

MINISTRY OF ENERGY, MINES AND LOW CARBON INNOVATION



ESTIMATES 2023/24

EMLI 2023 Estimates Table of Contents

Electricity and Alternative Energy Division

Clean Transportation

CleanBC Go Electric Programs.....	1
Zero Emission Vehicle Act / Regulation	2
Low Carbon Fuel Standard	3
Renewable and Low Carbon Fuel Production Goal.....	4
Clean Transportation Action Plan	5

Energy Efficiency

Clean Buildings Strategy.....	6
Clean BC – Better Homes and Better Buildings Program	7
Utility Demand Side Management.....	8

BC Hydro

Affordability and BC Hydro Rates (Update on the CCF; Affordability Credit; F22-F24 RRA)	9
Site C Update	10
Energy Purchase Agreements Renewals.....	11
BC Hydro Integrated Resource Plan	12
Industrial Electrification and the North Coast Expression of Interest	13
Rates and Rate Design (Tiered Residential Rates & Income Impacts, Industrial Rate Flattening & BCH's planned engagements on rate design)	14
DRIPA Action Plan/Indigenous Clean Energy Opportunities process.....	15

Communities

Remote Community Energy Strategy	16
BC Indigenous Clean Energy Initiative	17

Innovative Clean Energy (ICE) Fund

ICE Fund	18
\$25M Contingencies Access - Federal Partnerships	19

Climate Leadership

Geothermal Energy	20
CleanBC	21
Decarbonising BC's Gas Grid (GGRR, GHG Reduction Standard)	22
BC Hydrogen Strategy	23
Centre for Innovation and Clean Energy	24
Climate Aligned Energy Framework	25
Evolving Role of the BCUC	26

Mines, Competitiveness and Authorizations Division

Mining Regulatory Excellence	1
Permitting Regional Mines	2
Major Mines Permitting Timelines	3

Exploration

Mining and Mineral Exploration in BC	4
British Columbia Geological Survey	5
Geoscience BC	6
Mining Exploration Tax Incentive Programs	7

Region Projects/Issues of Concern

Carlyle Commodities – Newton Project.....	8
Joe Rich Quarry.....	9
Pavilion Mine	10
Lightening Rock/Sumas Mountain	11
Bamberton Quarry (Malahat)	12
Placer Projects and permitting in Atlin.....	13

Mine Development Projects

Table: Mine Development Projects in B.C.....	14
• <i>Significant Active Projects (in pre-application or review) [>300 employed]</i>	
• <i>Active Projects (in pre-application or review)[<300 employed]</i>	
• <i>Forecast but No Current Permitting Applications</i>	
Cariboo Gold.....	15
Blackwater	16
Highland Valley Copper	17

Operating Mines

Operating Coal Mines in B.C.....	18
Operating Metal Mines in B.C.	19
Map – Operating Mines & Selected Major Exploration Projects in BC....	20
Mineral Tax Revenue Forecast / Revenue Sharing with First Nations....	21
Financial Securities for Mines	22
SE BC Initiatives (Joint ENV/EAO note).....	23

Major Amendments approved in 2023

Table: Major Amendments	24
-------------------------------	----

<ul style="list-style-type: none"> • <i>Mine Expansion Amendments</i> • <i>Other Major Amendments</i> 	
Red Chris Block Cave	25
Eskay	26

Policy

Mining Competitiveness	27
International Joint Commission Reference and BC's Transboundary Relations with Neighbouring States	28
<ul style="list-style-type: none"> • <i><u>Attachment</u>: Appendix A – BC's Transboundary Relationship with Alaska and Washington</i> 	
Potential IJC Reference in SE on selenium in Koocanusa Reservoir	29
Placer and Jade Mining in BC	30
Mineral Tenure Act Reform/Modernization (w/ Banks Island Gold/Gitxaala Reference)	31
Critical Minerals	32

Mines Health, Safety and Enforcement Division

Mining Oversight	1
Code Review	2
<ul style="list-style-type: none"> • <i><u>Attachment</u>: Code Review to BN</i> 	
Health and Safety of BC Mines	3
Abandoned Mines	4
Mine Audits Unit	5
Mines Investigations	6
Mines Digital Services	7
Quinsam Coal Receivership	8
Tulsequah Chief Mine	9
Yellow Giant Mine (Banks Island)	10

Oil and Gas Division

Tenuring and Resource Stewardship

Petroleum and Natural Gas Tenuring and Disposition	1
• <i><u>Attachment</u>: Petroleum and Natural Gas Tenure Disposition and Management Processes</i>	
Petroleum and Natural Gas Tenure Revenue	2
• <i><u>Attachment</u>: Petroleum and Natural Gas Tenure Revenue</i>	
Resource Stewardship Initiatives with treaty 8 First Nations	3
Petroleum, Natural Gas Development and Agriculture	4
• <i><u>Attachment</u>: ToR Task Force</i>	

Energy Information and Analysis

Overview of British Columbia's Natural Gas Industry	5
LNG Projects: Status and Facts (inc Emissions)	6
• <i><u>Attachment</u>: LNG Projects Status and Facts</i>	
Government's Five Conditions for LNG	7
LNG Bunkering	8
Gasoline Prices (Fuel Price Transparency Act)	9
• <i><u>Attachment</u>: Gasoline Prices Across Canada</i>	
• <i><u>Attachment</u>: Taxes on Gasoline Across Canada</i>	

Royalty Policy and Administration

Royalty Review – programs, outcomes, and next steps	10
Healing the Land and Emissions Reduction	11
• <i><u>Attachment</u>: Estimated Deep Well Account Balances for Specified Operators</i>	
Upstream Investment Environment, Social and Governance	12
• <i><u>Attachment</u>: BC Oil and Gas Upstream Industry Capital Investment and Percentage of Canadian Investment</i>	
Questions on Subsidies	13

- *Attachment: Inventory of production and consumption fiscal measures pertaining to the oil and gas sector*

Regulatory and Infrastructure

Oil and Gas Legislation and Regulatory Development	14
CleanBC Roadmap to 2030 - Oil and Gas Industry.....	15
Carbon Capture and Storage	16
<ul style="list-style-type: none"> • <i><u>Attachment</u>: Provincial Funding by Program for CCS projects</i> 	
Hydraulic Fracturing and Responsible Resource Development	17
Federally Funded Programs for Dormant and Orphan Well Clean-up	18
Sierra Yoyo Desan Road	19

Infrastructure Projects and Strategic Initiatives

Trans Mountain Expansion Project Overview	20
<ul style="list-style-type: none"> • <i><u>Attachment</u>: Trans Mountain Expansion Project Construction Benefits</i> • <i><u>Attachment</u>: Maps of Trans Mountain Expansion Project</i> 	

Clean Energy Major Projects Office

Clean Energy Office Overview	1
Energy Action Framework.....	2

LNG Canada Implementation Secretariat

Project and 5 Conditions	1
LNG Canada Terminal Overview	2
Coastal GasLink Pipeline Overview	3
Coastal GasLink: Section 7 construction.....	4
LNG Canada Phase 2.....	5

Woodfibre Implementation Group

Woodfibre LNG Terminal Project	1
Eagle Mountain Pipeline Project	2

Strategic & Indigenous Affairs Division

UNDRIP Implementation.....	1
SIAD Overview	2
Tahltan Overview.....	3
Blueberry River FN & Treaty 8 Implementation.....	4
Fed/Prov Energy Transition and Economic Opportunities	5

Questions Deferred from other Ministries

2023 Deferred Estimates Questions	*
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CSNR Financials and Service Plan

Budget and Ministry Key Documents (Prepared by CSNR)	
Budget Highlight	1
i Minister Briefing Slides	
ii Estimates Summary	
Service Plan & Estimates Blue Book.....	2
Minister Mandate Letter	3

Mandate Letter Commitments

Minister Josie Osborne's Mandate Letter.....	1
CleanBC Go Electric Programs BN #1 (EAED).....	2
CleanBC Better Homes and Better Buildings Program BN #7 (EAED).....	3
CleanBC Roadmap to 2030 - Oil and Gas Industry BN #15(OGD).....	4
CleanBC BN #21 (EAED)	5
Decarbonising BC's Gas Grid (GGRR, GHG Reduction Standard)	
BN #22 (EAED).....	6
CleanBC Better Homes and Better Buildings Program-BN #7 (EAED)	7
Climate Aligned Energy Framework and BCUC Mandate	
BN #25 (EAED).....	8
Permitting Regional Mines BN #2 (MCAD).....	9
Major Mines Permitting Timelines BN #3 (MCAD)	10
Industrial Electrification and the North Coast Expression of Interest	
BN #13 (EAED).....	11
Rates and Rate Design (Tiered Residential Rates & Income	
Impacts Industrial Rate Flattening & BCH's planned engagements	
on rate design) BN #14 (EAED)	12
CleanBC Roadmap to 2030 - Oil and Gas Industry BN #15 (OGD).....	13

Carbon Capture and Storage BN #16 (OGD).....	14
• <i>Attachment: Provincial Funding by Program for CCS projects</i>	
Clean Transportation Action Plan BN #5 (EAED).....	15
Climate Aligned Energy Framework and BCUC Mandate	
BN #25 (EAED).....	16
Healing the Land and Emissions Reduction BN #11 (OGD).....	17
• <i>Attachment: Estimated Deep Well Account Balances for Specified Operators</i>	
Critical Minerals Strategy BN #32 (MCAD).....	18
Mineral Tenure Act Reform/Modernization (w/ Banks Island	
Gold/Gitxaala Reference) BN #31 (MCAD)	19
Royalty Review – programs, outcomes, and next steps. BN # 10	
(OGD).....	20
CleanBC Go Electric Programs BN #1 (EAED).....	21
Zero Emission Vehicle Act / Regulation BN #2 (EAED)	22
Centre for Innovation and Clean Energy BN #24 (EAED)	23

Statistics

Statistics Table	1
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Title: CleanBC Go Electric Program

Drafted: March 15, 2023

Issue: Investments to stimulate increased uptake of zero-emission vehicles (ZEVs), and further economic development in the ZEV sector in British Columbia

Response:

- British Columbia (B.C.) is a leader in clean transportation, with the second highest zero-emission vehicle (ZEV) adoption rate in North America in 2022 (18.1% of new light-duty vehicle sales in B.C. compared to 18.8% in California), one of the largest public charging networks in Canada, the largest public hydrogen fuelling network in Canada, a world-leading hydrogen and fuel cell industry, and a ZEV maintenance training program offered at four post-secondary institutions.
- The CleanBC Go Electric Program has been highly successful in: reducing market barriers; encouraging the adoption of ZEVs by British Columbians; leveraging private, municipal, and federal investment in ZEVs and infrastructure in B.C.; and supporting new economic opportunities in the ZEV sector.
- The CleanBC Go Electric Program provides rebates for zero-emission light-duty vehicles, medium- and heavy-duty trucks and buses, marine vessels, and airport and port ground equipment, and makes investments in infrastructure, training, public outreach, and economic development.
- Budget 2023 includes an additional \$40 million for the Go Electric Commercial Vehicle Pilots Program.
- In 2023, the CleanBC Go Electric Passenger Vehicle Rebate program is transitioning its funding source to revenues from BC Hydro's sales of credits obtained through the Low Carbon Fuel Standard.
- In August 2022, the CleanBC Go Electric Passenger Vehicle Rebate program implemented income testing to improve ZEV affordability and accessibility for low- and middle-income customers.
- In May 2019, the Province passed the *Zero-Emission Vehicles Act* (ZEV Act) which requires automakers to meet ZEV sales targets reaching 10% of new light duty vehicle sales by 2025, 30% by 2030, and 100% by 2040. The CleanBC Roadmap to 2030 accelerated the ZEV sales targets to 26% by 2026, 90% by 2030 and 100% by 2035, and announced the introduction of new ZEV targets for medium- and heavy-duty vehicles. The purpose of the ZEV Act is to ensure increased ZEV availability and choice at more affordable prices in B.C.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Background/Status:

- In 2011, B.C. introduced ZEV programming, currently called the CleanBC Go Electric Program (the Program). Including Budget 2023, and fiscal year-end funding in Fiscal 2023, more than \$515 million has been committed to make ZEVs more affordable and reduce greenhouse gas emissions.
- A total of \$45.7 million was approved for 2022-2023 fiscal year-end funding, which includes \$26 million for the Public Charging program, \$19.5 million for Medium and Heavy-Duty Infrastructure program, and \$0.2 million for First Nations low-carbon transportation planning. Budget 2023 approved a further \$40 million for the Commercial Vehicle Pilots Program.
- As of December 31, 2022, the Program has led to:
 - almost 110,000 new light-duty ZEVs on the road;
 - over 1,000 ZEVs in commercial applications, such as forklifts, medium/heavy duty vehicles, cargo e-bikes and port and airport ground equipment;
 - over 70 early-market commercial medium/heavy-duty ZEVs for diverse on-road and off-road applications, as well as 60 commercial vehicle charging points;
 - over 70 electric school buses;
 - over 3,000 public Level 2 charging stations, and 854 fast-charging stations across 277 locations;
 - a network of four public hydrogen fueling stations in Metro Vancouver and Greater Victoria, with two more planned to be operational by the end of 2023, the majority of which are at existing gas stations;
 - automotive technician training at four B.C. technical institutions, electrician training, and eleven research and academic projects;
 - an economic development program for B.C.'s ZEV sector supporting 21 ZEV projects leading to approximately 180 additional full-time equivalent jobs; and
 - a multi-faceted outreach and awareness program called Emotive, including include community awareness and planning funding.
- There are multiple Program streams:
 - The income-tested passenger vehicle rebate provides up to \$4,000 for small light-duty ZEVs priced below \$55,000, or for larger light-duty ZEVs priced below \$70,000, including minivans, sport utility vehicles, and pickup trucks. The rebate may be combined with federal rebates, for a total rebate of up to \$9,000 per ZEV.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

- Home and workplace charger rebates, which provide up to \$350 for charging stations in homes, and up to \$2,000 for charging stations and free EV advisor services in apartments, condos and workplaces. Rebates up to \$3,000 are available to complete an EV Ready Plan for condominiums and apartments and up to \$600/parking stall for electrical infrastructure upgrades (maximum of \$120,000 per complex). Increased rebates are available for Indigenous communities and businesses.
- Public infrastructure funding, which provides up to 50% funding for public fast charging stations (up to \$80,000). Increased rebates of up to 90% of project costs (to a maximum of \$130,000) per station are available for Indigenous-owned DCFC stations.
- Hydrogen fuelling infrastructure funding, which provides funding for public hydrogen fuelling stations. Through the 2021 RFP, five stations received capital funding of \$850,000 per station and an additional \$100,000 to support operations and maintenance.
- Commercial Vehicle Pilots Program, which provides funding for vehicles, infrastructure, and data analysis to support zero-emission technologies. The fourth funding call is open and accepting applications until March 31, 2023. The first two funding calls allocated funding to 22 projects.
- Supporting a pilot program with the Vancouver Fraser Port Authority that is expected to support the deployment of twelve low and zero-emission drayage trucks, a biofuel-based switch locomotive, and a biofuel-based harbour patrol vessel.
- Specialty Use Vehicle Incentive program which provides a rebate up to 33% for e-cargo bikes, electric motorcycles, low-speed vehicles, medium/heavy-duty vehicles, airport and port vehicles, and utility vehicles. Medium/-heavy-duty rebates may be combined with federal rebates, for total rebates of up to \$300,000.
- Fleets program which provides funding for ZEV fleet and infrastructure assessments, electrical upgrades, installations of charging stations, and advising services.
- School Bus program which provides public, private, and Indigenous schools with funding for ZEV buses and charging stations.
- “Emotive”, the province-wide ZEV public outreach program developed and delivered under partnerships with local governments and community organizations, including Indigenous communities.
- Funding to upgrade electrician and automotive technician training to incorporate charging infrastructure and ZEVs.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

- The Advanced Research and Commercialization program which supports projects that create jobs and lead to economic growth in the ZEV industry sector in B.C. A new Commercial Vehicle Innovation Challenge is expected to launch shortly to help attract international investment to B.C. companies and address the current technology gap in the hard-to-decarbonize commercial vehicle sector.
- CleanBC Go Electric Programs support growth of B.C.'s ZEV sector, which has over 270 companies and organizations involved in all aspects of the supply chain employing more than 11,000 jobs, producing \$2.1 billion in total economic output and contributing \$1.15 billion to the provincial gross domestic product.

Cross Reference:

Zero Emission Vehicles Act

Low Carbon Fuel Standard

Clean Transportation Action Plan

Contact:

Les MacLaren	ADM	Electricity and Alternative Energy Division	778 698-7183
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Title: Zero-Emission Vehicles Act / Regulation

Drafted/Revised: March 10, 2023

Issue: The *Zero-Emission Vehicles Act* / Regulation (ZEV Act) requires automakers to increase their supply of zero-emission vehicles (ZEVs) to British Columbia (BC)

Response:

- BC's ZEV Act delivers on the Province's CleanBC plan commitment to make ZEVs more affordable and accessible to British Columbians.
- The ZEV Act requires automakers to meet an escalating annual percentage of new light-duty ZEV sales, reaching 10% by 2025, 30% by 2030, and 100% by 2040, which will ensure greater supply and availability of ZEVs.
- The CleanBC Roadmap to 2030, released in 2021, included commitments to increase the ZEV Act targets to 26% of light-duty vehicle sales to be ZEV by 2026, 90% by 2030, and 100% by 2035, and to implement medium- and heavy-duty regulations.
- The ZEV Act provides flexible pathways (through sales, trading of compliance units, initiative agreements for sales of used and medium/heavy duty ZEVs, or purchase agreements), for suppliers to achieve compliance while ensuring that the Province meets its ZEV and GHG targets.
- The Ministry of Energy, Mines and Low Carbon Innovation (Ministry) has developed an online ZEV Reporting System which regulated parties use to demonstrate their compliance with the ZEV Act. Eighteen automakers are actively using the system and have been submitting annual compliance reports since October 2021.
- BC joined Quebec and 14 US states in having a ZEV standard, as well more than 20 countries worldwide who have now either announced a future ban on the sale of new gasoline and diesel cars or targeted 100% of vehicle sales to be ZEVs.
- The ZEV Act is part of a coordinated, and expanding, program of activities under the Province's highly successful CleanBC Go Electric Program that aims to: reduce market barriers; encourage the adoption of ZEVs by British Columbians; leverage private, municipal and federal investment in ZEVs and infrastructure in BC; and support new ZEV sector economic opportunities.
- Budget 2023 includes an additional \$600,000, for total annual funding of \$1,320,000 to enable development, deployment and sustainment of online regulatory reporting tools for both the ZEV Act and Low Carbon Fuel Standard.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Background/Status:

- The ZEV Act passed on May 30, 2019, and the ZEV Regulation on July 30, 2020, to ensure that more ZEVs are available for purchase in BC.
- The ZEV Act was informed by engagement and consultation with the auto industry, local governments, and environmental non-governmental organizations (ENGOS).
- In the Roadmap to 2030, Government announced that the light-duty ZEV targets will be increased, and targets will be developed for medium- and heavy-duty vehicles.
- The ZEV Act sets phased-in annual targets and other compliance requirements, ensuring automakers increase ZEV availability to meet demand.
- Technical reviews of the ZEV Act are held at regular intervals to review market trends, receive input from stakeholders, and allow for any necessary adjustments.
- In July 2022, as part of the first formal review of the ZEV Act, the Ministry released an Intentions Paper on its proposed amendments to the Act and Regulations to stakeholders, including vehicle suppliers, ENGO's, local governments, and other relevant industry stakeholders. The feedback received from stakeholders informed the forthcoming proposed amendments to the Act and Regulations.
- A ZEV Advisory Council is being established to provide input into the Ministry's ZEV programming and policies including the ZEV Act. The ZEV Advisory Council will be comprised of industry, ENGOS, local governments, Indigenous organizations, infrastructure providers, and academics.
- In 2022, BC had the highest uptake of ZEVs in Canada and the second highest in North America. New ZEV sales averaged 18.1% of light-duty vehicle sales over the year.
- In 2022, the Government of Canada announced a mandatory target for all new light-duty cars and passenger trucks sales to be zero-emission by 2035. The mandate includes interim targets of at least 20% by 2026 and at least 60% by 2030, and assumes that B.C. will implement its Roadmap ZEV commitments. BC's ZEV Act was the first in the world to include a 100% ZEV target.

Cross Reference: 01 - CleanBC Go Electric Programs
05 - Clean Transportation Action Plan

Contact:

Les MacLaren	ADM	Electricity and Alternative Energy Division	778-698-7183
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osbourne

Title: Low Carbon Fuel Standard

Drafted: March 13, 2023

Issue: New Legislation governing the BC Low Carbon Fuel Standard (LCFS)
Response:

- In June 2022, the Province passed the *Low Carbon Fuels Act* (New Act) which will repeal the *Greenhouse Gas Reduction (Renewable and Low Carbon Fuel Requirements) Act* (Existing Act) and replace it with legislation that broadens the scope and makes it easier to administer and enforce. The New Act is expected to come into force by regulation on January 1, 2024.
- The effectiveness of the New Act is increased by implementing policy improvements which extend the authority to include new fuel categories, recognize new technologies, and ensure funding/support for low carbon fuel projects that also support other objectives of CleanBC.

Background/Status:

- The Low Carbon Fuel Standard (LCFS) was introduced in 2008 and implemented in 2010. It sets annual carbon intensity reduction targets using a lifecycle analysis encompassing all stages of a fuel product's life from raw material to final use.
- A fuel supplier's annual compliance with the LCFS is calculated in terms of compliance units, a positive number (credits) for low carbon fuels and a negative number (debits) for high carbon fuels.
- At the end of each compliance period, suppliers must have a balance of zero or positive compliance units to avoid non-compliance penalties.
- As annual carbon intensity reduction targets become more stringent, fuel suppliers will be challenged to meet their obligations, and will require access to more credits or alternative options for compliance with the LCFS.
- Amendments to the Regulation in December 2022:
 - increased the carbon intensity reduction requirement from 20% to 30% by 2030 in the gasoline and diesel fuel pools.
 - increased the low carbon fuel requirement non-compliance penalty from \$200 per tonne to \$600 per tonne.

The LCFS contribution to CleanBC:

- The LCFS is the single largest contributor to meeting the greenhouse gas (GHG) reduction targets set out under CleanBC and is an integral part of B.C.'s GHG reduction policies.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osbourne

- Between 2010 and 2021, actions taken to comply with the LCFS have avoided over 15.7 million tonnes of global greenhouse gas emissions.
- At a 30% reduction in carbon intensity by 2030, the LCFS is expected to deliver a total of 5.7 million tonnes of reductions in B.C. GHG emissions in 2030, which represents 19% of CleanBC's current 2030 target (with indirect support for an additional 6% from ZEVA).

Investment in Clean Fuel through the Part 3 Agreement Program:

- In 2022, the Province held Agreements supporting 21 projects with potential new investments exceeding \$1.98 billion over the next eight years. Upon completion, the projects are expected to supply fuel that will reduce lifecycle greenhouse gas emissions by approximately 3.2 million tonnes of carbon dioxide equivalent globally per year.
- If successful, six projects supported by Part 3 Agreements will lead to the annual production of over 570 million litres of low carbon renewable fuel in B.C. by 2028, representing 44% of the new Roadmap target of 1.3 billion litres of renewable fuel production in BC by 2030.

Policy improvements:

- In June 2022, the Province passed the new *Low Carbon Fuels Act* (New Act) which is expected to come into force through regulation on January 1, 2024.
- The New Act will repeal the Existing Act and replace it with a legislation that broadens the scope and makes it easier to administer and enforce.
- The intention of the New Act remains the same while improving overall clarity for regulated industry, closing compliance and enforcement gaps, and incorporating policy changes announced in the CleanBC Roadmap to 2030.
- Policy changes in the New Act that are supported by the CleanBC Roadmap to 2030 include:
 - Recognizing jet fuel as a new category of fuel, and enabling regulations to create other fuel categories, such as marine fuels.
 - Recognizing the use of alternatives to diesel fuel to generate electricity in remote communities not connected to the Provincial grid.
 - Expanding the scope of Part 3 Agreements (soon to be called Initiative Agreements) to increase the supply of low carbon fuels in BC by enabling support for new proponents and new business opportunities.

Fuel Pricing:

- As the carbon intensity reduction targets become more rigorous, the cost of high carbon fuels can be expected to increase, while the cost of low carbon fuels is expected to decrease.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osbourne

- Ministry officials estimate that the cost of the LCFS could be as high as 9.8 cents per litre in 2022 and up to 38.5 cents per litre in 2030.
- If the wholesale fuel market is competitive, a high portion of this cost could be passed forward to the consumer in the price at the pump.
- Advice/Recommendations

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Cross Reference:

04 Increasing Renewable Low Carbon Fuel Production in BC

Contact:

Les MacLaren ADM Electricity and Alternative Energy Division 778 698-7183

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Renewable and Low Carbon Fuel Production in British Columbia.

Drafted: March 14, 2023

Issue: CleanBC Roadmap to 2030 committed to increasing the production of renewable fuel in B.C. by 1.3 billion litres per year by 2030.

Response:

- Under the CleanBC Roadmap to 2030 (CleanBC Roadmap), the Low Carbon Fuel Standard (LCFS) is expected to deliver about 5.7 million tonnes of reductions in British Columbia (BC)'s greenhouse gas emissions in 2030.
- As a CleanBC Roadmap commitment, the LCFS was enhanced by increasing the stringency of carbon intensity reduction targets from 20% to 30% by 2030.
- The CleanBC Roadmap also announced the intention to consider expanding the LCFS to cover aviation and marine fuels not previously subject to the requirements.
- In order to meet the increased demand for cleaner fuels from strengthening and expanding the LCFS, the CleanBC Roadmap committed the Province to work towards ramping up to 1.3 billion litres of new renewable fuel production by 2030.
- Refining our own renewable fuels with BC materials and BC workers will lead to job growth and reduce the need to import fossil fuels and renewable fuel and feedstocks from other jurisdictions.
- BC does not produce enough "conventional" feedstocks, such as canola, to meet the long-term demands for meeting the 1.3 billion litre goal. To utilize BC feedstocks, new technologies must be commercialized to convert the feedstocks into finished fuels. Potential new feedstocks include wood waste, tall oil, municipal solid waste, and sewage sludge.
- Part 3 Agreements currently support projects that could result in the production of 570 million litres of low carbon renewable fuel by 2028. The Ministry will continue to work to ensure that these projects are successful, while working with industry to achieve the 1.3 billion litre production goal for 2030.
- Increasing the demand for low carbon jet fuel through regulation, stimulates the nascent low carbon jet fuel production industry and supports the development of additional made-in-B.C. renewable fuels.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Background/Status:

- Transportation accounts for 40% of BC's GHG emissions, with more than half being emitted from medium- and heavy-duty transportation vehicles.
- Currently, BC imports most of its renewable fuels. Producing these fuels in the province will lead to job growth and regional economic development.
- The LCFS, including Part 3 Agreements, is a strong tool for attracting investment in renewable and low carbon fuel production.
- Part 3 Agreements between a fuel supplier and the statutory director are for actions that increase the use of Part 3 fuels sooner than would have occurred otherwise.
- In 2022, the Province held Part 3 Agreements supporting 21 projects with potential new investments exceeding \$2 billion over eight years. Upon completion, the projects are expected to supply fuel that will reduce lifecycle greenhouse gas emissions by approximately 3.2 million tonnes of carbon dioxide equivalent globally per year.
- In 2021 the impact of COVID-19 reduced the credits available for Part 3 Agreements, and in 2022 inflation and supply chain issues delayed projects and increased costs, so there were no new agreements signed. The capacity for new agreements in 2023 has yet to be determined.
- Supported through a Part 3 Agreement, Tidewater Renewables is nearing completion of construction of a renewable diesel facility co-located at the Prince George Refinery which will produce 150 million litres per year of renewable diesel products starting in Spring 2023.
- Most processes that create renewable diesel fuel can be modified to produce low carbon jet fuel. Inclusion of jet fuel in the LCFS could provide significant support for this emerging opportunity.
- For several conversion technologies, the resulting product may not be completely suitable as a fuel but can be further refined by mixing the product with crude oil for processing at existing fossil fuel refineries. This enables existing refineries to transition to the production of significant quantities of renewable fuels.
- The Parkland Refinery in Burnaby and the Tidewater Midstream Refinery in Prince George are producing volumes of low carbon gasoline and diesel fuel via co-processing renewable feedstocks with fossil crude oil as inputs to their refineries. Both refineries have been receiving support through Part 3 Agreements.
- The Ministry continues to engage with companies who are producing and considering the production of low carbon fuel in BC, including: Arbios Biotech, Azure Sustainable Fuel, HTEC, Parkland, Shell, Suncor, and Tidewater Renewables.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Cross Reference: #03 Low Carbon Fuel Standard

Contact:

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Clean Transportation Action Plan

Drafted/Revised: March 13, 2023

Issue: Clean Transportation Action Plan, a commitment under the CleanBC Roadmap to 2030

Response:

- CleanBC's Roadmap to 2030 (Roadmap) committed to developing a Clean Transportation Action Plan (CTAP) to be released by the end of 2023.
- The CTAP is part of a comprehensive approach, as outlined in the Roadmap, to meet British Columbia's (B.C.) transportation sector greenhouse gas (GHG) reduction target of 27-32% below 2007 levels by 2030, and to achieve net-zero GHG emissions by 2050.
- The Province has already taken significant actions to reduce transportation GHG emissions, including through programs, policies and regulations that support active transportation, zero-emission vehicles (ZEV), and clean fuel adoption. Examples include: the suite of Go Electric programs, the *Zero Emission Vehicles Act*, and the Low Carbon Fuel Standard (LCFS).
- Building off existing work, and other ongoing Provincial transportation work, the purpose of the CTAP is to identify the next set of concrete actions across five foundational areas – reducing vehicle kilometres travelled (VKT); mode shift to efficient modes; increasing vehicle efficiency; switching to ZEVs; and using clean fuels.
- Decarbonizing and increasing energy efficiency in B.C.'s transportation sector helps in achieving Government priorities such as supporting clean jobs and increased affordability, all while stimulating province-wide economic activity.

Background:

- The Ministry plays a leading role in developing policies, programs and standards that improve the energy efficiency and reduce GHG emissions in the transportation sector.
- B.C.'s transportation sector accounts for approximately 39% of provincial GHG emissions: approximately 14% from light-duty vehicles, 14% from medium- and heavy-duty vehicles, and 11% from marine vessels, rail, aircraft, off-road equipment.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- In 2019, transportation emissions had risen 22% in B.C. since 2007, largely due to increasing emissions from heavy-duty vehicles, rising vehicle populations, and increasing fuel consumption.
- CleanBC and the recently released CleanBC Roadmap to 2030 (Roadmap), identify additional transportation targets including:
 - ZEV targets:
 - accelerated *Zero Emission Vehicle Act* targets - 26% of new light-duty vehicles by 2026, 90% by 2030, 100% by 2035; and
 - new ZEV targets for medium- and heavy-duty vehicles aligned with California or leading jurisdictions.
 - VKT reduction targets: reduce light-duty VKT by 25% by 2030, compared to 2020.
 - Mode share targets: increase share of trips (e.g., commuting for work and personal activities) made by walking, cycling, transit to 30% by 2030, 40% by 2040, and 50% by 2050.
 - Energy intensity targets for personal and commercial transportation: reduce the energy intensity of goods movement (tonne-kilometres) by at least 10% by 2030, 30% by 2040, and 50% by 2050, relative to 2020.
- The CTAP will take a long-term view to realize the GHG benefits of all potential actions, such as compact, complete communities that take longer to yield results but provide significant benefits.
- To achieve the 2030 and 2050 targets, CTAP policies will need to be stringent and effective enough to change behavior in all travel modes.
- The CTAP is being developed by the Ministry of Energy, Mines, and Low Carbon Innovation, the Ministry Environment, and the Ministry of Transportation and Infrastructure.
- Ongoing engagement with Indigenous Nations on CTAP started in Summer 2022. Engagement with local governments started in Fall 2022. A consultation paper was issued to technical stakeholders in February 2023, with responses due in April 2023. The CTAP is anticipated to be released by the end of 2023.

Cross Reference:

01 - CleanBC Go Electric Programs

02 - Zero-Emission Vehicles Act & Regulation

Contact:

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

2022 Transition Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible:

Title: Clean Buildings Strategy

Drafted/Revised: March 16, 2023

Issue: Efforts to decarbonize buildings through energy efficiency and fuel switching

Response:

- The Ministry of Energy, Mines and Low Carbon Innovation (Ministry) plays a leading role in developing policies, programs and standards that improve energy efficiency and reduce greenhouse gas (GHG) emissions in buildings.
- Making British Columbia's (B.C.'s) built environment more energy efficient and lower carbon helps achieve government priorities such as supporting clean jobs and ensuring affordability, all while stimulating province-wide economic activity.
- The Ministry has been implementing a multi-faceted Clean Buildings Strategy as part of CleanBC to support B.C. in transitioning to low-carbon buildings by 2030.
- The strategy is the basis of the Buildings Pathway commitments in the CleanBC Roadmap to 2030.
- The objective of the strategy is to drive energy efficient and low carbon solutions to a tipping point of availability, acceptability, and affordability through targeted interventions in the marketplace, followed by progressively more stringent codes and standards that backstop progress.
- The Clean Buildings Strategy includes five streams of action to drive market transformation in the sector:
 - **Research, development and demonstration** to bring B.C.-made energy efficient and low-carbon solutions to the market;
 - **Energy information** tools to help British Columbians identify retrofit opportunities and inform investment decisions;
 - **Industry training** to support workforce readiness for programs, codes and standards;
 - **Targeted incentives and financing** to drive adoption of low carbon heating systems and energy efficiency improvements; and

2022 Transition Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible:

- **Progressively more stringent energy codes and standards** to eliminate the most polluting and least efficient products and practices from the market.

Background/Status:

- Buildings account for 10% of B.C.'s GHG emissions (not including emissions from waste and deforestation). The Province has a target to reduce emissions from the built environment by 59%-64% by 2030.
- Achieving the Province's legislated 2030 and 2050 GHG reduction targets will require a shift towards low-carbon heating options and the highest performing buildings.
- In addition to reducing emissions, making B.C.'s buildings more efficient will help achieve government priorities such as advancing innovative technology development, promoting clean jobs, and ensuring affordability of housing by reducing energy costs, all while stimulating province-wide economic activity.
- Every \$1 million invested in energy efficiency is estimated to create between 30 and 57 job years and \$4-8 million of gross domestic product.
- Between 2007 and 2019, energy use per m² of floorspace was reduced by 24% in residential buildings and 11% in commercial buildings. GHG emissions¹ per m² of floorspace reduced 32% in residential buildings and 19% in commercial buildings.
- Between 2007 and 2020, the percentage of households using heat pumps for primary or secondary heating increased by 180%.
- Efficiency Canada's Provincial Energy Efficiency Policy Scorecard awarded B.C. the top ranking in Canada in every year since its inception in 2019. BC leads in both the 'Enabling Policies' and 'Buildings' categories and was praised in particular for the CleanBC Roadmap to 2030 that will make new buildings zero carbon and require new and replacement space and water heating equipment to be at least 100 per cent efficient by 2030.
- The Province's built environment initiatives are grounded in a market transformation approach that covers both existing buildings and new construction. This approach consists of five streams of action, listed below along with key initiatives:

¹ This NRCan statistic excludes emissions from electricity, which in BC are very small.

2022 Transition Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible:

Research, Development and Demonstration

- The CleanBC Building Innovation Fund provides support for research, commercialization and demonstration of advanced building designs and construction methods, and ultra-efficient building components in order to increase the availability and affordability of low-carbon buildings solutions made in B.C. To date, the program has held three intakes, distributing \$14.65 million in support to 41 projects across the province.

Energy Efficiency Information

- Better Homes and Better Buildings provides free energy coaching to British Columbians to help them identify opportunities for energy savings and emission reductions in their homes and businesses.
- The Province will be requiring realtors to provide energy efficiency ratings on listed homes to make it easier for buyers and renters to factor energy costs and GHG emissions into their decisions. The Ministry is developing a virtual home energy assessment tool to generate this rating and help homeowners connect with Better Homes program resources.

Industry Training

- The Ministry has worked with BC Hydro, FortisBC, and the Home Performance Stakeholder Council to develop best practice installation guidelines and training curriculum for heating systems and envelope improvements, and is now subsidizing the cost of this training for those becoming registered members of the Home Performance Contractor Network (HPCN). CleanBC Better Homes is transitioning to requiring use of an HPCN member in order to access incentives. This will help foster quality workmanship and maximize energy efficiency and emission reductions.

Financial Incentives

- The CleanBC Better Homes and Better Buildings program provides financial incentives and low-interest financing to help households and businesses save energy and reduce GHG emissions through heating equipment replacement and building envelope improvements. The program is funded through 2024/25.
- Budget 2022 included a PST exemption on heat pumps, paired with an increase to the PST on fossil fuel alternatives to 12 per cent. It also included a new temporary tax credit - the Clean Buildings Tax Credit - for retrofits that improve the energy efficiency of eligible multi-unit residential buildings and commercial buildings.

2022 Transition Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible:

- In 2021, BC Hydro, FortisBC Gas and FortisBC Electric spent a combined \$197 million on energy efficiency programs², enabled through a supportive regulatory framework. The Province is currently drafting amendments that will carry out the CleanBC Roadmap commitment to transition utility DSM away from conventional combustion gas equipment and towards building-envelope improvements and heat pumps.
- Local governments have requested the legislative authority to offer Property Assessed Clean Energy financing programs to support building energy retrofits. The Province is currently assessing options and timing.

Regulated Codes and Standards

- Efficiency standards are implemented as point-of-sale regulations (through the *Energy Efficiency Act*) or in the BC Building Code (by the Minister Responsible for Housing).
- CleanBC commits to setting a requirement that, after 2030, all space and water heating equipment sold and installed in BC will be at least 100% efficiency, significantly reducing GHG emissions. The Ministry is working with the Office of Housing and Construction Standards to undertake analysis and consultation on regulations that will utilize both the *Energy Efficiency Act* and the BC Building Code.
- The Province has built off its success with the Energy Step Code, by committing to adopt a “net-zero energy ready” base code for new buildings by 2032. Effective May 1, 2023, most new construction in BC must be 20% more energy efficient than the base 2018 BC Building Code, with the next incremental improvement coming in 2027. Local governments are now able to adopt the Zero Carbon Step Code, which sets out several levels of carbon intensity requirements that can be referenced. The base code will begin incorporating these requirement for the whole province starting in 2024.
- A building alterations code is also being developed that will align with a federal retrofit code, due to be completed in 2024. The alterations code will focus on raising existing building performance to today’s code level.
- The Roadmap to 2030 also commits to a new regulatory tool--placing a cap on emissions for natural gas utilities and enabling a variety of pathways to achieve it. This will drive utility investment in energy efficiency, renewable gas, fuel switching, and other decarbonization actions.

Cross Reference: 07 - Better Homes and Better Buildings Program
08 - Utility Demand-Side Management

² Based on BC Hydro results for 2021/22 and FortisBC results for 2021

2022 Transition Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible:

Contact:

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: CleanBC Better Homes and Better Buildings Program

Drafted/Revised: March 16, 2023

Issue: CleanBC Better Homes and Better Buildings Program Overview

Response:

- The CleanBC Better Homes and Better Buildings program provides financial incentives to help households, businesses and the public sector save energy and reduce greenhouse gas emissions (GHG) through heating equipment replacement and building envelope improvements.
- The program launched in September 2018 as a two-year, \$24 million retrofit program co-funded by the Province and the federal government through the Low Carbon Economy Leadership Fund.
- Under the CleanBC plan, the program was extended and provided additional funding.
- CleanBC Better Homes and Better Buildings has \$71.6 million in base funding from fiscal 2022/23 through fiscal 2024/25.
- The program portfolio includes:
 - commercial retrofit incentives for large complex buildings;
 - commercial retrofit incentives for small buildings;
 - commercial new construction incentives;
 - residential retrofit incentives;
 - residential low-interest retrofit financing;
 - residential income-qualified incentives;
 - residential new construction incentives;
 - Indigenous community retrofit incentives; and
 - specialized energy coaching support for small businesses, Indigenous communities and civic organizations.
- As of February 2023, CleanBC Better Homes and Better Buildings has provided 45,765 residential retrofit rebates and 1,361 income-qualified rebates, approved pre-registrations for 1,000 residential new construction projects and disbursed 296 incentives, and approved 327 capital incentives for commercial, institutional, and multi-unit residential building energy efficiency and fuel-switching projects.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- As of April 1, 2022, the Province no longer contributes top-up incentives for conventional residential and commercial natural gas space and water heating equipment.

Background/Status:

- The Ministry of Energy, Mines and Low Carbon Innovation (Ministry) launched a \$24 million retrofit program in September 2018, co-funded through the federal Low Carbon Economy Leadership Fund.
- The Program was allocated an additional \$40.6 million in Provincial base funding over fiscal year 2019/20 to 2021/22, and now has \$71.6 million in base funding for fiscal year 2022/23 to fiscal 2024/25.
- Budget 2022 provided an additional \$42 million in contingencies to continue energy efficiency incentives and market supports through the program, including \$16 million over three years to provide new top-up incentives, such as heat pump incentives for northern and rural homeowners.
- The program includes:
 - **Better Homes:**
 - Residential retrofit rebates for fuel-switching to heat pumps, high efficiency windows, doors and insulation in fossil-fuel heated homes;
 - Low-interest financing for fuel-switching to heat pumps;
 - High value incentives for income-qualified households;
 - Incentives for building to higher steps of the BC Step Code with electric heating, and for installing heat pumps in new construction; and
 - A single application for Provincial, BC Hydro, FortisBC, and local government incentives.
 - **Better Buildings:**
 - Energy study and capital incentives for commercial, institutional, and multi-unit residential buildings and social housing to support fuel-switching and energy efficiency improvements.
 - **Online hubs and energy coaching:**
 - Online web hubs for homeowners and businesses to access information, incentives (provincial, utility and local government) and

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

supports to reduce energy use and GHG emissions in homes (www.betterhomesbc.ca) and buildings (www.betterbuildingsbc.ca).

- Free energy coaching services for homeowners, contractors, small businesses, Indigenous communities, and civic organizations.
- In July 2022, new northern top-up incentives were launched for residential and commercial programs, retroactive to April 1, 2022. Rural top-up incentives are in development and will be launched later in 2023.
- Program participation remains robust.
- The Ministry continues to increase awareness of heat pumps and available incentives through public and contractor education and marketing.
- The Ministry has worked with BC Hydro, FortisBC, and the Home Performance Stakeholder Council to develop best practice installation guidelines and training curriculum for heating systems and envelope improvements and is now subsidizing the cost of this training for those becoming registered members of the Home Performance Contractor Network (HPCN). CleanBC Better Homes is transitioning to requiring use of an HPCN member in order to access all residential incentives. It is now required for heat pump, insulation and all income-qualified incentives. This will help foster quality workmanship and maximize energy efficiency and emission reductions.
- In August 2022, the CleanBC Better Homes New Construction program was fully subscribed.
- As of April 1, 2022 Provincial top-up incentives for gas-fired equipment in both residential and commercial programs ended in order to prioritize clean fuel-switching incentives.
- The Ministry is developing options to support clean energy and energy efficiency upgrades for low-income and rental housing that will help reduce emissions while making homes more comfortable and affordable.

Cross Reference: 06 – Clean Building Strategy
08 – Utility Demand-Side Management
21 – CleanBC

Contact:

Les MacLaren	Assistant Deputy Ministry	Electricity and Alternative Energy	778-698-7183
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2023 Transition Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible:

Title: Utility Demand-Side Management

Drafted/Revised: March 16, 2023

Issue: Utility demand-side management programs help reduce energy bills and greenhouse gas emissions

Response:

- Energy efficiency programs, capacity-focused programs, and electrification programs – otherwise known as demand-side management (DSM) - are a resource for utilities to address energy and capacity needs, while helping families and businesses to reduce their energy bills.
- The Province provides the regulatory framework for DSM through legislation and regulation, including the *Utilities Commission Act*, the *Clean Energy Act*, and the Demand-Side Measures Regulation (DSM Regulation).
- The Province provides additional support for utility electrification through the Greenhouse Gas Reduction (Clean Energy) Regulation (GGRR).
- Due to supportive government policies, there has been a significant increase in natural gas DSM (energy efficiency) by FortisBC over the last 15 years.
- BC Hydro's spending on electricity DSM (energy efficiency) has been moderate because of the current electricity surplus, but is scheduled to increase given the increasing demand for electricity that will be driven by actions to achieve climate targets.
- Electrification will play a larger role in utility planning given provincial greenhouse gas (GHG) reduction goals.
- BC Hydro has released an electrification plan, which, if approved in 2023, will result in \$260 million in spending to advance electrification in buildings, transportation, and industry over 5 years.

Background/Status:

- Utility energy efficiency and capacity-focused DSM expenditures are approved by the British Columbia Utilities Commission (BCUC).
- Utilities must meet adequacy and cost-effectiveness requirements set out in the DSM Regulation.
- The DSM Regulation offers favorable treatment of programs that are harder to justify through traditional cost-effectiveness tests, including those that:

2023 Transition Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible:

- Serve low-income customers and renters;
 - Offer education and awareness in schools;
 - Support the transition to higher building codes including the Step Code;
 - Support future codes and standards; and
 - Support technology innovation.
- The Roadmap to 2030 committed “to shift the focus of utility-funded efficiency programs to support market readiness for future standards and codes, place more emphasis on electrification, and to ensure affordability for households and businesses. Instead of seeing incentives for conventional gas-fired heating equipment such as furnaces and boilers, consumers will see more support for building-envelope improvements such as insulation and better windows, and all kinds of high efficiency heat pumps – electric, gas and hybrid.” Plans are underway to implement this commitment through amendments to the DSM Regulation.
- Electrification DSM is currently considered separately from energy efficiency and capacity-focused DSM in legislation. Utilities in B.C. are authorized under the GGRR to undertake electrification projects and programs in order to reduce GHG emissions, provided they are cost-effective to the utility.
- The GGRR allows utilities to implement these undertakings without seeking the prior approval of the BCUC. The BCUC can still rule on the prudence of these expenditures

Natural Gas Utilities:

- In 2021, FortisBC Energy Inc. (FEI) spent \$106.8 million on DSM and achieved 1,143 terajoules (TJ) in new energy savings. FortisBC’s current one-year 2023 DSM plan includes spending \$141M and net incremental savings of 1,600 TJ. The 2023 plan represents a five-fold increase in spending over the past 10 years, since 2013.
- FEI will submit a new DSM plan for 2024-2027 once the DSM Regulation has been updated.
- Pacific Northern Gas, which serves portions of northern B.C., has an approved DSM portfolio averaging \$0.86M in approved spending per year for 2020-2022.
- PNG has submitted a new DSM plan this year for 2023-2024 that contains an average of \$1.9M in spending per year.
- The Roadmap to 2030 also commits to a new regulatory tool, the Greenhouse Gas Reduction Standard (GHGRS), to cap emissions for natural gas utilities and enable a variety of pathways to achieve it. This will drive additional utility investment in energy efficiency, renewable gas, and other decarbonization actions.

Electric Utilities:

2023 Transition Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible:

- Electricity conservation and energy efficiency will take on increased importance as the Province takes action to meet its GHG targets, which will require electrification throughout the economy.
- BC Hydro's spending on electricity DSM has been moderate the past few years because of the current electricity surplus.
- In fiscal 2021, BC Hydro spent \$77 million on DSM and achieved 780 GWh in new incremental energy savings. This is approximately in line with BC Hydro's approved F20-F21 DSM plan which included \$89.1M for traditional DSM, targeting 753 GWh/yr of new incremental energy savings.
- In September 2021, BC Hydro filed a three-year Revenue Requirements Application for F25, proposing to spend \$83.4M, \$85.1M and \$87.1M on DSM in F23, F24, and F25, respectively.
- BC Hydro's latest Integrated Resource Plan was filed in December 2021, and proposes to continue with a base level of energy efficiency in the near-term but ramping up in future years.
- In Sept 2021, BC Hydro released an electrification plan, including \$260M in spending to advance electrification in buildings, transportation, and industry over 5 years. The funding includes \$190M to promote fuel switching in the built environment, transportation, and industrial sectors, and \$50M to attract new load from customers who have flexibility in the regions of the province they can operate.
- BC Hydro concurrently launched a residential heat pump fuel switching incentive of \$3,000, which is integrated with the CleanBC Better Homes rebate.
- FortisBC Inc. (FBC), which provides electricity in parts of the BC interior, has planned DSM expenditures between 2023 and 2027 of \$16.5M per year, with savings of approximately 29 GWh/yr. In 2021 it spent \$12.7M and achieved 30 GWh of savings.

Cross Reference: 06- Clean Buildings Strategy
07 - Better Homes and Better Buildings Program

Contact:

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Affordability and BC Hydro Rates

Drafted/Revised: March 15, 2023

Issue: Government is working with BC Hydro to maintain affordability of electricity

Response:

- In its August 2021 Revenue Requirements Application to the BCUC, BC Hydro requested rate increases below the expected rate of inflation for the next three years of 0.62% beginning April 1, 2022, 0.97% on April 1, 2023, and 2.18% on April 1, 2024.
- BC Hydro requested that these increases be offset by a rate rider giving a 2% discount for fiscal 2023, a 1% discount for fiscal 2024, and a 0.5% discount for fiscal 2025.
- The BCUC has subsequently granted BC Hydro an interim rate increase of 0.62% effective April 1, 2022, and an interim rate rider providing a 2% discount. This results in a net rate decrease of nearly 1.4%. The BCUC's proceeding on rates is currently underway.
- To further mitigate limit upward pressure on BC Hydro customers' bills, Government and BC Hydro have taken a number of actions, including
 - Government instructing the BCUC not to increase BC Hydro's allowed net income - i.e., profit - during the Fiscal 2022 to Fiscal 2025 period, and
 - providing a one-time cost-of-living bill credit in Fall 2022 to residential and commercial utility customers throughout B.C. Residential customers received a credit of \$100. Commercial customers, including restaurants, tourism operations and other businesses, received a credit averaging about \$450 based on their prior year's electricity consumption.
- In addition, over the last 5 years BC Hydro's Customer Crisis Fund has provided grants to customers facing disconnection who have experienced a life event and are in financial crisis.
- Government is committed to providing continued support for low-income customers and is considering implementing a means-tested bill assistance program modelled after the Customer Crisis Fund.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Background/Status:

BC Hydro Rate Increases

- BC Hydro's rates are currently among the lowest in North America.
- Of the major utilities surveyed by Hydro Quebec, BC Hydro's rates are the second- or third-lowest for the vast majority of residential customers.
- Advice/Recommendations
- In its Fiscal 2023-2025 Revenue Requirements Application, BC Hydro has requested rate increases of: 0.62% for Fiscal 2023; 0.97% for Fiscal 2024; and 2.18% for Fiscal 2025.
- Offsetting these increases, BC Hydro proposes to return favourable regulatory account balances to ratepayers with a -2% rate rider in Fiscal 2023; a -1% rate rider in Fiscal 2024; and a -0.5% rate rider in Fiscal 2025.
- On February 22, 2022, the BCUC approved BC Hydro's requests for Fiscal 2023 on an interim (refundable) basis, resulting in a rate decrease by a net 1.39% on April 1, 2022.
- If the interim rate increase approved for F2023 and F2024 and F2025 rates and deferral accounts are approved by the BCUC, rates would decrease 1.39% in Fiscal 2023, increase 2% in Fiscal 2024, and increase 2.06% in Fiscal 2025.
- Advice/Recommendations

Cost-of-Living Bill Credits

- In Fiscal 2021/2022, BC Hydro's revenues exceeded expectations, resulting in a higher credit balance in BC Hydro's Cost of Energy Variance Accounts.
- Government worked with BC Hydro to use \$320 million of this balance to provide a "cost-of-living bill credit" to eligible utility customers, beginning in December 2022.
- Credits were provided to all eligible residential and commercial electricity customers, including those who receive their electricity service indirectly from BC Hydro through FortisBC or a municipal utility.
- Residential customers received a one-time bill credit of \$100, which is the equivalent of approximately one month of electricity charges for an average residential customer living in a detached home, or more than two months for an average customer living in an apartment.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Bill credits for commercial customers were distributed on a proportional basis based on the customers' electricity consumption from the previous year. The average bill credit for commercial customers was approximately \$450.
- Approximately 2.2 million residential and commercial customers received the cost-of-living bill credits. Approximately 1.9 million of those were residential account holders.

BC Hydro's Net Income

- BC Hydro's allowable net income, or "profit" is established by its economic regulator, the BCUC, and is subsequently recovered from ratepayers as part of its BC Hydro rates.
- Starting in 2013, Government took on BCUC's role in setting net income, as part of a "10 Year Rates Plan" which smoothed significant rate increases, required to recoup BC Hydro investments in its aging infrastructure, over a multi-year period to lower annual rate increases that would otherwise have been required in 2011 and 2012 of 11% and 15% respectively.
- As an outcome of the 2018 Phase 1 of the Comprehensive Review of BC Hydro (Phase 1), legislative/regulatory changes returned authority to the BCUC to set:
 - BC Hydro's rates beginning in Fiscal 2020, and
 - BC Hydro's allowed net income (profit), which is recovered from its customers through rates, in Fiscal 2021 after a transition period.

- Advice/Recommendations; Cabinet Confidences

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Advice/Recommendations; Cabinet Confidences

Government extended the transition period for returning authority to the BCUC, and directed the BCUC to set BC Hydro's current \$712 M allowed net income for Fiscal 2024 and Fiscal 2025.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Advice/Recommendations

Customer Crisis Fund:

- On May 1, 2018, BC Hydro started the Customer Crisis Fund (CCF) pilot program to provide bill relief for certain customers, as directed by the BCUC.
- A residential BC Hydro account holder may apply for a grant under the CCF if their account is overdue and they are facing disconnection. They must also have experienced a life event, within the previous year, that caused a temporary financial crisis. Eligibility is not dependent on income or whether the account holder receives other forms of Government assistance.
- Under the CCF, eligible customers may receive a grant equal to the amount owing on their account, up to maximum grants of \$600 for customers who heat their homes with electricity, and \$500 for customers with non-electrically heated homes (e.g., natural gas heat).
- The CCF pilot program expired on May 31, 2021. In June 2021, Government put in place a direction to the BCUC that allowed the CCF to continue past that date on a temporary basis.
- The CCF pilot program was funded by a monthly rate rider that was added to residential customers' bills. BC Hydro stopped applying the rate rider to customers' bills effective June 1, 2021. The temporary continuation of the CCF is being funded, in part, through a surplus of approximately \$5 million that represented the difference between revenues collected through the monthly rate rider and the costs of providing the pilot program. An additional \$6 million in funding, drawn from higher-than-expected BC Hydro revenues, was added in fall 2022.
- As of the end of the CCF pilot program on May 31, 2021, BC Hydro had provided approximately 11,396 grants totaling \$4.289 million to customers in need.
- Since June 1, 2021, when the CCF was continued temporarily, BC Hydro has provided support to 4,028 customers, providing \$2.096 million in grants as of February 2023.
- At the current level of participation, BC Hydro forecasts the CCF funding available will allow operations for up to 30 months, or until Fall 2025.
- As part of the BC Hydro Review Phase 2, government committed to provide additional support for low-income customers and is considering implementing a means-tested program modelled after the CCF to continue providing relief to BC Hydro Customers in crisis once current CCF funding is depleted.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- A working group comprised of staff from the Ministry of Energy, Mines and Low Carbon Innovation, Ministry of Social Development and Poverty Reduction, Ministry of Indigenous Relations and Reconciliation and BC Hydro is currently examining options for the future of the CCF, as well as other measures to address household energy affordability issues.

Cross Reference: 14 – Rates and Rate Design

Contact:

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2022/23 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Title: Site C Project Update

Revised: March 22, 2023

Issue: Site C Project

- In February 2021, Government confirmed its decision to continue with Site C at a revised cost estimate of \$16 billion and with a one-year delay to its in-service date. The project is currently on schedule and on budget.
- Construction on the project has progressed on all fronts with some parts of the project already completed or nearing completion. The project is more than 70% complete. The earthfill dam is completed to approximately 87% of the total required volume.
- Nearly 90 per cent of the concrete has been placed in the powerhouse and the first generating unit is in the process of being installed. BC Hydro expects all concrete for the powerhouse to be finished in 2023.
- BC Hydro is on track to complete the project in 2025, which includes a schedule for achieving first power in 2024.
- As a result of the efforts of BC Hydro and Site C contractors exploring strategies to complete work on the project that had been delayed by the COVID-19 pandemic, a scenario has emerged that has the potential for reservoir filling to take place as early as fall 2023 and be able to deliver first power later this year.
- Prior to filling the reservoir in 2023, more than 20 regulatory approvals must be met. In addition to these authorizations, reservoir filling must consider BC Hydro's operation of the Peace River system, environmental and weather constraints, and construction progress.
- If reservoir filling does not occur in 2023, BC Hydro will continue with its approved schedule to commence reservoir filling and first power in 2024.

Background/Status:

Overview:

- Site C will be the third dam and hydroelectric generating station on the Peace River and is designed to provide 5,100 gigawatt hours of electricity each year and 1,100 megawatts of capacity, which is enough power for 450,000 homes.

2022/23 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

- Construction began on July 27, 2015. Completion is scheduled for December 2025.

Right Bank Foundation Enhancements

- During construction of the powerhouse and spillway buttresses, sensitive instruments monitored the bedrock foundation below and behind the buttresses for movements. BC Hydro identified small movements (millimetres) along a thin bedding plane located below the bottom of the concrete buttress shear key.
- One of the project's design objectives is to avoid movements of the buttresses, as the concrete structures built on top of them (and the generating equipment that will be installed in the powerhouse) cannot accommodate even small movements without damage.
- BC Hydro identified a two-part solution to improve the stability of the right bank structures: extend the foundation deeper into the rock; and reduce water pressure that can build up in the bedrock foundation.
- The first part of the solution is to improve the strength of the concrete buttresses beneath the right bank structures by anchoring the buttresses deeper into the rock below using vertical piles (large steel pipes filled with concrete).
- The second part of the solution is to improve the water tightness of the approach channel. The approach channel directs water around the earthfill dam and into the generating station. BC Hydro will enhance the approach channel with a manufactured geomembrane liner, and improve drainage to prevent water from seeping into the foundation.
- Many large hydroelectric dam projects have encountered geotechnical challenges during construction and have modified their design to suit the conditions.
- One example in British Columbia is the Revelstoke Dam, which was completed in 1984. Adverse bedrock geology discovered during construction led to major design changes. Changes in the concrete dam included additional excavation of weak rock, placement of backfill concrete to provide a more stable foundation, provision of additional drainage.
- The cost of the right bank foundation enhancement work is included within the current \$16 billion cost estimate. BC Hydro expects the work to be completed prior to reservoir filling.
- The right bank foundation enhancement work continues to be reviewed by internationally recognized dam experts appointed by the Project Assurance Board: John France and Dr. Kaare Höeg.

2022/23 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Construction Progress:

- Construction on Site C began in July 2015 and is over 70% complete.
- Construction activities are underway in all project areas including at the dam site, reservoir, transmission line corridor, and segments of Highway 29.

Construction activities for 2023:

- This year, the project activities include:
 - Progression of earthworks at the dam site;
 - Ongoing construction of the powerhouse and spillways, including generator installation and the continued installation of steel piles as part of the right bank foundation enhancement work;
 - Construction of approach channel;
 - Transmission line maintenance and reclamation; and
 - Highway 29 realignments at Cache Creek, Halfway River, Farrell Creek, Dry Creek and Lynx Creek.

Earthfill dam construction

- Two cofferdams are required to seal off the main channel of the river. These structures were completed in March 2021, ahead of schedule. The main earthfill dam is currently under construction and approximately 70% complete.
- The main earthfill dam will be 60 metres tall, about 500 metres wide at its base and span more than one kilometre across the river valley.

Generating station and spillways work

- Generating station and spillways work on the right bank of the Peace River includes the Site C powerhouse, penstocks, spillways, turbines and generators.
- By concrete volume, the generating station and spillways civil works is approximately 82% complete as of September 30, 2022.
- The six penstocks, which will channel the water from the reservoir into the turbines and generators, have had all the penstock steel installed. Penstocks are large steel pipes, which are 10 metres in diameter and 80 metres long. A flexible coupling for the penstocks has been redesigned to address a pressure test failure in 2021, BC Hydro is working towards implementing the fix.
- In early August 2022, the two large Site C powerhouse bridge cranes were taken out of service due to issues with the crane wheels. To mitigate potential delays, a smaller construction crane was used allowing for almost full resumption of the powerhouse construction. As of mid-October 2022, both cranes are back in

2022/23 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

service. This event is not expected to impact achieving the approved in-service date in 2025. The powerhouse is approximately 86% complete.

- All six turbine runners have been transported to site from Brazil.

Substation and transmission lines

- The Site C substation was completed in October 2020, and the two 500 kilovolt transmission lines are now energized ahead of schedule.
- Construction continues on the three transmission lines connecting the Site C substation to the Site C powerhouse, including the installation of five of the eight transmission towers.

Highway 29 construction

- BC Hydro is partnering with the Ministry of Transportation and Infrastructure to realign six segments of Highway 29, which connects Hudson's Hope to Fort St. John.
- Construction is underway for all 30 kilometres of the highway that need to be realigned to accommodate the future reservoir.
- Construction of the of the following segments has been completed:
 - Farrell Creek East - August 2022; and
 - Dry Creek – September 2022.
- All work on Highway 29 is on track to be complete in 2023.

Reservoir clearing

- BC Hydro is removing trees and vegetation from the future Site C reservoir area.
- Clearing of the 87-kilometre-long reservoir area is nearly complete.

COVID-19

- Since April 2022, COVID-19 has remained manageable at the site. BC Hydro continues to work with Northern Health to monitor the latest developments of the COVID-19 pandemic to help prevent the spread of the virus on the project.
- BC Hydro has suspended the COVID-19 vaccination policy effective September 26, 2022. The project continues to collect vaccination status for anyone accessing site, as the health authority had previously requested this information from large industrial projects. Rapid testing continues to be used as requested by workers, and to test symptomatic workers reporting to the clinic.

2022/23 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Site C employment

- The latest employment statistics show that there were 5,420 total workers on the Site C project in September 2022.
 - Of the total workers, 3,594 or 66% were from British Columbia.
 - There were 1,015 workers on site from the Peace River Regional District — that's 22% of the construction and non-construction contractor's workforce.
 - There were 589 women working for Site C construction and non-construction contractors.
- Peak employment was reached on the project in September 2022.

Indigenous relations

- BC Hydro has reached benefit agreements with the 10 First Nations that are most impacted by the project, including most of the Treaty 8 First Nations.
- About \$687 million in Site C procurement opportunities have been awarded to Indigenous designated businesses, including pre-construction contracts.
- BC Hydro continues to advance economic opportunities for First Nations through capacity building and procurement opportunities. Approximately \$687 million in Site C procurement opportunities have been awarded to companies designated by First Nations since the beginning of the project.
- In September 2022, 403 Indigenous people were working on the Site C project, compared to 390 in September 2021. The project peak of 428 Indigenous people working on the Site C project was reached in October 2019.
- Consultation is ongoing with impacted First Nations regarding options and site-specific plans for the management of identified burial and cultural sites impacted by reservoir filling, in particular in the Halfway River and Cache Creek Bear Flats areas.
- Based on consultation and field investigations undertaken by BC Hydro and First Nations, two burial sites were identified in the future reservoir area, which have been registered as heritage sites under the Heritage Conservation Act.
- BC Hydro is working closely with affected Nations to develop the most appropriate management options and any community support needs. BC Hydro requires permits from the Archaeology Branch under the *Heritage Conservation Act* prior to undertaking any activities that may impact the registered burial sites.

2022/23 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Monitoring recent inflationary pressures

- BC Hydro advises that recent inflationary pressures could potentially impact the project's remaining costs due to potentially higher labour and fuel costs and higher interest during construction due to the significant increase in interest rates.
- In addition, beyond inflationary cost impacts, supply chain challenges could potentially cause schedule delays.

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne
Title: Electricity Purchase Agreements and Renewals

Drafted: March 14, 2023

Issue: In December 2021, BC Hydro submitted its long-term plan to meet its customers' needs for energy and capacity for the next 20 years to the B.C. Utilities Commission and has developed a program for renewing Electricity Purchase Agreements, set to expire before April 2026, for projects that are clean or renewable resources.

Response:

- BC Hydro's Integrated Resource Plan (IRP) states that BC Hydro is seeking to renew EPAs for 19 clean or renewable independent power producer (IPP) projects, whose current contracts expire before April 2026.
- The cost of energy is a major driver of BC Hydro rates. Renewing the agreements at cost-effective prices provides greater certainty that these clean or renewable energy facilities will continue to be available when needed, while reducing BC Hydro's future energy acquisition costs from new clean or renewable resources.
- As compared to greenfield (new) projects, BC Hydro expects that renewal prices will be more favorable, and existing projects will have minimal incremental environmental impacts, and provide greater certainty with respect to timing and volumes of delivered energy.
- All of the EPA renewals will be subject to approval of the British Columbia Utilities Commission (BCUC).

If asked about natural gas-fired facilities and/or Island Generation:

- BC Hydro has negotiated a short-term renewal agreement for Capital Power's gas-fired Island Generation facility near Campbell River to ensure electricity reliability for Vancouver Island as BC Hydro undertakes investigative and repair work to transmission cables damage during the 2021 heat dome.
- The BCUC accepted this agreement on November 10, 2022.

Background/Status:

- Along with debt servicing and finance expenses, energy acquisition from IPPs is a major driver of BC Hydro's costs and rates.
- As of April 2022, BC Hydro had about 125 electricity purchase agreements (EPAs) with IPPs. These EPAs provide about 25% of BC Hydro's electricity

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

supply on the integrated system, and account for about 30% of BC Hydro's total planned costs.

- As a major cost driver for BC Hydro, the acquisition of energy from IPPs was a key focus of Phase 1 of the Comprehensive Review of BC Hydro. In addition, the then-Minister of EMLI commissioned a review of BC Hydro's purchase of power from IPPs by Ken Davidson (the "Zapped Report") which was released in February 2019.
- The Zapped Report concluded policy direction by the previous government led BC Hydro to procure too much lower-value intermittent energy from IPPs, much of which is delivered on to the system when BC Hydro least needs it (spring freshet). When comparing EPA prices with current export market prices, Mr. Davidson determined that the previous government's policies cost BC Hydro's rate payers at least \$16 billion over 20 years, equivalent to roughly \$4,000 per residential ratepayer over the same period.
- Phase 1 of the Comprehensive Review of BC Hydro found that there is little flexibility to make significant changes to the structure of existing EPAs. However, to reduce BC Hydro's future energy costs, Government approved:
 - the indefinite suspension of BC Hydro's Standing Offer Program (SOP), a continuous intake program for small clean energy projects of 0.1 to 15 megawatt (MW) in size. At the time the program was suspended, eligible projects were paid ~\$120 per MW hour, escalating with inflation, over a 20-year term; and
 - renewal of seven biomass EPAs, held mainly by forest companies, that were set to expire by January 2022, at, on average, ~80% of the original contract price and ~80% of the historically delivered volume of energy.
- In December 2021, BC Hydro filed its IRP for acceptance with the BCUC. Before any planned resources, such as demand-side measures, BC Hydro's IRP forecasts that BC Hydro has sufficient energy to meet its customers' needs until Fiscal 2029, and sufficient capacity until Fiscal 2032.
- At the same time, the IRP lays out BC Hydro's intent to renew 19 EPAs that expire before April 2026 using market-based pricing for IPPs that are from 100% clean or renewable resources. The Greater Vancouver Regional District's SEEGEN facility in Burnaby, which generates electricity as a by-product of municipal solid waste incineration and is not 100% clean, is also set to expire before April 2026 and its potential renewal will be managed through a different process.
- The IRP also included an assumption that Capital Power's natural gas-fired Island Generation facility in Campbell River was not to be renewed after its original agreement expired in April 2022. However, BC Hydro has negotiated a short-term renewal agreement for Capital Power's Island Generation facility near Campbell River to ensure electricity reliability for Vancouver Island as BC Hydro undertakes investigative and repair work to the transmission cables damaged

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

during the 2021 heat dome. BC Hydro's planning assumptions in the IRP, with respect to a long-term renewal for the Island Generation facility, have not changed.

- Indigenous Nations (INs) have significant interests in the expiring EPAs. In at least three cases, INs are the lead in the EPA or have significant equity participation in associated projects:
 - The China Creek (also known as Upnit) small hydroelectric facility on Vancouver Island is 72.5% owned by the Hupacasath First Nation and 10% owned by the Ucluelet First Nation.
 - The Walden North facility is 49% owned by Cayoose Creek Development Corp, which is the business arm of the Sekw'el'was Cayoose Creek Band.
 - Intergovernmental Communications

- Advice/Recommendations

Rationale and Strategy for EPA Renewals

- Advice/Recommendations; Government Financial Information
-
- BC Hydro has developed two options for renewal pricing:
 - A five-year-term renewal with a variable price based on the day-ahead Mid-C market index; and
 - A 20-year term with a fixed price schedule and a partial inflation escalator.
- These pricing approaches protect ratepayers from losses in the event market prices are low, while providing certainty to IPPs with respect to the sale of their generation at prices that they can accept. This strategy also increases the probability the BCUC will accept the renewal EPAs.
- BC Hydro expects to file the first of the EPA renewals with the BCUC in the coming months.

IPPs may raise concerns about BC Hydro's pricing:

- Advice/Recommendations

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne
Advice/Recommendations

- Most of the expiring EPAs were originally signed in the late 1980s, or between 2000 and 2003.
- The price for EPAs signed in the late 1980s is now approximately \$95 per MWh, escalating by 3% per year. The average price for EPAs signed in 2001 and 2003 is slightly below \$60 per MWh¹.
- In February 2022, BC Hydro began engaging with IPPs holding expiring EPAs, and Indigenous Nations regarding the development of the EPA Renewal Program for the renewal of those EPAs that expire before April 2026 for clean or renewable energy projects.
- Draft terms of the EPA Renewal Program were issued in February 2022 and July 2022, and the final terms were issued in October 2022 considering the input received from eligible IPPs.

Advice/Recommendations

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- BC Hydro has executed one EPA renewal with one of the eligible IPPs and discussions with certain holders of other expiring EPAs are progressing. BC Hydro expects to file these renewal EPAs with the BCUC in the coming months for review and acceptance under section 71 of the *Utilities Commission Act*.

Environmental groups, Indigenous People and others may also raise concerns about renewal of the Island Generation EPA

- Island Generation is in most years operated infrequently, primarily in response to high market electricity prices or to maintain reliable service on Vancouver Island.
- Under the terms of the existing EPA, Island Generation has been a relatively high-cost facility and one of the largest point sources of greenhouse gases in BC Hydro's system when it is being operated.

¹ Based on data with the Zapped Report

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

- For these reasons, and because BC Hydro has enough transmission to Vancouver Island to generally negate the need for Island Generation for reliability, BC Hydro does not anticipate renewing the EPA on a long-term basis.
- However, out of an abundance of caution, BC Hydro entered into a short-term agreement (4.5 years) with Island Generation for additional back-up support for Vancouver Island. This short-term supply of a back up resource is required as BC Hydro continues to investigate and repair transmission cables to the island that were damaged during the “heat dome” event in June 2021.
- The BCUC accepted this EPA renewal on November 10th, 2022.

Cross Reference: 12 - BC Hydro Integrated Resource Plan
15 - DRIPA Action Plan/Indigenous Clean Energy Opportunities process

Contact:

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne
Title: **BC Hydro Integrated Resource Plan**

Drafted: March 10, 2023

Issue: BC Hydro has submitted its plan to meet its customers' needs for the next 20 years to the BC Utilities Commission.

Response:

- BC Hydro has submitted its Integrated Resource Plan (IRP) to the British Columbia Utilities Commission (BCUC). The BCUC will decide, after a public process, whether to approve BC Hydro's IRP.
- The IRP includes a mix of conservation and new resources under a range of load growth scenarios, and positions BC Hydro to pivot, as required, to support electrification as one of the three major pathways under the CleanBC Roadmap to 2030¹ while enabling BC Hydro to keep its rates affordable.
- While the IRP is based on a "Base Case" Load forecast that projects moderate growth in electricity demand, it also includes contingency resource plans to meet a range of needs, including accelerated demand driven by implementation of the CleanBC Roadmap to 2030.
- As a result, BC Hydro is well-positioned to pivot to support electrification as one of the three major pathways (energy efficiency, biofuels, and electrification, in that order) under the CleanBC Roadmap to 2030.
- The IRP takes a balanced approach to supporting CleanBC while enabling BC Hydro to keep its rates affordable.
- The Province has heard the interests of many Indigenous Nations who are seeking to participate in clean electricity projects. An Electricity Table under the Indigenous Clean Energy Opportunities engagement process, which is co-led by the Ministry and the First Nations Leadership Council, will provide an opportunity to continue discussing Indigenous participation in the electricity sector.

Background/Status:

- BC Hydro's 2021 IRP sets out its plan to meet its customers' energy needs from 2020 to 2040.
- This is BC Hydro's first IRP since 2013, and the first that's been reviewed by the BCUC since 2008 (the 2013 IRP was reviewed by Cabinet, under now-repealed provisions under the *Clean Energy Act*).

¹ Energy efficiency, liquid and gaseous biofuels, and electrification, in that order.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

- In its base scenario, the IRP projects that its customers' demand will increase from just under 60,000 gigawatt-hours (GWh) per year today to nearly 76,000 GWh by fiscal 2041, an increase of approximately 25% (the "Reference Case")
- It proposes to meet this anticipated increase in electricity consumption through additional demand-side measures (DSM) (e.g., energy efficiency and conservation), renewals of existing electricity purchase agreements, and new generation resources starting in Fiscal 2031.
- The IRP also includes a range of scenarios, including scenarios with stagnating electricity demand and multiple scenarios with higher and faster growth in electricity demand.
- For example, under its most optimistic load growth (the Accelerated Electrification to meet CleanBC goals) scenario, BC Hydro projections suggest residential, commercial, and industrial demand could grow to around 83,000 GWh per year by 2041 (just under 10% higher than the Base Case, and about 38% higher than today). To meet this higher demand, BC Hydro proposes to expedite its proposed supply responses (for example by implementing even higher levels of energy efficiency programming, seeking to procure incremental electricity resources one year sooner (2030), and temporarily importing electricity as a bridging mechanism).
- A key feature of the IRP is that it provides BC Hydro the flexibility to respond to faster or slower growth in electricity demand by pursuing its contingency resource plans.
- BC Hydro proposes a number of Near-term Actions to enable it to implement elements of the Contingency Resource Plans on a timely basis.
- These Near-term Actions include: submitting planned DSM expenditures for Fiscal 2023 through Fiscal 2025 to the BCUC for review and approval; applying to the BCUC for approval of voluntary time-of-use rates for residential customers; and to study, consult on, and pilot utility-scale battery resources.
- BC Hydro has submitted its planned DSM expenditures as part of its Fiscal 2023 to Fiscal 2025 Revenue Requirements Application, and on March 3, 2023 it filed its application for voluntary time-of-use rates for residential customers.

Criticism of the IRP

- Clean Energy BC, the Independent Power Producer (IPP) industry association and several environmental organizations have argued that the IRP's load forecast and associated Resource Plan should be based on the Accelerated Electrification, rather than Reference Case.

- Advice/Recommendations

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

- In addition, electricity demand has remained relatively flat over the past several years, even as Government and BC Hydro have promoted electrification initiatives. In the past, BC Hydro has been criticized by the BCUC and others for optimistic load forecasts that have not materialized, especially in the industrial sector.
- As noted above, BC Hydro's IRP includes a contingency plan to ensure BC Hydro is prepared to meet customers' need for energy on a timely basis if CleanBC leads to accelerated growth in the demand for electricity.

Consultation Informing the IRP

- BC Hydro consulted widely in developing the IRP, with all First Nations invited and 85 Indigenous Nations, Tribal Councils and Indigenous organizations participating. BC Hydro also heard from more than 6,000 British Columbians through surveys and virtual engagement sessions.
 - This included seeking feedback on the relative priority that should be placed on each of the following objectives as BC Hydro developed its plan:
 - keeping costs down for customers;
 - reducing GHG emissions through clean electricity;
 - limiting land and water impacts;
 - supporting reconciliation with Indigenous peoples; and
 - supporting the growth of BC's economy.
- Public and customer participants indicated that GHG reductions through clean electricity was the highest priority, followed by keeping costs down for customers and limiting land and water impacts. Public and customer feedback showed strong support for the 2021 IRP.
- Indigenous participants indicated that advancing reconciliation and limiting land and water impacts were their top priorities. Feedback from Indigenous participants included strong interests in:
 - conservation, to protect the environment and Indigenous traditions and culture connected to lands and water;
 - Indigenous participation in future clean energy development including new EPAs with BC Hydro. There was also interest in micro-grids, net metering and other forms of customer generation such as rooftop solar; and
 - opportunities to participate in transmission upgrades and related transmission ownership opportunities. There were also concerns about wildfire risk from climate change and how this could affect reliability of electricity service. Some participants felt that BC Hydro should use its existing infrastructure, instead of building new infrastructure, in order to mitigate further environmental impact.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation

Minister Responsible: Honourable Josie Osborne

○ Advice/Recommendations; Intergovernmental Communications

- During the engagement, BC Hydro also received feedback from Indigenous participants on certain issues that are outside the scope of the 2021 IRP. These included revenue sharing, and Indigenous-owned public utilities.

○ Advice/Recommendations

Cross Reference: 11 – Electricity Purchase Agreements and Renewals
15 – DRIPA Action Plan/Indigenous Clean Energy Opportunities process

Contact:

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Industrial Electrification and North Coast Expression of Interest

Drafted/Revised: March 15, 2023

Issue: Electrification of industry will require expansion of BC Hydro's transmission infrastructure

Response:

- Electrification is one of the pathways identified in the CleanBC Roadmap to 2030 leading to reduced or avoided emissions in the industrial sector.
- BC Hydro's Electrification Plan, released in September 2021, has a significant industrial electrification focus with an expectation of adding 2,800 gigawatt-hours of incremental load from the industrial sector alone.
- British Columbia (B.C.) has an opportunity to support global energy security through the export of lower carbon energy produced using BC Hydro's clean electricity from upstream gas production to the point of export.
- Electrification of industry including critical minerals metals mining, ports and LNG processing facilities, provides a mechanism for the industrial sector to meet B.C.'s sectoral targets allowing for investment certainty and is aligned with B.C.'s and Canada's climate ambitions.
- To facilitate further industrial growth in B.C.'s northwest in line with provincial and federal climate ambitions requires new electricity infrastructure. Expansion of transmission supply to B.C.'s North Coast will also support the \$1.5 billion dedicated to support critical mineral projects under the federal government's Critical Minerals Strategy.
- BC Hydro launched a non-binding expression of interest (EOI) on February 15, 2023, to gauge interest by customers on the North Coast in electrifying. The EOI is part of a multi phased approach to determine needs on the coast and inform transmission expansion plans.
- BC Hydro and the Ministry of Energy, Mines and Low Carbon Innovation are also engaging with First Nations along the proposed North Coast transmission expansion corridor on opportunities for transmission line co-ownership.

Continued...

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Electrification of industry on the North Coast and pursuing options for Indigenous ownership of BC Hydro infrastructure align with deliverables in this Ministry's mandate letter including supporting the Province's critical minerals strategy.

Background/Status:

- B.C.'s industrial sector accounts for 40% of B.C.'s GHG emissions, mostly due to compressors in the natural gas sector, diesel engines in mining and forestry, and process heat in the forest products industry. Industry represents the largest electrification opportunity to reduce emissions in B.C.
- BC Hydro's northwest service area is supplied with electricity through a single radial 500 kilovolt (kV) transmission line that runs from Prince George to Terrace. BC Hydro is anticipating significant growth along the North Coast of British Columbia, with critical mining projects, port electrification, proposed liquefied natural gas (LNG) projects, fuel processing / shipping projects under consideration.
- To date, proponents in the North Coast area have expressed interest in electrifying projects, which total nearly 3,000 megawatts (MW) of electricity demand with nearly half that demand coming from new or expanding critical mineral and metal mining projects and the electrification of ports.
- This level of demand far exceeds the transmission capacity of the existing system even with the partially federally funded Prince George to Terrace Capacitors project that will increase the capacity of the existing radial line from 800 MW to 1300 MW by 2027.
- To meet the anticipated demand will require adding a second 500 kilovolt (kV) transmission circuit across the three segments of the existing North Coast radial line at a capital cost of about \$3 billion and is expected to take 8-10 years from development to in-service.
- The line would support North Coast LNG projects, in or entering the environmental assessment (EA) process, to pass an emissions test with a credible plan to be net zero by 2030, as announced March 14, 2023 as part of the new energy action framework.

North Coast Expression of Interest:

- BC Hydro launched an Expression of Interest on February 15 to gauge interest and ensure that a new line is appropriately sized to meet the electrification demand in the North Coast.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Many of the Nations along the proposed transmission line route are members of the First Nations Climate Initiative (FNCI) and/or the First Nations Major Projects Coalition (FNMPC), and have expressed support for net zero LNG, expanded transmission capacity and Indigenous equity ownership of transmission infrastructure.
- The current interconnection process, which does not allow BC Hydro to group interconnection requests, is challenging for the Northwest as individual customers do not want to be responsible for triggering these significant transmission upgrades and therefore paying for the infrastructure. ^{Advice/}
Advice/Recommendations; Intergovernmental Communications
- As a result, BC Hydro is proposing a different multi-phased approach to develop new transmission capacity in the Northwest.
- The first stage is a two-month non-binding EOI to determine the demand for electricity in the region. Subsequent stages of the process will require financial commitment from each company who requires capacity (in the form of security). This will require a new transmission interconnection tariff, ^{Advice/Recommendations}
Advice/Recommendations
- The benefits of this approach include the following:
 - Information about customer electricity needs will be received earlier and will be used to inform transmission system planning in the region.
 - Security for project development costs is distributed across multiple customers rather than a single customer, which will reduce a barrier to initiating transmission line upgrades, increase project certainty, and in turn enable engagement with First Nations.
 - Transmission line upgrades can be optimized based on customer demand and location.
- For the standard interconnection process, BC Hydro is required to enter all transmission load connection requests into the connection queue in the order of requests received (i.e., “first come, first served.”)
- The end-to-end duration for customer connections varies significantly depending on complexity, other BC Hydro work, external factors such as weather, regulatory requirements, First Nations consultation and stakeholder requirements, and customer-driven changes. A typical overall timeline for a new transmission connection is two to four years.
- Following the Expression of Interest, customers may be asked to submit a transmission service request or complete interconnection studies. The Expression of Interest will not replace the interconnection request process.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Up to 14 First Nations could be affected by a new North Coast transmission line between Prince George and Terrace. BC Hydro's relationships with these Nations are at various stages based on current and past projects.
- Senior level EMLI staff have also communicated the desire of government to work with BC Hydro and First Nations on processes and models for Indigenous co-ownership of transmission infrastructure in B.C. at a First Nation gathering on March 3 in Vancouver.

North Montney

- One of the projects that BC initiated with its federal partners as part of the 2019 Memorandum of Understanding on Electrification of BC's Natural Gas Sector was the North Montney Regional Electrification Project that would extend BC Hydro's grid into the North Montney basin where no electrical infrastructure currently exists. Some of these upstream gas processing facilities will feed LNG plants on BC's coast.
- The Project was put on hold pending outcome of negotiations between the Province and Blueberry River First Nation following the *Yahey* decision. On January 18, 2023, the Province reached an agreement with the Blueberry River First Nation and as a result there is an opportunity to resume some natural gas activities in the North Montney area.
- BC Hydro is in discussion with proponents in the North Montney on approaches to electrify their upstream gas processing facilities.
- BC Hydro and the Province are also exploring partial Indigenous ownership of transmission infrastructure in the North Montney.

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osbourne

Title: Rates and Rate Design

Drafted: March 16, 2023

Issue: BC Hydro is considering opportunities to advance updated rate designs to provide customers with choices that better meet their electricity needs.

Response:

- The current structure of tiered electricity rates in British Columbia were designed to encourage electricity conservation, and they have accomplished that objective.
- As electricity prices increased, tiered rates have further increased the cost of electric heat and may discourage adoption of electric vehicles (EVs).
- However, any change to flatten the tiered rate structure would result in increases (albeit mostly small) in bills for most BC Hydro customers.
- Changes to rate structures are made through public processes before the British Columbia Utilities Commission (BCUC), to ensure that all ratepayers' interests are considered.
- BC Hydro is submitting a series of rate design applications this spring, including
 - a pricing principles application proposing that rate increases be allocated evenly among all components of its Residential Inclining Block (RIB) rate so that the majority of customers with relatively low electricity consumption will not experience higher bill impacts.
 - A proposed optional time of use rate that would reduce the cost of charging EVs overnight, and
 - A proposed flattening of industrial rates to remove a barrier to growth and electrification.
- The BCUC will decide whether to accept BC Hydro's proposals.
- BC Hydro plans to consult on additional rate options in the next few months.

Background/Status:

- BC Hydro currently has a two-tiered rate for residential customers based on electricity consumption.
- Under tiered rates, Customers are charged one rate for electricity up to a certain threshold in each billing period, and a higher rate for all electricity use beyond that threshold. This "tiered" rate was designed to reflect approximate long-term costs of

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osbourne

new supply to encourage conservation, although in recent years the tiers have become significantly more expensive than the cost of new supply.

- BC Hydro's rates increase by 2%, on an interim basis, on April 1, 2023. This follows a 1.4% interim bill decrease on April 1, 2022, a 1.16% increase on April 1, 2021 and a 1.62% rate decrease on April 1, 2020.
- BC Hydro is applying to have its proposed 2% net rate increase on April 1, 2023 spread proportionately across all three energy charges to avoid creating larger bill impacts for customers with lower electricity consumption.
- As of April 1, 2023 BC Hydro's proposed charges for its Residential Inclining Block (RIB) rate, paid by nearly all of its residential customers, are:
 - Customer basic charge of 21.10 ¢ per day (~\$13.00 per 2-month billing period);
 - Step 1 is 9.59¢ per kWh for the first 1,350 kWh in an average two-month billing period (22 kWh per day); and
 - Step 2 is 14.22¢ per kWh over the 1,350 kWh Step 1 threshold.

All of BC Hydro's electricity rates are also subject to a 1% credit through BC Hydro's Deferral Account Rate Rider.

- In its decision on FortisBC's 2017 Rate Design Application, and with the support of most of FortisBC's customer groups, the BCUC approved FortisBC's plan to phase out the RCR over five years resulting in a single flat rate by 2023.
- On January 1, 2023, FortisBC completed its five-year transition from a two-tiered rate to a flat rate.
- Charges for FortisBC's bi-monthly residential service rate are as follows:
 - Customer Charge \$42.42 based on 60-day billing period; and
 - All kWh are billed at 13.266¢ per kWh.
- Single-family homes, those using electricity for space and water heating, and those with pools, hot tubs, EV service equipment, poor insulation, multigenerational families, and secondary suites are among the types of residences that are likely to use more power and experience higher electricity bills under tiered rates than under the flat rate charged by New Westminster's municipal utility or Fortis Electric.
- Natural gas utilities, such as FortisBC, advertise a cost comparison between natural gas and the second-tier electric rate to persuade customers to switch to natural gas for space and water heating.
- Some customers believe they are being penalized if they have consumption in the higher second tier. Customers can have considerable annual consumption at the higher Tier 2 rate (about 40%) and still be better off than under the former flat rate.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osbourne

Customers with a Tier 2 consumption greater than 40% of annual consumption are worse off.

- It is ultimately a BCUC decision, informed by evidence and arguments, whether to approve BC Hydro's rate proposals.
- However, to maintain affordability, Government is providing a letter of support for BC Hydro's proposal to apply rate increases evenly to all components of its RIB rate rather than disproportionately to the fixed charge or Tier 1 rate.

Alternative Rate Designs:

Advice/Recommendations

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- In its decision on BC Hydro's Fiscal 2019/2020 and 2020/2021 Revenue Requirements Application, the BCUC noted it shared customer groups' concerns that BC Hydro's current rate design may be out of date and may no longer achieve the objectives that it was meant to achieve.
- As part of the second phase of the Comprehensive Review of BC Hydro (Phase 2), the Ministry of Energy, Mines and Low Carbon Innovation, Ministry of Environment and Climate Change Strategy, BC Hydro, and energy industry experts looked at rate designs that could support GHG emission reductions.
- Advice/Recommendations
 -
 - It also noted that optional rates, such as an optional time of use rate, an interruptible rate allowing BC Hydro to manage hot water heating, or a discounted rate for heat pumps, could provide customers with more choice, make electricity more affordable, and reduce emissions.
 - Informed by feedback from the Phase 2 Review, and engagement with its customers, BC Hydro applied to apply to the BCUC for an optional time of use rate that would better support CleanBC on March 3, 2023.
 - This optional rate would charge a 5 cent per kilowatt-hour premium during evening hours when demand peaks on BC Hydro's system while giving a 5 cent discount overnight.
 - This rate design would provide most customers with the opportunity to save if they can shift when they consume electricity, as total residential consumption is similar in the shorter peak demand period to the longer overnight period.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osbourne

- Customers with electric vehicles could an average of roughly \$57 per year by charging their vehicles overnight at the discounted rate, and most customers with electric heat would realize a benefit - roughly \$6 per year for apartments or \$38 per year for single family homes - due to higher heating demand overnight.
- Mandatory time of use rates will not be brought forward.
- In addition to an optional time of use rate for residential customers, BC Hydro applied for a flat transmission rate for its industrial customers on March 16, 2023.
- This rate will more closely align the cost of energy for industrial customers to the marginal cost to BC Hydro of supplying them with energy.
- Impacts on individual industrial customers will range from savings of 8% to increased costs of 11%.
- To minimize the impact on those customers who face bill increases as a result of the change in rate structure, BC Hydro proposes to flatten its industrial rates over three years.
- Just under 2/3 of responses to a survey BC Hydro sent to industrial customers following a series of four consultation workshops 'somewhat' or 'strongly' agreed that BC Hydro's proposed rate struck an appropriate balance.
- BC Hydro plans to engage on potential additional optional rate designs in the coming months.

Impacts of Tiered Rates at Different Household Incomes:

- While energy use is not strongly associated with income in BC, customers with higher energy use pay more under inclining block rates.
- The BCUC's 2017 Residential Inclining Block Rate report (RIB Report) found that most customers paid lower rates under the RCR in every income bracket, although a somewhat higher proportion of households with at least \$80,000 in household income paid higher bills under tiered rates.
- The same report found some correlation between income and electricity consumption across most income groups for BC Hydro.
- BC Hydro customers with household income of less than \$20,000 were likely to have lower than average consumption and households with income of \$120,000 or more were likely to have higher than average consumption; however, some customers in each income bracket consumed in the highest use bands.
- Overall, BC Hydro's input to the RIB Report found that nearly 90% of its low-income customers paid lower bills under the RIB rate, 7% paid higher bills, and 1% had bills more than 10% higher as a result of the RIB rate.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osbourne

- However, the smaller group of BC Hydro customers with low incomes and high energy consumption are particularly impacted by the RIB rate. In BC Hydro's evaluation report for the first year of the Customer Crisis Fund (CCF), submitted to the BCUC in 2019, it noted that the average CCF applicant used over 15,000 kWh per year. For BC Hydro's customers, the average consumption was under 10,000 kWh per year.
- The majority of CCF applicants were among the highest-consumption quartile of BC Hydro customers while only 4% of applicants were among the lowest-quartile.
- When FortisBC applied to the BCUC to flatten its tiered rate structure in 2017, the BC Old Age Pensioners Association and other anti-poverty groups supported the proposal.
- In its decision to phase out FortisBC's tiered rate, the BCUC found that the bill impacts of moving to a flat rate were adequately addressed by FortisBC's proposed five-year transition plan.
- BC Hydro and FortisBC each have energy efficiency programs to help with low-income affordability.
- Both utilities offer free energy savings kits to help low-income homes reduce their energy use, as well as an Energy Conservation Assistance Program to provide advice on saving energy and free installation of energy-saving products.
- BC Hydro's CCF provides grants up to \$600 to qualifying customers experiencing a temporary financial crisis, such as loss of employment or benefit income, unanticipated medical expenses, or a death in the family and who have fallen behind on their BC Hydro bills.

Cross Reference: 9 – Affordability and BC Hydro Rates

Contact:

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: DRIPA Action Plan/Indigenous Clean Energy Opportunities process

Drafted/Revised: March 20, 2023

Issue: Indigenous Nations are calling upon Government to expand clean electricity economic opportunities to meet the Province's reconciliation objectives and *Declaration on the Rights of Indigenous People Act* (DRIPA) obligations

Response:

- Our Government is committed to advancing reconciliation with Indigenous people and aligning provincial legislation with the United Nations Declaration on the Rights of Indigenous People (UNDRIP), as required under DRIPA.
- The Indigenous Clean Energy Opportunities (ICEO) engagement is described in section 4.43 in the *Declaration on the Rights of Indigenous Peoples Act* (DRIPA) Action Plan.
- The ICEO process launched in November 2021, and two workshops were held in early March 2022 with First Nations and Indigenous organizations.
- The ICEO is intended to be an evergreen forum for collaborative dialogue between the Ministry, Indigenous leadership, Nations, and organizations to:
 - position Indigenous Nations to fully participate in current and future opportunities in British Columbia's clean energy sector, including clean electricity, gases, and fuels; and
 - engage on related legislation and policies and align BC clean energy laws with UNDRIP.
- The ICEO launch was hosted by the First Nations Leadership Council (FNLC) and the Ministry of Energy, Mines, and Low Carbon Innovation (EMLI), with over 116 First Nation participants from approximately 90 communities and organizations across British Columbia.
- ICEO workshops have included participation of First Nation and Indigenous organization representatives.
- Engagement topics for 2023/2024 will include hydrogen and renewable natural gas; a learning series on electricity markets, systems and regulation; and development of a joint process for engagement on clean energy regulations and legislation.
- I look forward to a continued partnership with the First Nations Leadership Council under the ICEO, and to receiving the collaboratively developed advice and recommendations coming out of that process.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Background/Status:

- Under the DRIPA Action Plan, EMLI has committed to co-develop recommendations on strategic policies and initiatives for clean and sustainable energy with Indigenous partners.
- In May 2021, Minister Bruce Ralston and the FNLC agreed to co-design and co-lead this province-wide process. The FNLC delegated the First Nations Energy and Mining Council (FNEMC) to partner on the process with EMLI.
- The ICEO is part of the Relationship Protocol agreement between FNLC/EMLI.
- The ICEO was funded from the Ministry of Indigenous Relations and Reconciliation (IRR) Indigenous Funding Program (IFP) in FY22 and FY23.

Engagement Table Framework:

- Input from the March 2022 workshops was used by EMLI and FNEMC to jointly develop “Engagement Tables” for the priority topics to provide a venue for dialogue for fiscal year 2022-2023 (FY23).
- The Engagement Tables are the framework to further the co-development work between EMLI and FNEMC. The ICEO process, to date, has established strong working relationships between EMLI and FNEMC. There is strong interest in the ICEO engagement both inside EMLI and within Indigenous organizations.
- In July 2022, EMLI Minister and First Nation leadership approved the Engagement Tables framework to proceed for co-development with three Engagement Tables: Electricity Table, Hydrogen Market Opportunities Table and Legislative Standing Table.

Electricity Table:

- The Electricity Table’s initial ‘knowledge and capacity building year’ seeks to engage First Nations leadership, communities and organizations to ensure all participants have common understanding of B.C.’s clean electricity sector.
- FY23 knowledge topics include the provincial electric grid, generation, transmission, end-use, utilities, and regulation of utilities.
- An Electricity Table Advisory Group (ETAG) has been established to advise on activities and provide guidance to FNEMC and EMLI on First Nation’s participation in the clean energy sector for FY23 and FY24.
- ETAG consists of Indigenous, industry and government representatives who identify key areas of focus, provide feedback and recommendations, and suggest areas of exploration for Electricity Table activities.

Hydrogen Market Opportunities Table:

- In cooperation with the FNEMC, B.C. Hydrogen Office and Natural Resources Canada, and partners such as FortisBC the objective of this table is to co-develop and carry out a market research study of Indigenous participation future

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

in hydrogen, implementation of the B.C. Hydrogen Strategy, and Renewable Natural Gas (RNG) market opportunities.

- Jointly, FNEMC and EMLI are developing an Indigenous Hydrogen Market Opportunities Analysis to identify opportunities for First Nations to participate in the B.C. hydrogen sector. This work includes the development of a report and two workshops.

Legislative Standing Table:

- The purpose of this table is to create a forum to bring forward provincially-proposed clean energy legislative and regulatory changes for discussion with First Nations on alignment with UNDRIP as per DRIPA Section 3 obligations. First Nations leadership and/or the FNEMC will also bring forward legislative proposals for discussion.

Coordination with other First Nations Engagement Processes

- ICEO actively seeks out opportunities to form relationships and engage with other initiatives:
 - The CleanBC Remote Community Energy Strategy (RCES) Indigenous Working Group: The Working Group workplan will include a process for bringing appropriate recommendations to the Indigenous Clean Energy Opportunities initiative and for considering policies that could be applied in isolation to remote communities.
 - B.C. Hydrogen Office: The ICEO Hydrogen Market Opportunities Table is working closely with the B.C. Hydrogen Office and FNEMC to co-develop workshops that enable Indigenous participation in B.C.'s hydrogen sector through education, opportunity identification, and actionable insights.
 - ICEO may be an avenue to engage BC Indigenous people in the Natural Resources Canada's Regional Energy and Resources Tables.
 - In FY23 ICEO EMLI and FNEMC staff engaged with Indigenous participants through the Province's CleanBC strategy, Clean Energy BC's First Nations Energy Summit, and the First Nations Leaders' Gathering.

Cross Reference: 01 – UNDRIP Implementation (SIAD)
11 – Electricity Purchase Agreements and Renewals
12 – BC Hydro Integrated Resource Plan
23 – Hydrogen Strategy

Contact:

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2022/23 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Bruce Ralston

Title: CleanBC Remote Community Energy Strategy

Drafted/Revised: March 16, 2023

Issue: Reducing GHG emissions from diesel electricity generation in remote communities

Response:

- Most remote off-grid communities in British Columbia (B.C.) rely on diesel for electricity generation. Under CleanBC, the Province aims to reduce emissions from diesel electricity generation in remote communities by 80% by 2030.
- The CleanBC Remote Community Energy Strategy (RCES) includes three streams of action to pursue this goal: (1) build remote community capacity to lead energy efficiency and clean energy projects; (2) support remote community efforts to improve energy efficiency and minimize greenhouse gas (GHG) emissions in new and existing buildings; and (3) implement renewable energy generation projects to displace diesel generation.
- Budget 2021 included a \$34 million investment in new RCES programs to support the capacity of Indigenous remote communities, and for the Community Energy Diesel Reduction (CEDR) program, which supports the planning, development and implementation of diesel-displacing energy efficiency and renewable energy generation projects. In 2022, a first round of CEDR funding provided \$7.1 million to 12 remote communities. In February 2023, Treasury Board approved the addition of \$30 million to CEDR. The federal government is considering a contribution as part of its Budget 2023.
- Following engagement with a Working Group of remote Indigenous community representatives, the Ministry has developed an RCES Action Plan to achieve the CleanBC diesel reduction goal. The Action Plan includes the development of regulatory approaches to enable diesel-displacing projects.

Background/Status:

- The Community Clean Energy Branch (CCEB) is working to develop and implement RCES in collaboration with provincial ministries, Indigenous Nations, the federal government and BC Hydro.
- B.C. has the largest number of diesel-dependent remote communities of any province in Canada. RCES focuses on about 44 communities, most of which are governed by Indigenous Nations.

2022/23 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Bruce Ralston

- Some remote communities own and operate the diesel generating stations that supply their micro-grids, while others are served by BC Hydro as non-integrated areas (NIAs). Most provincial diesel consumption for electricity occurs in NIAs.
- In 2019, BC Hydro NIA stations consumed about 19.1 million litres of diesel fuel, resulting in 51,784 tonnes of GHG emissions. In 2019, independently owned stations consumed approximately 2.7 million litres, resulting in approximately 7,218 tonnes of GHG emissions.
- The Ministry established a RCES Working Group with seven remote Indigenous Nations to strengthen relationships and gain a further understanding of community priorities and effective program approaches. In June 2022, the Working Group provided recommendations for provincial actions to achieve the CleanBC diesel reduction target.
- The RCES Working Group recommendations informed the development of the Ministry's RCES Action Plan to achieve the CleanBC diesel reduction goal.

Cross Reference: 15 - B.C. Indigenous Clean Energy Initiative

Contact:

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2021 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low-Carbon Innovation
Minister Responsible: Energy, Mines and Low-Carbon Innovation

Title: British Columbia Indigenous Clean Energy Initiative

Revised: March 24, 2023

Issue: Supporting development of clean energy projects in Indigenous communities

Response:

- First developed in 2016 by the New Relationship Trust (NRT) with funding from Western Economic Diversification Canada (now PacifiCan), the B.C. Indigenous Clean Energy Initiative (BCICEI) provides support and capacity-building funds to Indigenous nations across the province working to develop clean energy projects.
- PacifiCan provided \$4.2 million in 2016 and \$4.5 million in 2019, and is seeking approval for further funds as part of federal Budget 2023.
- The Ministry has supported the program and participated in its governance since its inception, contributing \$5 million through CleanBC in 2019. In March 2023, Treasury Board approved a \$140 million contribution to BCICEI with access to the Contingencies bottom-line surplus in 2022/23.
- The fiscal year-end funds will be invested by the NRT, with the interest (est. \$5 - \$7 million per year) being used to support BCICEI activities over the next 5-10 years. NRT will also develop a new program stream to support grid-connected Indigenous power projects. The new stream is expected to draw down the \$140 million by 2033.
- A key strength of BCICEI is an Indigenous-government-stakeholder governance model that pursues consensus decisions on program parameters and project approvals.

Background/Status:

- BCICEI supports clean energy developments in Indigenous communities, including hydro, wind, biomass, solar, tidal and geothermal projects. The BCICEI also supports energy efficiency projects and energy storage.
- Funding through the BCICEI covers feasibility and site selection activities; environmental review and permitting; project design and engineering; demand-side management; and small-scale clean energy projects.
- The BCICEI program has an established annual reporting regime that tracks the development and impact of each supported project. BCICEI has completed a third-

2021 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low-Carbon Innovation
Minister Responsible: Energy, Mines and Low-Carbon Innovation

party program evaluation cycle that resulted in the implementation of improvements by NRT in 2020. The program continues to receive positive feedback from Indigenous nations, government partners and stakeholders.

Cross Reference: Remote Community Energy Strategy

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Title: Innovative Clean Energy Fund

Drafted: March 16, 2023

Issue: Innovative Clean Energy (ICE) Fund, a Special Account designed to support Government's energy and environmental priorities and advance British Columbia's clean energy sector

Response:

- Established in 2007, the Innovative Clean Energy (ICE) Fund is a legislated Special Account designed to support Government's energy and environmental priorities and advance British Columbia (BC)'s clean energy sector.
- Funding for the Special Account comes via a 0.4% levy applied to the final sale of specified "energy products" (primarily natural gas). The levy is forecast to generate approximately \$7 million (M) in 2023/24. The levy originally included electricity sales, which combined with higher natural gas prices, generated about \$25M per year.
- In March 2017, Canada and British Columbia (BC) signed a memorandum of understanding (MOU) effective to March 2022 and executed a three-year, \$40M Joint-Call Partnership for the development of pre-commercial clean energy projects and technologies. Each party committed \$20M and are represented by Sustainable Development Technology Canada (SDTC) and the ICE Fund, respectively. In March 2022, BC met its \$20M commitment with 16 approved projects to date. BC and SDTC continue to collaborate to jointly fund projects.
- \$25M in one-time funding was originally allocated in Budget 2021 to support clean energy and technology investments and partnership opportunities with the federal government. and moved to Budget 2022 due to COVID and federal election related delays.
- In Budget 2023, the ICE Fund has \$10.128 in operating expenses allocated for 2023/24. A new spending plan for 2023/24 has been proposed to Treasury Board.

Background/Status:

Current Status:

- Since 2008, approximately \$112M has been allocated to support pre-commercial clean energy and technology projects and various programs and initiatives.
- Over the last 15 years, ICE Fund investments have leveraged projects worth \$508M, creating or sustaining more than 950 direct jobs and more than 650 jobs in project construction.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Cross Reference: 19_ICE_Fund_Projects and Partnerships

Contact:

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2023/2024 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Title: \$25M Contingencies Access – Federal Partnerships

Revised: March 16, 2023

Issue: Innovative Clean Energy (ICE) Fund Partnerships and Funded Projects to support the development of pre-commercial clean-energy projects and technologies

Response:

- Partnerships with private, academic, and federal agencies are a key way to secure investments in B.C.'s innovation ecosystem.
- On March 10, 2017, British Columbia (BC) and Canada signed a memorandum of understanding (MOU) effective to March 2022, for a \$40 million (M) partnership for the development of pre commercial clean energy projects and technologies. In March 2022, BC met its \$20M commitment with sixteen approved projects to date. BC and SDTC continue to collaborate to jointly fund projects.
- The ICE Fund exceeded the original target of a 1:1 leverage ratio for federal funds and a total of 2:1 combined federal and industry funding to provincial contributions. With BC's \$21.6M, SDTC has committed \$82.3M to these approved projects. Total project investments is \$338.66M.
- The partnership with SDTC has demonstrated the value of leveraging significant federal and private investments into BC's clean energy technology innovation sector. The Province is interested in developing further partnerships to undertake investments in clean energy and GHG reduction projects that advance CleanBC goals, as seen through fostering a new partnership with Pacific Economic Development Agency of Canada (PacifiCan).
- From Budget 2022, one-time funding of \$23.6M for five initiatives has been approved and are scheduled to be announced in 2023. These initiatives include partnerships with SDTC and PacifiCan.
- The ICE Fund continues to seek projects to support the development of pre-commercial clean-energy projects and technologies.

2023/2024 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Background/Status:

- The ICE Fund is a Special Account designed to accelerate the development and commercialization of emerging clean energy technologies with funds collected and disbursed in accordance with statutory funding authority.
- Through Partnerships, the ICE Fund is well positioned to advance the CleanBC Roadmap to 2030 commitment to invest in innovation. Opportunities exist with a variety of organizations in the clean energy technology sector to develop these partnerships.
- Partnerships are developed and managed to support the following objectives: leveraging other funding sources (e.g., federal); accessing resources, expertise, and project referrals; supporting efficient program administration such as conducting due diligence and expert reviews during the project evaluation process while maintaining independent decision-making authority and governance requirements; developing B.C.'s clean technology ecosystem; and providing an improved program funding experience.
- These partnerships may include fostering existing and new partnerships with organizations such as SDTC, PacifiCan, Natural Resources Canada (NRCan), the Innovation, Science and Economic Development (ISED) Strategic Innovation Fund (SIF), or academic institutions, in order to leverage federal funding for B.C. based projects that align with the ICE Fund and CleanBC goals.
- Of the \$25M one-time funding, \$23.6M for five initiatives has been approved and are scheduled to be announced in 2023. The remaining \$1.4M was reallocated to fund the BC Hydrogen Office. Planning is underway to announce funded initiatives and one initiative (BC Net-Zero Innovation Network (BC NZIN)) has been announced:
 - On February 1, 2023, Parliamentary Secretary for the Sustainable Economy, Adam Walker, announced \$2.3M (2022-2025) in provincial funding for Foresight Cleantech Accelerator Centre's BC NZIN. This provincial funding leverages \$5.2M in federal funding from Pacific Economic Development Canada (PacifiCan).
 - Foresight is implementing themed clusters through the BC NZIN initiative as a platform for cleantech innovators and adopters to compete, attract investment and talent, and ultimately grow faster while bringing their products to market. Clusters include water, bio-economy, and mining, with a fourth to be determined.

2023/2024 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Attachment 1: Table A: Joint Call 2017/2018 - 2022/23 Approved Projects

Cross Reference: 18 - Innovative Clean Energy Fund

Contact:

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2023/2024 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

ATTACHMENT 1:

Table A: Joint Call 2017/2018 - 2022/23 Approved Projects

Sustainable Development Technology Canada (SDTC) Partnership	Project	Total ICE Fund Expenditure (\$ millions)
D-Wave Systems Inc.	Next-Generation Quantum Computer	2.000
Canfor Pulp	Pulp Mill Biocrude	2.000
Clir Renewables	Software to increase energy production at Wind Farms	1.494
Consolidated Biofuels	Polyurethane from biobased organics	0.875
Ionomr Innovations Inc.	Membrane technology for clean energy systems	2.357
MineSense Technologies	Sensor systems and data optimization for mining	2. 000
Advanced Intelligent Systems	Autonomous, battery-driven cart puller for plant nurseries	0.950
Recyclesmart	Hardware system for optimizing garbage collection and diversion to recycling	0.606
Nano One	Low-cost high-performance battery materials for electric vehicles	3.033
Cryologistics	Cryogenic pallet container for cold storage	1.439
Pani Energy	Water treatment plant optimization using advanced artificial intelligence	0.838
Miru Smart Technologies (formerly Click Materials)	Development of next generation electrochromic windows	0.300
Axine Water Technologies	Electrochemical oxidation of difficult to treat organic pollutants in industrial wastewater resulting in 20% - 30% lower costs than incineration	1.000
Ecoation Innovative Solutions	Robot and Artificial Intelligence enabled Farming as a Service platform for greenhouses that	0.200

2023/2024 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

	reduce pesticide use and increase grower yield by 5 per cent	
Terramera	Plant Intelligence Engine for digital remote verification of soil carbon content increases from regenerative farming practices	1.000
Open Ocean Robotics	Development of autonomous solar-powered, un-crewed surface vehicles and ocean data analytics platforms for maritime monitoring for marine life and security monitoring	1.500
Total		21.6

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Geothermal Energy

Drafted/Revised: March 9, 2023

Issue: Geothermal Energy Opportunities and Issues

Response:

- British Columbia (B.C.) has several promising geothermal energy prospects.
- The biggest barrier to geothermal resource development is the lack of a market to sell electricity. Exploration risk, long development timelines, and higher cost have made geothermal less attractive in the past than other energy sources.
- Geothermal energy could provide a significant source of both renewable electricity and firm capacity to BC Hydro in the future.
- Direct-use projects, where heat is used directly for commercial or industrial purposes, can provide an alternative to natural gas combustion. Direct-use projects are limited to areas near geothermal prospects.
- Several projects continue to be advanced in B.C. The Ministry of Energy, Mines and Low Carbon Innovation (EMLI) has continued to support geothermal development by issuing geothermal exploration permits.

Background/Status:

- Under the *Geothermal Resources Act* (GRA) of 1982, geothermal resources are defined as water or steam that is greater than 80°C when produced at surface.
- The GRA and regulation:
 - vest ownership of all geothermal resources in B.C. with the Crown;
 - regulate exploration for, and the development and use of, these resources through permits and leases;
 - set out a framework for the disposition of geothermal resources based on a bid system similar to petroleum resources; and,
 - allow geothermal resource tenures to be issued through an agreement approved by the Lieutenant Governor in Council (LGIC).
- Geothermal permits confer the subsurface rights to the tenure holder for the purposes of exploration. Geothermal permits are one year in length and may be renewed up to seven times through an administrative process. If a permit holder

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

discovers a geothermal resource through the drilling of a well, they may apply for a geothermal lease which allows development and production of the resource.

- The BC Energy Regulator (the Regulator) oversees the regulatory framework for exploration and development activities. The Regulator has expressed interest in making several amendments to the GRA, including:
 - Address liability and security provisions;
 - Increase flexibility of the regulatory framework;
 - Clarify and enable cost recovery for geothermal regulatory activities;
 - Enable the Regulator through legislation to regulate as a single window agency for geothermal exploration and development activities; and,
 - Bringing geothermal activity under the regulatory framework of the *Energy Resources Act*.

Notable Geothermal Projects

1. Tu Deh-Kah (Clarke Lake) - Fort Nelson (<https://tudehkah.com/>)

- Two exploration permits have been awarded to Deh Tai GP, a development corporation of the Fort Nelson First Nation (FNFN) through an agreement approved by the LGIC (January 2020 and March 2022).
- The pilot scale geothermal energy plant (with a capacity of approximately 10 megawatts (MW)) would provide electricity to Fort Nelson which is not integrated into the BC electricity transmission system.
- BC Hydro operates a 73 MW natural gas-fired generating facility, the Fort Nelson Generating Station (FNGS), to serve the Fort Nelson region. Excess electricity generated at FNGS is exported along an interconnection into northern Alberta. With an average annual greenhouse gas emissions of 185 kilotonnes, FNGS is one of the largest single sources of BC Hydro's emissions.
- The geothermal resource at Clarke Lake is much larger than the planned pilot scale and has been confirmed from the existing petroleum wells. Eventually the geothermal energy could supply the electricity needs of region.
- In March 2021, the federal government announced \$40.5 million (M) in funding for this project, primarily through the Natural Resources Canada (NRCan) Emerging Renewable Power Program.
- Cost of generation is a barrier to development of the geothermal resource. BC Hydro estimates that the annual cost of a contract for the pilot would be \$4.5M. The current estimate of approximately \$75/MWh for the Tu Deh-Kah geothermal plant is currently \$20-30/MWh more expensive than gas-fired generation. A contract for energy sales to BC Hydro will require direction to the B.C. Utilities Commission.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- An increase in the carbon tax is expected to shrink the differential between the cost of FNGS and geothermal generation, with near parity expected at a carbon tax of \$120-130/tCO₂e.

2. Lakelse Lake – Terrace <https://www.kitselasgeo.ca/>

- Borealis Geopower, in partnership with the Kitselas First Nation, acquired a geothermal permit at auction in January 2014 and formed a joint development company, Kitselas Geothermal Inc. (KGI). Recently, KGI announced an agreement with Shell Canada for the evaluation and de-risking of the project for direct-use heat.
- KGI has requested a new geothermal permit based on their exploration work to date. EMLI issued KGI a geothermal permit in February 2023 to allow them to advance their exploration efforts.

3. Lease at Mount Meager <https://meagercreek.ca/>

- The only geothermal lease in B.C. was first issued in 1987 to BC Hydro on the south side of Mount Meager.
- Several wells have been drilled at Mount Meager, with the most recent in 2004. The wells have confirmed a heat resource but have not encountered a commercially viable reservoir.
- The lease was renewed in December 2017 under the terms of the lease for an additional 20-year term.
- Ownership of the lease was recently transferred. The project developers are proposing to use the electricity generation to produce electrolytic hydrogen in the Pemberton Valley rather than pursue an electricity purchase agreement with BC Hydro.

Contact:

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2022/23 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Title: CleanBC

Drafted/Revised: March 10, 2023

Issue: CleanBC Implementation – Roadmap to 2030

Response:

- British Columbia's (B.C.'s) 2018 climate plan, CleanBC and the updated 2021 CleanBC Roadmap to 2030 (Roadmap), are detailed plans on how the Province will create an equitable, resilient, low carbon future to meet our greenhouse gas (GHG) emissions targets.
- The focus of CleanBC is on energy efficiency, clean fuels and electrification in order to reduce GHG emissions and overcome B.C.'s reliance on fossil fuels.
- In Budget 2023, Government announced an additional \$44 million in new funding to support CleanBC and the Roadmap over three years, including more funding for the CleanBC Go Electric Commercial Vehicle Pilots (CVP) Program, support for the BC Hydrogen Office, and enhancements to regulatory compliance and enforcement tools for both light and medium/heavy duty vehicles.
- The Roadmap sets out to maximize reductions in GHG emissions by expanding clean transportation programs and the BC Low Carbon Fuel Standard, implementing a GHG emissions cap for natural gas utilities, continuing to implement the B.C. Hydrogen Strategy, and building out the CleanBC Better Homes and Buildings programs.
- The 2022 provincial GHG forecast has yet to be released, but the 2021 forecast projects that the GHG emissions curve will have begun to bend downwards starting in 2020, due in part to CleanBC actions and temporary emissions reductions from the COVID-19 pandemic.
- The 2022 Climate Change Accountability Report states the carbon intensity of B.C.'s economy has decreased 24% since 2007, and GHG emissions per capita has gone down 19% since 2007.
- The Climate Solutions Council provides independent advice to Government on CleanBC to strengthen our actions moving forward.

Background/Status:

- CleanBC and the Roadmap are a collaborative effort of many ministries across the B.C. Government.

2022/23 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

- The Ministry plays a leading role in developing policies, programs, and standards that decarbonize energy systems, improve energy efficiency, and reduce GHG emissions across B.C.'s economy.
- B.C.'s legislated emission targets for 2030, 2040 and 2050 are 40%, 60% and 80% below 2007 levels, respectively. The Province has also set sectoral targets and will develop legislation to ensure B.C. reaches net-zero emissions by 2050.
- In 2020, a new interim GHG reduction target was set at 16% below 2007 levels by 2025. It provides a benchmark on the road to 2030.
- Launched in December 2018, CleanBC set out the pathway to achieve 75% of the 2030 emission reduction target.
- The recently released Roadmap, together with CleanBC, set out actions to achieve 100% of the 2030 target.
- The Roadmap includes a wide range of accelerated and expanded actions that will be implemented in this mandate to reduce pollution and build a cleaner, stronger economy for everyone, including:
 - accelerated Zero Emission Vehicle Standard targets, a strengthened Low Carbon Fuel Standard, and a new emissions cap for natural gas utilities;
 - a revised carbon pricing system to meet or exceed the federal benchmark, with supports for people and businesses;
 - requirements for new industry projects to have enforceable plans to reach net-zero emissions by 2050;
 - near elimination of methane emissions by 2035 in oil and gas, mining, industrial wood waste and other sectors; and,
 - a new program to support local government climate and resiliency goals with predictable funding.
- The Province conservatively expects the Roadmap to lead to gross domestic product increases of 19% by 2030 and job growth of 7% by 2030. The economic benefits could be greater if; for example, new clean technologies cost less than expected, or more jurisdictions accelerate their climate ambitions.
- In 2020, B.C.'s net GHG emissions were 63.5 megatonnes (Mt) of carbon dioxide equivalent (CO₂e). This represents a net decrease of 3% from 2007 levels (-2.0 Mt CO₂e), mainly due to the impacts from the COVID-19 pandemic.
- In 2022, the Province released the annual Climate Change Accountability Report which outlined progress over the previous year of CleanBC implementation.

2022/23 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Transportation Successes:

- In 2020, transportation remained the largest source of B.C.'s emissions. While emissions from this sector decreased 8% from 2019 (likely due to impacts of COVID-19), emissions since 2007 have increased 12%. This is because of increases from heavy-duty vehicles (+24%) and light-duty vehicles (+2%).
- B.C. is a leader in clean transportation. In 2022, B.C. had the second highest zero-emission vehicle (ZEV) adoption rate in North America (18.1% of new light-duty vehicle sales). The province has one of the largest public charging networks in Canada, the largest public hydrogen fuelling network in Canada, and a world-leading hydrogen and fuel cell industry.
- In May 2019, the Province passed the *Zero-Emission Vehicles Act* (ZEV Act) which requires automakers to meet increasing ZEV sales targets reaching 10% of new light duty vehicle sales by 2025, 30% by 2030, and 100% by 2040. The Roadmap accelerated the ZEV sales targets to 26% by 2026, 90% by 2030 and 100% by 2035, and announced the introduction of new ZEV targets for medium- and heavy-duty vehicles. The purpose of the ZEV Act is to ensure increased ZEV availability and choice at more affordable prices in B.C.
- Budget 2022 includes \$40 million (M) more for the CleanBC Go Electric Commercial Vehicle Pilot (CVP) Program which supports businesses, non-profits, and eligible public entities looking to deploy commercial ZEVs, including: medium- and heavy-duty on-road vehicles, rail, marine, aircraft, and off-road equipment, along with supporting infrastructure. This builds on existing CleanBC programs, such as \$49M invested to date in the CVP program and is also in addition to over \$200M for light-duty ZEV rebates announced in Budget 2022.
- The Roadmap committed to developing a Clean Transportation Action Plan to identify the next set of concrete actions across five foundational areas: vehicle kilometres travelled (VKT) reduction; mode shift to efficient modes; vehicle efficiency; ZEVs; and fuel efficiency - to ensure BC meets its legislated and Roadmap transportation targets.
- Budget 2023 includes \$100M more, over three years, to support the CleanBC Active Transportation Strategy with capital funding for more active transportation networks that are safe, accessible, and convenient for pedestrians, cyclists, transit riders and motorists – of all ages and abilities. This builds on \$48M provided in Budgets 2021 and 2022.
- The B.C. Low Carbon Fuel Standard (LCFS) is the single largest contributor to meeting the targets set out under CleanBC.
- The LCFS increased the carbon intensity reduction requirement from 20% to 30% by 2030 in the gasoline and diesel fuel pools.

2022/23 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

- At a 30% reduction in carbon intensity by 2030, the LCFS is expected to deliver a total of 5.7 million tonnes of reductions in B.C. GHG emissions in 2030, which represents 19% of CleanBC's current 2030 target (with indirect support for an additional 6% from ZEVA).
- Additional policy changes to the LCFS that are supported by the Roadmap include:
 - Recognizing jet fuel as a new category of fuel, and enabling regulations to create other fuel categories, such as marine fuels.
 - Recognizing the use of alternatives to diesel fuel to generate electricity in remote communities not connected to the Provincial grid.
 - Expanding the scope of Part 3 Agreements (soon to be called Initiative Agreements) to increase the supply of low carbon fuels in BC by enabling support for new proponents and new business opportunities.
- In order to meet the increased demand for cleaner fuels, the Roadmap committed the Province to ramping up new production of 1.3 billion litres of renewable fuels by 2030.
- Initiative Agreements under the LCFS currently support projects that could result in the production of 570 million litres of low-carbon fuel by 2028. The Ministry will continue to work with industry to achieve the 1.3 billion litre production goal for 2030.

Clean Industry Successes:

- In 2020, emissions in the industrial sector, excluding oil and gas, were down 9% compared to 2019 and 8% compared to 2007. One driver of these reductions is lower industrial output that was experienced during the COVID-19 pandemic.
- In 2020, emissions in the oil and gas sector were almost unchanged from 2019, and down 7% from 2007. Reductions from baseline can be attributed to reductions in the carbon intensity of upstream natural gas production, including reductions in venting and flaring, requiring leak detection and repair, and limiting certain equipment (pneumatic devices, seals, tanks, and surface casing vents).
- In January 2021, Government announced the CleanBC Industrial Electrification Rates comprised of two categories – clean industry and innovation, and fuel switching. The rates provide a 7-year discount from BC Hydro's standard industrial electricity rate: 20% in years 1-5, 13% in year 6 and 7% in year 7.
- In January 2021, Government announced that it directed \$84.4M from the Government of Canada's Investing in Canada Infrastructure Program (ICIP) to create a new CleanBC Facilities Electrification Fund that will provide support to customers to reduce the costs of connecting to the electricity grid or upgrading their connections to use more electricity and reduce air pollution.

2022/23 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

- The Province invested \$83.5M in 32 emissions reduction projects across the province together with industry in 2021 through the CleanBC Industry Fund.
- The Province continues implementation of Canada's first comprehensive hydrogen strategy by a province – the B.C. Hydrogen Strategy (Strategy). To help grow B.C.'s hydrogen economy, the Strategy outlines 63 policy actions to increase the production, use and export of low-carbon hydrogen.
- In March 2022, the BC Hydrogen Office (Office) was established to expand hydrogen development and streamline projects from proposal to construction. In Budget 2023, the Office received funding to staff five positions to help facilitate hydrogen's role to decarbonize sectors where direct electrification is not as practical.
- To lower carbon emissions and drive the transition from fossil natural gas to renewable gas, the Province is putting in place a new GHG emissions cap for BC's natural gas utilities. The cap will be set at 6 Mt of carbon dioxide emissions per year for 2030, which is 47% lower than 2007 levels. Gas utilities will have the flexibility to undertake a broad range of actions and investments to reduce the GHG emissions associated with the use of the natural gas they provide to their customers.

Buildings and Communities Successes:

- Emissions in the buildings and communities sectors have fallen by 12% compared to 2007 levels, driven by decreases in emissions from residential and commercial buildings (-8%).
- The CleanBC Better Homes and Better Buildings program provides financial incentives to help households, businesses and the public sector save energy and reduce GHG through heating equipment replacement and building envelope improvements.
- CleanBC Better Homes and Better Buildings has \$71.6M in base funding from fiscal 2023 through fiscal 2025. In February 2022, the program introduced a stand-alone income qualified program, providing high value incentives to low- and moderate-income households, which is complementary to current residential and income-qualified rebates.
- As of March 2022, the program has provided 35,315 residential retrofit rebates, approved pre-registrations for 445 residential new construction projects and disbursed 149 incentives, and approved 264 capital incentives for commercial, institutional, and multi-unit residential building energy efficiency and fuel-switching projects.
- Sixty-one communities now reference the B.C. Energy Step Code in municipal policy or regulation for new building construction. The Step Code sets out a series of energy efficiency requirements beyond the base B.C. Building Code.

2022/23 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

- The Roadmap announced new requirements for all new buildings to be zero carbon and new space and water heating equipment to be of the highest efficiency by 2030.
- In 2022, the CleanBC Remote Community Energy Strategy (RCES) has achieved 5% of the CleanBC commitment to reduce the GHG emissions from diesel electricity generation in remote communities by 80% by 2030.
- RCES programs support the capacity of Indigenous remote communities, and the planning, development and implementation of diesel-displacing energy efficiency and renewable energy generation projects.

Cross Reference:

Zero Emission Vehicles Act/ Regulation
CleanBC Go Electric Program
Clean Transportation Action Plan
Low Carbon Fuel Standard
CleanBC Electrification Rates

CleanBC – Better Homes and Buildings
Renewable Gas Legislation
BC Hydrogen Strategy
Remote Community Energy Strategy

Contact:

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Decarbonising BC's Natural Gas Public Utility Grid

Drafted/Revised: March 8, 2023

Issue: Progress to date on development of the Greenhouse Gas Reduction Standard, and regulatory considerations to enable natural gas public utilities to take actions now to achieve their proposed 2030 legislative obligations.

Response:

- To dramatically lower carbon emissions and drive the transition from fossil natural gas to low carbon gas, we're putting in place a new GHG emissions cap for BC's natural gas utilities.
- The Greenhouse Gas Reduction Standard (GHGRS) implements a commitment in the CleanBC Roadmap to 2030.
- The standard would require gas utilities to further lower GHG emissions from fossil natural gas used to heat homes and buildings and power industry, reducing emissions from around 11 megatonnes in 2007 to about 6 megatonnes in 2030 (a 47% reduction).
- Gas utilities will determine how best to meet the cap, and will have flexibility to undertake a broad range of actions and investments to reduce GHG emissions associated with the use of natural gas they provide to their customers.
- Utility plans are expected to include displacement of fossil natural gas with low carbon alternatives, such as Renewable Natural Gas produced from organic sources and hydrogen produced from natural gas using carbon capture and storage technology. This approach would maintain BC's energy reliability, while giving consumers a choice between electricity and low carbon gas to meet their space and water heating and/or industrial process needs.
- The BC Utilities Commission (the Commission or BCUC) would have the mandate to review gas utilities' plans, investments, and expenditures to ensure they're aligned with the GHG emissions cap, and cost effective, helping to mitigate gas rate increases for people and businesses.
- Cabinet Confidences
- However, public gas utilities will need to take action now to meet the proposed emissions cap.

Continued...

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Advice/Recommendations

Background/Status:

- Under the CleanBC Roadmap to 2030 (Roadmap), Government has committed to implementing a legislated requirement for FortisBC and Pacific Northern Gas (the gas utilities) to limit the GHG emissions of their buildings and industry (excluding Liquified Natural gas and upstream oil and gas) customers to around 6.04 MT by 2030. This proposed emissions cap aligns with BC's sectoral GHG targets.
- Amendments to the *Utilities Commission Act* are needed to require the gas utilities, under the oversight of the BCUC, to undertake activities and/or invest in technologies to meet this cap but would not specify specific things utilities must do.
- The Commission already regulates gas utilities. Gas utilities would be responsible for seeking approval from the Commission on how they plan to comply with the GHGRS.
- The GHGRS, like similar Roadmap initiatives, would drive substantive increases in natural gas rates as gas utilities seek to recover the costs of meeting the emissions cap from their ratepayers.

- Advice/Recommendations; Government Financial Information

- BCUC oversight will play a key role in mitigating rate increases by ensuring gas utility spending plans are cost effective, and by using existing tools, such as rate levelization and deferral accounts to smooth costs over periods of up to 40 years. Additionally, Government could develop targeted supports, for example expanded energy efficiency incentives for low-income residential customers, and/or enhanced CleanBC funding to accelerate decarbonization for gas-dependent industries like cement, pulp and paper, and agriculture.
- The Ministry is also examining potential implications for BC's long-term energy reliability. Currently, the natural gas grid plays an important role in providing capacity to meet BC's demand during cold weather peaks, supplying around

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

two-thirds of the energy needed for buildings, industry, and transportation during those periods. The other one-third is provided through BC Hydro's system, operating at its maximum existing capacity (about 11,000 MW).

- While enhanced electrification will be critical to meeting BC's climate targets, it is likely low carbon gas options like low carbon gases would be needed to ensure peak demand can be met in a cost-effective manner, at least over the foreseeable future. Relying solely upon electrification without a substantial build out of BC Hydro's system would create a significant risk that insufficient energy would be available to heat British Columbian's homes and power our industries.

- Cabinet Confidences

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Attachments: N/A

Cross Reference: #24 Climate Aligned Energy Plan – BCUC Mandate

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¹ \$2021. Under current regulation, the applicable price cap escalates each year with inflation, as measured by the Consumer Price Index.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Title: B.C. Hydrogen Strategy

Drafted/Revised: March 7, 2023

Issue: B.C. Hydrogen Strategy

Response:

- CleanBC committed the Province to develop a B.C. Hydrogen Strategy (Strategy).
- Hydrogen will be required if the Province is to achieve net-zero greenhouse gas (GHG) emissions by 2050, as hydrogen is one of the only practical replacements for fossil fuels in the hardest-to-abate sectors.
- The Strategy highlights British Columbia's (B.C.) leadership in hydrogen and fuel cells and hydrogen's role in decarbonizing transportation, natural gas, and industry while creating clean jobs and economic opportunities across the Province.
- The Strategy includes 63 policy actions that support and promote the production, use and export of hydrogen in B.C. over the next 10 years, and beyond. The five initial priorities for 2022/23 are: Committing \$5 million to a \$15 million hydrogen blending study, establishing a declining carbon intensity threshold, planning hydrogen hubs, performing regulatory mapping, and developing a carbon dioxide storage atlas for Northeastern B.C.
- The implementation of the Strategy will continue into 2023/24, including the following priorities: Developing education and safety marketing materials, hydrogen use in communities, labour and skills development, and the continued development of regional hydrogen hubs.
- B.C. is committed to working with Indigenous Nations through partnerships such as the Indigenous Clean Energy Opportunities (ICEO). Hydrogen was selected as a priority area and jointly the First Nations Energy and Mining Council (FNEMC) and EMLI are developing an Indigenous Hydrogen Market Opportunities Analysis to identify opportunities for First Nations to participate in the B.C. hydrogen sector.
- B.C. is participating in the Clean Fuels Working Group within the Federal Regional Energy and Resource Tables to further support hydrogen investment in the Province.

Background:

B.C. Hydrogen Strategy Implementation, 2022/23:

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

- The Strategy builds upon B.C.'s globally recognized hydrogen and fuel cell leadership, and its abundant clean energy resources.
- The Strategy includes 63 policy actions that clarify how the Province will support and promote the production, use and export of hydrogen in B.C. over the next 10 years and beyond.
- In 2022/23, B.C. acted on five initial priorities that were identified as key to growing B.C.'s hydrogen sector. These initial priorities include:
 - Committing \$5 million to a \$15 million hydrogen blending study jointly led by Enbridge, FortisBC and Pacific Northern Gas to examine the technical, economic, and regulatory requirements to introduce hydrogen into B.C.'s natural gas pipeline transmission and distribution network;
 - Establishing a declining carbon intensity threshold for low-carbon hydrogen production to align with our net-zero by 2050 target;
 - Planning hydrogen hub development in B.C. to promote hydrogen production, use, and exports;
 - Developing a regulatory mapping study and statutory changes to enable hydrogen projects; and,
 - Developing a carbon dioxide storage atlas to quantify the geological storage capacity of Northeastern B.C. and enable the development of low-carbon hydrogen from natural gas.
- EMLI signed a Trusted Partnership with the B.C Centre for Innovation and Clean Energy (Centre) to collaborate in areas that support the Province's clean energy objectives and, more specifically, in areas that align with the initial implementation priorities of the Strategy.
- This partnership will enable the Province to leverage the Centre's ability to act with more autonomy and flexibility than the government to rapidly progress shared climate objectives, and the Centre to build its brand as a key contributor to decarbonization.
- B.C. is also committed to working with Indigenous Nations through partnerships such as the ICEO. This is an initiative fostering the collaboration between the First Nations Leadership Council, FNEMC, and EMLI.
 - Hydrogen was selected as a priority area because it is an upcoming area in which the Province and Indigenous leadership can work together to better understand hydrogen as an energy source, its economic potential, and the impacts on the environment.
 - Jointly, FNEMC and EMLI are developing an Indigenous Hydrogen Market Opportunities Analysis to identify opportunities for First Nations to

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

participate in the B.C. hydrogen sector. This work will include development of a report and two workshops.

- On June 1st, 2022 Natural Resources Canada announced the first phase of the Regional Energy and Resource Tables (Regional Tables) as part of a collaborative initiative focused on ensuring provinces and territories are prepared to seize the economic opportunities enabled by the global move towards a low carbon future.
- EMLI is co-chairing the Clean Fuels Working Group, within the Regional Tables, to identify key hydrogen projects with high domestic strategic value warranting Federal and Provincial support.

B.C. Hydrogen Strategy Implementation 2023/24 priorities:

- In 2023/24, B.C. will continue to make progress on priorities that are key to growing B.C.'s hydrogen sector and the commitments outlined in the B.C. Hydrogen Strategy. These priorities include:
 - Developing hydrogen educational, marketing, and safety materials to inform the public;
 - Study the use of hydrogen in communities at the end of the electricity transmission line;
 - Complete a gap analysis to identify resources for hydrogen labour and skills development in B.C.; and,
 - Continue to develop hydrogen hubs alongside industry, interested stakeholders, regional governments, and Indigenous partners.
- Through the execution of two separate Shared Cost Arrangements, EMLI will collaborate with the Fraser Basin Council and the City of Prince George to achieve the priorities listed above.

Cross Reference: 23 – British Columbia Centre for Innovation and Clean Energy
15 – DRIPA Action Plan/Indigenous Clean Energy Opportunities process

Contact:

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Centre for Innovation and Clean Energy

Drafted/Revised: March 10, 2023

Issue: Support for innovation and commercialization of clean energy projects to meet CleanBC targets and B.C. Hydrogen Strategy policy actions.

Response:

- In September 2021, as part of StrongerBC, the British Columbia (B.C) Centre for Innovation and Clean Energy (CICE) was announced and became operational on October 25, 2021.
- CICE establishment and operations were funded by \$35 million from B.C., \$35 million from Natural Resources Canada, and \$35 million from Shell Canada, for a total of \$105 million.
- CICE's focus is on initiating new technology to accelerate the path to net-zero emissions by 2050.
- In February 2022, the CICE and the Ministry of Energy, Mines and Low Carbon Innovation (EMLI) established a five-year Trusted Partnership and Shared Cost Arrangement to collaborate on the implementation of the B.C. Hydrogen Strategy.
- As part of the Hydrogen Strategy implementation, EMLI transferred \$998,000 during the fiscal year 2021/22 to CICE to complete four studies on EMLI's behalf:
 1. Northeast B.C. Carbon Capture and Storage (CCS) Atlas
 2. Carbon Intensity of Hydrogen Production Methods Study
 3. BC Hydrogen Regulatory Mapping Study
 4. Metro Vancouver Hydrogen Hub Study

Background:

Centre for Innovation and Clean Energy Activities - 2021/22:

- CICE is a member-based, non-profit corporation designed to support the development and global scaling of B.C.-based energy technologies, including hydrogen, with the primary focus on commercialization.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- CICE provides early-stage opportunities in the following areas prioritized for funding and project delivery; the production, use, and distribution of low carbon hydrogen, carbon capture, utilization, and storage (CCUS); biofuels and synthetic fuels (including marine and aviation fuels); renewable natural gas; and battery technology, storage, and energy management systems.
- CICE intends to attract a wide range of companies and partners that share a common focus on low-carbon innovation and scaling up B.C.-based clean-energy technology.
- CICE's mandate is aligned with the B.C. Hydrogen Strategy and the CleanBC Roadmap to 2030 objectives to build B.C.'s low carbon economy.
- To achieve four objectives as part of the initial Strategy implementation, EMLI's financial contribution supported the development of the following four studies:
 - **Carbon Intensity of Hydrogen Production Methods Study:** The study identifies, models, and establishes carbon intensity thresholds for different hydrogen production pathways to help inform decisionmakers on the role of hydrogen in decarbonization.
 - **BC Hydrogen Regulatory Mapping Study:** The study reviews provincial, federal, and international codes, standards, and regulations, and identifies current regulatory gaps that could be addressed when considering hydrogen production, distribution, and storage.
 - **Northeast B.C. Carbon Capture and Storage (CCS) Atlas:** this study identified the significant carbon sequestration potential in northeast B.C. in saline aquifer sites and depleted or nearly-depleted natural gas pools potentially suitable for CCS.
 - **Metro Vancouver Hydrogen Hub Study:** The study analyses the potential demand and supply opportunities for hydrogen in the Metro Vancouver region, within the context of the broader economy of B.C.
- The Northeast B.C. Carbon Capture and Storage (CCS) Atlas was public released in January 2023, and the Carbon Intensity of Hydrogen Production Methods Study and the BC Hydrogen Regulatory Mapping Study will be public released in April 2023.
- EMLI and CICE will continue to collaborate on joint priorities identified in the Trusted Partnership Agreement in support of achieving objectives in the B.C. Hydrogen Strategy and the CleanBC Roadmap to 2030.

Cross Reference: 20 - CleanBC
22 - BC Hydrogen Strategy

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Contact:

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Climate Aligned Energy Framework

Drafted/Revised: March 28, 2023

Issue: Development of a Climate Aligned Energy Framework

Response:

- A Climate Aligned Energy Framework (Framework) will support the delivery of CleanBC Roadmap objectives and legislated GHG emissions reduction targets.
- The Framework will also need to consider other key priorities, such as energy affordability for households and businesses, continued access to reliable clean energy even during periods of peak demand, the energy action framework (including an emissions cap on the oil and gas industry), and Indigenous reconciliation.
- Once finalized, the Framework will provide guidance for Government energy-related policies, which will support decarbonizing BC's energy mix transitioning to a net zero emissions economy over the next 30 years (e.g, Renewable Natural Gas, hydrogen, biofuels, electricity, emissions caps, LNG environmental assessment guidance for net zero emissions plans) .
- The Ministry is collaborating with the Ministry of Environment's Climate Action Secretariat, the Environmental Assessment Office, the Ministry of Jobs, Economic Development and Innovation and energy utilities to move forward on developing the Framework.

Background/Status:

- As part of Premier Eby's December 7, 2022, mandate letter to Minister Osborne, he included expectations for the Minister to make progress on several priorities including:
 - "develop and implement a climate aligned energy framework for B.C. with an overall goal of maximizing our province's production of clean energy to use at home and for export."
- The Climate Aligned Energy Framework will be inclusive of the "new energy action framework" that was announced March 14, 2023 in association with the

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Cedar LNG project environmental assessment certificate approval. This framework committed the Province to:

- require all proposed LNG facilities in or entering the environmental assessment (EA) process to pass an emissions test with a credible plan to be net zero by 2030;
 - put in place a regulatory emissions cap for the oil and gas industry to ensure B.C. meets its 2030 emissions-reduction target for the sector;
 - establish a clean-energy and major projects office to fast-track investment in clean energy and technology and create good, sustainable jobs in the transition to a cleaner economy; and
 - create a BC Hydro task force to accelerate the electrification of B.C.'s economy by powering more homes, businesses and industries with renewable electricity.
- The Ministry is working in collaboration with other agencies, including the Climate Action Secretariat and BC Hydro to undertake analysis to inform the development of the framework that considers BC's potential future energy mix and the extent to which electricity, natural gas, liquid fuels, hydrogen and other resources are relied upon to power BC's vehicles, buildings, communities and industry.
 - The framework is intended to support the delivery of CleanBC Roadmap (Roadmap) objectives and legislated GHG emissions reduction targets.
 - In addition to electrification, the Roadmap primarily leverages several other mechanisms such as energy efficiency, demand destruction, low carbon gases and fuels, and carbon pricing to reach its targets.
 - Focusing primarily on electrification to achieve BC's climate objectives may create affordability challenges for households and business, energy resiliency challenges during times of winter peak energy use, and significant feasibility challenges related to realistic timelines for the development of infrastructure and availability of clean firm electricity sources. Currently, 16% of BC's energy needs are met through electricity, whereas 67% of these needs are met through fossil fuels.

- Advice/Recommendations

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Advice/Recommendations

-

Cross Reference: 22 - Decarbonising BC's Gas Grid (GGRR, GHG Reduction Standard)

26 – Evolving the Role of the BCUC

Contact:

Les MacLaren

Assistant Deputy
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Electricity and
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Evolving the Role of the British Columbia Utilities Commission (BCUC)

Drafted/Revised: March 22, 2023

Issue: Adapting the role of the BCUC to support BC's clean energy transition, in alignment with BC's climate goals and affordability objectives.

Response:

- In the same way we are taking active steps to align BC's energy system with our climate targets and other key priorities, we are committed to re-examining the role of the BC Utilities Commission.
- The BCUC has served British Columbians admirably to date as the economic regulator of public energy utilities, most of whom operate as natural monopolies.
- As we move forward, we will be working closely with the BCUC and others to determine how its powers and mandate can be adapted to better enable it to incorporate new responsibilities. For example, this could include overseeing the implementation of a cap on emissions for natural gas utility for buildings and industry customers under the Greenhouse Gas Reduction Standard.

Background/Status:

- As an economic regulator, the BCUC primarily considers cost implications to public utility ratepayers when assessing utility applications. In the absence of policy direction from Government, the BCUC is limited in its ability to consider other objectives such as climate targets and affordability within rate classes (e.g., setting different rates for lower and higher-income residential customers of a utility).
- Achieving BC's greenhouse gas (GHG reduction) targets will require a fundamental restructuring of BC's energy system, including a re-think of the roles of electricity, gas, and other public utilities.
- This includes opportunities to leverage utility spending, and utilities' close relationship with their customers, to implement GHG reduction initiatives and influence customer behaviour.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Currently, it is often difficult for utilities to obtain the approval of the BCUC for these kinds of initiatives within BC's current public regulatory framework.
- Government does have the ability to provide policy direction to the BCUC by using its powers under the *Utilities Commission Act* to direct certain outcomes, for example, directing the BCUC to set a BC Hydro electrification rate. Also, under the *Clean Energy Act*, the Greenhouse Gas Reduction Regulation provides a framework for utility projects to proceed in support of greenhouse gas reductions.
- However, moving forward, a re-examination of the role of the BCUC is required to ensure public utilities can play a key role in advancing climate action, while also mitigating costs for utility customers and maintaining reliable access to energy, including during peak periods of consumption.
- The Minister's Mandate letter includes a deliverable to "Work with the BC Utilities Commission in supporting BC's clean energy transition, in alignment with our province's climate goals to achieve net zero by 2050, and affordability objectives.
- The Climate Solutions Council (CSC) supports this deliverable. In its 2022 report, it raised concerns about the capacity of the BCUC to consider climate-related initiatives such as the Greenhouse Gas Reduction Standard within the BCUC's present mandate. CSC recommends Government consider a fundamental transformation of the BCUC to align decision-making with decarbonizing the energy system.
- The reframing of the BCUC role will be informed by the direction set under the Climate Aligned Energy Framework (the Framework).
- As part of development of the Framework, the Ministry will continue to work with the BCUC to identify potential new responsibilities that would support timely decision-making and greater consideration of Government policy objectives in the Commission's regulation of public utilities.

Cross Reference: # 22 Decarbonising BC's Gas Grid (GGRR,
GHG Reduction Standard)

25 Climate Aligned Energy Framework

Contact:

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Mining Regulatory Excellence

Revised: March 16, 2023

Issue: Advancing near term mining projects into final investment decision and reconciliation with Indigenous Nations

Response:

- Budget 2022 provided \$18 million over the next three years to continue the Regulatory Excellence in Mining strategy and support robust and efficient decision-making processes across regulatory agencies. This funding has led to 37 new dedicated staff across 4 natural resource agencies.
- Budget 2023 provides \$77 million over three years to help speed up natural-resource permitting and begin work to modernize the permitting service delivery model. Resources allocated to EMLI are still to be determined.
- Under Deputy Minister Board oversight, EMLI is continuing to advance regulatory performance by:
 - Delivering more efficient and effective permitting on priority projects to create quality economic growth opportunities;
 - Enhancing environmental sustainability and outcomes; and
 - Implementing the Province's reconciliation goals by partnering with Indigenous Nations on mining related opportunities.
- The Blackwater mine received its *Mines Act* permit in March 2023, which will reinforce investor confidence in the Province's ability to permit a major mining project in a timely manner with Indigenous support.

Background/Status:

- Building on the outcomes from the Mining Jobs Task Force and engagement with the Business Council of BC through the Low Carbon Industrial Strategy, EMLI is taking a focused approach to regulatory performance in the mining sector through oversight of an Executive Project Board (Board) made up of Deputy Ministers from the natural resource sector.
- The purpose of the Board is to ensure that permitting, issues resolution, environmental assessments (where applicable), and associated reconciliation efforts are conducted in a timely, coordinated, and high-quality manner. The Board's Terms of Reference has recently been revised to ensure continued focus on removing obstacles from permitting.
- Key project activities include:

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Enhanced project management approaches on major projects;
- Advancing mining opportunities in partnership with Indigenous Nations;
- Assessment of and improvements to the Province's statutory decision-making framework;
- Assessment of project specific economic barriers;
- Advancing policy and legislative reform and Critical Minerals strategy.
- This initiative will contribute to the Province taking advantage of opportunities to become a jurisdiction of choice to supply responsible low-carbon products and critical minerals, and attract investment from a growing pool of investors concerned about environmental, social and governance outcomes.
- Key outcomes to date include:
 - In early March 2023, the Province issued a *Mines Act* permit for the Blackwater Gold project located 112km southwest of Vanderhoof. This was the first "green fields" open pit *Mines Act* permit issued since 2012.
 - Establishment of the Southeast Secretariat (SE Secretariat) as a dedicated cross-agency team that acts as a single point of contact to manage the entire major mines regulatory process in southeast BC.
 - Secured incremental resources to add 38 new Full Time Equivalents (FTE) across mining regulatory agencies to ensure thorough timely reviews, support industry engagement, and address backlogs in regional permitting.
 - Renewed investment of \$6.6M in the Ministry's technological systems to ensure internal major mine permitting processes are coordinated and efficient.
 - The Province has negotiated a historic consent-based decision-making agreement based on Section 7 of DRIPA with the Tahltan First Nation on the Eskay Creek mine.
 - This agreement advances reconciliation and honors Tahltan's jurisdiction in land-management decisions in Tahltan Territory, in recognition of Tahltan's title and rights within its territory.
 - In 2022/23 EMLI approved 9 Major Mine projects:
 - Fording River Operations North Saturated Rock Fill Construction (April 2022)
 - Greenhills Operations Greenhills Creek Antiscalant System (June 2022)
 - Silvertip Mine UG Phase 1 Exploration (June 2022) – Supports future mine expansion
 - Brule Mine Plan amendment (June 2022) – Mine life expansion
 - Wolverine Pit Pushback (July 2022) – Mine life expansion
 - Eskay Creek Permitted Mine Area boundary expansion and material importation from KM32 quarry (August 2022)
 - New Afton C-Zone Mine Expansion (October 2022) – Mine life expansion

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Red Chris Block Cave Pre-production and Tailings Thickener Activities (Dec 2022) – Supports future mine expansion
- Blackwater Major Works Construction Activities (March 2023) – New Mine

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Permitting Regional Mines

Drafted/Revised: March 6, 2023

Issue: Industry concerns regarding timelines for processing applications for regional mines

Response:

- The Ministry is aware of industry concerns regarding long timelines for the processing of Notice of Work (NoW) applications for permits on regional mines and has been implementing numerous ways to reduce timelines.
- Regional mines include mineral and coal exploration, placer, aggregate and stone quarries.
- The Ministry has made changes to the permit intake process to streamline the process, and to ensure that applications are received by technical reviewers as early in the process as possible.
- Ministry staff continue to improve the NoW application form and develop accompanying materials to provide more guidance to proponents.
- Ministry staff have also been holding permitting workshops around the province to provide training, share knowledge, and to remain accessible and transparent with industry.
- The Ministry received funding for 13 new positions to help with regional permitting and all these positions have been filled.
- The new resources, along with the process improvements, are helping to reduce the backlog of files and are starting to improve permitting timelines.

Background/Status:

- Permitting timelines have been impacted by the volume of applications being submitted in this high cycle for mineral exploration and the increasingly challenging environment for consultation with Indigenous Nations.

Mandate Commitment – Permitting Timelines:

- The Ministry received funding for 13 new positions to help with regional permitting and all these positions have been filled.
- The new resources and process improvements are having a positive impact on reducing the backlog of applications (currently 116, a reduction of 30% from a backlog of 151 in January 2022) and is starting to reduce permitting timelines for new submissions.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- The Ministry has also made improvements to application forms and has provided guidance to industry to assist them in submitting high quality applications that can be processed faster.

Mandate Commitment – Transparency:

- The Ministry has been providing permitting workshops at industry events around the province to ensure staff are accessible and transparent with requirements.
- Staff have been meeting with the leadership of the Association for Mineral Exploration BC and BC Stone, Sand, and Gravel Association regularly to share permitting data and to remain transparent with progress.
- A new permitting database is allowing data to be collected and analyzed in a timely manner so that adjustments can be made as needed to improve the process; this is improving internal transparency for decision making.
- Regional Operations Branch introduced a permit intake window (batching) pilot project in the fall, for mineral exploration files. The goal is to provide a scheduled approach to permit reviews and provide proponents with more predictability with respect to when their applications will be reviewed and when feedback will be provided to them.

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Major Mines Permitting Timelines

Drafted/Revised: March 31, 2023

Issue: Industry concerns regarding timelines for permitting major mines

Response:

- The Ministry is aware of industry concerns regarding the timelines required to review applications for major mines and has been working on numerous ways to find efficiencies in the process.
- Major Mines include producing mineral and coal mines and applications are typically technically complex, involve multiple agencies, include multiple rounds of review, and significant engagement with Indigenous Nations.
- Expected timeline for referral of Major Works permit to Statutory Decision Making (SDM) is 6 to 12 months from acceptance of revised application to permit referral.
- The Ministry has increased permitting staff capacity through additional Full Time Employee (FTE), 5 over the past 3 years.
- The Ministry created a technical compliance branch, with 7 new FTEs in the past 2 years, enabling a shift of compliance and enforcement function off the permitting staff.
- The Ministry has increased Indigenous Relations capacity through the creation of a new branch, with 7 new FTE hired in 2022, and 2 additional FTE planned over the next year.
- Ministry staff have been improving application process and information requirement guidance for proponents.
- The Ministry has implemented the Departure from Approval Policy, with nearly 100 projects being processed in an average of 21 days, since 2020.
- The Ministry is continuously developing and implementing guidance and tools to ensure that the detailed requirements for amendment applications are clear and consistent for industry during the development of their applications, which will result in reduced review timelines.
- Ministry staff have implemented a streamlined review process for small, narrowly scoped, applications that has reduced timelines by 1 to 3 months.
- Timeline Trend - Major project review timelines have reduced from an average of 259 business days to 181 business days since 2019.

Background/Status:

- Timeline Trend - Preliminary analysis of major project review timelines suggest a trend toward more efficient processes:

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Prior to November 2019, completed major permitting review projects averaged 259 business days (ranging from 123 to 536 business days).
 - Since November 2019, completed major permitting review projects have averaged 181 business days (ranging from 83 to 354 business days).
- The current expected timeline for the review of a Major Works Application, from acceptance of the final Application to referral to the Senior Decision Maker is 6 to 12 months. Recent examples include Blackwater (10 months), New Afton C-Zone (10 months), Kemess Underground Project (7 months).
- Major Work applications are technically complex, require detailed review by Ministry staff, and are subject to timeline extensions created by the proponent or the resolution of Indigenous Nation concerns, which are outside the control of Ministry staff.
- The Major Mines Office has increased its capacity to conduct application reviews with the addition of 5 FTE over the past 3 years. This includes geoscience, geotechnical engineering, and reclamation technical experts and project management staff.
- Prior to 2021, major mines permitting staff also held Indigenous consultation and compliance and enforcement functions. The Ministry has created new branches to enable the Major Mines Office to focus on the application review process. The Technical Compliance Branch was created in 2021. The Priorities Advancement and Indigenous Relations Branch was created in 2022.
- In 2021/22 a total of 38 amendments were processed. To date, in 2022/23 over 30 amendments have been processed.
- The Ministry has developed both external and internal policies and procedures to assist in streamlining the application review process, including, updated application information requirements, major mines authorization guide, and improved coordination with The Ministry of Environment and Climate Change Strategies (ENV) on joint applications.
- The Ministry developed and implemented the Departure from Approval process in 2020 to provide a pathway for mine sites to self-assess proposed changes as 'non-substantial' as well as a pathway to request that the Ministry make the determination. Since 2020 nearly 100 submissions have been determined to be non-substantial and were able to be implemented by mines without the need for an amendment process. The average time to process these requests is 21 business days.
- The Ministry is constantly developing guidance and tools for industry. These include the Technology Readiness Levels (TRL) guidance, released in 2022, to help development of innovative technologies. The Major Mines Standardized Reclamation Security Calculator, currently under development, will provide a

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

consistent calculation of reclamation liability cost estimates. These tools will help ensure that the requirements for amendment applications are clear for industry, enable more consistent applications, which will result in reduce review timelines.

- The Ministry has developed and implemented a streamlined review process for small, narrowly scoped, applications. This includes expedited pre-application steps and shorter review timelines. Initial results have reduced process timelines by 1 to 3 months.

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Mining and Mineral Exploration in BC in 2022

Revised: March 14, 2023

Issue: Update on Mineral Exploration and Mining Numbers for BC in 2022

Response:

- According to the Ernst & Young Exploration Survey, exploration spending in British Columbia (BC) was \$740 million in 2022, up from \$660 million in 2021.
- 61 percent, \$451 million, of BC's total exploration expenditure was in the Northwest Region (the Golden Triangle).
- Currently, there are seven coal mines, nine metal mines, approximately 30 industrial mineral mines, and hundreds of aggregate pits/quarries operating in BC.
- BC's mineral production value is forecasted at approximately \$18 billion¹ for 2022.
- Mining, mineral exploration and related sectors provide well-paying direct jobs for more than 30,000² British Columbians.
- Approximately 600 exploration and 75 major mining companies are headquartered in BC.

Background/Status:

- The goal of exploration is to locate large, high-grade mineral and coal reserves with minimal disturbance to the ground and the environment.
- Exploration projects result in benefits for nearby communities, particularly rural communities, as many mineral and coal deposits are found in rural areas of BC. The industry also provides thousands of spin-off jobs and business opportunities for suppliers and service providers located close to project sites.
- The Exploration Survey found that exploration in BC is shifting towards discovery after years focused on the advanced exploration and mine evaluation stages. According to the survey, 39 percent of expenditures were in grassroots and early-stage exploration in 2022, receiving 78% more funding than in 2021.

¹ Natural Resources Canada

² Statistics Canada

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- In 2022, copper exploration spending jumped 84% from 2021, rising from \$128M to \$235M. Similarly, critical minerals exploration in BC increased 77% from 2021 fueled by favourable market conditions and increasing demand.
- According to the most recent forecasts from The Ministry of Energy, Mines and Low Carbon Innovation (EMLI), BC mines produced around \$18 billion worth of commodities in 2022 which would set a record for the province. The increase can mostly be attributed to a spike in metallurgical coal prices which approximately doubled the commodity's value from 2021.
- According to early estimates from Natural Resources Canada, BC's share of Canadian mineral resource development investments fell from 15.7% in 2021 to 13.7% in 2022, however this percentage is anticipated to increase in 2023 based on current company spending intentions.
 - BC's total investment in 2022 is estimated to be no different than it was in 2021.
 - Saskatchewan and Ontario are both estimated to have seen large increases to their share of Canadian mineral resource development investments in 2022 of 4.1% and 2.7% respectively which has negatively impacted BC's share of investment.
 - Current spending intentions published by NRCan show that mine development investment in BC is anticipated to increase in 2023 with many companies intending to increase project capital spending. Examples include Artemis Gold (Blackwater), Newcrest Mining (Red Chris), and New Gold (New Afton).

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: BC Geological Survey Including Critical Minerals

Revised: March 3, 2023

Issue: British Columbia Geological Survey and its role in Critical Minerals and Land Use Planning

Response:

- British Columbia Geological Survey (BCGS) develops, disseminates, and acts as the custodian for British Columbia's (BC) geoscience information.
- Over 4 years, starting in FY22/23, government is investing 7 FTEs and \$3.9M in to BCGS to advance critical mineral geoscience.
- To inform the Critical Mineral Strategy, BCGS is developing an inventory of 'critical' minerals and assess BC's potential to contribute to the global supply chain.
- In addition to ongoing foundational geoscience activities, BCGS is a Canadian leader in delivering digital geoscience that supports innovative mineral potential assessment and information for land use decisions.
- BCGS continues to support economic development in rural BC as public geoscience attracts investment. In BC, every \$1 provided to public geoscience typically results in \$5 of private sector investment.

Background/Status:

BCGS - Critical Minerals

- Budget 2023 provides \$6 million over 3 years to develop a BC Critical Minerals Strategy which includes increased access to geoscience to facilitate critical mineral exploration and assess potential for critical minerals opportunities. BCGS will deliver foundational geoscience that will inform the strategy development.
- Specifically, over 4 years starting in FY22/23, a total of 7 FTEs and \$3.90M are allocated to BCGS (CleanBC FY22/23 – FY24/25: 3 FTEs and \$1.85M; and Critical Mineral Strategy FY23/24 – FY25/26: 4 FTEs and \$2.05M)
- As an initial step, BCGS is compiling an inventory of BC's critical minerals and reviewing the significance of each to the BC economy. Subsequent work will evaluate mineral potential for high priority minerals.

BCGS and Geoscience BC

- BCGS is a ministry branch with staff geoscientists that provide in-house expertise, whereas Geoscience BC is a non-government, independent society with an administrative staff that redistribute government grants to proponents.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- In 2018, the Mining Jobs Task Force's final report recognized geoscience enhances BC's mineral exploration competitiveness and recommended an independent review of BC's geoscience delivery through BCGS and Geoscience BC (March 2019).
- To keep pace with other jurisdictions and maintain BC's status as a highly-competitive exploration destination, the review found the dual geoscience delivery model unsatisfactory and recommended increased base funding to BCGS.

BCGS and Public Geoscience

- BCGS is the provincial agency that links the mineral industry, government, and British Columbians to the Province's geology and mineral resources.
- Public geoscience is an economic stimulant, and the Prospectors and Developers Association of Canada (PDAC) notes \$1 provided to public geoscience is expected to bring \$5 of private sector investment. According to a recent Geological Survey of Canada evaluation, the return is >\$7 and audits of several Australian public geoscience programs have realized >\$20 return on public geoscience funding.
- BCGS's key roles are to:
 - Advise government on province's minerals resources;
 - Create, maintain and deliver geoscience knowledge for informed decisions;
 - Attract investment to explore BC for new mineral and coal resources;
 - Act as the public steward of mineral resources information;
 - Track the economic health of mineral exploration and the mining sector; and
 - Provide mineral potential assessments that ensure mining interests are included in land management strategies and negotiations.
- BCGS is responsible for carrying out geological field surveys and publishing the resulting maps, data, and reports, and providing geoscience expertise to support Government's objectives of responsible resource development and job creation.
- BCGS monitors industry activity, connects investment to BC's mineral resources and provides sector intelligence through the Mineral Development Office in Vancouver.

Cross Reference: Geoscience BC; Critical Minerals

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Geoscience BC

Drafted/Revised: March 17, 2023

Issue: Update on Geoscience BC

Response:

- Geoscience BC's (GBC) stated mission is to generate and publicly share high quality and unbiased earth science research and data that improves our collective level of geoscience knowledge; informs responsible natural resource development and investment decisions; catalyzes socio-economic opportunities; and stimulates innovation and geoscience technologies.
- GBC's most recent funding allocation from government was a \$5 million grant in 2019, and GBC has submitted additional funding requests annually.
- Since 2017, government has provided over \$15 million in grants to GBC.
- While no new funding was allocated to GBC in Budget 2023, the Ministry of Energy, Mines and Low Carbon Innovation (EMLI) will continue ongoing collaborations with GBC on projects related to minerals, water, wastewater, seismicity and clean energy.
- EMLI has submitted a request for year-end funding (2022/23) to support GBC water, energy, and carbon capture and storage (CCS) projects.

Background/Status:

- GBC is a non-government, not-for-profit society that has received \$76.8 million in grants from the British Columbia (BC) Government to fund mineral, oil and gas and water related geoscience activities since its inception in 2005.
 - Government has provided over \$15 million in grants to GBC since 2017, with the most recent being a \$5 million grant in 2019 following a recommendation of the Mining Jobs Task Force.
 - GBC offers geoscientific data to support mineral and energy projects in BC.
- GBC's stated key roles are to:
- Take advantage of emerging opportunities by funding large, multi-million-dollar geoscience projects;
 - Design and deliver high-profile geoscience programs in response to immediate industry needs and priorities;
 - Rapidly release project results and data to industry, academia, governments, Indigenous Nations and communities; and
 - Undertake community outreach, promote awareness of geoscience, and attract investment.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- While originally focused on mineral geoscience, GBC now funds oil and gas, water quality, and energy projects.
- BC Geological Survey (BCGS) is the BC's government geoscience agency with in-house expertise whereas GBC is a non-government granting society. Both provide important geoscientific data; however, GBC complements but does not replace or compete with the BCGS.
- Since 2012, EMLI has undertaken extensive reviews of long-term funding options for GBC; however, no clear and practical options have emerged from analysis and industry consultation.
- An independent review of BC's current delivery of geoscience through BCGS and GBC was conducted in 2019 as recommended by the Mining Jobs Task Force (MJTF) and concluded:
 - BC is falling behind other jurisdictions with respect to geoscience;
 - The current dual-delivery model is unsatisfactory;
 - Base funding to BCGS should be increased;
 - Coordination between GBC and the BCGS should be improved; and
 - \$1 to 2 million/year should be directed to airborne geophysical and geochemical surveys.
- In July 2020, a 3-year agreement was signed between GBC and BCGS detailing coordination and collaboration on mineral resources related geoscience. Despite this agreement, no new joint projects have been established and the Province has limited influence on GBC's future projects as they are an independent non-profit organization guided by an independent Board of Directors.
- In the summer of 2021, GBC formed a funding task force to identify alternative funding options. GBC has applied to several strategic funds including PacifiCan (formerly Western Economic Diversification) and the Innovative Clean Energy Fund.
- In February 2022, GBC and the Geological Survey of Canada signed a similar 5-year memorandum of understanding; however, to date, the Federal Government has not provided any fiscal resources to GBC.
- GBC continues to submit to the Select Standing Committee on Finance and Government Services as part of government's budget consultations. Over the last 3 years there has been limited support from government, but the submission continues to include requests to:
 - Invest \$5 million annually in GBC; and
 - Assist GBC to establish a sustainable long-term funding model.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- While no new funding was allocated to GBC in Budget 2023, EMLI will continue ongoing collaborations with GBC on projects related to minerals, water, wastewater, seismicity, and clean energy.
- EMLI is providing a \$XX grant through year-end funding (2022/23) to support GBC's energy, water and CCS projects, which represents a pivot for the organization. Funding is also intended to support GBC to conduct a study to inform a long-term funding model.

Cross Reference: British Columbia Geological Survey

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Mining Exploration Tax Incentive Programs

Revised: March 13, 2023

Issue: British Columbia's mining exploration tax incentive programs include the BC Mining Flow Through Share Tax Credit and the BC Mining Exploration Tax Credit. Both programs encourage exploration - a critical part of discovering sites for new mines.

Response:

- British Columbia's (BC) mineral exploration incentive programs include the BC Mining Flow-Through Share Tax Credit (MFTS) and the BC Mining Exploration Tax Credit (METC).
- Both programs encourage investment in mineral exploration, which is a critical part of discovering new mineral deposits which can lead to the development of new mines throughout the Province.
- The MFTS and the METC programs are highly competitive nationally and were made permanent in 2019 as recommended by the Mining Jobs Task Force (MJTF).
- At the beginning of September 2020, the eligibility period for flow-through share purchases was extended from 24 months to 36 months as a temporary COVID-19 provincial support measure.
- Government will continue to evaluate the MJTF recommendation to increase the MFTS and METC.

Background/Status:

Provincial Exploration Tax Incentives

- The MFTS provides a 20 percent non-refundable tax credit to individuals who invest in flow-through shares associated with BC flow-through mining expenditures. The MFTS is completely harmonized with the federal Mineral Exploration Tax Credit for flow-through shares making the after-tax cost of qualifying flow-through share-financed grassroots exploration expenditures in BC among the lowest in Canada.
- The METC is a refundable tax credit equal to 20 percent of non-flow-through funded, eligible BC grassroots mineral exploration expenditures incurred after July 31, 1998. In Mountain Pine Beetle-affected areas, the METC has been increased by 10 percent to 30 percent for eligible exploration.
- The MFTS and METC were made permanent as part of BC's 2019 budget. The credits had previously been renewed on an annual basis.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- At the beginning of September 2020, the eligibility period for flow-through share purchases was extended from 24 months to 36 months as a temporary COVID-19 provincial support measure. This aligns with the Federal extension announced in July 2020. Extending the eligibility period provided exploration companies additional time to incur and renounce expenditures associated with flow-through share purchases made by investors in 2019 and 2020. Any agreements entered into from 2021 onwards will revert back to the 24-month eligibility period.
- Over the past five years (FY17/18 to 21/22), the METC and MFTS have been estimated to cost the Province \$39 million annually.
- BC had the third highest mineral exploration and deposit appraisal expenditures in Canada in 2021 at \$813 million. Ontario (\$878) and Quebec (\$965) are the only two provinces ranking higher than BC. Preliminary spending estimates published by NRCan project BC to surpass Quebec in expenditures in 2022.
- Both Quebec and Ontario have tax incentives for flow-through share investors while Quebec offers an additional tax incentive program similar to BC's METC program (Appendix 1).
- During Budget 2023 consultations, the Association for Mineral Exploration advocated for modest increases to the METC and the MFTS so that BC would have the most competitive tax incentives in Canada.
- While difficult to rank and compare due to the differing tax approaches to incentives across Canada an independent assessment conducted for the Mining Jobs Task Force found that BC's incentives compared favorably with competitor jurisdictions.

Federal Exploration Tax Incentives

- The federal Flow-Through Shares program allows companies to flow qualifying Canadian Exploration Expenses through to investors who can then deduct those expenses from otherwise taxable income. This encourages exploration by reducing the amount of funds the investor has at risk. Companies issuing the shares and their investors typically share any gains associated with exploration.
- The federal Mineral Exploration Tax Credit is a non-refundable, 15 percent tax credit for grassroots exploration expenses pursuant to a Flow-Through Share Agreement. The federal government announced in November 2018 that it would extend its METC credit for five years to 2024. The credit had previously been renewed on an annual basis.
- In April 2022, a new Federal Critical Mineral Exploration Tax Credit was announced. This credit is a non-refundable, 30 percent tax credit for grassroots exploration expenses in respect of critical minerals pursuant to a Flow-Through Share Agreement. Critical minerals for the purpose of the credit will include copper, nickel, lithium, cobalt, graphite, rare earth elements, scandium, titanium, gallium, vanadium, tellurium, magnesium, zinc, platinum group metals, and uranium. The credit is eligible for agreements entered after April 2022 and before March 2027.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Attachments: Appendix 1 – Exploration Tax Incentives in Canada
Appendix 2 – Exploration and Deposit Appraisal Expenditures

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Minister and Authorizations
Division

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Appendix 1 – Exploration Tax Incentives in Canada

Jurisdiction	Incentive	Rate
BC	Mining Flow-Through Share Tax Credit (non-refundable)	20 percent (Mining Jobs Task Force proposed increase to 35 percent for 3-year trial)
	BC Mining Exploration Tax Credit (refundable)	20 percent to 30 percent (Mountain Pine Beetle-affected areas) (MJTF proposed increase to 30 percent for 3-year trial)
Ontario	Ontario Focused Flow-Through Share Tax Credit (refundable)	5 percent
Alberta	Mineral Exploration Tax Credit	15 percent on eligible expenses
Saskatchewan	Saskatchewan Mineral Exploration Tax Credit (non-refundable)	10 percent
Manitoba	Manitoba Mineral Exploration Tax Credit (non-refundable)	30 percent
Quebec	Tax Credit Relating to Resources (operators) (refundable)	12 percent 18.75 percent (Near and Far North)
	Tax Credit Relating to Resources (explorers) (refundable)	28 percent 38.75 percent (Near and Far North)
	Flow-Through Share deductions	Up to 20 percent
Yukon	Mineral Exploration Program – Hardrock (Total Program funding is approximately \$2.5 million)	100 percent up to \$15,000 (prospecting in new areas) 75 percent up to \$25,000 (under-explored areas) 50 percent up to \$40,000 (to develop project to advanced exploration stage, including placer)

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Appendix 2 – Exploration and Deposit Appraisal Expenditures in Canada, 2018-2022, \$M

Jurisdiction	2018	2019	2020	2021	2022 (estimate)
BC	427.9	388.7	513.5	898.1	966.7
Quebec	564.8	503.2	534.0	987.6	822
Newfoundland and Labrador	47.1	50.3	74.3	169.3	243
Nova Scotia	40.4	37.9	26.3	50.2	23.3
New Brunswick	25.6	12.7	14.1	27	21.1
Ontario	591.4	523.2	566.2	896.7	989.4
Manitoba	49.7	77.5	61.7	99.2	155.7
Saskatchewan	261.9	277.5	158.5	281.1	346.1
Alberta	26.6	53.2	46.6	20.8	19.9
Yukon	182.3	166.2	83.6	153.9	163.1
Northwest Territories	112	79.8	41.9	75.4	79.6
Nunavut	155.6	116.4	70.7	119.1	237.2

Source: Natural Resources Canada, from the federal-provincial/territorial Survey of Mineral Exploration, Deposit Appraisal and Mine Complex Development Expenditures
 Quebec data are compiled by l'Institut de la statistique du Quebec

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Carlyle Commodities / Newton Project in Tsilhqot'in Territory

Drafted/Revised: March 12, 2023

Issue: Tsilhqot'in Nation opposes Carlyle Commodities' approved mineral exploration program in Tsilhqot'in Territory.

Response:

- British Columbia (BC) is committed to the Government to Government (G2G) relationship with the Tsilhqot'in Nation (The Nation) and continues to meet with the Nation's leadership in an effort to work through their concerns regarding the Newton Project.
- The Ministry of Energy, Mines, and Low Carbon Innovation (EMLI) staff continue to encourage proponents to engage with Indigenous communities prior to permit submission, to build relationships and to share knowledge.

Background/Status:

- Carlyle Commodities submitted a permit application in February 2021 for exploration work that included 50 drill sites for ~50 ha of impact.
- The area has been partially disturbed in the past, with commercial logging and mineral exploration.
- The project area is adjacent to, but outside of, the Tsilhqot'in Declared Rights Area.

Consultation:

- Engagement with the Nation was initiated under the Tsilhqot'in Stewardship Agreement, which is a Strategic Engagement Agreement (SEA) between the Province and the Tsilhqot'in Nation that guides natural resource ministries in consulting with Tsilhqot'in.
- In response to Tsilhqot'in requests and interests, the Province elevated consultation from Level 2 (20 business days) to Level 3 (40 business days), to allow additional time for engagement.
- EMLI staff, along with the Ministry of Forests and the Ministry of Indigenous Relations and Reconciliation, led technical engagement to understand Tsilhqot'in interests and concerns.
- Although the consultation process had been prolonged, the agreed-to processes had been followed, and the parties made best efforts to preserve the G2G relationship.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Permitting:

- The Nation had expressed concerns with the proximity of the project to the Taseko River. In response, the proponent revised the project footprint so that any land disturbance would be a minimum of 1 km away from the river.
- Once all feedback had been received from the Nation with respect to the application, the permitting inspector drafted a set of permit conditions for review i.e., additional archaeological assessments, the requirement for a wildlife plan, and access restrictions.
- In the meantime, the proponent filed a petition with the Supreme Court of British Columbia, challenging administrative fairness due to delays in permitting.
- However, the petition was withdrawn by the proponent once the Statutory Decision Maker approved the permit application, with conditions.

Current Status:

- Intergovernmental Communications
- EMLI staff have offered to help facilitate a meeting between the two parties, but the proponent has strongly suggested that EMLI not get involved.
- T̓silhqot'in Nation recently issued a press release demanding a halt to exploration at the Newton Gold / Silver Project.

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Joe Rich Quarry / Joe Rich Properties Ltd. (Formerly Westridge Ventures).

Drafted/Revised: March 12, 2023

Issue: Community opposes proposed quarry in Joe Rich area of Kelowna

Response:

- The Statutory Decision Maker is waiting for more information from the project proponent and a public engagement meeting will be held prior to making a decision on this file.
- The public engagement meeting will allow the proponent to present the project, gather further information regarding community concerns and respond to any questions that the community may have.
- The Ministry of Energy, Mines and Low Carbon Innovation (EMLI) representatives will also attend the meeting to listen to the community and to speak to any permitting process questions.
- The proponent has commissioned technical studies to support the permitting process and public engagement. The timeline of the public engagement meeting and the adjudication of the permit is dependant on the timeline for these studies being completed. The Statutory Decision Maker's work is on hold until these two items can be satisfied.
- The rules of administrative fairness apply to the adjudication of BC Government permit authorizations. Due to concerns over fettering, the public has not had direct access to the Statutory Decision Maker, instead it has been asked of them to email their concerns to the regional office where they will be catalogued for consideration by the Statutory Decision Maker.

Background/Status:

- A Notice of Work application was submitted on December 16, 2020 by Joe Rich Properties Ltd. (the proponent) for a quarry in the Joe Rich Area of Kelowna on undeveloped private land zoned Rural Acreage by the Regional District of Central Okanagan.
- The proposed project is an aggregate quarry with a life expectancy of 40 years with a total disturbed area of 4.69 hectares over the life of mine.
- During the public review period there were many concerns, expressed by the Joe Rich community, some of which pertained to ground water, noise, dust, traffic, and the effect of the project on local property values.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Personal Information
- The adjudication process is currently on hold while the proponent completes technical studies to support the application.
- The Statutory Decision Maker has directed that the proponent hold a public engagement meeting to present the project, gather further information regarding community concerns and respond to any questions that the community may have. EMLI representatives will also attend the meeting to listen to the community and to speak to the permitting process.

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Graymont Pavilion Mine / Ts'kw'aylaxw First Nation

Drafted/Revised: March 12, 2023

Issue: Ts'kw'aylaxw First Nation has expressed concerns about outstanding reclamation at the Pavilion Mine site near Lillooet

Response:

- Ts'kw'aylaxw [TS-KWHY-lux] First Nation and British Columbia (BC) are working collaboratively to find a path forward to address the Nation's concerns about outstanding reclamation at the Pavilion Mine site.
- The proponent, Graymont, has also expressed a commitment to reclamation of the Pavilion Mine site.

Background/Status:

- The Pavilion Mine is located on the Reserve lands of the Ts'kw'aylaxw First Nation and on lands to which the Nation asserts Aboriginal Title and Rights.
- The Pavilion Mine occupies approximately 102 Hectares of Reserve Lands, which the operator, Graymont, has been leasing from the Nation since May 1, 2005.
- The operation was idled in 2016 and the limestone processing facility was dismantled and taken offsite.

Reclamation:

- A Mines Act Permit was issued in 2008 for the site and reclamation security for \$500K was posted.
- Ts'kw'aylaxw argue that the security is not adequate and have expressed concerns that Graymont may not renew the lease, may forfeit the security, and leave the mine un-reclaimed.
- The Nation commenced litigation in 2018 against Graymont and the Province.
- Intergovernmental Communications

Next Steps:

- Intergovernmental Communications

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Intergovernmental Communications

-

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Lightning Rock Mediation Agreement Update

Drafted/Revised: March 13, 2023

Issue: B.C., Semá:th and Abbotsford have reached an agreement on a draft term sheet for the protection of the Lightning Rock Site, south of Sumas Mountain.

Response:

- We acknowledge the deep cultural and spiritual importance of Lightning Rock for Semá:th [Sumas] and other Stó:lō/Coast Salish peoples.
- Ministry of Energy, Mines and Low Carbon Innovation (EMLI) has been supporting the Ministry of Indigenous Relations and Reconciliation (MIRR) in discussions with Semá:th.

Advice/Recommendations; Cabinet Confidences; Intergovernmental Communications

- Sumas mountain is an important source of aggregate for the lower mainland construction industry, supplying over 8 million tonnes of product per year.

Background/Status:

- Sumas Mountain is one of the most important areas for aggregate and stone production serving the lower mainland.
- It has 12 active pits and quarries that are permitted to produce 7.85 million tonnes per year. Of these, 5 quarries are accessed by a haul road traversing the Lightning Rock site.

Semá:th concerns:

- Semá:th (Sumas) First Nation has been seeking cultural protection for the Lightning Rock site at the base of Sumas Mountain in Abbotsford since 2014.
- The 36-hectare site is currently privately owned by Coldwater Ranch.
- The site holds strong cultural significance for many Coast Salish Nations. It includes a transformer stone ("Lightning Rock") and Semá:th believes the site contains an ancestral burial place for smallpox victims dating from the 1700s.
- Semá:th have additional concerns about the haul road that cuts through the site, allowing heavy trucks to access gravel quarries on Sumas Mountain. They have

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

specific concerns with the traffic impacts to the Lightning Rock Sacred Site, as approximately 3 million gravel tonnes/year are hauled past the site.

- Semá:th, along with other members of the Solh Temexw Stewardship Alliance (STSA) have long been interested in broader stewardship of the Sumas Mountain area. The Semá:th have raised concerns regarding the extensive aggregate mining operations on Sumas Mountain for many years.

Term Sheet:

- BC, Semá:th and the City of Abbotsford have reached an agreement on a draft term sheet for the protection of the Lightning Rock Site.
- Advice/Recommendations; Cabinet Confidences; Intergovernmental Communications
- MIRR has sought input from EMLI and The Ministry of Forests (FOR) regularly throughout the engagement and mediation process with Semá:th and development of the term sheet.
- EMLI is supportive of the term sheet and is willing to participate in associated planning discussions.

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Bamberton Quarry

Drafted/Revised: March 8, 2023

Issue: Application to increase production at Bamberton Quarry has generated opposition

Response:

- Review of the Bamberton Quarry permit amendment application remains in progress, with technical reviews and consultation with Tsartlip First Nation ongoing.
- The Ministry of Energy, Mines and Low Carbon Innovation (EMLI) maintains a rigorous application review process supported by a team of professionals qualified to assess mining projects and their potential impacts, including environmental impacts and protection of public safety.
- EMLI has been carrying out consultation with affected Nations and the applicant has been required to undertake public engagement as part of the application process, including advertising in local papers and hosting a public meeting.
- *Mines Act* applications are adjudicated by independent statutory decision-makers, responsible for assessing applications in a fair and balanced manner.

Background/Status:

- The Bamberton Quarry is on private land owned by the Malahat First Nation and is in the Cowichan Valley Regional District, approximately 6 km south of Mill Bay, on the Saanich Inlet.
- The site has been used for industrial purposes since the early 1900s as a cement plant and later as a quarry.
- Malahat Investment Corporation (MICO) is the business arm of the Malahat First Nation and became the permit holder of the quarry in 2016.
- The existing quarry was first permitted in 1991 and is currently authorized for a mine area of 39.3 hectares and annual production of 240K tonnes per year.
- MICO applied to amend its Bamberton Quarry permit in May 2019, with a proposal to increase the production area by 16% and double the production rate.
- Products from the Bamberton Quarry serve local construction markets and are primarily shipped by barge via the Saanich Inlet.
- MICO has also applied to the Ministry of Forests to amend its foreshore lease to administratively expand its authorized marine area to better accommodate vessels using the foreshore dock; no additional construction is required.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Bamberton Quarry Permit Amendment Application Status:

- Review of the permit amendment application remains in progress, with technical reviews and consultation with Tsartlip First Nation ongoing.
- EMLI has coordinated with other government agencies during the application process, with the application being referred for input to Cowichan Valley Regional District, Ministry of Forests, Ministry of Indigenous Relations and Reconciliation, Ministry of Transportation and Infrastructure, and Ministry of Environment.
- A thorough review of environmental impacts has been conducted as part of the adjudication process.
- Public engagement activities required of the applicant have included: posting signage at the entrance to the quarry, making a physical copy of the application available in a public location, advertising in local papers, and hosting a public meeting. Ministry staff have also made electronic copies of the application available upon request.
- The Ministry has received over 200 letters from the public, with a summary of concerns shared with the proponent for their consideration in making revisions to their application, and the letters have also been shared with the statutory decision maker for their consideration.

Application to Minister of Environment for Designation as a Reviewable Project

- One of the key concerns expressed by the public has been the lack of a formal Environmental Assessment.
- The Bamberton Quarry permit amendment application does not meet the Environmental Assessment Office's threshold for the *Reviewable Project Regulation* for modification of existing quarries.
- An application has been made to the Minister of Environment and Climate Change Strategy (ENV) by the Saanich Inlet Protection Society to designate the Bamberton Projects under the *Reviewable Projects Regulation*.
- The designation application process is in progress, having recently completed the public engagement phase. The Environmental Assessment Office is finalizing a recommendation report for the Minister, who is the Statutory Decision Maker for the designation application. A decision on the Mines Act permit amendment application is not expected to occur prior to the conclusion of the designation application process.

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Atlin Placer Gold Projects - Permitting

Drafted/Revised: March 8, 2023

Issue: Concerns from Atlin area placer mine operators regarding permitting timelines

Response:

- The Ministry of Energy, Mines and Low Carbon Innovation (Ministry) recognizes the important role placer mining has in the community of Atlin. The industry provides jobs to community members and supports local businesses.
- The Ministry continues to take meaningful steps, including adding more staff, to address a backlog of permit applications and improve the permit review process to support this important industry in the Atlin area.
- Atlin has some of the largest and most technically complex placer sites in the province, with significant reclamation and bonding requirements.
- The Ministry recognizes that an evolving regulatory environment and increased focus on reclamation and bonding for placer mining has been challenging for the sector.
- The Ministry believes that any mining company operating in BC should be responsible for the work and costs associated with the reclamation and remediation of mine sites. The Ministry has developed standardized methods and guidance to ensure a fair and transparent approach to bonding.

Background/Status:

- The placer mining sector in Atlin has been raising concerns regarding the pace of placer mine permitting since summer 2022. Operators have framed this as a “shut down” of the sector and voiced concerns about perceived unfair treatment from Ministry staff, particularly in relation to reclamation bonds.
- Atlin community members and businesses have also raised concerns about impacts to their businesses when placer miners do not have a permit to operate.
- Ministry staff have been contending with a backlog of applications due to staffing shortages in the past and historically high levels of activity in the mining sector, translating into high volumes of permit applications.
- The Ministry has added new staff and is making significant progress on addressing the application backlog..
- Atlin has some of the largest and most technically complex placer sites in the province, with significant reclamation and bonding requirements. Applications for

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

these sites require extra time to conduct an adequate technical review, to refer to other agencies and to conduct meaningful consultation.

- The Ministry and Taku River Tlingit First Nation (TRTFN) have developed a constructive and collaborative relationship to address mining concerns, including permitting timelines.

Prioritization of Applications:

- Due to the high volume of applications, permit reviews are prioritized based on the quality of application, the value to local communities, the degree of environmental impact, the effort taken by the company to establish good Indigenous relations, and with consideration for any prior compliance concerns.
- The Ministry is balancing placer applications with other types of applications, including quarries, sand/gravel pits and mineral exploration.
- Placer operations typically employ few workers and generate little revenue for the province or local economies. Mineral exploration is a major driver for employment and revenue for northern BC; the Association for Mineral Exploration BC estimates the average annual expenditure for an exploration drill program at \$2.9M.
- Given ongoing high interest in the Northwest as a destination for exploration investment, the Ministry has been challenged in ensuring timely review of small-scale placer mining applications.
- However, the Ministry ensures that larger placer operations, which are major employers for the Atlin area, are appropriately prioritized.

Status of placer applications in Atlin area:

- 10 placer applications are currently in the queue for the Atlin area; 4 of these are on proponent delay and the remaining 6 are in various stages of adjudication.
- Additionally, the 2 largest Atlin area placer operators (located on Otter Creek) have had their applications on proponent delay since summer 2022 due to outstanding bond and reclamation planning requirements. Ministry staff have remained available to engage with these operators, but discussions on bonds are frequent sticking points.
- In the past year, 1 new placer permit was issued, and amendments granted to 2 existing permits. Much effort was put into completing reviews on the large operations and working towards a resolution.

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Mine Development Projects – In Permitting, in Environmental Assessment (EA) Review Processes, or forecasted to commence permitting

Project	Product	Employment	Location	Environmental Assessment / Permitting	Cap. Costs	Proponent/Owner
New Mine Projects in active permitting processes						
Blackwater	Gold/Silver	825 Construction 457 Operations	Vanderhoof	<ul style="list-style-type: none"> Federal EA issued April 2019; Provincial EAC issued June 2019 Early Works Permits issued in June 2021 Major Works Mines Act permit issued March 8, 2023. EMA permit is expected to be referred to SDM at the end of March 2023. Referral date for Transmission Line permits for decision anticipated April 2023. 	\$810 M	Artemis Gold Inc.
Cariboo Gold	Gold	245 Construction 350 Operations	Wells	<ul style="list-style-type: none"> EA process commenced May 2020. A memo outlining project changes is expected from Osisko Q2 2023. This project change has pushed the referral date to Ministers for decision to late August 2023. Osisko plans to submit its joint permitting Application for screening on March 31, 2023. 	\$900 M	Osisko Development Corporation

Mine Development Projects – In Permitting, in Environmental Assessment (EA) Review Processes, or forecasted to commence permitting

Project	Product	Employment	Location	Environmental Assessment / Permitting	Cap. Costs	Proponent/Owner
New Mine Projects in active permitting processes						
Eskay Creek	Gold/Silver	400 Operations	Stewart	<ul style="list-style-type: none"> Tahltan Central Government and EAO provided their determination that the Eskay Creek Project could proceed to an environmental assessment in November 2022; project is now in the process planning phase to end on March 20, 2023. Technical Sample Joint MA/EMA application anticipated early Q3 2023. The company is also in the process of applying for several ancillary applications (land tenures, OLTC, WSA applications). 	<p>\$488 M</p> <p>Since 2014: Skeena reports investment of \$310M in BC economy</p> <p>2022: Skeena reports investment of \$71M in BC</p>	Skeena Resources Ltd.

Mine Development Projects – In Permitting, in Environmental Assessment (EA) Review Processes, or forecasted to commence permitting

Project	Product	Employment	Location	Environmental Assessment / Permitting	Cap. Costs	Proponent/Owner
New Mine Projects in EA process; permitting process may/may not have commenced						
Tenas Coal	Coal	100 Construction 90 – 110 Operations	Smithers	<ul style="list-style-type: none"> • Application review for EA transitioned to 2018 Act in December 2022. • Company is working on responding to detailed requests from the EA working group before the Assessment and Recommendation phases of the EA process can begin. • Permitting pre-application has not yet commenced as Proponent has yet to submit a draft PD/IRT. 	\$84.2 M	Telkwa Coal Limited (wholly-owned subsidiary of Allegiance Coal Ltd.)
Spanish Mountain	Gold/Silver	1000 – 1250 Construction 260 Operations	Likely	<ul style="list-style-type: none"> • the Initial Project Description was submitted to EAO in March, 2022. • Draft Detailed Project Description submitted in December 2022. • Permitting pre-application discussions have not been initiated 	\$900 M	Spanish Mountain Gold Ltd.
Yellowhead (formerly Harper Creek)	Gold/Silver	Estimated 600 Construction jobs 450 Permanent Jobs	150 km northeast of Kamloops	<ul style="list-style-type: none"> • Initial Project Description (IPD) in early development. Submission of an IPD is the first step in the Early Engagement Phase of EA 	\$1 B est.	Taseko Mines Ltd.

Mine Development Projects – In Permitting, in Environmental Assessment (EA) Review Processes, or forecasted to commence permitting

Project	Product	Employment	Location	Environmental Assessment / Permitting	Cap. Costs	Proponent/Owner
New Mine Projects in EA process; permitting process may/may not have commenced						
Crown Mountain	Coal	500 Construction 330 Operations	Sparwood	<ul style="list-style-type: none"> Project has transitioned from 2002 to 2018 EA Act. Proponent has agreement with Tobacco Plains Nation. Application submission anticipated Q2 2023. Permitting pre-application discussions have not been initiated. 	\$412 M (initial capital)	NWP Coal Canada Ltd.
Michel Coal	Coal	500 full-time jobs Construction 300 full-time jobs Operations 24-year mine life	Sparwood	<ul style="list-style-type: none"> Intergovernmental Communications Project will need to transition to 2018 EA Act Permitting pre-application discussions have not been initiated. 	\$358 M	North Coal
Kutcho	Copper/Zinc	250 Construction 250 Operations	100 km east of Dease Lake	<ul style="list-style-type: none"> EA in Pre- Application under 2002 Act in 2019. No active EA 	\$287.8 M – 345 M	Kutcho Copper Corp (KCC)

Mine Development Projects – In Permitting, in Environmental Assessment (EA) Review Processes, or forecasted to commence permitting

Project	Product	Employment	Location	Environmental Assessment / Permitting	Cap. Costs	Proponent/Owner
New Mine Projects forecasted to commence permitting						
Kerr-Sulpherets-Mitchell (KSM)	Gold/Copper	Approximately 280,698 FTE jobs over 59 years In January 2023, Tahltan Nation and Nisga'a Nation announced new partnership through the Treaty Creek	65 km northwest of Stewart	<ul style="list-style-type: none"> Five MX permits were amalgamated under a single MA (M-245) Permit in Q2 2022 M-245 application for administrative changes, including expansion of PMA received March 6, 2023. Seabridge started applying for permits in 2022 for the "site capture" phase of the Project and has demonstrated preparation for many additional required permits in 2023, including EMA permit for water discharge. 	<p>\$54.6 B over 59 years</p> <p>Seabridge reports 2022 expenditures of \$197 M with \$650M spent to date</p> <p>Seabridge reports budget of \$230 M for 2023</p>	KSM Mining ULC (Subsidiary of Seabridge Gold)
Red Mountain	Gold	TBD	Stewart	<ul style="list-style-type: none"> EA granted on October 5, 2018 Proponent plans to process Red Mountain ore at Premier. This would require an EAC, EMA and MA amendment. Ascot is applying for an extension to their EA Certificate. 	Unknown	Ascot Resources Ltd.

Mine Development Projects – In Permitting, in Environmental Assessment (EA) Review Processes, or forecasted to commence permitting

Project	Product	Employment	Location	Environmental Assessment / Permitting	Cap. Costs	Proponent/Owner
New Mine Projects forecasted to commence permitting						
Murray River	Coal	780 jobs (including construction and operations)	Stewart	<ul style="list-style-type: none"> Permits issued in 2018 following federal and provincial positive EA decision. Proponent considering final investment decision. EAC certificate renewal granted in 2020; project must be substantially started by 2025 Company initiated site preparation activities in Q1 2023. Drill program anticipated summer 2023 	Unknown	Ascot Resources Ltd.
Galore Creek	Copper/Gold/Silver	TBD	Northwest BC	<ul style="list-style-type: none"> EAC issued in 2007. Early works MA permit issued 2007. In pre-application stage for amendments to early works. Application submission expected Q2 2023. Company has indicated they intend to amend EAC to reflect reconfigured project, expected to occur in 2024. 	Unknown	Galore Creek Mining Corporation (Teck/Newmont joint venture)

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Cariboo Gold Project

Drafted/Revised: March 9, 2023

Issue: Status of the Environmental Assessment and Major Mine permitting processes for Cariboo Gold Project (Cariboo Gold)

Response:

- Osisko Development Corporation (ODV) proposes to develop Cariboo Gold, located near the Town of Wells, British Columbia (BC).
- The Environmental Assessment (EA) process for Cariboo Gold began on May 14, 2020 under the 2018 *Environmental Assessment Act*.
- Cariboo Gold is in the Effects Assessment and Recommendation phase of the EA. The Environmental Assessment Office (EAO) anticipates a potential referral date to Ministers in late Summer 2023.
- Cariboo Gold will require several permitting authorizations and a coordinated authorization permitting process is being led by the Major Mines Office (MMO) of the Ministry of Energy, Mines and Low Carbon Innovation (EMLI).
- ODV plans to submit a joint application for *Mines Act* and *Environmental Management Act* (joint application) authorizations for screening possibly by March 31, 2023.
- Government agencies have made the EA and permitting of Cariboo Gold a priority and EMLI has assigned dedicated resources to the Project.

Background/Status:

- ODV proposes to develop Cariboo Gold, an underground gold mine with a production capacity of 4,750 tonnes per day, near Wells, BC.
- Cariboo Gold is anticipated to produce 25 million tonnes of ore with an operating mine life of 16 years, in addition to construction (2 years) and site decommissioning and reclamation (2 years) at a capital cost of \$900 million.
- ODV indicates that Cariboo Gold would have a construction employment peak of 245 workers and an estimated 350 direct employees plus 50 contractors and consultants during operations.
- Lhtako Dene Nation, Xat'sül First Nation, and Williams Lake First Nation are participating Indigenous nations in the EA and reached consensus on the Readiness Decision. These same nations have been participating in the permitting processes.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Nazko Indian Band and Tsilhqot'in National Government are being notified of key milestones during EA and will be notified of permitting milestones once the joint application is submitted.
- MMO is leading discussions with Lhtako Dene Nation, Xat'sül First Nation, and Williams Lake First Nation regarding collaborative engagement for permitting. Capacity funding has been secured for the three nations via the Indigenous Funding Program for the 2022/2023 fiscal year and requested for the upcoming fiscal year.
- ODV submitted a License of Occupation application to the Ministry of Forests, Lands, Natural Resource Operations and Rural Development, in July 2021 for a 69 km transmission line. ODV has requested that this application remain outside of the MMO coordinated authorization review process.
- The Project proposes to use some infrastructure from nearby Quesnel River and Bonanza Ledge mines including milling, possible water treatment and waste rock storage.
- ODV has indicated that it is their priority to get mining of Lowhee deposit permitted by end of 2023.
- While permitting application review can occur parallel to the EA process, no decisions can be made on permitting applications until a positive EA Certificate decision is made.
- Government staff continue to prioritize their workload to support this important project and apply innovative approaches to permitting processes including negotiating collaborative engagement agreements with Nations that cover all aspects of permitting.

Contact:

Tania Demchuk

A/ADM

MCAD

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Blackwater Gold Project

Drafted/Revised: March 9, 2023

Issue: Status of Blackwater Gold Project

Response:

- The Blackwater Gold Project (Blackwater) received an Environmental Assessment Certificate on June 21, 2019, following substantial collaborative work with Indigenous Groups.
- The *Mines Act* permit for Major Works was issued on March 8, 2023.
- The *Environmental Management Act* permit is expected to go to referral for decision by end of March 2023 and permits for the Transmission Line are expected to go to referral in April 2023.
- Blackwater will see the creation of 457 direct jobs created for Life of Mine (LOM) with an additional 825 direct jobs created during construction/expansion phases.
- Over LOM, \$13.2 billion in value added in British Columbia (BC) is projected, and \$2.3 billion in Provincial Government Revenues.
- The Province has an Economic and Community Development Agreement (ECDA) with the Lhoosk'uz Dené Nation (LDN) and Ulkatcho First Nation (UFN) and a Pathways Agreement with the Carrier Sekani First Nations that provides for revenue sharing and collaborative decision-making processes.

Background/Status:

- The proposed Blackwater Gold Mine Project (Blackwater), located in central BC, approximately 112 km southwest of Vanderhoof, and is accessed via the Kluskus Forest Service Road (FSR), the Kluskus-Ootsa FSR and an exploration access road. The Kluskus FSR joins Highway 16 approximately 10 km west of Vanderhoof.
- Blackwater is comprised of an open pit gold and silver mine, with ore processing facilities, commencing with a nominal milling rate of 15,000 t/d (5.5 Mtpa). The ore processing facilities will be expanded to achieve 33,000 tpd (12 Mt/y) starting in Year 6 with a final expansion to achieve 55,000 t/d (20 Mt/y) starting in Year 11 of operation. The total LOM is expected to be 23 years.
- Blackwater's capital expenditure is estimated at \$1.5 billion with average annual operating costs estimated at \$284 million. During the construction phase, Blackwater is projected to generate an estimated \$810 million in value for the BC economy and an estimated \$12.4 billion in revenue tax over the 23-year mine life.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- The mine site is located within the traditional territories of Lhoosk'uz Dené Nation (LDN) and Ulkatcho First Nation (UFN). Other components of Blackwater, including the FSRs and transmission line, cross the traditional territories of Nadleh Whut'en First Nation, Saik'uz First Nation, and Stellat'en First Nation (collectively, the Carrier Sekani First Nations).
- The Province has an Economic and Community Development Agreement (ECDA) with LDN and UFN that provides for revenue sharing of the mineral tax collected from Blackwater.
- The Province also has a Pathways Agreement with the Carrier Sekani First Nations that provides for revenue sharing and collaborative decision-making processes in four main areas: economic development, socio-cultural programming, governance, and environmental stewardship.
- Federal and Provincial Environmental Assessment (EA) certificates were issued for the Project on April 15, 2019 and June 21, 2019 respectively.
- Blackwater was sold by New Gold Ltd. to Artemis Gold Inc. in June 2020, for \$190 million.
- The permitting pathway for Blackwater is managed through the Major Mines Office coordinated authorizations process and includes three phases:
 - Early Works – to support early works activities related to land clearing and site preparation. Completed in June 2021.
 - Major Works – to support the construction, operation, production, reclamation, and closure of the mine site. Permit issued on March 8, 2023.
 - Transmission Line – to support the 134.3 km, 230 kV electrical transmission line. Referral for decision expected in April 2023.

Contact:

Tania Demchuk	A/ADM	MCAD	778 698-7222
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Highland Valley Copper Mine Project

Drafted/Revised: March 9, 2023

Issue: Status of Environmental Assessment and permitting process for the Highland Valley Copper Mine Expansion

Response:

- Highland Valley Copper Mine (HVC) is an open pit copper-molybdenum mine near Logan Lake, British Columbia (B.C.), owned by Teck Highland Valley Copper Partnership (Teck).
- Teck's proposal for an expansion, referred to as HVC 2040, would extend the mine life from 2028 until approximately 2042.
- The Environmental Assessment Office (EAO) and the Major Mines Office (MMO) of the Ministry of Energy, Mines and Low Carbon Innovation (EMLI) are planning a combined Environmental Assessment (EA) and permitting review for HVC 2040. The MMO will coordinate the multiple permitting authorizations required for the project.
- The EAO completed the Process Planning phase for HVC 2040 on December 16, 2022 under the *EA Act 2018*.
- Teck has indicated they expect to submit their EA Certificate and *Mines Act* and *Environmental Management Act* joint permit applications in July 2023.
- Government agencies have made the EA and permitting review of HVC 2040 a priority and EMLI has dedicated resources to the Project.
- Indigenous nations whose interests may be affected by HVC 2040 include Nlaka'pamux [Ing-khla-kap-muh] and Secwépemc [Sheh-kwep-em] groups. Government is collaborating with these nations in the review of the Project.

Background/Status:

- HVC is an existing operational open pit copper-molybdenum mine near Logan Lake, B.C., owned by Teck.
- HVC 2040 would extend mine life from 2028 until approximately 2042, producing approximately an additional 900 million tonnes of ore and 1 billion tonnes of tailings.
- The Project would extend the existing Valley and Highmont pits, extend existing dumps, increase mill capacity, extend the Highland tailings storage facility (TSF), reroute local power and gas lines, and potentially relocate a portion of Highway 97C.
- The EAO completed the Process Planning phase of the HVC 2040 on December 16, 2022. The Process Order sets out how the EAO will conduct its assessment.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Including information that will be required, the methods to be used and the timelines.

- The EAO and the MMO are working together on a joint review process to gain efficiencies in review effort and time.
- Teck is targeting submission of its application for an EA Certificate and *Mines Act* and *Environmental Management Act* joint permit applications in July 2023.
- The EAO and MMO are working closely with the following Nlaka'pamux Nation groups:
 - Citxw Nlaka'pamux Assembly (CNA)
 - Lower Nicola [Ni-co-la] Indian Band (LNIB)
 - Kanaka [Ka-KNOCK-a] Bar Indian Band (Kanaka Bar)
 - Nlaka'pamux Nation Tribal Council (NNTC)
 - Spuzzum First Nation
- The EAO and MMO are working with the following Secwépemc groups:
 - Stk'emlupsemc te Secwépemc Nation (SSN)
 - Bonaparte First Nation (Bonaparte)
- An application for a minor amendment to the HVC *Mines Act* permit to allow for the quA-ymn Solar Project to be located on reclaimed lands within the permitted mine area is anticipated to be referred for decision in May 2023. The Solar project is a joint venture between Bluearth and NNTC member bands.

Contact:

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Operating Steelmaking Coal Mines in British Columbia

Revised: March 17, 2023

Issue: Summary of coal mines currently operating in British Columbia

Response:

- There are currently seven metallurgical coal mines operating in British Columbia (BC), employing approximately 4,728 workers.
- BC is Canada's largest coal producer with all of its operating mines producing metallurgical coal used in steelmaking.
- There are no thermal coal mines operating in the province.
- The estimated value of the coal produced in BC in 2022 was around US \$9.2 billion, up from US \$5.9 billion in 2021. (Due to high coal prices)
- Over 75 percent of the mineral tax the Province collected from BC mines in 2021/22 came from coal operations (\$508 million) which was a significant increase over 2020/21 when it made up only 10% of the mineral tax collected.

Background/Status:

- The following coal mines are currently operating in BC:

Operation	Company	Community	Est. Employees ¹
Elkview	Teck Resources	Sparwood	1,107
Fording River	Teck Resources	Elkford	1,346
Greenhills	Teck Resources	Elkford	711
Line Creek	Teck Resources	Sparwood	684
Wolverine	Conuma Coal	Tumbler Ridge	375
Brule	Conuma Coal	Tumbler Ridge	325
Willow Creek	Conuma Coal	Tumbler Ridge	275

- The estimated value of the coal produced in the Province increased by around 56% from US \$5.9 billion in 2021 to around US \$9.2 billion in 2022 due to higher coal prices.
- Over 75 percent of the mineral tax the Province collected from BC mines in 2021/22 came from coal operations (\$508 million of \$660 million).

Advice/Recommendations; Government Financial Information

¹ As reported by the companies.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Four of BC's seven operating coal mines are in southeast BC:
 - Teck Resources has operated these mines since 2003. In February 2023, Teck announced the reorganization (spinoff) of its business to separate base metals and steelmaking coal into two independent, publicly listed companies: Teck Metals Corp. and Elk Valley Resources Ltd. This transaction will be completed in Q2 2023 following a shareholder vote in late April 2023.
 - The four Elk Valley mines are a significant part of the regional and provincial economy, employing approximately 3,848 people.
 - In April 2020, Teck submitted an Initial Project Description to the Environmental Assessment (EA) Office for the Fording River Extension (FRX) Project at the Fording River mine. It is understood this project will continue to be advanced by Elk Valley Resources.
 - In February 2022, the EA Office issued a readiness decision requiring further engagement with Ktunaxa on FRX.
- Three of BC's seven operating coal mines are located at the Peace River Coalfield near Tumbler Ridge. These are owned by Conuma Coal and employ approximately 975 people from the communities of Tumbler Ridge and Chetwynd.
 - In February 2021, Conuma received an amendment to the Wolverine Mine EA Certificate that would extend the mine life by seven years.
 - The Willow Creek Mine reopened in January 2021 due to optimism regarding coal prices. It had previously been shuttered since June 2020.
- In December 2022, Teck sold all assets and liabilities of its Quintette coal mine located near Tumbler Ridge to a subsidiary of Conuma resources for \$120 million. As part of the agreement, Conuma has agreed to pay an ongoing 25% net profits interest royalty once it recovers its investment in the mine.
- Coal produced at BC mines is transported by rail to shipping terminals in Vancouver (Port Metro, Westshore, or Neptune Terminals) and Prince Rupert (Ridley Terminals).
- Proposed coal projects in the EA process include Crown Mountain (Jameson Resources), Michel Coal Project (North Coal), and Tenas Coal (Allegiance Coal).
- Metallurgical coal prices skyrocketed in 2021 and continued to climb during the first quarter of 2022. Spot prices of metallurgical coal started the year of 2022 at US \$358/tonne and climbed sharply to over US \$600/tonne in March 2022.
 - Surging prices were attributed to strong global steel production as the global economy began recovering from the pandemic, and domestic supply tightness in China resulting in the country raising their level of metallurgical coal imports.
- The price of metallurgical coal has been declining steadily in March due to reduced downstream steel demand as weakening auto production and global inflationary pressures weigh on market sentiment. The latest reported spot price was US \$368/tonne on March 9, 2023.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Metallurgical coal produced in BC is high-quality with low sulfur content, reducing acid rain concerns. Our mines also have significantly lower carbon intensity compared to competing jurisdictions due to hydro grid connection. 50% lower carbon intensity than Australia
- 300% lower carbon intensity than United States

Contact:

Tania Demchuk	A/Assistant Deputy Minister	Mines Competitiveness and Authorizations Division	(778) 698-7222
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Operating Metal Mines in British Columbia

Revised: March 17, 2023

Issue: Summary of metal mines currently operating in British Columbia

Response:

- There are currently nine metal mines operating in British Columbia (BC), employing approximately 5,047 workers.
- The key metals mined in BC are copper, gold, silver, zinc, and molybdenum.
- BC is Canada's largest producer of copper and Canada's only producer of molybdenum, both of which are on Canada's critical minerals list.
- Metal mines accounted for US \$4.4 billion of all mine production in 2021, representing about 43 percent of total major mine output.
- The preliminary estimate for all metal mines production in 2022 is around US \$3.9 billion.
- In March 2023, Artemis Gold obtained *Mines Act* permit to allow construction at its Blackwater Gold project in Central BC.

Background/Status:

- The following 9 metal mines are currently operating in BC:

Operation	Company	Community	Est. Employees ¹	Commodities
Brucejack	Newcrest Mining Limited	Stewart	425	Gold/Silver
Copper Mountain	Copper Mountain Mining Corporation	Princeton	471	Copper/Gold/Silver
Gibraltar	Taseko Mines Limited	Williams Lake	690	Copper/Molybdenum
Highland Valley Copper	Teck Resources Limited	Logan Lake	1,421	Copper/Molybdenum
Mount Milligan	Centerra Gold Inc.	Prince George	618	Copper/Gold
Myra Falls	Nyrstar	Myra Falls	130	Copper/Gold/Silver/ Zinc/Lead

¹ As reported by the companies.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

New Afton	New Gold Inc.	Kamloops	485	Copper/Gold/Silver
Red Chris	Newcrest Mining Limited	Iskut	467	Copper/Gold/Silver
Mount Polley	Imperial Metals Corp.	Williams Lake	340	Copper/Gold/Silver

- Metal mines accounted for US \$4.4 billion of all mine production in 2021 and the preliminary estimate for production from metal mines in 2022 is around US \$3.9 billion.
- The Province collected \$152 million in mineral taxes from BC metal mines in 2021/22 fiscal year. *Advice/Recommendations; Government Financial Information

Advice/Recommend Intergovernmental Communications

Intergovernmental Communications

- Proposed upcoming metal mines include the Eskay Creek, Blackwater Gold, Cariboo Gold, Premier Gold, Red Chris Block Cave Expansion, and Highland Valley Copper 2040 Expansion.
- In March 2023, Artemis Gold obtained a *Mines Act* permit to allow construction at its Blackwater Gold project. Mine production is anticipated in the second half of 2024 and is estimated to create 457 jobs in operations and generate an estimated \$47 million in mineral tax revenue for the province. (\$12.4 B overall revenue).
- *Mines Act* and *Environmental Management Act* amendments were issued in late 2021/early 2022 to restart the Premier Gold mine located near the town of Stewart. Mine production is anticipated as soon as Q2 2024.
- BC's mining sector saw near record levels of investment in mineral exploration in 2022, totalling nearly \$740 million. Around 33.8% of that spending was in advanced exploration by mining companies.
- 2022 and the start of 2023 saw significant investment in BC's major metal mines (Appendix 1) with approximately \$1.3 billion invested in mines and advanced projects such as Blackwater Gold project, Gibraltar Copper mine, Premier Gold project, and KSM.
- Metal prices continued to remain high through most of the first half of 2022 with growing optimism about the overall economic recovery following COVID-19. Beginning in June 2022, demand for industrial metals including copper fell after China imposed further COVID-19 lockdowns and strict containment measures at many of their industrial hubs. Continued monetary tightening to fight inflation and growing fears of a global recession have added to the slowdown in global economic activity and the demand for industrial metals. The price of copper was US \$4.00/lb as of March 7, 2023.
- Metal prices are forecasted to remain strong over the long term to meet a post-COVID surge in demand and rising demand for metals such as copper to build clean energy infrastructure.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Attachment: Appendix 1 – Recent investments in BC’s operating and proposed metal mines.

Contact:

Tania Demchuk	A/Assistant Deputy Minister	Mines Competitiveness and Authorizations Division	(778) 698-7222
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Appendix 1 – Recent investments in BC’s operating and proposed metal mines

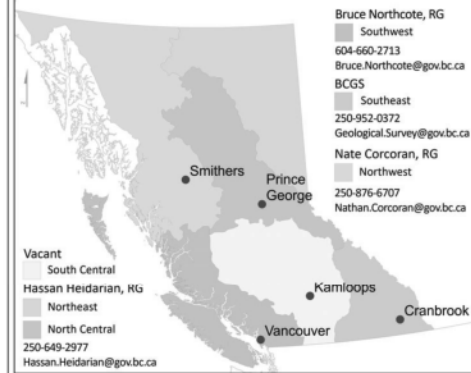
- In February 2023, Artemis Gold closed \$385 million project loan financing and \$40 million standby cost overrun facility with National Bank of Canada, Macquarie Bank Limited, ING Capital LLC, Société Générale, and Bank of Montreal to fund construction costs of its Blackwater Gold Project.
- In February 2023, Taseko Mines acquired an additional 12.5% interest in the Gibraltar copper mine from Sojitz Corporation for \$60 million.
- In January 2023, Ascot Resources closed \$200 million in project financing for construction of its Premier gold project with Sprott Private Resource Streaming and Royalty B Corp, with strategic equity investment by Ccori Apu.
- In January 2023, Skeena Resources closed a royalty sale with Franco-Nevada Corp. pursuant to which Skeena grants a 0.5% net smelter returns royalty of the Eskay Creek project in exchange for \$27 million and cash contingent cash considerations of \$1.5 million.
- In December 2022, Imperial Metals closed \$53 million non-brokered private placement of convertible debentures.
- In September 2022, Skeena Resources entered into a bought deal agreement with a syndicate of underwriters led by Raymond James worth \$30 million.
- In August 2022, Imperial Metals closed \$47 million non-brokered private placement of convertible debentures.
- In August 2022, Mitsubishi Corp. agreed to establish a joint venture called Hard Creek Nickel Corp. with Giga Metals to advance the Turnagain nickel project in north-central BC. Under the agreement, Mitsubishi acquires a 15% interest in Hard Creek for \$8 million.
- In June 2022, Skeena Resources acquired QuestEx Gold and Copper for approximately \$26 million. Properties acquired as part of the deal include the KSP and Kingpin properties which are close to Skeena’s Eskay and Snip projects located in northwest BC.
- In February 2022, Dolly Varden Silver Corp. acquired 100% interest in Fury Gold Mines’ Homestake Project located near Stewart for \$50 million.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- In February 2022, Seabridge Gold announced that its wholly owned subsidiary, KSM Mining ULC, has agreed to sell a secured note that is to be exchanged at maturity for a silver royalty on its 100% owned KSM project to Sprott Resource Streaming and Royalty Corp. and Ontario Teachers' Pension Plan for \$285 million. The proceeds of this sale will be used to continue ongoing physical works at KSM and advance the project towards a designation of 'substantially started'.

Mineral Development Office and Regional Geologist Contacts



British Columbia Geological Survey

British Columbia Ministry of Energy, Mines and Low Carbon Innovation

Adrian Hickin, Chief Geologist and Executive Director
Yao Cui, Resource Information Director
Gordon Clarke, Mineral Development Office Director

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British Columbia Geological Survey
Open File 2023-01



Mines, mine development, selected proposed mines, and selected exploration projects in British Columbia, 2022

Gordon Clarke, Bruce Northcote, Nate Corcoran, Hassan Heidarian, and Kirk Hancock

0 250
Kilometres

Property status (overlay on sector and predominant deposit group)

- Operating mine*
 - Care and Maintenance**
 - Specialty Mill
 - Mine development
 - Proposed mine
 - Mine Reclamation
 - Exploration project
 - Temporary shutdown
- * Operated in or for part of 2022
** Operated within the last 3 years

Sector and predominant deposit group (possible commodities listed beside)

- | | |
|---|---|
| Metal <ul style="list-style-type: none"> ● Porphyry - Cu, Mo, Au, Ag ● Vein, breccia, and stockwork - Au, Ag, Cu, Pb, Zn, Co, Te ● Sediment-hosted - Cu, Co, Pb, Zn, Au, Ag ● Epithermal - Au, Ag, Cu, Sn, Pb, Zn ● Marine volcanic association - Cu, Pb, Zn, Au, Ag ● Skarn - W, Cu, Fe, Au, Ag, Pb, Zn, Mo, Co ● Ultramafic/Mafic - Cu, Ni, PGE, Co, Au, Ag, Me ○ Manto - Ag, Pb, Zn ○ Carbonatites - Nb, REE | Coal <ul style="list-style-type: none"> ■ Metallurgical - Thermal |
| Industrial <ul style="list-style-type: none"> ◆ Industrial rocks - Andesite, basalt, dimension stone, limestone, marble, pumice, shale, silica ◆ Sediment-hosted - Bentonite, magnesite, barite, kaolin, talc ◆ Chemical sediment - Gypsum, diatomite, phosphate ◆ Continental sedimentary and volcanic rocks - Zeolite, silica ◆ Metamorphic-hosted - Graphite | Miscellaneous <ul style="list-style-type: none"> ▲ Slag △ Clay |

Geology

Post accretionary assemblages

- Intrusive rocks
- Supracrustal rocks
- Neogene to Quaternary volcanic rocks

Terranes

- Outboard
- Alexander
- Wrangellia
- Cache Creek and affiliates
- Slide Mountain
- Stikinia
- Quesnellia
- Yukon-Tanana

Ancestral North America

- Cassiar
- Deep-water basin strata
- Platform strata
- Craton and cover

Clarke, G., Northcote, B., Corcoran, N.L., Heidarian, H., and Hancock, K., 2023. Mines, mine development, selected proposed mines, and selected exploration projects in British Columbia, 2022. British Columbia Ministry of Energy, Mines and Low Carbon Innovation, British Columbia Geological Survey Open File 2023-01.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Mineral Tax Revenue Forecast / Revenue Sharing with First Nations

Drafted/Revised: March 10, 2023

Issue: BC's Mineral Tax forecast and Revenue Sharing with First Nations through Economic Community Development Agreements.

Response:

- Mineral tax revenue depends on the level of mineral production in British Columbia's (BC) mining sector along with commodity prices. Mineral tax revenues are mainly supported by coal, copper, and gold sales in the province.
- After reaching record highs at the beginning of 2022, prices for metallurgical coal declined throughout most of 2022 due to inflationary pressures and global economic uncertainty. Recently, prices have been steadily increasing due to extreme weather conditions and labour constraints in Australia; the world's largest metallurgical coal supplier. Advice/Recommendations; Government Financial Information
- Intergovernmental Communications
- Economic Community Development Agreements (ECDA) representing 53 individual mineral tax revenue streams have been signed with 48 FNs and further are underway or planned.
- The Province recognizes that FNs have been requesting amendments to revenue sharing policy. The Ministry of Energy, Mines and Low Carbon Innovation (EMLI) and the Ministry of Indigenous Relations and Reconciliation (MIRR) continue to evaluate ECDA policy improvements as part of the New Fiscal Relationship with Indigenous nations with intentions to bring forward reform as committed in the Declaration on the Rights of Indigenous People's Act (DRIPA) Plan.

Background/Status:

BC Mineral Tax

- The mineral tax is a profit-based tax payable by the mines and quarries operating in BC. The tax was enacted in 1990.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- The program applies a tax on prescribed commodities:
 - Coal (approximately 90 percent of forecasted revenue) - Metallurgical, Thermal, PCI (Pulverized Coal Injection)
 - Base and Precious Metals (approximately 10 percent of revenue) – Copper, Molybdenum, Zinc, Gold and Silver
 - Other (less than 1 percent) – Industrial Minerals, Gemstones, rare elements and dimension stones
- The Mineral Tax Revenue projections are based on forecasted commodity prices, various economic indicators and knowledge of the industry. EMLI is responsible for providing commodity price forecasts while FIN is responsible for the Mineral Tax Revenue projections. EMLI subscribes to a publication called Consensus Economics to generate its price forecasts (Appendix 1).
- There are two tiers of mineral tax:
 - The lower tier is called the Net Current Proceeds tax, calculated at 2 percent of operating cash flows (i.e., revenues plus recoveries minus operating expenditures for the period). This tax is paid before recovery of all operating and capital costs and other deductions.
 - The higher tier is called the Net Revenue Tax, calculated at 13 percent of profits over the life of the mine (i.e., cumulative revenue minus cumulative operating and capital costs and other tax-related deductions). The higher net revenue tax is only paid after recovery of all operating and capital costs and other deductions.

Mineral Tax Revenue Sharing

- In 2008, BC became the first province in Canada to introduce a policy to share with FNs direct provincial mineral tax revenue from new and expanded mines.
- ECDAs secure support for mining projects, increase process certainty for the Province, FNs and industry, and reduce litigation risks for the life of the agreement.
- MIRR leads the negotiation of ECDAs, and FNs receive a percentage of up to 37.5 percent of incremental mineral tax revenue from mine developments in FNs traditional territories.
- The Province's ECDA's represent 53 individual mineral tax revenue sharing streams to FNs which cover 24 metal and coal mines in BC.
- Agreements for mines which have recently come out of care and maintenance (Brule, Wolverine, Willow Creek) were signed at the end of March 2020.
- Other agreements, including those for Myra Falls, Fireside Barite, Cariboo Gold, Elk Gold, Premier, and Kootenay West Gypsum are underway, with further negotiations planned for the near future.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Attachments: Appendix 1 – EMLI’s Price Forecast
Appendix 2 – Payments to FNs through ECDAs in 2021/22

Contact:			
Tania Demchuk	A/Assistant Deputy Minister	Mines Competitiveness and Authorizations Division	778-698-7222

Appendix 1 – EMLI's Price Forecast

	Actual 21/22	Advice/Recommendations; Government Financial Information
Metal Prices (US\$)		
Copper (\$/lb)	4.40	Advice/Recommendations; Government Financial Information
Lead (\$/lb)	1.04	
Zinc (\$/lb)	1.48	
Molybdenum (\$/lb)	17.83	
Gold (\$/oz)	1,819	
Silver (\$/oz)	24.59	
Coal Contract Prices (US\$/mt)		
Metallurgical Coal	250	
Low Vol PCI Coal	179	
Thermal Coal	145	
Mineral Tax (\$'000s)		
Metals	152,192	
Coal	508,013	
Total	660,205	

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Government Financial Information; Intergovernmental Communications

Mine	FNs	Government Financial Information; Intergovernmental Communications
Brucejack	Nisga'a	
	Tahltan	
Copper Mountain	Lower Similkameen	
	Upper Similkameen	
Elk Valley	Ktunaxa Nation	
Gibraltar	Alexandria (?Esdilagh)	
	Xat'sull (Soda Creek)	
Highland Valley Copper	Kanaka Bar	
	NLX	
	NNTC	
	Lower Nicola	
Huckleberry	Cheslatta	
	Nee Tahi Buhn	
	Skin Tyee	
	Westsuweten	
Mt. Milligan	McLeod Lake	
	Nak-azdli	
Mt. Polley	Williams Lake	
	Xats'ull (Soda Creek)	
New Afton	Skeetchestn/Kamloops	
Quinsam Coal	K'omoks	
	We Wai Kai	
	Wei Wai Kum	
Red Chris	Tahltan	
NE Coal	Saulteau	
	West Moberly	
	Halfway River	
	McLeod Lake	

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Financial Security for Mines

Revised: March 8, 2023

Issue: The purpose of mine reclamation security and an update on the Ministry of Energy, Mines and Low Carbon Innovation's work related to updating the reclamation security policy.

Response:

- The Ministry of Energy, Mines and Low Carbon Innovation (EMLI) requires security at the time of mine permitting and conducts regular reviews of the amount held as conditions change throughout the life of the Mine.
- In April 2022, EMLI released an Interim Major Mines Reclamation Security Policy following engagement with industry, environmental organizations and Indigenous groups.
- The policy protects British Columbia (BC) taxpayers while ensuring that mining in BC continues to be nationally and globally competitive.
- EMLI is working to close the gap between reclamation liabilities and the amount of reclamation security held in order to reduce the risk to BC taxpayers, and to limit the potential for mine sites to impact the environment.
- The Ministry is currently supporting the Ministry of Environment and Climate Change Strategy (ENV) on the *Public Interest Bonding Strategy* to ensure owners of large industrial projects are bonded moving forward so they – not BC taxpayers – pay the full costs of environmental cleanup if their projects are abandoned. EMLI's interim policy will help to inform this work, and the policy will be reviewed and updated as necessary to reflect any changes arising from the *Public Interest Bonding Strategy*.

Background/Status:

- The interim policy ensures that permittees for new major mines pay the full cost of environmental cleanup and reclamation for their mine.
- Under the *Mines Act*, the Chief Permitting Officer sets the financial security requirements at the permitting stage, regularly reviews them during mine operations, and can adjust them as liability or other factors change at any point during the mine's life.
- Acceptable forms of security include cash, surety bonds, qualified environmental trusts, and irrevocable standby letters of credit.
- From 2017 to 2021, financial security at major mines has increased from \$1.36B

2023/24 Estimates Note Advice to the Minister

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to \$2.98B and the differential between the amount of financial security and the amount of the reclamation liability has fallen from \$1.43B to \$1.05B.

- Lack of clear policy and insufficient security has been identified in several recent AG reports across the country (Ontario 2015, Alberta 2015, Nova Scotia 2014). This is an evolving area of policy development, and BC is at the forefront of this with the Interim Reclamation Security Policy and the Public Interest Bonding Strategy.
- EMLI's interim policy is based on current best practices as informed by the Ernst and Young report, the Stantec report and input from industry, environmental organizations, and Indigenous Organizations.

Primary objectives of the interim policy include:

- Enhance the environmental sustainability of the mining sector;
 - Provide transparency with respect to how reclamation liability cost estimates are to be calculated;
 - Reduce the differential between the mining sector's reclamation liabilities and the reclamation securities held by the Province for existing mines;
 - Promote on-going exploration to reduce the risk of default and to promote stable mining communities;
 - Encourage progressive reclamation and proactive source control measures to reduce the need for long-term water treatment and other environmental liabilities;
 - Maintain and enhance BC's strong practices and reputation with respect to Environmental, Social, and Governance factors;
 - Support the continued competitiveness of BC's mining industry to ensure that this critical industry continues to thrive in BC.
- EMLI is working to close the historic gap between reclamation liabilities and the amount of reclamation security held to reduce the risk to BC taxpayers, and to limit the potential for mines sites to impact the environment.
 - The Ministry is currently supporting ENV on the *Public Interest Bonding Strategy* to ensure owners of large industrial projects are bonded moving forward so they – not BC taxpayers – pay the full costs of environmental cleanup if their projects are abandoned. EMLI's interim policy will help to inform this work, and the policy will be reviewed and updated as necessary following the conclusion of that work.
 - Total security for both major and regional mines held by the Province has risen from \$10 million in 1984 to approximately \$3.1 billion as of March 2023.

Attachments: Appendix 1 – Reclamation Security Deposits held by the Province

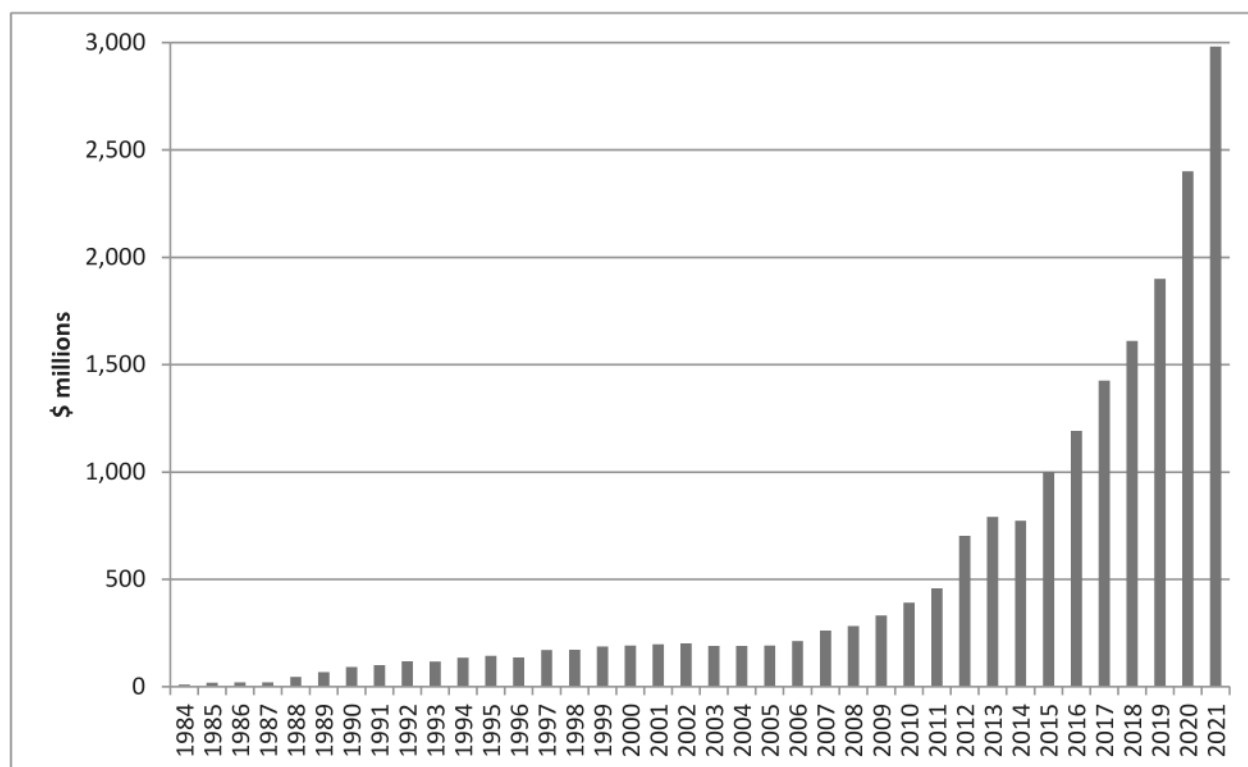
2023/24 Estimates Note Advice to the Minister

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Contact:

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Appendix 1 – Reclamation Security Deposits held by the Province



<p>ESTIMATES NOTE (2023)</p> <p>Confidential</p> <p>Ministry of Environment and Climate Change Strategy Environmental Protection Division</p>	<p>SE BC Initiatives</p>
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KEY FACTS

Area-Based Management Plan (ABMP):

- **The ABMP for the Elk Valley is generally working, as it is driving significant investment in water quality (WQ) treatment and it provides a strategy to manage cumulative effects.**
- **WQ targets are being met in most parts of the watershed, but selenium and nitrate levels remain elevated in the Fording River and areas close to the mine sites. An adaptive approach is being taken and adjustments are being made to Teck's treatment plans and other strategies to ensure continued timely progress towards achieving the targets.**
- To address learnings and strengthen environmental protection, Ministry staff have been working on a process to develop amendments (updates) to the ABMP.
- The amendment process will include deep engagement with Ktunaxa, incorporate advice from independent experts, and opportunities for industry, Canadian and US agencies and Tribes, and stakeholders to provide input.
- The amended Plan will be government-owned, reflect improved understanding and science regarding Koocanusa Reservoir, better support adaptive management, and be applicable for all proponents in the valley.
- Completion of B.C. and Ktunaxa Nation Council's (KNC) proposed Koocanusa Reservoir selenium (Se) Water Quality Objective (WQO) will be undertaken as part of a broader process to reassess the ABMP target for Se in the reservoir. That process will be informed by additional monitoring and assessment data, plus other relevant information such as achievability and socio-economic factors.

Water Quality Treatment:

- **Until recently, decades of mining in the Elk Valley have led to significant waste rock accumulation, alteration of land and watercourses, poorly understood environmental impacts, and degrading WQ trends. However, this trajectory is starting to change with Teck Coal Ltd. (Teck) bringing new water treatment facilities online.**
- Levels of Se and nitrate (NO₃) have started to stabilize at some locations in the valley, and Teck is predicting full stabilization and some reductions by the end of 2023 once their fourth water treatment facility comes online.
- Record amounts of Se and NO₃ are now being removed from the watershed and

by the end of 2023 Teck expects to be treating 77 million liters/day representing an investment of close to \$2B in water treatment. Teck will be adding new facilities every one to two years, with an expected treatment requirement of 193.5M liters/day by 2042.

- New Saturated Rock Fill technology is showing effective treatment of selenium and nitrate, and is proving to be a more robust and cheaper technology than the active water treatment facilities that are also being used.
 - Teck continues to make major investments in research and development, and is at the global forefront in developing technologies for both treatment and source control of coal mining impacts.
- Teck is predicting full compliance with all ABMP water quality targets by 2028.

Current State of the Aquatic Environment:

- Monitoring in the valley shows functioning aquatic ecosystems in mainstem water bodies (such as the Elk River). However, chronic toxicity impacts are present in some areas, and many tributaries are heavily impacted both from infill and water quality.
- Monitoring and assessment in Koocanusa Reservoir has not detected ecosystem impacts, although Se levels in the water exceed BC's proposed water WQO, and some fish tissue exceeds thresholds where effects to the fish are possible. The majority of fish tissue samples in Koocanusa (98%) are below the proposed WQO threshold for safe consumption by humans, including at the preferred consumption rate for Ktunaxa people.

Compliance:

- ENV is currently updating its four-year Compliance Plan, which is developed with input from KNC, and includes all 33 of Teck's *Environmental Management Act* (EMA) authorizations.
 - Over 200 inspections have been completed since 2014, including 62 inspections of the Valley-wide EMA permit.
 - Enforcement responses are escalating over time, with increasing numbers of Administrative Penalty (AP) referrals for ongoing non-compliances. Over \$17.2M in APs have already been assessed to Teck, and there are 12 more APs in progress.
 - Most notably, on Jan. 31, 2023 Teck was fined over \$16.5 million for significant water quality-related non-compliances that occurred between 2019 and 2021 and delays in implementing water treatment.
- Permitting teams continue to prioritize reviews for mitigation projects and other applications that support achievement of ABMP targets, and for Teck to get back into compliance.

Se Water Quality Objective (WQO)

- **A draft Se WQO for Koocanusa Reservoir was developed by ENV and KNC through a rigorous multi-year collaborative and transparent process using the best available data, sound science, and established BC-specific protocols and procedures for developing WQOs.**
- **BC is preparing to proceed to the public comment period on a draft Se WQO for Koocanusa Reservoir later this spring, once the ABMP amendment process has been initiated.**
- Approved WQOs are policy goals in B.C., and represent conditions considered to be of very low risk. They are not regulatory standards, like in other jurisdictions such as the U.S.
- The draft Se WQO water concentration is 0.85 µg/L and the whole-body fish tissue Se WQO is 5.2 mg/kg. These numbers will conservatively protect all water uses and values in Koocanusa, including the most sensitive use which is human health based on a preferred consumption rate by Ktunaxa peoples. The proposed water concentration is similar to background levels, and may be difficult to achieve in the short term given the extent of mining in the watershed.
- Montana's Se standard, which was developed using the same bioaccumulation model used by B.C. (Montana's standard is 0.8 µg/L), continues to be challenged.

Cumulative Effects and Land Stewardship:

- **Cumulative Effects risk assessments indicate valued components (Grizzly Bear, High Elevation Grasslands, Westslope Cutthroat Trout, Bighorn Sheep, Riparian) are at high risk.**
- **Under the leadership of WLRS & FOR, BC is working with Ktunaxa to advance work on key strategic stewardship initiatives including Upper Fording River Westslope Cutthroat Trout Recovery, Cumulative Effects and Land Stewardship Planning.**
- Through the cumulative effects work, the Province and Ktunaxa are establishing objectives and management metrics for each valued component.
- There is a high degree of overlap between the current and proposed mine footprints, leases and licenses with the at-risk High Elevation Grassland (HEG) ecosystem units. Stewardship which applies the full scope of the mitigation hierarchy (avoid, minimize, restore, offset) is required to sustain HEG on the landscape.
- Bighorn Sheep also use HEG and adjacent areas as winter range. Securing portions of critical winter range and maintaining winter habitat function through mitigation are the most pressing stewardship challenges for this highly valued species.
- The Westslope Cutthroat Trout population collapsed in the Upper Fording River in 2019. The Province and Ktunaxa Nation have developed a recovery plan and have collaborated with Teck to implement actions to support recovery. Reducing risk from permitted water withdrawals and advancing instream habitat

improvements are early actions.

- Formal implementation of the objectives through Land Use Planning will be key to addressing current and potential impacts to all valued components.
- A Land Use Planning process has been developed by B.C. and Ktunaxa and has been endorsed by Ktunaxa. B.C.'s endorsement is required prior to starting a Tier 1 Land Use Plan for the Elk and Flathead Valleys that will be applicable to the natural resource sector.

Fording River Extension (FRX) – Readiness Decision

- **The Chief Executive Assessment Officer and Associate Deputy Minister of the EAO has issued a Readiness Decision for the FRX Project to require Teck to submit a revised detailed project description.**
- Teck has the option to submit a revised detailed project description that addresses deficiencies outlined by the EAO through collaboration with the Ktunaxa Nation to include plausible measures to mitigate extraordinarily adverse effects to the environment, the Ktunaxa Nation and its rights. Teck could also withdraw from the Environmental Assessment (EA) process entirely and/or restart another process for a different project.
- FRX has been in the Readiness Decision phase of the EA process since July 2021, to allow time for Teck and the EAO to respond to Ktunaxa's request to suspend all EAs in the Elk Valley and to better understand concerns with the Project resulting in extraordinarily adverse effects on Ktunaxa and its rights due to existing and cumulative impacts.
- Ktunaxa and EAO concluded a facilitated dispute resolution process in December 2022 as provided for by the *Environmental Assessment Act* (2018) to resolve substantial disputes at process milestones. Ktunaxa initiated dispute resolution at the Readiness Decision phase for the FRX project. This was the first dispute resolution process conducted by the EAO under the Act.
- Ktunaxa disputed the EAO's preliminary recommendation for the Readiness Decision that the Project proceed to an EA. Ktunaxa submitted their own recommendation that the Project be terminated on the basis that the project will result in extraordinarily adverse effects on multiple biophysical values, Ktunaxa rights and the Ktunaxa Nation itself.
- At the conclusion of the dispute resolution process, the EAO revised the Readiness Decision recommendation to require Teck to submit a revised Detailed Project Description to address deficiencies identified through the dispute resolution process. Despite best efforts, the EAO did not reach consensus with Ktunaxa on the revised recommendation as Ktunaxa continued to view termination as the appropriate decision at this stage.
- Although the EAO and Ktunaxa did not reach consensus on the Readiness Decision recommendation, Ktunaxa has indicated an openness to the consideration of Teck submitting a different project that is more compatible with Ktunaxa rights and one that accounts for existing conditions. Ktunaxa also support the approach to specify requirements for engagement and information in

a revised Detailed Project Description with the proviso that Ktunaxa continue to recommend termination.

- As an outcome of dispute resolution and discussions about jurisdiction and self-determination in decision-making, Ktunaxa requested that an agreement under Section 7 of the *Declaration on the Rights of Indigenous Peoples Act* be explored with respect to Ktunaxa consent for projects proposed in Qukin ʔamakʔis (the Elk Valley).

Intergovernmental Communications

Intergovernmental Context:

- **The Province is undertaking a comprehensive approach to addressing transboundary water quality concerns which includes:**
 - **Strengthening regulatory requirements for Elk Valley mining operations including amendments to provincial permits and to the ABMP, including release of the Se WQO for Koocanusa Reservoir;**
 - **Continued compliance and enforcement activities to hold Teck accountable;**
 - **Increased transparency of regulatory efforts, and data and monitoring activities, through the launch of a new Elk Valley Water Quality Hub website which occurred on Feb. 17, 2023;**
 - **Providing input into the federal government's proposed Coal Mining Effluent Regulation; and**
 - **Enhancing transboundary governance, coordination, and information sharing.**
- There continues to be pressure from U.S. federal agencies, U.S. Tribes and Ktunaxa Nations for International Joint Commission (IJC) involvement to improve water quality in the Elk Valley and Koocanusa Reservoir.
- The Province continues to work with all parties to improve water quality in the area without the involvement of the IJC.
- B.C. will make further improvements to these initiatives should issues be identified that are not currently captured.
- The federal government is also considering options for an alternative approach to the IJC. B.C. has requested collaboration and coordination between B.C. and Canada, and with Ktunaxa, to ensure the approaches are aligned to provide comprehensive environmental protection that addresses Ktunaxa's concerns.

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EPD, 250-802-7149

Major Amendments

Project	Product	Employment	Location	Environmental Assessment / Permitting	Cap. Costs	Proponent/Owner
Mine Expansion Amendments						
Bonanza Ledge /QR	Gold	130 during Operations 30 during Care and Maintenance	Wells	<ul style="list-style-type: none"> BL MA permit was amended on Dec 20, 2022. Review comments from Nations and Osisko on Draft BL EMA permit is expected by March 14, 2023. Cariboo Gold Joint Application proposing to use QR Mill and BL mine site is anticipated March 31, 2023. 	\$35 M	Barkerville Gold Mines / Osisko Development
Wolverine Hermann Pit Expansion	Coal	300 employees (currently employed at Wolverine). May expand to 400 during construction of Hermann Pit	Tumbler Ridge	<ul style="list-style-type: none"> EAC Amendment issued February 2021 Early works Mines Act application for harvesting related to the access road issued June 2021 Joint Permitting Application (MA/EMA) submitted June 14, 2021. Time delays attributable to proponent in providing responses to MRC. Round 3 responses provided in March 2023. To be reviewed by MRC once remaining information has been provided by Proponent. 	\$68 M	Conuma Resources Ltd.

Major Amendments

Project	Product	Employment	Location	Environmental Assessment / Permitting	Cap. Costs	Proponent/Owner
Mine Expansion Amendments						
Highland Valley Copper 2040	Copper/ Molybdenum	1,320 during Operations	Logan Lake	<ul style="list-style-type: none"> Process Planning phase of EA completed December 16, 2022. Permitting in pre-application stage. Anticipated EAC and permit applications July 2023. 	\$2.5 B	Teck Resources
New Afton – C Zone	Copper/Gold/ Silver	410 during operations	Kamloops	<ul style="list-style-type: none"> C Zone Mines Act Permit Amendment issued October 2022. 	\$460 M	New Gold
Teck Fording River Extension (FRX)	Coal	1,300 during operations	Elkford	<ul style="list-style-type: none"> EA Readiness Decision issued returning Detailed Project Description to Teck for redesign and resubmission with increased consultation. 	Unknown (Teck has not provided)	Teck Coal Limited (Fording River Operations)
Red Chris	Copper/Gold	500 during operations	80 km south of Dease Lake	<ul style="list-style-type: none"> Pre-Production Mines Act amendment issued Dec 8, 2022 for underground block cave mine. Current mine is an Open Pit. EAC amendment application for Production of ore expected to be submitted in November 2023 and pre-application phase for permitting to commence Fall 2023. 	\$2.6 B for entire block cave exploration and production	Newcrest Mining Limited (70%) owner/operator Imperial Metals Corporation (30%) owner

Major Amendments

Project	Product	Employment	Location	Environmental Assessment / Permitting	Cap. Costs	Proponent/Owner
Mine Expansion Amendments						
Eskay Creek	Gold/Silver	400 during operations	Stewart	<ul style="list-style-type: none"> Tahltan Central Government and EAO provided their determination that the Eskay Creek Project could proceed to an environmental assessment in November 2022; project is now in the process planning phase to end on March 20, 2023. Technical Sample Joint MA/EMA application anticipated early Q3 2023. The company is also in the process of applying for several ancillary applications (land tenures, OLTG, WSA applications). 	\$488 M Since 2014: Skeena reports investment of \$310M in BC economy 2022: Skeena reports investment of \$71M in BC	Skeena Resources Ltd.
Mount Polley	Copper/Gold	300 during operations	Likely	<ul style="list-style-type: none"> In pre-application phase for expansion to the mine's Springer Pit and increase in TSF height; permit application expected August 2023. Application to develop new dry stack tailings facility under review; decision anticipated April 2023. 	\$32 M	Imperial Metals Corporation

Major Amendments

Project	Product	Employment	Location	Environmental Assessment / Permitting	Cap. Costs	Proponent/Owner
Mine Expansion Amendments						
Brucejack	Gold/Silver		65 km NNW of Stewart	<ul style="list-style-type: none"> Multiple permitting processes underway for this operational mine (and EAC amendments) including Joint Application anticipated March 2023 for increased daily rate of production that would result in a reduced mine life by 3 years. 	TBD	Pretium Resources
Copper Mountain	Copper/Gold/Silver	465 during operations	20 km from Princeton	<ul style="list-style-type: none"> Copper Mountain Mine is planning to submit the New Ingerbelle Application for a mine expansion in Q2 2023 following further engagement with Indigenous Nations. EMLI is working with Copper Mountain, and the Indigenous Nations on reviewing the Mine Plan and Reclamation Program Update and on an Engagement Framework to address many concerns the Nations have with the mine. 	\$214 M	Copper Mountain Mining Ltd.

Major Amendments

Project	Product	Employment	Location	Environmental Assessment / Permitting	Cap. Costs	Proponent/Owner
Mine Expansion Amendments						
Brule	Coal	325	Tumbler Ridge	<ul style="list-style-type: none"> • In Pre-application stage for expansion of the Blind Pit; permit application expected in April 2023 • Would increase mine life by 1 yr. Current end of operations expected in Q1 2024. 	Unknown	Conuma Resources Ltd.
Dome Mtn	Gold	17 during operations	38km from Smithers	<ul style="list-style-type: none"> • In screening stage for mine restart. • Process has been delayed by proponents' inability to provide required information to move to full review. • First mining project to implement the 2020 Foundation Agreement 	Unknown	Gavin Mines Ltd.

Major Amendments

Project	Product	Employment	Location	Environmental Assessment / Permitting	Cap. Costs	Proponent/Owner
Other Major Amendments						
Silvertip	Silver/Lead/ Zinc	64 currently at mine site	16 km south of the Yukon border (90 km SW of Watson Lake)	<ul style="list-style-type: none"> Mine went into care and maintenance on February 19, 2020 and Proponent is advancing surface and underground exploration for potential expansion. NPAG rock for construction and Phase 1 of the Underground Exploration Mines Act Permit Amendments were issued 2022. Application for joint MA/EMA amendments for Phase 2 underground exploration beyond the limits of the existing PMA, mine plan and water management capacity anticipated Q2 2023. Coeur has indicated to Nations they will be seeking an EAC for eventual mine expansion. 	Unknown	Coeur Silvertip Holdings Ltd.

Major Amendments

Project	Product	Employment	Location	Environmental Assessment / Permitting	Cap. Costs	Proponent/Owner
Other Major Amendments						
Teck Coal Water Treatment Projects	Water treatment facilities	Unknown	Elk Valley	<ul style="list-style-type: none"> Fording River – North Saturated Rock Fill Phase 2 in commissioning stage; Operations application in draft permit review stage 	\$700 M (2022-2024) For water treatment and mgmt projects	Teck Resources Limited
Premier	Gold	573 Constructions 220 Operations	25 km NNW of Stewart	<ul style="list-style-type: none"> Applications for MA and EMA permits for administrative permit updates, PAG classification and stockpiles expected April 2023. Notices of Departure for water treatment mitigations, change of portal location and pit stability plan review underway 	\$160 M	Ascot Resources
Gibraltar	Copper/ Molybdenum	700	19 km from McLeese Lake	<ul style="list-style-type: none"> Joint application for amendments to MA and EMA Permits for a water treatment plant are under review. Decisions anticipated in May 2023. Amendment to the EMA for discharges to the Fraser River issued June 2022 	\$325 M	Taseko Mines

Major Amendments

Project	Product	Employment	Location	Environmental Assessment / Permitting	Cap. Costs	Proponent/Owner
Other Major Amendments						
Kerr-Suphurets-Mitchell (KSM)	Gold/Copper	Approximately 280,698 FTE jobs over 59 years In January 2023, Tahltan Nation and Nisga'a Nation announced new partnership through the Treaty Creek Limited Partnership, allowing for opportunities for Nation members for training, employment, and contraction with KSM.	65 km NW of Stewart	<ul style="list-style-type: none"> Five MX permits were amalgamated under a single MA (M-245) Permit in Q2 2022 M-245 application for administrative changes, including expansion of PMA received March 6, 2023. Seabridge started applying for permits in 2022 for the "site capture" phase of the Project and has demonstrated preparation for many additional required permits in 2023, including EMA permit for water discharge. 	\$54.6 B over 59 years Seabridge reports 2022 expenditure s of \$197 M with \$650M spent to date Seabridge reports budget of \$230 M for 2023	KSM Mining ULC (Subsidiary of Seabridge Gold)

2023/24 Estimates Note Advice to the Minister

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Title: Red Chris Mine Project

Drafted/Revised: March 13, 2023

Issue: Status of Red Chris Block Cave Project

Response:

- Newcrest Red Chris Mining Limited (NRCM) became owner and operator of the Mine on August 15, 2019, after entering into an asset purchase agreement with Imperial Metals Limited to acquire 70 percent of the Mine.
- Currently, up to 1000 people are employed at the Red Chris Mine during operations and construction. Approximately 40 percent of NRCM's employees are from northwestern BC communities, including 220 members of the Tahltan Nation.
- Newcrest is currently in Environmental Assessment (EA) and early permitting to transition from an open pit operation to a block cave underground mining method to access higher grade ore at depth as the open pit resource nears depletion. The transition is expected to be complete in 2027 and the mine life is estimated to be about 30 years.
- Cabinet approved a mandate to enter Declaration on the *Rights of Indigenous Peoples Act* negotiations with Tahltan regarding the EA decision for the upcoming block cave amendment. At the time the mandate was sought, it was understood that the consent provisions of the EA Act do not apply to EA Certificate amendments. Tahltan and BC have been exploring options for implementing the cabinet mandate to negotiate a consent agreement.

Background/Status:

- The Red Chris property is within the territory of the Tahltan Nation and situated approximately 18 km southeast of the village of Iskut, 80 km south of Dease Lake, and 450 km north of the town of Smithers.
- The Red Chris Mine has been in continuous operation since February 2015 and has an existing annual operating expenditure of approximately \$46 to 52 million.
- In August 2019, Imperial Metals Limited (Imperial) and Newcrest Mining Limited formed a joint venture worth US\$806.5 (~CAN\$1,074.7) million for the operation of the Red Chris Mine. NRCM, acting as operator, holds a 70 percent interest and Imperial retains a 30 percent joint venture interest.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
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- NRCM is transitioning from the current open pit operation to a block cave underground mining method to access higher grade ore at depth as the open pit resource nears depletion.
- Briefings with provincial Ministers on options for implementing the cabinet mandate to negotiate a consent agreement regarding the EA decision for the upcoming block cave amendment occurred in late February 2023. NRCM is supportive of a consent agreement being reached. Once BC and Tahltan have confirmed an agreement on the implementation approach, NRCM will be provided with an update, likely in March 2023.
- Tahltan and the Province are engaging at a deep level on permitting. This engagement has been guided by the Red Chris Management Agreement dated January 24, 2017, an agreement between Tahltan and the Province. To date, Tahltan and the Province have worked collaboratively on the review of permit applications and Newcrest is responsive and active in their engagement with Tahltan.
- On December 8, 2022, Newcrest received an amendment to their Mines Act (MA) permit for block cave mining pre-production work at Red Chris including completing an extension to an exploration decline. This MA amendment also included an increase in the reclamation security held by the province to \$135M. The balance is to be paid in two instalments, the first was paid on January 31, 2023, and the second is due on January 31, 2024.
- The next step for Newcrest in permitting block cave mining at Red Chris is to seek a permit to produce ore and other underground mining activities through *Mines Act, Environmental Management Act and Environmental Assessment Certificate* amendments. These processes are anticipated to commence in mid to late 2023.
- Beyond 2023, Newcrest anticipates submitting applications to permit the expansion of block cave mining production and the tailings impoundment area in 2034.
- In January 2023, the British Columbia Labour Relations Board (BCLRB) directed the United Steelworkers Union Local 1-1937 and Newcrest (Red Chris Mine) to binding arbitration of a first collective agreement. The arbitration date is set for April 2023. Newcrest has appealed to the BCLRB to reconsider the decision to impose the first contract arbitration process under Section 55 of the BC Labour Code.

2023/24 Estimates Note Advice to the Minister

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- On February 5, 2023, Newmont Corporation, the world's largest gold miner by output, confirmed it has submitted a non-binding proposal to acquire 100 percent of the issued share capital of Newcrest Mining Limited by way of a scheme of arrangement for the equivalent of US\$17 billion. Newcrest rejected the proposal on February 15, 2023, suggesting an improved proposal was required. The proposed transaction, should it be completed, would combine two of the sector's top senior gold producers and strengthen Newmont's position in British Columbia with the acquisition of Newcrest's Red Chris Mine, and Brucejack Gold Mine.

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2023/24 Estimates Note Advice to the Minister

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Title: Eskay Creek Revitalization Project

Drafted/Revised: March 9, 2023

Issue: An overview of the Eskay Creek Mine Revitalization Project

Response:

- A Process Charter has been signed between the Province, Tahltan Central Government (Tahltan) and Skeena Resources Ltd. (Skeena) to set out efficiencies for the regulatory review and approvals processes.
- The Environmental Assessment Office (EAO) and Tahltan have developed a consent based decision-making process pursuant to Section 7 of the *Declaration Act*, which was signed on June 6, 2022. This landmark agreement represents the first such agreement under the Declaration on the Rights of *Indigenous Peoples Act* (DRIPA) and British Columbia (BC) is very proud of this achievement.
- The Province is committed to timely permitting process, understanding the impact and constraints of weather in the region, in particular high snowfall limiting the construction season.
- A creative approach is being undertaken for this Project with the province, Tahltan and Skeena working together on the environmental assessment (EA) and finding regulatory efficiencies to commence permitting.

Background/Status:

- The Eskay Creek Revitalization Project (Eskay) is proposed by Skeena, a Vancouver-based junior exploration and development company. The Project is in the Golden Triangle region of British Columbia, 83 km northwest of Stewart. The mine site has all-weather road access and is near the 287-kV Northwest Transmission Line. The Volcano Creek Hydroelectric Power Station is 7 km away from Eskay.
- Originally commissioned in 1994, the Eskay Creek Mine operated for 14 years and produced approximately 3.3 million ounces of gold and 160 million ounces of silver and was once the world's highest-grade gold mine and fifth-largest silver mine by volume. Over \$2 billion has been invested in infrastructure in the area.
- Eskay is an open-pit mine with on-site processing of the mined material by conventional milling and flotation to recover a gold-silver concentrate for provision to third-party smelters. The anticipated mine lifespan is 13 to 16 years, and the mine would employ 250 people during the 8 to 11 years of operation.

2023/24 Estimates Note Advice to the Minister

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- Eskay lies within the Tahltan Territory and within the asserted traditional territory of the Tsetsaut Skii Km Lax Ha. Concentrate transported to the Stewart Port via Highway 37 and 37A will pass through the Nass and Nass Wildlife Areas of the Nisga'a Nation and the asserted traditional territory of the Gitanyow Nation.
- A federal impact assessment is required and on November 29, 2022, the Federal Minister made the decision to proceed with a substituted EA process.
- On November 18, 2022, Tahltan and EAO provided their determination that Eskay could proceed to an EA. On that same date, the Project began the process planning phase of the assessment which is scheduled to end in March 2023.
- The EAO and Tahltan have developed a Decision-Making Agreement that sets out a consent based decision-making process for the Eskay EA Certificate, pursuant to Section 7(1)(b) of the Declaration on the Rights of *Indigenous Peoples Act (Declaration Act)*. The Agreement was signed on June 6, 2022.
- Skeena plans to conduct a Technical Sample program prior to starting Eskay. The company plans to submit a *Mines Act* and *Environmental Management Act* Joint permit application for the Technical Sample program in September 2023. Permitting Pre -Application phase for Eskay would commence in Q4 2023.

Attachments: N/A

Cross Reference: N/A

Contact:

Tania Demchuk	A/ADM	MCAD	778 698-7222
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Mining Competitiveness

Drafted/Revised: March 22, 2023

Issue: Challenges and opportunities for British Columbia's mining sector competitiveness

Response:

- The competitiveness of British Columbia's (BC) mining sector is key to attracting investment to mineral exploration and mine development.
- The Province's fiscal incentives, rich mineral deposits, world-class infrastructure and abundant source of clean and affordable energy continues to make BC an attractive jurisdiction for mine investors with approximately \$691 million invested in BC companies and assets in 2022.
- The Province is advancing initiatives to leverage and promote BC's Environmental/Social/Governance (ESG) strengths such as low carbon footprint, commitment to reconciliation and strong regulatory regime.
- Budget 2023 provides \$6 million over 3 years to develop a Critical Minerals Strategy to support future development in critical minerals extraction and value chain opportunities.
- Budget 2023 provides \$77 million over three years to help speed up natural resource permitting and begin work to modernize the permitting service delivery model.
- The Blackwater mine received its *Mines Act* permit in March 2023, which will reinforce investor confidence in the Province's ability to permit a major mining project in a timely manner with Indigenous support.

Background/Status:

- The Ministry of Energy, Mines and Low Carbon Innovation (EMLI) service plan highlights EMLI's commitment to position BC as an attractive, responsible, and competitive jurisdiction for investment in the mining sector.
- On April 12, 2022, the Fraser Institute released its annual report ranking jurisdictional investment attractiveness for 2021; BC ranked 16th out of 84 jurisdictions for overall investment. In 2020, BC ranked 17th.
- The Mining Association of BC (MABC) and independent studies commissioned by EMLI have noted the carbon tax as impacting the competitiveness of BC operations, in addition to low ore grades, distance of mines to tidewater, challenging relationships with Indigenous Nations and regulatory complexity.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- To address these challenges, support growth and competitiveness more broadly and support economic recovery from the COVID-19 pandemic, the Province has implemented a wide range of initiatives to support mining in BC.

Fiscal Measures

- Budget 2019 made the Mining Flow-Through Share Tax Credit and the BC Mining Exploration Tax Credit permanent incentives, and extended the New Mines Allowance for 5 years.
- Budget 2020 removed location restrictions on pollution control and waste management machinery/equipment from the Provincial Sales Tax exemption.
- The BC Mining Customer Payment Plan (2016-21) enhanced BC's competitiveness by allowing mines to defer electricity payments during low commodity price cycles. EMLI is now evaluating reimplementing this program and making it permanent as recommended by the Mining Jobs Task Force (MJTF).

Permitting

- Incremental resources were secured through Budget 2022 to add 38 new Full Time Equivalents (FTEs) across mining regulatory agencies to ensure thorough, timely reviews and address backlogs in regional permitting.
- Budget 2023 provides \$77 million over three years to help speed up natural resource permitting and begin work to modernize the permitting service delivery model. Funding will be used to support an additional 160 staff across several ministries to reduce permit backlogs, allow projects to move forward and unlock economic potential.

Carbon Tax

- Budget 2023 announced that on April 1, 2024 BC will transition from its current industrial carbon pricing system, the CleanBC Program for Industry, to a made-in-BC Output-Based Pricing System (OBPS). These changes will ensure that BC's carbon pricing regime meets federal stringency requirements.
- Further policy development and engagement to finalize the details of BC's OBPS will be conducted over 2023 by the Ministries of Environment and Climate Change Strategy and Finance.
- The Climate Action Secretariat has implemented the CleanBC Industrial Incentive Program to support industrial emissions reductions and minimizes carbon leakage by supporting industrial competitiveness.
- The CleanBC Industry Fund (CIF) invests a portion of carbon tax revenues into businesses working on emission reduction projects, including mining companies. Approximately \$40 million of funding was invested in all CIF projects for 2021/22. Funding allocations to mining have been substantive, with a combined total of

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

approximately \$19 million invested across seven projects in 2020 and 2021 (Attachment 1).

ESG

- EMLI is working to position BC as a leading jurisdiction to attract ESG investment capital that has been valued at over \$100 trillion globally through branding efforts and a digital platform to surface relevant ESG data in a verifiable way.
 - The Mines Digital Trust pilot is underway in partnership with the Ministry of Citizen Services.
 - Through StrongerBC, the ESG Centre of Excellence is being established to provide support to BC businesses to develop, promote and market their goods and services under a provincial ESG brand.

Critical Minerals

- Budget 2023 provides \$6 million over three years to develop a BC Critical Minerals Strategy. The strategy will aim to drive potential future clean economic development through increased access to geoscience to facilitate critical mineral exploration and production, and assess potential for critical minerals processing, manufacturing, and recycling.

2022 Investment in mining and mineral exploration in BC

- 2022 saw investment of \$691 million in mines and advanced projects.
- Exploration expenditures in BC totalled an estimated \$740M in 2022 which was up from \$660M in 2021. This is the highest amount on record for the province. Approximately 61 percent of these expenditures were made in northwest BC.

Attachments: Attachment 1 – CleanBC CIF Funded Mining Projects

Contact:

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CleanBC industry Fund – Funded Projects					
Year	Funding (CA\$)	Mining Projects	Project Name	Project Description	Company
Emissions Performance Projects					
2021	\$448,243	Newcrest Red Chris mine	Fuel Switching project	Switch from diesel generator to the BC Hydro electricity grid	Newcrest Red Chris Mining Ltd.
2021 Total	\$448,243				
2020	\$8,000,000	Copper Mountain Mine	Energy Efficiency, Renewable Energy project	Pilot an electric trolley system for haul trucks	Copper Mountain Mine Ltd.
	\$7,950,000	Brucejack Gold Mine	Fuel Switching project	Switch from 13 diesel powered haul trucks with seven electric haul trucks	Pretium Resources Inc.
	\$512,137	Fording River Operations	Fuel Switching project	Replace two diesel buses with two zero emission electric buses	Teck Resources
	\$512,137	Greenhills Operations	Fuel Switching project	Replace two diesel buses with two zero emission electric buses	Teck Resources
	\$768,670	Highland Valley Copper Operations	Fuel Switching project	Replace existing tractor trucks with a zero emission electric truck	Teck Resources
	\$325,000	Line Creek Operations	Waste Heat Recovery project	Install heat exchange units and upgrade the fans to variable speed operation	Teck Resources
2020 Total	\$18,067,944				
2019	\$439,441	Mount Milligan Mine	Fuel Switching project	Replace all diesel-powered generators with electric-powered equipment	Centerra Gold Inc.
	\$2,000,000	Copper Mountain Mine	Fuel Switching, Energy Efficiency project	Pilot an electric trolley system for 4 haul trucks	Copper Mountain Mine Ltd
				Pilot a zero-emissions shuttle program with two electric buses for staff at its Elkview mining operation & to replace the burner head in its smelting furnace at its Trail operation with a more efficient model.	Teck Resources
2019 Total	\$434,823	Trail and Elkview Operations	Fuel Switching, Process Improvement project		
	\$2,874,264				

Project Feasibility Studies					
2021	\$174,093	Copper Mountain Mine	Electric Haul Truck Trolley Assist System study	Study will determine the technical and economic feasibility of adding corners to a haul truck trolley assist system	Copper Mountain Mine Ltd.
	\$350,000	Teck Trail Operations	Carbon Capture, Utilization and Storage Pilot Plant study	The study will assess the feasibility and determine the appropriate technology and associated cost estimate for a carbon capture, utilization, and storage facility	Teck Resources
2021 Total	\$524,093				
Grand Total of CleanBC Industry Fund - Funded Projects	\$21,914,544				

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: International Joint Commission Reference (IJC) and BC's Transboundary Relations with Neighboring States

Drafted: March 13, 2023

Issue: Ongoing transboundary mining concerns and continued pressure for referrals to the IJC.

Response:

- British Columbia (BC) is committed to ensuring that the Province remains a world-leading jurisdiction in mining regulation, oversight, health and safety.
- BC values and is committed to ongoing collaboration, information sharing, and engagement with our United States of America (US) transboundary neighbours.
- BC communicates regularly with its US transboundary neighbours and values their input and partnership in addressing transboundary issues and concerns.
- BC continues to strive to be a globally attractive and competitive mining jurisdiction and recognizes the importance of building strong relationships with our US neighbours.
- BC is committed to a science-based process informed by the best available and transparent data across all our transboundary waterways and will continue to collaborate with local Indigenous Nations to identify concerns in particular areas.

Background/Status:

- Intergovernmental Communications
-
- Concerns over selenium (Se) levels in the Elk River, Koocanusa Reservoir, and the Kootenai River have been raised by US state and federal agencies, stakeholders, and Indigenous Nations on both sides of the Canada/US border.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- The International Joint Commission (IJC) was created through the Boundary Waters Treaty of 1909. It was established to approve projects that affect water levels and flows across the boundary and to investigate transboundary issues and recommend solutions. The IJC was established by both countries because they recognized that each country is affected by the other's actions in lake and river systems along the border.
- The Montana Department of Environmental Quality (MT DEQ), Ktunaxa Nation Council (KNC), and the individual Ktunaxa First Nations who form the KNC, Kootenai Tribe of Idaho, Confederated Salish and Kootenai Tribes, US EPA as well as members of the US Senate requested that the US and Canadian federal governments initiate an IJC reference .
- KNC and Ktunaxa First Nations are also continuing to pursue a joint reference relating to selenium levels in the Koocanusa Reservoir.
- Pressure and tension continue to build between BC, Canada, and the US over the need for an IJC reference with respect to water quality in the Koocanusa Reservoir.
- Intergovernmental Communications

•

- Existing transboundary forums have proven effective at addressing technical problems and discussing other concerns. Intergovernmental Communications
Intergovernmental Communications

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Montana-BC

- The foundation of BC and Montana's collaboration on regional ecosystems and

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

shared protection of transboundary waters is captured in the 2003 Environmental Cooperation arrangement. It is also underpinned by the Memorandum of Understanding and Cooperation on Environmental Protection, Climate Action, and Energy. These agreements also provide reciprocal opportunities for Montana to participate in BC's environmental assessment process.

Montana – Selenium Levels in Southeast BC and Potential IJC Reference

- Over the past several decades metallurgical coal mining operated by Teck Resources Ltd. has resulted in concerns over elevated selenium levels in the Elk River, Lake Koocanusa, and the Kootenai River. This has been raised by agencies, stakeholders, and Indigenous Nations on both sides of the BC / Montana border.
- In 2014, the Elk Valley Water Quality Plan was approved as an Area Based Management Plan by the Minister of Environment to improve outcomes downstream of Teck's coal mines in the Elk Valley and Koocanusa Reservoir, requiring Teck to construct several innovative water treatment facilities. Two of these water treatment facilities are now operational, along with one Saturated Rock Fill (SRF) and a further SRF being built out. While these efforts are leading to positive results, time is required to improve the overall water quality.
- BC remains committed to a science-based process and working collaboratively with the State of Montana and the Environmental Protection Agency on selenium concerns.
- The Province is undertaking a comprehensive approach to addressing transboundary water quality concerns which includes:
 - Strengthening regulatory requirements for Elk Valley mining operations including amendments to provincial permits and to the ABMP, including release of the Se Water Quality Objectives for Koocanusa Reservoir;
 - Advice/Recommendations; Business Information
 - Increased transparency of regulatory efforts, and data and monitoring activities, through the launch of a new Elk Valley Water Quality Hub website which occurred on Feb. 17, 2023;
 - Providing input into the federal government's proposed Coal Mining Effluent Regulation; and
 - Enhancing transboundary governance, coordination, and information sharing.

¹ In the amount of \$16M for failure to have water treatment plants in place by a specific date.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- BC's position remains that an IJC reference is not needed, as it would be duplicative to processes planned and those already underway, adding an additional complex transboundary process without clearly defining what issue needs to be solved.

Appendix A – Relations with BC-Alaska and BC-Washington

Contact:

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Appendix A – BC’s Transboundary Relationship with Alaska and Washington

Alaska-BC

- The Province and Alaska signed a Memorandum of Understanding and Cooperation (MOU) in 2015. The MOU is being implemented through a Statement of Cooperation (SoC) on the Protection of Transboundary Waters.
- The SoC is overseen by a Bilateral Working Group (BWG) of BC Deputy Ministers and Assistant Deputy Ministers from the Ministry of Energy, Mines and Low Carbon Innovation, the Ministry of Environment and Climate Change Strategy, the Environmental Assessment Office, and Alaska department Commissioners of Environmental Conservation, Fish and Game, and Natural Resources.
- The BWG meets on a bi-annual basis to discuss transboundary matters and developments on projects proximate to the Alaskan border.
- BC’s relationship with its Alaskan counterparts (Commissioners) is strong, transparent, and cooperative.
- There have been recent and renewed calls from Alaskan State Representatives, Senators, Alaskan Tribes, and Environmental Non-Governmental Organizations (ENGOS) to have an IJC reference address transboundary water impacts from BC mining along the BC-Alaska border. Recent correspondence has further indicated that these groups wish to seek a moratorium on BC mining until an International Joint Commission (IJC) reference can be initiated.
- BC is working with its Alaskan counterparts through the MOU to identify ways to continue to transparently share information with the State, Tribes, and ENGOS.
- BC’s position remains that an IJC reference is not needed, given the strong working relationship with Alaska.

Alaska-Tulsequah Chief Mine (Tulsequah)

- Tulsequah is a source of historical contamination concerns and ^{Intergovernmental}Intergovernmental Communications and a key focus for BC and Alaska’s collaborative work.
- Intergovernmental Communications
- Interim reclamation work has continued during the 2022 field season in collaboration with the Taku River Tlingit First Nation (TRTFN).
- Intergovernmental Communications
- BC staff continue to work closely with and inform Alaska on this issue.

Washington State-BC

- BC and Washington State have enjoyed a collaborative working relationship since the creation of the Environmental Cooperation Agreement in 1992. The Agreement and the Environmental Cooperation Council have a successful history of promoting and coordinating mutual efforts to ensure the protection, preservation, and enhancement of our shared environment.

Washington State – Imperial Metal's Mines Act Application within Skagit Valley

- The *Mines Act* application respecting the “Donut Hole” within E.C. Manning Park is no longer active. Mineral tenures were surrendered in January 2022 after the successful completion of negotiations with Imperial Metals for the company to voluntarily surrender their mineral rights. Imperial Metals was allocated \$24M in the negotiated outcome, with funding coming from the Province, the Nature Conservancy of Canada, the Skagit Environmental Endowment Fund, Washington State, and the City of Seattle. BC Parks is initiating engagement with First Nations in the coming months to help determine their vision for the long-term protection of the area.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Potential International Joint Commission (IJC) Reference in the Southeast (SE) on Selenium in the Koocanusa Reservoir

Drafted/Revised: March 13, 2023

Issue: Ongoing transboundary water concerns stemming from coal mining in the SE resulting in pressure from the US, Ktunaxa First Nations, and US Tribes for a reference to the IJC.

Response:

● Advice/Recommendations

- The Province welcomes a dialogue with all stakeholders to identify specific gaps in existing and proposed approaches to resolving these concerns.
- Advocates for IJC involvement have not clearly articulated a rationale for this request nor a specific issue that can't be resolved bi-laterally with existing or proposed initiatives. Given the significant efforts underway to address water quality and related issues, BC's position is that an IJC reference would be duplicative and would add an additional complex transboundary in an area with significant regulatory processes underway.
- BC continues to make progress on responding to concerns that have been raised, with new tools being developed to increase accessibility and transparency of information and data related to water quality and regulatory activities in the Elk Valley.
- BC continues to engage with Ktunaxa First Nations (Ktunaxa) to understand and address concerns related to mining in the Elk Valley, to develop a vision for mining that benefits communities and protects the environment.
- The southeast of BC remains an area of significant economic importance for the Province. Currently operating metallurgical coal mines in the Elk Valley account for most of Canada's coal production and exports, with steelmaking coal being BC's largest single export (13% of total exports). Recent numbers show that Teck's four steelmaking coal mines generate \$4B in production value.
- Addressing water quality is a key priority for the Province and we continue to work and innovate with industry through our strong regulatory systems.
- We look forward to continuing to work with Ktunaxa, United States (US) Tribes, US and Canadian federal agencies, and the state of Montana to collaborate and address these concerns.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Background/Status:

- Over the past several decades metallurgical coal mines operated by Teck Coal Ltd. have resulted in elevated selenium (Se) levels in the Elk Valley watershed and Koocanusa Reservoir.
- Concerns over selenium levels in the Elk River, Koocanusa Reservoir, and the Kootenai River have been raised by US state and federal agencies, stakeholders, and Indigenous Nations on both sides of the Canada/US border.
- The Montana Department of Environmental Quality (MT DEQ), Ktunaxa Nation Council (KNC), and the individual Ktunaxa First Nations who form the KNC, Kootenai Tribe of Idaho, Confederated Salish and Kootenai Tribes, US Environmental Protection Agency (EPA) as well as members of the US Senate requested that the US and Canadian federal governments initiate an IJC reference on these issues.
- KNC and Ktunaxa are also continuing to pursue a joint reference relating to selenium levels in the Koocanusa Reservoir.
- The IJC was created through the Boundary Waters Treaty of 1909. It was established to approve projects that affect water levels and flows across the boundary and to investigate transboundary issues and recommend solutions. The IJC was established by both countries because they recognized that each country is affected by the other's actions in lake and river systems along the border.
- Government Financial Information; Intergovernmental Communications
-
- Monitoring and assessment programs in BC have not detected aquatic ecosystem impacts from selenium in the reservoir. A recently completed Human Health Risk Assessment also did not identify any selenium-related risk from fish consumption in the reservoir.
- The Province is undertaking a comprehensive approach to addressing transboundary water quality concerns which includes:
 - Strengthening regulatory requirements for Elk Valley mining operations including amendments to provincial permits and to the Area Based Management Plan (ABMP), including release of the Se Water Quality Objectives for Koocanusa Reservoir;
 - Continued compliance and enforcement activities to hold Teck accountable;
 - Increased transparency of regulatory efforts, and data and monitoring activities, through the launch of a new Elk Valley Water Quality Hub website which occurred on Feb. 17, 2023;

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Providing input into the federal government's proposed Coal Mining Effluent Regulation; and
 - Enhancing transboundary governance, coordination, and information sharing.
- The Province continues to work with all parties to improve water quality in the area without the involvement of the IJC.
- BC will make further improvements to these initiatives should issues be identified that are not currently captured.

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Placer and Jade Mining in BC

Drafted/Revised: March 20, 2023

Issue: Initiatives related to placer and jade mining in British Columbia

Response:

- The environmental impacts of placer and jade mining are a clear and expressed concern from Indigenous Nations across the Province.
- The Ministry of Energy, Mines and Low Carbon Innovation (the Ministry) is working on a range of initiatives for placer gold and jade mining to address these concerns.
- A key initiative to address placer jade issues is the Order in Council (OIC) that was repealed and replaced under section 7 of the *Environment and Land Use Act (ELUA)* on July 5, 2021, deferring permitting on placer jade operations in Northern BC until May 11, 2023.
- Following this, the Ministry will begin reviewing Notice of Work applications submitted by jade proponents, unless government chooses to extend the OIC.
- The OIC creates space for the Ministry to continue to work closely with Indigenous Nations and placer jade operators to develop higher operational and reclamation standards.

Background/Status:

- Indigenous Nations and stakeholders throughout the Province have expressed concern about the high environmental impact of placer and jade mining in BC that is not balanced by an economic return.
- The environmental impacts of placer and jade mining are exacerbating long-standing concerns of Indigenous Nations and pose a risk to advancing reconciliation. Specifically, in northwest British Columbia (BC) concerns about placer activity are impacting development of a Comprehensive Reconciliation Agreement with the Tahltan Central Government (TCG).
- Tahltan Territory overlaps the most valuable mineral region in BC known as the “Golden Triangle”. TCG works constructively with mineral exploration and mining companies but feel placer and jade operations do not respect Tahltan cultural and community values.
- The Ministry has developed a Placer Mining Strategy, which includes several initiatives to address issues specific to the placer industry. This includes a range of completed, ongoing and planned activities to improve sector performance and address Indigenous concerns.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Completed Placer Initiatives:

- A Placer Revenue Discussion Paper was released in May 2021, proposing options for an updated placer revenue model that would better balance the environmental impacts with economic return. Following a four-month public engagement period, the Ministry released a What We Heard Report in November 2021.
- In November 2022, the Ministry released a Placer Revenue Intentions Paper, outlining the Ministry's intention to update placer gold permit fees, inspection fees, and the mineral tax rate.
- The Ministry delivered two placer engagement sessions (December 14, 2021 and February 22, 2022) to First Nations. These sessions were co-hosted with the First Nations Energy and Mining Council and focused on providing updates on key placer initiatives and sought feedback on potential placer revenue models.
- An OIC was repealed and replaced under section 7 of the *ELUA* on July 5, 2021, deferring permitting on placer jade operations in Northern BC until May 11, 2023.
- A socio-economic study on placer and jade mining was commissioned to better understand the economic impacts of placer mining.
- Amendments to the Placer Mine Waste Control Regulation. These amendments removed the exemption for placer mines to discharge into certain creeks.
- A set of Placer Notice of Work Application Requirements was developed, outlining the required information to make the requirements readily available and transparent.
- Regional *Mines Act* permit conditions, including placer, have been standardized and reviewed by the Compliance and Enforcement Branch, to improve enforceability.
- The Placer Best Management Practices have been finalized and posted online to guide placer operators on how to conduct and design their operations.
- A regional Reclamation Bond Calculator has been implemented to better assess liability and ensure sites are sufficiently bonded.

Placer Initiatives in Progress:

- Placer Jade Collaborative Working Group (PJCWG): Established to initiate an ongoing dialogue in Northwest BC between the First Nations and the Ministry on placer and jade issues in the northwest, and to co-develop solutions.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- The Ministry is working with the PJCWG to finalize a set of recommendations for placer and jade mining that will propose improvements to information sharing, revenue model changes, reclamation, areas for restriction of activities, compliance, and legacy sites.
- Parallel discussions between the Ministry and jade operators are also underway. Jade operators are supportive of improving the regulatory framework of the sector, recognizing that changes need to be made.
- Jade operators have expressed strong concerns regarding impacts of the OIC to their businesses, the uncertainty around the end of the OIC, and the perceived lack of progress in identifying a shared vision for the future of the jade sector.
- On March 16, 2023, the Ministry received correspondence from legal counsel representing a group of jade operators. The letter indicates that a claim for compensation will be brought against the Ministry by March 27th, 2023 based on constructive losses associated with the OIC unless the Ministry agreed to enter into a tolling agreement to extend the limitation period. The Ministry has agreed to enter into the agreement.

Attachments: N/A

Cross Reference: N/A

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Mineral Tenure Act (MTA) Modernization

Drafted/Revised: March 10, 2022

Issue: Modernizing the MTA in consultation and collaboration with First Nations and First Nation organizations

Response:

- Modernizing BC's mineral tenure system, including the Mineral Tenure Act (MTA), is a longstanding priority for First Nations and First Nations organizations.
- The Ministry of Energy, Mines, and Low Carbon Innovation (EMLI) committed to modernizing the MTA under the Declaration Act Action Plan.
- EMLI is working with First Nations and First Nation organizations to develop a path forward on consultation and cooperation.
- Multiple stages of engagement are anticipated – and all First Nations will have multiple opportunities for direct and meaningful involvement.
- The MTA is complex – and deep consultation will require significant time and resources.
- There will be a parallel engagement process with industry, labour, and other partners.
- This will be challenging work – but by working closely with First Nations and First Nation organizations, industry, and communities, we can modernize the MTA while maintaining a strong, sustainable mineral exploration and mining sector that continues to contribute to reconciliation and economic prosperity.
- Gitxaala and Ehattesaht First Nations have both launched parallel legal challenges in BC Supreme Court, challenging parts of the current mineral tenure system. The Province cannot comment on matters before the Courts.

Background/Status:

- The MTA sets out BC's laws for registering and maintaining mineral tenure – which determines where people can explore for, develop, and produce minerals.
- Currently, BC's mineral tenure system does not require consultation with First Nations before mineral claims are registered.
- Previous MTA engagement in 2018-9 with First Nations, industry and partners indicates complex and diverse interests surrounding the MTA, particularly between First Nations' modernization priorities and industry's views on maintaining competitiveness.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Previous engagement around MTA modernization paused in 2019 to accommodate collaborative work on the Declaration on the Rights of Indigenous Peoples Act (Declaration Act) and its implementation.
- In March 2022, a public-facing commitment to modernize the MTA in consultation and cooperation with First Nations and First Nations organizations was added to BC's Declaration Act Action Plan.
- EMLI is in discussions with the First Nations Leadership Council, the Declaration Act Secretariat (DAS), and First Nations to develop an initial consultation and cooperation approach. All First Nations will have the opportunity to provide input on the consultation and cooperation approach.
- The MTA modernization process will align with the DAS's guidance on implementing the Declaration Act and will include multiple stages of outreach to all First Nations, modern treaty First Nations, First Nations organizations, and other Indigenous representative groups.
- First Nations will expect MTA modernization to prioritize alignment with United Nations Declaration on the Rights of Indigenous Peoples (UN Declaration), particularly around First Nations' role in decision-making around tenures (e.g., consent, shared decision-making).
- Gitxaala and Ehattesaht First Nations have both filed petitions in BC Supreme Court, challenging elements of BC's mineral tenure system. The petitions are scheduled to be heard together in April 2023.
- The petitions include claims that (1) the Province has a constitutional duty to consult with First Nations before granting mineral claims on land subject to rights and title claims; (2) parts of the mineral tenure system conflict with the Declaration Act and the UN Declaration.
- The potential scope of MTA modernization is expected to include ideas from previous MTA engagement in 2018-9, the Gitxaala and Ehattesaht cases, the Declaration Act, the First Nations Energy and Mining Council's "Indigenous Sovereignty: Consent for Mining on Indigenous Lands" report, and recent legislative reforms by other natural resource sectors.

Cross Reference: Yellow Giant Mine (Banks Island)

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Critical Minerals

Drafted/Revised: March 17, 2023

Issue: Efforts to advance critical minerals priorities for BC

Response:

- Critical minerals are metals and non-metals that are considered essential to the economy and whose supply may be at risk due to geological scarcity, geopolitical issues, trade policy or other factors.
- British Columbia (BC) contributes to Canada's critical minerals supply chain as the largest producer of copper and only producer of molybdenum.
- BC has potential to produce other critical minerals, but further geoscience work is required to better understand this opportunity.
- In December 2022, the Minister of Energy, Mines and Low Carbon Innovation's mandate letter contained direction to "*expedite a provincial critical minerals strategy that positions British Columbia to take advantage of the emerging clean global economy.*"
- Budget 2023 provides \$6 million over three years to develop a BC Critical Minerals Strategy. The strategy aims to drive potential future clean economic development through increased access to geoscience to facilitate critical mineral exploration, and assess potential for critical minerals processing and manufacturing.

Background/Status:

- Demand for critical minerals is projected to rapidly increase to meet increased demand for green technologies and infrastructure. For example, demand for nickel, copper, and cobalt to produce electric vehicle batteries is expected to increase by 14x, 10x and 3x, respectively, by 2030, according to BloombergNEF.
- In March 2021, Canada published a Critical Minerals list identifying minerals of key national importance. The list includes 31 minerals considered critical to economic success to Canada and key trading partners.
- BC provided input on the development of the federal list and is participating in federal/provincial/territorial tables to advance critical minerals development in Canada.
- Canada announced \$3.8 billion over eight years (commencing in 2022-23) in Budget 2022 to implement Canada's first Critical Minerals Strategy to capitalize on the growing need for these minerals. The Strategy was launched in December 2022.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- In March 2023, the Canadian Government announced over \$344 million in funding under the Canadian Critical Minerals Strategy for five new programs and initiatives including a Critical Minerals Technology and Innovation Program, Critical Minerals Geoscience and Data Initiative, Global Partnerships Program, Northern Regulatory Initiative, and the renewal of the Critical Minerals Centre of Excellence.
- The United States, United Kingdom, and some provincial governments (Saskatchewan, Quebec, Ontario, Alberta) have invested significant resources in plans to capitalize on the growing demand for critical minerals and to ensure strong, reliable supply chains. Other jurisdictions are actively developing strategies.
- BC has substantial potential to produce additional critical minerals and to develop a full critical minerals value chain, including development of greater refining, smelting, manufacturing, and recycling capacity.
- Budget 2023 provides \$6 million over three years to develop a BC Critical Minerals Strategy. The strategy aims to drive potential future clean economic development through increased access to geoscience to facilitate critical mineral exploration and assess potential for critical minerals processing and manufacturing.
- The Ministry is taking a data-driven, collaborative approach to developing the BC Critical Minerals Strategy. The \$6M funding for strategy development will be directed to support:
 - Geoscience inventory and analysis work, and Indigenous-focused geoscience outreach,
 - Economic analysis of BC's critical mineral development and value chain potential,
 - Engagement with First Nations and stakeholders including industry, academia, and others through initiation of an Advisory Committee to help shape the Strategy, and
 - Further engagement with Indigenous communities and organizations, consistent with the *Declaration Act*.
- The Ministry sees the BC Critical Minerals Strategy as complementary to the federal strategy while advancing provincial interests. BC is engaging with federal counterparts to explore opportunities for collaboration on critical minerals initiatives, including funding for Indigenous engagement, geological assessments and downstream/manufacturing/recycling related activities.
- Critical minerals are a key area of focus for the recently initiated Regional Energy and Resources Table (RERT) between BC and Canada to seize on economic opportunities enabled by the global low-carbon transition.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- RERT is the probable avenue for BC to access a portion of the \$3.8 billion in federal funds earmarked for critical minerals in Canada.

Contact:

Tania Demchuk	A/ADM	MCAD	778-698-7222
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Mining Oversight

Drafted/Revised: March 20, 2023

Issue: Ministry actions to improve mining oversight

Response:

- The Ministry of Energy, Mines and Low Carbon Innovation has prioritized, and made substantial progress on actions to improve mining oversight since the 2016 B.C. Auditor General Report on mining compliance and enforcement.
- Supported by a \$20 million investment in 2019, the Ministry restructured to create two mining divisions: one focused on competitiveness and permitting, and the other focused on compliance and enforcement.
- Amendments to the *Mines Act*, brought into force August 2020, strengthened and modernized mining oversight in BC by creating the roles of Chief Permitting Officer and Chief Auditor. The creation of these statutory positions has enabled the separation and independence of the permitting, compliance and enforcement, and auditing functions.
- A standing Code Review process is in place to modernize the Health, Safety and Reclamation Code for Mines in BC, to keep workers safe and ensure mining regulations address the changing needs of the industry.
- The Ministry continues to invest in the development and implementation of digital systems to help improve data collection, storage and analysis of mining oversight information.
- The Ministry's actions to support a competitive mining sector with strong regulatory oversight have been informed by engagement with labour, Indigenous representatives and industry through the Mining Jobs Task Force, best practice in other jurisdictions, and recommendations from the Auditor General.
- The Auditor General released an audit in June 2022 in which it concluded that the Ministry's changes since the 2016 audit are adequately addressing the risks identified in the 2016 audit.
- In the 2022 audit, the Auditor General made five recommendations, which have all been accepted by the Ministry. Work is ongoing to address these recommendations with a report back to the Public Accounts Committee likely in late 2023.

Background/Status:

- The Ministry received a nearly \$20 million budget increase between 2019 and 2022 (up to 65 FTEs) to support strengthened oversight and restructuring of the mining team to align with other provincial regulators, by separating into two

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

divisions: Mines Competitiveness and Authorizations Division, and Mines Health, Safety and Enforcement Division.

- As of March 16, 2023, 2138 mine inspections were completed in FY 2022/23, which exceeds this fiscal's target of 1600 by approximately 30%. The Ministry will have the detailed break-down for FY 2022/23 by end of April 2023.
- *Mines Act* amendments brought into force on August 14, 2020, support robust mining oversight and a competitive sector by:
 - creating the role of Chief Permitting Officer, responsible for making permitting decisions and improving the mine permitting process and competitiveness.
 - modernizing and enhancing compliance and enforcement provisions to improve the tools for holding mines accountable,
 - formalizing the Mine Audits Unit by creating the role of Chief Auditor, responsible for evaluating the effectiveness of mining regulation in BC; and
 - supporting efforts to increase Indigenous engagement in compliance by introducing the authority for inspectors to bring representatives of Indigenous Nations on inspections.
- Additional Ministry actions to improve mining oversight include:
 - The Chief Auditor released their first audit report: "Code Requirements for Tailing Storage Facilities." The report provided the Ministry with seven recommendations to inform a review and updates to TSF provisions in the Code. The Ministry accepted all recommendations and developed an Action Plan to address the findings of the Chief Auditor.
 - A 12-member Code Review Committee, comprised of equal representation from labour unions, Indigenous Nations, and Industry to ensure that mining regulations remain relevant and able to address the changing needs of the industry, the environment, Indigenous Nations and all British Columbians.
 - Continued enforcement activities through the Mines Investigation Unit resulting in three successful prosecutions since 2019.
 - Imposing 24 administrative monetary penalties totalling more than \$1.4M.
 - Continually increasing the amount of reclamation security held by EMLI. As of March 8, 2022, EMLI held \$2.6B.
 - Investment in the development and implementation of improved digital systems, to allow for more effective planning, reporting, follow-up and trend analysis.
- The Auditor General released a mining compliance and enforcement audit in June 2022 concluding that the ministry had developed adequate policies and procedures to address the key environmental risks of major mines identified in its 2016 audit and had also developed an adequate framework to manage potential public safety and environmental concerns at abandoned mines.
- The Ministry has accepted and actioned all five recommendations from this follow-up audit. The Ministry will be called by the Public Accounts Committee to

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

report back on its ongoing work, likely in late 2023. Additionally, the Ministry has committed to providing a public update on progress in the 2022/23 Annual Report of the Chief Inspector of Mines and Chief Permitting Officer.

Cross Reference: Code Review (MHSE)
Health and Safety of BC Mines (MHSE)
Mine Audits Unit (MHSE)

Contact:
Andrew Rollo A/ Assistant Deputy Mines Health, Safety & (236) 478-3641
Minister Enforcement Division

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Standing Code Review Committee

Drafted/Revised: March 17, 2023

Issue: The Standing Review of the Health, Safety and Reclamation Code for Mines in BC

Response:

- The Health, Safety and Reclamation Code for Mines in BC (Code) provides the detailed regulation for all aspects of mining and mineral exploration in BC.
- The standing Code Review process is in place to modernize the Code, keep workers safe and ensure mining regulations address the changing needs of the industry, the environment, and Indigenous Nations.
- The 12-member Code Review Committee (Committee) is comprised of equal representation from labour unions, Indigenous Nations, and industry.
- The Committee's first eight changes to the Code were brought into force through an order in council in 2021.
- The latest changes to the Code are reflected in its 2022 version, published on November 30, 2022 and included: incident reporting, autonomous equipment and gender-neutral language.
- A UN Declaration sub-committee, struck in April 2022, is co-chaired with the First Nations Energy and Mining Council to ensure future Code changes align with the United Nations Declaration on the Rights of Indigenous Peoples (UN Declaration) and the *Declaration on the Rights of Indigenous Peoples Act* (Declaration Act).
- Current Committee work is focused on enabling the use of mining equipment with emerging technology at mine sites; addressing Chief Auditor recommendations related to tailings storage facilities; and revising occupational health provisions.
- Reviews of Code sections regarding requirements for mobile equipment working near or on the water and safeguarding of machinery are planned to start in the spring of 2023.

Background/Status:

- To review the Code, the Minister appoints members to the Committee under section 34 of the *Mines Act*. The Chief Inspector of Mines (or delegate) chairs the Committee and is responsible for making recommendations for amendments to the Minister. The *Mines Act* is unique in setting a committee process to create and amend the Code.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- In September 2022, the Chair of the Committee was changed from Tania Demchuk to Jorge Freitas.
- The Committee prioritizes its review work annually, this includes, when appropriate, consideration of Chief Auditor recommendations directed to the Committee by the Ministry.
- Funding to establish the Committee was provided in Budget 2019 in response to the 2018 recommendation of the Mining Jobs Task Force.
- A standing review of the Code ensures that mining industry regulations remain relevant and able to address the changing needs of the industry, the environment, Indigenous Nations and all British Columbians.
- The Committee consists of four representatives each from labour unions, Indigenous Nations and industry for a total of 12 members appointed by the Minister. Appendix 1 provides the current Committee membership.
- The Committee's first eight revisions came into force on April 1, 2021.
- The latest revisions, published on November 30, 2022, addressed the implementation of autonomous and semi-autonomous equipment in mines; updated reportable incident requirements; and adopted non-gendered language throughout the Code.
- The Committee relies on the advice and technical expertise provided by sub-committees and working groups. Current activities include:
 - *The Emerging Technology and Automation sub-committee* has completed its work on semi-autonomous and autonomous equipment on mines and is now working to address the use of alternative energy equipment. This sub-committee will complete their reviews and end its activities late in the spring of 2023.
 - *The Part 10 – Permitting, Reclamation, and Closure -sub-committee* is working to address the recommendations of the Tailings Storage Facility audit released by the Chief Auditor in June 2021. Considering the number of items included in this part of the Code, it is expected that this sub-committee will continue their reviews for the next few years.
 - *The UN Declaration sub-committee* is co-chaired with the First Nations Energy and Mining Council to improve alignment of the Code with the UN Declaration. The sub-committee is now working with various technical sub-committees to provide feedback that aligns the revisions with the UN Declaration and Declaration Act. This sub-committee is regarded as permanent. Members of the sub-committee may change, but the group will continue to perform their reviews to ensure that the work of technical sub-committees is in alignment with the UN Declaration.
 - *An Occupational Health sub-committee* is currently reviewing Part 2 – Occupational Health of the Code, with initial focus on workplace

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

contaminants/Maximum Allowable Exposures. Considering the number of items included in this part of the Code, it is expected that this sub-committee will continue their reviews for the next few years.

- Two working groups are expected to start their reviews on Mobile Equipment Cabs working near or on the water and Safeguarding of Machinery in the spring of 2023. Working groups are assembled to address specific issues and have a shorter life when compared with sub-committees. In this case, both working groups may be able to complete their reviews by the end of this year.

- Cabinet Confidences

Attachments: Attachment: Code Review Committee Membership List

Cross Reference: UNDRIP Implementation (SIAD)
Mine Audits Unit (MHSE)

Contact:

Andrew Rollo	A/ Assistant Deputy Minister	Mines Health, Safety & Enforcement Division	(236) 478-3641
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2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation

Minister Responsible: Josie Osborne

Attachment: Code Review Committee Membership List

	Code Review Committee Members
Labour	Rob Foskett, Union of Operating Engineers
	Ed Kent, United Steelworkers Union
	Dean Lott, United Steelworkers Union
	Dave Williams, UniFor, Myra Falls
Indigenous Nations	Charlie Allison, Upper Similkameen Indian Band
	Nalaine Morin, Tahltan First Nation, Arrowblade Consulting
	Kyle Penner, Tahltan First Nation, BCIT mining engineering student
	Tamlyn Botel, Citxw Nlaka'pamux Assembly
Exploration	Kim Bittman, consultant, Association for Mineral Exploration
Sand and Gravel	David Rogalsky, Woodbrook Aggregates
Major Mines	Sean Masse, Brucejack Mine, Pretivm Resources
	Don Sander, Elkview Coal Operations (Teck)

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Health and Safety of BC Mines

Drafted/Revised: March 16, 2023

Issue: Ministry Actions to ensure BC remains a leader in mining health and safety regulation

Response:

- Mining remains one of the safest heavy industries in BC through the cooperative efforts of mine employers and employees, associations, unions, and the regulator.
- Supported by a \$20 million investment in 2019, the Ministry increased the Mine Inspectors workforce with a focus on health, safety, and compliance oversight.
- The Ministry has worked to further support compliance and enforcement by restructuring the Mines Divisions to consolidate all compliance functions, which are now vested in the Office of the Chief Inspector.
- Mine Inspectors take various actions to ensure safety on mine sites, including pro-active inspections, compliance promotion, training, certifications, and mine emergency response plans to promote emergency readiness.
- The Office of the Chief Inspector is committed to engaging Indigenous Nations in compliance activities through enhancing mines inspectors' understanding of Indigenous interests, values and experiences related to compliance; and conducting accompanied inspections with Indigenous Nations.
- In addition to the work of the inspectorate, the Ministry has established two regulatory continuous improvement functions: 1) the Mine Audits Unit to evaluate the effectiveness of the regulatory framework for mining, and 2) the standing Code Review Committee to undertake regular updates of the Health, Safety and Reclamation Code for Mines in BC.

Background/Status:

- Mine Inspectors oversee all aspects of the mining cycle: from exploration to operations to final reclamation. In addition, inspectors support the health and safety of workers by verifying compliance with the Health, Safety and Reclamation Code for Mines in British Columbia and permit conditions.
- Mining remains one of the safest heavy industries in the province; injury rates are consistently low relative to other heavy industries. While WorkSafeBC does not regulate health and safety on mine sites, they oversee the claim system for injured workers and hold official injury statistics. According to WorkSafe BC injury rates for 2022 will not be available until summer 2023. The table below provides

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

injury rates from previous years, with a comparison of mining to other heavy industry.

	Injuries by subsector, weighted average (# of claims per 100 person-years)										
Sub-sector	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Mining (Metal, Coal & Quarries)	1.6	1.4	1.1	1.2	1.0	1.1	1.2	1.3	1.2	1.4	1.4
Heavy Construction	3.5	3.6	3.4	3.3	2.9	3.1	3.2	3.1	2.3	1.7	1.4
Forestry	4.8	4.8	5.2	5	4.8	4.8	4.5	4.6	4.3	4.0	3.8
General Construction	4.6	4.4	4.1	4.2	4.2	4.2	3.9	4.1	3.7	3.4	3.5
Oil & Gas or Mineral Resources	1.8	1.4	1.1	1.1	1.1	1.1	1.1	1.3	1.2	1.4	1.7
Road Construction or Maintenance	3.1	2.9	2.7	2.6	2.7	2.6	2.7	2.7	2.6	2.5	2.8
Wood and Paper	3	3.4	3.1	3.1	3.2	3	2.9	2.7	2.7	2.8	2.8
Provincial	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.1	2.2

- Two mining-related fatalities occurred in 2022. An employee was fatally injured underground at the Brucejack mine when the scoop went over a highwall and this incident remains under investigation by the Mines Investigation Unit. A second fatality occurred when a pilot was fatally injured when the helicopter went down near Kitsault. This incident is under federal jurisdiction and being investigated by the Transportation Safety Board of Canada.
- The Ministry is committed to providing strong regulatory oversight of the mining industry and holding industry accountable: three successful prosecutions since 2019 and 24 Administrative Monetary Penalty decisions issued.
- As of March 16, 2023, 2138 mine inspections were completed in FY 2022/23, which already exceeds this fiscal's inspection target (1600) by approximately 30%.
- FY 2022/2023 inspections per discipline:

General Health and Safety	Specialist Health and Safety	Environmental	Geotechnical	Permitting	Tenure
1163	599	155	61	159	1

- Risk-based inspection planning is used to ensure that areas of the highest risk are inspected on a regular basis. Inspection planning is integrated between disciplines to ensure maximum coverage and effectiveness.
- In 2022, EMLI conducted 43 accompanied inspections with Indigenous Nations across BC including: Taku River Tlingit First Nation (20); Tsay Keh Dene (7); Tahltan Central Government (3); Nazko First Nation (3); Nisgaa Lisims Government (2); Lake Babine Nation (2); Spaltsin First Nation (2); Nuxalk First

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Nation (1); Upper Similkameen (1); Lower Similkameen (1); and Akisniuk First Nation (1).

- The Ministry is committed to increasing accompanied inspections. This work supports larger reconciliation objectives by providing introductory training and information sharing with Indigenous Nations to build strong collaborative relationships in the regulatory management of mining activities in B.C.
- Centralized weekly dangerous occurrence reporting on the Ministry's website, introduced in 2021, promotes transparency regarding safety incidents and is vital in sharing safety-related information and reminders about key regulatory requirements.
- EMLI continues to sponsor the annual Mine Safety Awards, now in their 61st year. The awards are given to mining operations with the lowest injury rates in their respective operation categories for the past year. The Chief Inspector also honours individuals or groups for outstanding achievements in health and safety with the Chief Inspector of Mines Award.
- A new reward was introduced in 2022, to recognize new and innovative technologies used to reduce the risk of harm from various hazards in the mining industry. This award has been adopted on National level by the John T Ryan Awards.
- In addition to the work of the inspectorate, the Ministry has established the Mine Audits Unit to evaluate the effectiveness of the regulatory framework for mining, and the standing Code Review Committee to undertake regular updates of the Health, Safety and Reclamation Code for Mines in BC.
- These two functions have a key role in the continuous improvement of regulatory effectiveness of mine sites in BC to maintain world leading regulations and implement robust oversight of all regulated mining practices.

Cross Reference: Mining Oversight (MHSE)
Code Review Committee (MHSE)
Mine Audits Unit (MHSE)

Contact:
Andrew Rollo A/ Assistant Deputy Mines Health, Safety & (236) 478-3641
Minister Enforcement Division

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Abandoned Mines

Drafted/Revised: March 20, 2023

Issue: Management of abandoned mines in British Columbia

Response:

- In 2019, the Ministry of Energy, Mines and Low Carbon Innovation established the Abandoned Mines Branch (AMB) to address public safety and environmental concerns at abandoned mines in BC.
- Many of these sites are mines that predate reclamation legislation, which was enacted in 1969.
- The long-term goal of the AMB is to reduce residual public safety and/or environmental risks associated with the abandoned mines to as low as reasonably practicable and minimize long-term monitoring and maintenance requirements.
- The AMB is implementing a risk-based approach to identifying and prioritizing abandoned mines presenting the highest risk to public safety and the environment.
- The AMB continues to contract qualified professionals to conduct inspections and assessments at tailings storage facilities at four abandoned sites with the long-term goal to reduce risks to minimize long term monitoring and maintenance requirements by the province.
- The AMB is working closely with the Crown Contaminated Sites Program (CCSP) in the Ministry of Forests (MOF) to ensure effective and coordinated use of provincial resources.

Background/Status:

- Mining has been central to the provincial economy for well over 150 years as an important source of jobs, revenues, and regional development. While the regulation of the mining industry has evolved and improved over time, the long history of mining in the province has resulted in abandoned mines that may pose a risk to public safety (e.g., unstable historic infrastructure) and/or the environment (metal leaching or acid rock drainage entering waterways).
- Many abandoned mines predate BC's reclamation legislation enacted in 1969 that requires mine owners to reclaim their properties and make their mines safe for closure.
- The AMB was established in 2019. The primary objective of the branch is to reduce liabilities by addressing the public safety hazards and/or environmental impacts posed by abandoned mines.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- The authority for these actions is derived from section 17 of the *Mines Act*, where the Chief Inspector of Mines considers that work may be necessary in, on or about a closed or abandoned mine in order to prevent danger to persons or property, or to abate pollution of the land and watercourses affected by the mine.
- The AMB works collaboratively with the Crown Contaminated Sites Program (CCSP) in the Ministry of Forests to ensure effective and coordinated use of provincial resources. The CCSP focuses primarily on contaminated sites remediation and many of their sites are abandoned mines; however, the CCSP does not specifically address the physical public safety hazards.
- Funding for the branch activities comes from two main sources:
 - Mine Owners - confiscated security deposits provided under a *Mines Act* Permit (if applicable).
 - The province - assumed liability for the remediation work where there is no longer an owner (Ministry Base Funding, if available; Contingency fund (PS3262) or request new funding from Treasury Board).

Activities completed by the AMB

- The AMB continues to use qualified geotechnical engineers to complete dam safety inspections for five tailings storage facilities at four sites: two facilities at Red Mountain (Coxey), and one each for Northair, Lawyers and Mt. Copeland. Planned activities for 2023 include the continuation of dam safety inspections and following up on recommendations by the contract engineer for each of these sites.
- To date, the AMB has completed the following reclamation activities:
 - Red Mountain (Coxey) (Rossland BC):
 - Activities in 2022 included removing debris and vegetation from spillways and removing vegetation from dams as per recommendations from the Dam Safety Inspection.
 - Candorado (near Hedley BC):
 - The AMB is collaborating with the Upper Similkameen Indian Band (USIB) to develop a final closure plan for the site.
 - In 2021, the AMB repaired the effluent ponds that capture discharge to add capacity and safely retain effluent on the mine site.
 - Tulsequah Chief (near Atlin BC):
 - Early reclamation works (2020 – 2022) focused on maintaining site access (roads & bridges) and continued monitoring of water quality in the Tulsequah River. These works have been conducted in collaboration with the Taku River Tlinglet First Nation and are consistent with the 2020 conceptual Closure and Reclamation Plan for the site.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Northair Mine (near Whistler BC)
 - In 2021, AMB identified publicly accessible mine openings that pose a significant public safety risk. In 2022, contract engineers assessed the site and are developing plans to permanently close the mine openings.
 - Lakeview-Dividend (Osoyoos)
 - A follow up inspection at the previously reclaimed Lakeview-Dividend Mine identified a public safety hazard that required immediate repair. Fencing that was established to prevent the public from falling down a cliff had been vandalised. New fencing was installed in October 2022.
 - Bowen Island
 - Public complaints had been received by the ministry regarding the use of three small open adits by youth, which have now been closed using a steel bar grate to prevent public access. The grates were designed to allow Northern Red-Legged Frogs (a Blue List species of special concern) to continue to access their established habitat.
 - Homestake Mine (Kamloops)
 - In collaboration with the Adams Lake Indian Band, AMB has completed a water quality monitoring program in Homestake Creek with the goal of assessing metal contaminate loads during spring freshet. The Homestake Mine is adjacent to Homestake Creek, which is a tributary that feeds into Adams Lake, world renowned for its sockeye fishery.
- The AMB is in the process of planning site-specific projects for the 2023 field season.
 - In addition to project-specific work, field assessments will continue to inventory and assess abandoned sites across the province to support risk-based planning for future reclamation work.

Cross Reference: Tulsequah Chief Mine (MHSE)
Financial Security for Mines (MCAD)

Contact:

Andrew Rollo	A/ Assistant Deputy Minister	Mines Health, Safety & Enforcement Division	(236) 478-3641
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Mine Audits Unit

Drafted/Revised: March 20, 2023

Issue: Current priorities of the Mine Audits Unit

Response:

- The Mine Audits Unit (the Audit Unit) conducts audits to evaluate the effectiveness of mining regulation and is an important component of the mining regulatory framework in B.C.
- The Audit Unit operates under the authorities and duties of the Chief Auditor, a statutory role under the *Mines Act* (the Act).
- To date, the Audit Unit has published two audit reports focused on (1) requirements for tailings storage facilities and (2) worker protection in mobile equipment near water. Combined, these audits resulted in 10 recommendations for the Ministry of Energy, Mines and Low Carbon Innovation (the Ministry).
- The Ministry accepted all recommendations from the two audits and developed 15 actions in response. The Ministry completed four actions in 2021/22 and publicly reported on this in its first annual progress update to the Chief Auditor (June 2022).
- The Audit Unit has three audits underway related to major mine closure, occupational health and safety committees, and security for exploration activities; and has started initial scoping on a fourth audit, confined spaces.
- The Audit Unit is currently in the process of developing the 2023/24 Audit Plan.
- The Audit Unit and the Ministry continue to collaborate with the First Nations Energy and Mining Council (the FNEMC) to ensure Indigenous perspectives are incorporated in all audit work.

Background/Status:

- The Audit Unit was established in response to recommendations by the Auditor General in 2016 and to fulfill a previous Minister's mandate letter commitment to establish an independent oversight unit for mining.
- The Audit Unit's mandate is to evaluate the effectiveness of mining regulation in BC and provide recommendations to government for continuous improvement.
- In August 2020, the Act was amended to establish the statutory role of the Chief Auditor. The Audit Unit operates under the statutory authority of the Chief Auditor, thereby formalizing the independence of their work.
- The statutory authority of the Chief Auditor, together with the mining and regulatory expertise of their team, makes the Audit Unit unique among auditing organizations and well placed to contribute to effective mining oversight in BC.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- In developing its policies, procedures, and organizational structure, the Audit Unit engaged with staff from the Office of the Auditor General and other audit professionals to ensure the Audit Unit is aligned with audit best practice. The Audit Unit has since received praise from the previous Auditor General and the Canadian Audit and Accountability Foundation for its work and innovative approach.
- Each audit focuses on an area of mining regulated by the Ministry and generally considers current regulatory requirements, government policies and actions, and mining sector compliance and outcomes.
- Under the Act, the Chief Auditor must publish an Audit Plan each year outlining the audits the Audit Unit will prioritize in that year. The Audit Plan is informed by suggestions from Indigenous partners and interested parties, Ministry data, and previous audit findings. The Audit Unit is currently in the process of developing the 2023/24 Audit Plan.
- After completing an audit, the Chief Auditor must provide a final report to the Minister outlining the audit's findings, conclusion and any recommendations. This report must also be published on the Audit Unit's website.
- Pursuant to a Memorandum of Understanding (MOU) between the Chief Auditor and the Ministry, the Ministry is committed to providing the Chief Auditor with a response to each audit and annual progress updates, both of which the Chief Auditor will post on their website. The Ministry has an internal team responsible for working with and coordinating Ministry audit responses and progress updates.
- The Audit Unit and the Ministry have a MOU with the FNEMC that sets out collaboration points in audits and responses to help ensure Indigenous interests are meaningfully considered. The FNEMC's collaboration under the MOU has had a positive impact on audits and has contributed to integrating Indigenous perspectives and interests into the audit process.
- In June 2021, the Audit Unit released their first audit: *Code Requirements for Tailings Storage Facilities*. This audit generated seven recommendations, which were all accepted and actioned by the Ministry.
- In April 2022, the Audit Unit released their second audit: *Worker Protection in Mobile Equipment near Water*. This audit generated three recommendations, which were accepted and actioned by the Ministry.
- The Ministry provides updates on audit recommendation progress annually in a progress report submitted to the Chief Auditor and posted on their website. As reported in the FY 2021/22 report (June 2022), the Ministry has completed four of the 15 actions from previous audit recommendations. Progress on the remaining 11 actions will be reported in the annual progress update for 2022/23, which will be released in 2023.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- The Audit Unit has three audits in progress from the 2021/22 Audit Plan: major mine closure, occupational health and safety committees; and security for exploration activities. The Audit Unit has started initial scoping on the one audit topic from the 2022/23 Audit Plan (September 2022): confined spaces.

Contact:

Andrew Rollo	A/ Assistant Deputy Minister	Mines Health, Safety & Enforcement Division	(236) 478-3641
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Mines Investigations

Drafted/Revised: March 13, 2023

Issue: Overview of mine investigation activities pursuant to the *Mines Act*

Response:

- The *Mines Act* provides authority for the Chief Inspector to direct an inspector to investigate incidents resulting in, or having had potential to cause, serious injuries, loss of life or property or environmental damage.
- Formed in 2017, the Mines Investigation Unit (MIU) is a team of ten specialized investigative professionals in the Mines Health, Safety and Enforcement Division.
- Prior to 2017, the Ministry did not have formally trained investigative capacity and the last known prosecution under the *Mines Act* was in 1999.
- The MIU undertakes investigations into serious incidents and alleged contraventions of the *Mines Act*, Health, Safety and Reclamation Code and permit conditions.
- Three of the five cases investigated by the MIU and referred to Crown Counsel have resulted in three successful prosecutions under the *Mines Act* and other investigations have resulted in the issuance of 24 Administrative Monetary Penalties (AMPs).
- Results of successful prosecutions and AMPs are published on the BC Mine Information website.

Background/Status:

- The *Mines Act* provides that the Chief Inspector may direct an inspector to investigate an incident that has caused or had potential to cause serious personal injury, loss of life or property or environmental damage. Inspectors may investigate any matter relating to health and safety of any person or the public.
- Led by the Director of Investigations, the MIU was formed in 2017 in response to recommendations from the Chief Inspector of Mines' Mount Polley Investigation Report and the 2016 audit from the Auditor General.
- The MIU undertakes all investigations pursuant to Section 7 and Section 14 of the *Mines Act* on behalf of the Chief Inspector of Mines, as well as other investigations in relation to non-compliances with the *Mines Act*, Health Safety and Reclamation Code and permit conditions.
- In fatality and serious injury cases, the MIU is the point of operational liaison with police, WorkSafeBC, other enforcement groups and Crown Counsel.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- The MIU also provides assistance and training to mines inspectors who may be tasked to investigate less serious incidents.
- The primary purpose of investigations is to determine what happened, why an incident happened, and how future incidents can be prevented.
- The results of investigations may be presented to:
 - the Chief Inspector of Mines, with recommendations for prevention of similar incidents including publication of an industry hazard alert;
 - a delegate of the Chief Inspector for consideration for Administrative Monetary Penalty; or
 - the Crown Counsel for consideration of *Mines Act* charges.
- Recommendations from MIU have resulted in issuance of 24 administrative monetary penalties totaling more than \$1.4M. Several other recommendations for penalties are currently in process.
- The MIU has three fatality investigations in progress, as well as several investigations related to safety incidents at mines.
- Since its inception in 2017, MIU has referred five cases to the BC Prosecution Service Crown Counsel. Each case met the standard for charge approval:
 - Banks Island Gold Mine (near Prince Rupert): On March 06, 2019 the court decided the evidence did not support the conviction of a mine manager accused of obstructing an inspector and acquitted the accused.
 - Swansea Quarry (near Cranbrook): On March 13, 2019 the court awarded a \$20,000 fine and a \$50,000 donation to a charitable organization for *Mines Act* charges in relation to a double fatality in 2014. This represented the first successful prosecution under the *Mines Act* in over two decades.
 - Polar Jade Mine (near Dease Lake): On September 6, 2019 the court awarded a fine of \$20,000 for *Mines Act* charges in relation to a 2015 fatality. The court's ruling took into account the fact that the accused also donated \$50,000 to the deceased's family.
 - Big Nugget Mine (northeast of Hixton): On March 13, 2020 the court awarded a fine of \$7,500 in relation to a 2016 injury sustained by an underage worker.
 - Keithly Creek Placer Mine (near Likely): In 2018, parallel investigations were conducted alongside Natural Resource Officers investigating violations under the *Mines Act* and the *Water Sustainability Act*. Charges were laid under the *Mines Act* for failing to submit reports, however, the charges were later stayed due to the death of the accused.
- Administrative monetary penalty decisions and summaries of court decisions are made public on the BC Mine Information website.

Contact:

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Mines Digital Services

Drafted/Revised: March 20, 2023

Issue: Development of digital tools to support mine permitting and oversight in British Columbia

Response:

- Mines Digital Services (MDS) is a leader in digital transformation across the Natural Resource Ministries that continuously develops and maintains transformational digital products for staff, industry and the public using an agile delivery model.
- MDS forms a central hub for mining-related IM/IT services and is developing data management and business intelligence functions in support of mine permitting and oversight functions to improve data quality and save time in compliance, reporting and health and safety oversight.
- MDS has developed three key products (Core, MineSpace and BC Mine Information (BCMI) website) to aggregate and centralize data for mines across BC and enable robust and transparent regulatory oversight.
- Released in 2019, Core is a central internal information management system that supports the key regulatory functions for both mines divisions.
- The MDS systems development is currently focused on building the major mines permitting process into the mines digital ecosystem, building on the regional permitting process system released in January 2021.
- Also released in 2019, MineSpace allows mining proponents to submit documents directly to the Ministry of Energy, Mines and Low Carbon Innovation (EMLI), view their compliance history, and review information about their mine, such as permit data and incident history. This portal significantly improves the connection and consistency of information between EMLI and mining operators.
- The BCMI website improves transparency and public access to major mine information from EMLI, Environmental Assessment Office (EAO), and Ministry of Environment and Climate Change Strategy (ENV).

Background/Status:

- MDS manages, maintains and/or provides operational support for the integrated digital products used in mining oversight and in improving transparency with indigenous groups, the public and other stakeholders:
 - Core – a mine management system for staff that holds all relevant mining and compliance related data in a web-based and centralized way.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- MineSpace – a portal for proponents to submit information directly to EMLI (e.g., compliance data and permit application information) and view information held about their mines.
- BCMI – a publicly accessible mine information website.
- Natural Resource Inspection Systems (NRIS) – a cross-natural resource ministry application designed to enable inspectors to digitally manage compliance and enforcement activities and records (e.g., observations, orders and remedial actions).
- Public Website for mineral exploration and mining-related content.
- The MDS Team is responsible for developing Core, MineSpace and BCMI. This work is driven largely user needs (e.g., EMLI staff, Industry and the public) through a collaborative process that is founded in extensive user research, which enables the MDS Team to identify and improve redundant business process.
- The ongoing development work of MDS contributes to streamlining business processes, enabling data-driven decisions and continuously improving transparency and mining oversight. For example:
 - By consolidating and centralizing data, staff can make decisions with all relevant information in one web-based platform.
 - Regional exploration permitting is managed through Core, with process consistency and data collection helping to support robust and timely permitting decisions.
 - Over 500 Mining Proponents voluntarily use MineSpace to submit regulatory reports directly through this portal. To date, over 2000 compliance related documents have been received from mines via this portal, which provides Ministry staff instant access to compliance status. Before MineSpace, this took weeks to manually compile from various email in-boxes.
 - In Fall 2022 MDS launched the intake of major mine applications through MineSpace and has since received 10 Major Mine Applications.
 - BCMI was launched in February 2017 and represents the first time mine related information from EMLI, EAO and ENV is publicly available online in one place.
 - Currently, BCMI publicly displays authorizations, annual reclamation reports, and compliance reports such as Dam Safety Inspections and Dam Safety Reviews, for 73 mines.
- MDS system development is funded using minor capital funding through the Office of the Chief Information Officer (OCIO). From fiscal year 2015/16 to 2021/22 \$8.8M was invested in mines IT systems. In March 2021, \$6.6 million was approved through the OCIO to expand the existing products to focus on Major Mines permitting over four years to directly support Mining Regulatory Excellence work. By the end of fiscal year 2024/25 the total investment in IT systems will be \$15.4M

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- MDS is currently comprised of two hybrid teams, government staff and contractors. MDS holds contracts with Ernst and Young (EY) and Apps on Time Technologies (AOT).

Cross Reference: Permitting Regional Mines (MCAD)
Major Mines Permitting Timelines (MCAD)

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Minister Enforcement Division

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Quinsam Coal Receivership

Drafted/Revised: March 15, 2023

Issue: Quinsam Coal Receivership

Response:

- Quinsam Coal Corporation, owner of the Quinsam Coal Mine (the Mine), filed for bankruptcy on July 3, 2019.
- The bankruptcy trustee abandoned the Mine on July 31, 2019. On September 20, 2019, on the Province's application, the BC Supreme Court appointed a receiver over the Mine. The receiver is managing the Mine in a care and maintenance state to ensure safety and environmental protection remains a priority at the site.
- A buyer for the Mine was not found through the receivership process. The financial security for the Mine, collected under the *Mines Act*, has been fully used to fund the receivership proceedings, thus ensuring environmental protection and human safety at the site.
- The receiver has taken steps to ensure public health and safety are not put at risk at the site, by, for example, maintaining power at the site and ensuring the continued operation of critical pump and ventilation infrastructure.
- The Ministry is exploring opportunities for funding ongoing care and maintenance and options for reclamation and closure of the site.

Background/Status:

- Quinsam Coal Corporation (Quinsam) owned and operated a thermal coal mine, located roughly 20km southwest of Campbell River, and leased the Middle Point Barge Terminal, located roughly 10km north of Campbell River, from the We Wai Kai Nation.
- The Mine ceased operating on June 12, 2019, due to significant liquidity issues. Quinsam entered into bankruptcy on July 3, 2019, choosing PricewaterhouseCoopers Inc. to act as the Trustee.
- The secured creditor did not adequately fund the Trustee, and as a result, on July 30, 2019, the Trustee notified the Province that at midnight on July 31, 2019, it would be abandoning the Mine pursuant to the *Bankruptcy and Insolvency Act* but maintaining their obligations at Middle Point.
- To address immediate health, safety and environmental concerns presented by the Trustee's abandonment of the Mine, the Ministry retained the Bowra Group

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Inc./MNP (Bowra) as a contractor. In September 2019, Bowra was appointed receiver over the Mine and all of Quinsam's assets.

- The Province seized the \$7.28 million reclamation security held in relation to the Mine. Costs paid to the receiver to keep the Mine in care and maintenance are approximately \$300,000 a month and were paid from the security until the security was exhausted in July 2021. Since then, an additional \$2.35M has been spent out of base budget.
- The receiver undertook a sales process from December 2019 to November 2021, which included advertising in national and international publications and direct outreach to unions and potentially interested parties. A suitable buyer for the Mine was not found through this process.

Reclamation

- Through Bowra, the Ministry has taken steps to keep the Mine in care and maintenance status to ensure public health and safety are not put at risk.
- The Ministry contracted an engineering firm, SRK Consulting, to complete an assessment of reclamation and closure costs, which were estimated at \$35.6 million.

Legal Information

- The Ministry is evaluating the next steps for the receivership and the Mine reclamation. These next steps will include updated cost estimates and scope revisions.

Contact:

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Tulsequah Chief Mine

Revised: March 20, 2023

Issue: Remediation of ongoing acid rock drainage from legacy mining into the Tulsequah River and transboundary watershed

Response:

- Between 1951-1957, underground mining activities at Tulsequah Chief Mine (the Mine) left a legacy of acid rock drainage in the Tulsequah River.
- The Province remains committed to holding all past and present owners of the Mine accountable for addressing the acid rock drainage and properly reclaiming the Mine.
- The Province is committed to continuing working in collaboration with the Taku River Tlingit First Nation (TRTFN) and engaging with interested stakeholders regarding the Mine.
- Since 2020, the Province, in collaboration with the TRTFN and the Atlin Taku Economic Limited Partnership, the economic arm of the TRTFN, has carried out interim reclamation activities at the Mine.
- To date, Teck has provided a total of \$3.26 million to the Province on a voluntary basis to support interim reclamation works in 2021 and 2022. This is in addition to the \$1.2M security that the Province seized.
- The receivership over Chieftain Metals Inc. concluded in August 2022.
- The dissolution proceedings of Chieftain were postponed by the courts until October 2022; however, the Ontario Corporate Registry has not yet completed the dissolution process.
- In January 2023, the TRTFN self-declared an area of almost 2 million hectares as an Indigenous Protected and Conserved Area (IPCA), which includes the Tulsequah site. Although the mine site is located within the IPCA, the Province does not expect this to impact current and future reclamation work at the site.
- The Province continues to work with Alaska to identify ways to continue to transparently share information with the State, Tribes, and ENGOs and address concerns from Alaska state lawmakers.

Background/Status:

- The Mine is located south of Atlin and northeast of Juneau Alaska, on the Tulsequah River, in the traditional territory of Taku River Tlingit First Nation (TRTFN).
- Underground copper/lead/zinc mining activities carried out at the Mine between 1951 to 1957 by Consolidated Mining and Smelting Company of Canada Ltd.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

(Cominco), or a subsidiary of Cominco, left a legacy of acid rock drainage, raising concerns amongst First Nations and stakeholders, including Alaska.

- Cominco, through corporate amalgamation, is now Teck Metals Corp., a subsidiary of Teck Resources Ltd. The Mine has not operated since the late 1950's. Teck carried out exploration activities at the Mine in the 1980's and 1990's before selling its interests to Redfern Resources Inc. ("Redfern").
- Redfern became insolvent, and the Mine was acquired by Chieftain Metals Inc. ("Chieftain").
- The Mine is currently owned by Chieftain, a company incorporated in Ontario.
 - Chieftain became insolvent in 2016.
 - In September 2016, Chieftain's primary secured creditor, West Face Capital Inc. (West Face), applied to the Ontario Superior Court for the appointment of a receiver over Chieftain and its parent company, Chieftain Metals Corp.
 - In fall 2016, the Chief Inspector of Mines confiscated the \$1.2 million security bond provided by Chieftain, which has been used to secure areas of the site, address immediate issues, and fund the development of a conceptual closure and reclamation plan.
 - In 2020, West Face applied to have the Receiver discharged without limiting the ability of having a receiver reappointed within two years in the receivership proceedings.
 - The court granted the discharge of the Receiver, and West Face had until August 11, 2022 to apply to reappoint a receiver. No such application was made, and the Province has publicly stated its position that the receivership process is concluded.
- Chieftain continues to retain its assets and interests. Chieftain does not have any corporate directors.
- On September 21, 2022, the Ministry was advised that West Face had "assigned its investments in Chieftain to Armex Mining Ltd. ("Armex") as of September 20, 2022". Ministry staff are working to determine whether Armex purchased the shares of Chieftain or whether Armex has replaced West Face as secured creditor.
- In January 2023, the Chief Inspector of Mines ordered Chieftain to submit plans to address outstanding compliance issues. If Chieftain fails to comply with the order, its Mines Act permit may be canceled.
- The Province (led by Ministry of Water, Land and Resource Stewardship) is working with the TRTFN to advance a revised Land Use Planning project and the recently declared Indigenous Protected Conservancy Area ("IPCA"), which includes the Mine site.

Legal Context:

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- While the passing of August 11, 2022 provided closure in relation to the Chieftain receivership proceedings, the Ontario Superior Court stayed any process for the corporate dissolution of Chieftain until October 2022. As a result, October 2022 was the earliest possible time that the process of dissolution could commence. As of March 16, 2023, the dissolution has yet to occur.
- If the corporate dissolution of Chieftain occurs, Chieftain's assets and interests (e.g., mineral titles) will escheat to the Crown. However, if Chieftain is brought into good standing with the corporate registrar by Armex, Chieftain will not be a risk of dissolution.
- Misperceptions exist among Alaska and environmental non-government organizations (ENGOS) that August 11, 2022, marked the end of Chieftain's interests at or in the Mine such that the Province could immediately commence full reclamation of the site.
- While Chieftain continues to have liabilities with respect to the site, Chieftain's insolvency makes it unlikely they will be contributing financially to remediation.
- As a former operator, it is likely that Teck is a responsible party under the *Environmental Management Act*. The Province has initiated discussions with Teck regarding next steps for reclaiming the site.
- To date, Teck has provided a total of \$3.26 million (over 2 years) to the Province on a voluntary basis to support interim reclamation works in 2021 and 2022.
- Advice/Recommendations

Interim Reclamation Activities (2020-2022):

- Remediation efforts to date have involved the development of a conceptual reclamation and closure plan (the Conceptual Plan) for the Mine, which included input from the TRTFN, the State of Alaska and Teck. Further work is needed to address information gaps and inform a final detailed reclamation plan.
- The Ministry, with cooperation and funding from Teck, has been carrying out the early work identified in the Conceptual Plan to improve site stability and accessibility and to undertake the water and aquatic effects monitoring required to inform a final reclamation plan. These interim activities have been conducted in collaboration with the TRTFN through the Atlin Taku Economic Limited Partnership, the economic arm of the TRTFN.
- Completed work includes:
 - building and repairing 17 stream crossings and bridges;

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- airstrip erosion protection;
- continuation of an annual water quality monitoring program at site; and
- implementing year 3 of a 5-year water quality and aquatic effects monitoring program in the Tulsequah River, which will support and inform further reclamation planning at the Mine.

United States and International Interests:

- The Province and Alaska signed a Memorandum of Understanding and Cooperation (MOU) in 2015. The MOU is being implemented through a Statement of Cooperation (SoC) on the Protection of Transboundary Waters. B.C.'s relationship with its Alaskan counterparts (Commissioners) is strong, transparent, and cooperative.
- Provincial staff will continue to be in regular contact with the State of Alaska, Tribes in Alaska, ENGOS, and other interested parties regarding the continuation of interim reclamation work at the site during the 2023 field season.
- Bilateral working group meetings were held between B.C. and Alaska in October 2022 and January 2023 to share information with State of Alaska Commissioners.
- Following a March 2023 visit to Alaska by EMLI and ENV senior executive for the Juneau Mining Forum, a press conference was held where Alaska state legislators and Alaska Tribal Leaders expressed concern and urgency surrounding Tulsequah Chief and other northwest B.C. mines.
- A March 9th letter from Alaska state legislators to the U.S. government requests a pause on mine permitting and exploration in B.C. and renewed calls for the International Joint Commission (IJC) to intervene. This approach appears to be supported by numerous ENGOS and Alaska Tribes and Tribal organizations.
- B.C. is working with its Alaskan counterparts through the MOU to identify ways to continue to transparently share information with the State, Tribes, and ENGOS. B.C.'s position remains that an IJC reference is not needed, given the actions BC is taking and the strong working relationship with Alaska.

Cross Reference: International Joint Commission Reference and BC's Transboundary Relations with Neighbouring States (MCAD)

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Yellow Giant Mine (Banks Island)

Drafted/Revised: March 20, 2023

Issue: Reclamation of Yellow Giant Mine on Banks Island, Northwest BC

Response:

- Banks Island Gold Ltd (BIG), former owner of Yellow Giant mine (the Mine) located on Banks Island 105 kilometers southwest of Prince Rupert, BC, filed for bankruptcy and went into receivership in 2016.
- BIG's capital assets, mineral claims and titles were purchased by MCC Canadian Gold Ventures (MCGV) in 2019. BIG was dissolved by the corporate registry on August 15, 2022, for failing to file its annual reports.
- The Mine is located in the asserted territory of Gitxaala Nation, who in 2021 expressed concerns about the future state of the mine site, particularly as it relates to reclamation, and commenced a legal challenge to the *Mineral Tenure Act*, citing issues related to the Mine as examples of impacts to right and title. The Province acknowledges Gitxaala's concerns related to outstanding reclamation, and is working with Gitxaala on options to address.
- The Province has conducted remedial work at the Mine under section 17 of the *Mines Act*, using confiscated securities to remove high risk hazardous materials in 2017.
- The Province is committed to working closely with Gitxaala to confirm a desired approach to addressing the reclamation of the site through collaborative efforts.

Background/Status:

- The Mine comprises three separate exploration sites and one permitted mine, including a modular processing plant.
- The Mine is in the asserted territory of Gitxaala Nation (Gitxaala) and Kitselas First Nation.
- In 2016, BIG filed for bankruptcy and went into receivership. EMLI confiscated all reclamation securities, totaling \$420,000, and used \$200,000 to remove high risk hazardous materials from the site in 2017.
- In 2017, EMLI participated in a joint site visit with Gitxaala and the Ministry of Environment and Climate Change Strategy to assess the site following the removal of the hazardous materials. No further activity by the Province has occurred on site since that time.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- In 2019, the mineral claims were acquired by MCGV, the major creditor to BIG. This purchase was approved in December 2018 by the court as part of BIG's receivership.
- Although BIG is bankrupt, it remained the permittee under the *Mines Act* as MCGV did not transfer the permit. However, due to BIG's failure to file its annual reports with the corporate registry, BIG was dissolved on August 15, 2022.
- Gitxaala has voiced concerns about the current and future state of the Yellow Giant site and, in October 2021, requested "clear confirmation that BC is committed to promptly ensure full and complete remediation is conducted at the Yellow Giant site, and that this remediation will not be in any way contingent on permitting further mining to occur at the site".
- The Province is building the relationship with Gitxaala in relation to this site and is in discussions regarding next steps and opportunities for collaboration. A site visit is planned in Spring 2023.
- In June 2022, MCGV wrote to Gitxaala and offered to provide an update on MCGV's environmental activities to Gitxaala. EMLI later learned through a conversation with GTMA that they met in October 2022, though specific plans and future intentions were not discussed.
- In February 2023, MCGV provided a proposal for clean-up activities to EMLI and Gitxaala. Gitxaala and EMLI are working closely on the next steps for engagement with MCGV on the proposal.

Legal Context:

- On October 26, 2021, Gitxaala announced a legal challenge to the *Mineral Tenure Act* (MTA), particularly with respect to the provincial tenuring system under the MTA. The filing referenced environmental impacts resulting from the Mine operating outside of the regulatory scheme, as well as the outstanding reclamation liabilities at the Mine. These issues were cited as examples of impacts to rights and title resulting from the issuance of mineral tenures and subsequent regulation of mining activity.
- The Province continues to explore all options for holding the owner, permittee or recorded holder accountable.

Cross Reference: Mineral Tenure Act Reform/Modernization (MCAD)

Contact:

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2023/2024 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne
Title: Petroleum and Natural Gas Tenuring and Disposition

Revised: March 13, 2023

Issue: Petroleum and Natural Gas Tenure issuance and management of Crown-owned subsurface resources.

Response:

- The Government owns most of the petroleum and natural gas (PNG) resources in British Columbia (BC) and grants rights for their use through issuance of PNG tenure under the *Petroleum and Natural Gas Act*.
- There are two types of PNG tenure that are routinely issued by the Ministry of Energy, Mines and Low Carbon Innovation (Ministry). They are leases and drilling licences.
- Industry requests and acquires PNG tenure at Crown held dispositions (Crown sales), which are held monthly through a competitive sealed-bid public tender auction.
- The Ministry paused the Crown sale process in July 2021 as a result of *Yahey v BC*, and to support negotiation processes.
- The Crown sale process remains paused until the Ministry works with Treaty 8 First Nations to align a new tenuring process with negotiated commitments.

Background/Status:

- A PNG tenure grants the right to use Crown-owned subsurface resources under certain terms.
- The Ministry is responsible for issuing and managing PNG tenures on behalf of the province, ensuring that Crown-owned PNG resources are managed in a responsible and sustainable manner to benefit all British Columbians. Additional information regarding the processes in disposing and managing PNG tenure can be found in Appendix 1.
- Once PNG tenure has been issued, the tenure holder must apply to the BC Energy Regulator to conduct surface related oil and gas activities that support the exploration and development of the issued PNG tenure.
- The Ministry paused the Crown sale process in July 2021, as a result of *Yahey v BC*, and to support negotiation processes.
- In January 2023, negotiated agreements were reached with Blueberry and four other Treaty 8 First Nations.
- The Crown sale process remains paused while the Ministry takes steps to engage Treaty 8 First Nations with the goal of aligning a new tenuring process with negotiated commitments.

2023/2024 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Types of Tenure

- There are two types of PNG tenure that are routinely issued by the Ministry under the *Petroleum and Natural Gas Act*. They are:
 - **Drilling licence** - A drilling licence provides the exclusive right to explore for PNG resources by drilling wells. Drilling licenses are acquired at Crown dispositions and are issued under terms of three, four or five years depending on geographic location.
 - **Lease** - A lease provides the exclusive right to produce PNG resources and a right to dispose of or store natural gas, water and other substances associated with oil and gas activities. They are acquired at Crown dispositions or selected from drilling licenses. Lease terms are five or ten years, depending on geographic location.
- Each type of tenure grants a specific set of rights and sets out the obligations of the tenure holder and the circumstances under which the tenure can be extended or converted to another type of tenure.
- Occasionally PNG tenure is issued by the Minister under special terms and for the price approved by the Lieutenant Governor in Council. This process is sometimes used for unique situations to support First Nations initiatives or company specific interests where different tenure terms are needed or where a competitive public tender process is not appropriate.

Tenure by the Numbers

- As of March 10, 2023, there are 11,171 leases and 67 drilling licences, covering approximately 5.79 million hectares.
- Over the past 5 years the amount of tenured land has been steadily decreasing. This is likely due to oil and gas companies surrendering lands to seek more viable economic resource plays elsewhere and reducing operating costs during times of uncertainty as a result of litigation (e.g., *Yahey v BC*).
- Most of the province's PNG resources occur in the Western Canada Sedimentary Basin that underlies northeast BC. Natural gas, not oil, is the province's predominant form of hydrocarbon resource.

Cross Reference: Petroleum and Natural Gas Tenure Revenue
Attachment: Appendix 1 - Petroleum and Natural Gas Tenure Disposition and Management Processes

Contact:

Nathaniel Amann- ADM Oil and Gas Division 250 889-1990
Blake

Appendix 1

Petroleum and Natural Gas Tenure Disposition and Management Processes

Management of the Crown PNG Resources

The province is divided into a rectangular geographic grid system known as the petroleum and natural gas grid. Each rectangular cell of the PNG grid is known as a 'spacing area' and is approximately 259 hectares or approximately one square mile. The Ministry uses the PNG grid system with its geological zone designation system to responsibly administer and manage the Crown's PNG resources in the form of PNG tenure.

PNG Tenure Disposition Process

- **Posting request/pre-referral review:** An oil and gas company sends the Ministry a legal description and location of the PNG rights they would like posted in an upcoming Crown disposition. The Ministry runs a comprehensive initial check to determine:
 - if there are pre-existing PNG rights in the area being requested;
 - if the PNG rights have already been requested;
 - if there are known issues with the surface lands that would prevent or limit surface access to those rights, e.g., provincial parks; or
 - if there is overlap with lands that have existing First Nations legal commitments, such as a treaty land entitlement claim, which may constrain access to those rights.

If a posting request passes this review, it proceeds to the next step in the disposition process.

- **Pre-tenure referral:** Before posting PNG rights for disposition, the Ministry consults with First Nations, local governments and other provincial ministries to identify any concerns that these groups may have with the proposed disposition.
- **Finalization and assessment:** Once the pre-tenure referral process has been concluded, the Ministry analyzes the comments it has received on the requested PNG rights and decides whether:
 - to not offer the PNG rights for disposition;
 - to defer the disposition of the PNG rights until further consultations or land use planning/negotiations have taken place; or,
 - to post the PNG rights for disposition with caveats affixed to the pending title identifying to bidders the concerns raised by First Nations and other governments.

Once the PNG rights have been selected to be offered for disposition, the Ministry will:

- publish (electronically) a public notice describing the PNG rights to support the upcoming monthly disposition; and

- conduct an assessment on each PNG right included in the upcoming monthly disposition to estimate the potential revenue expected from the disposition to inform the disposition adjudication.
- **Monthly rights disposition:** Generally, the Ministry conducts a disposition of PNG rights in the form of tenure once per month. Purchasing bids are usually delivered to the Ministry up until noon on the day of the disposition via ebidding.

When the bids are received, they are reviewed to determine the successful bid for each PNG right requested. The Ministry may choose not to dispose of PNG rights if the bids received are not consistent with current or historic bidding trends or do not represent good value to the province given the geological potential and other related factors associated with the PNG rights being requested.

Accepted bids are deposited into the province's Consolidated Revenue Fund on the day of the disposition (see Transition Note: Petroleum and Natural Gas Tenure Revenue, for information regarding the administration of bonus bid revenue).

- **PNG Tenure issuance:** On the day following the monthly disposition, the successful bidder is issued a PNG tenure for the rights in the location described in the public disposition notice.

PNG Tenure Management Process

- **Annual rent collection:** The province charges a per-hectare annual rent on issued PNG tenures. The Ministry manages collection of this rent (along with cancellation of tenure in cases of non-payment).
- **PNG Tenure management:** Oil and gas companies routinely buy, sell or trade PNG tenure amongst themselves. The Ministry keeps up-to-date records of which company holds which PNG tenures. These records are publicly available. Oil and gas companies often borrow money to finance their operations using their PNG tenures as collateral. On request, the Ministry may record certain types of financial instruments as an encumbrance against a PNG tenure – improving liquidity for oil and gas companies and providing some security for creditors.
- **Lease selection from drilling licences:** To gain the right to produce from a drilling licence, drilling licence holders must drill earning wells, which provides the basis of selecting leases. Production is not allowed on drilling licences. The Ministry assesses lease selection applications to:
 - ensure that the wells drilled qualify as earning wells;
 - verify the lease area earned by the drilled wells; and
 - track which rights are transferred to the new lease area and which remain with the drilling licence.
- **Applications for drilling term extensions:** There is a variety of term extensions at the end of the primary term of an issued drilling licence. There is a one-time standard extension available upon payment, while other extensions require an application and subsequent review by the Ministry to validate the request (e.g., safety or planning activities may have delayed the drilling of a well).

- **Lease continuations:** At the end of the primary term of an issued lease, the tenure holder may apply to have the lease term continued. There are a variety of continuation options which all require an application so the Ministry can validate the request to determine whether the tenure holder has met the lease requirements set out under the *Petroleum and Natural Gas Act*. The review can include analysis and interpretation of geological information provided by the tenure holder and other information held by the Ministry.

In some cases, a lease continuation application is not successful. When this occurs, the oil and gas company will have to apply for a continuation under a program of work, which the Ministry will have to review and determine its validity.

2023/24 Transition Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Petroleum and Natural Gas Tenure Revenue

Revised: March 14, 2023

Issue: Petroleum and natural gas subsurface tenure revenue update and forecast.

Response:

- The Ministry of Energy, Mines and Low Carbon Innovation (Ministry) manages subsurface petroleum and natural gas (PNG) tenures and the associated revenue.
- PNG tenure revenue is in the form of rental payments and administrative fees issued on existing tenure, including bonus bids, i.e., what industry pays at a Crown PNG tenure sale over and above rentals when initially acquiring PNG tenure.
- All PNG tenure revenue is accounted for in the Public Accounts.
- The Ministry paused the Crown sale process in July 2021 as a result of the June 2021 B.C. Supreme Court Decision in *Yahey v. BC* (Yahey).

Background/Status:

- On an annual basis, the Ministry publishes the number of hectares of PNG tenure disposed, total bonus bids received and average tenure price on a per hectare basis (Appendix 1, Table 1).
- Bonus bid revenue generated from Crown sales is deferred over time as it allows for better financial planning and streamlines the Public Accounts by spreading the revenue across several years to avoid spikes in the Province's revenue stream.
- A comprehensive analysis is conducted by the Auditor General's Office (OAG) and the Office of the Comptroller General (OCG) at the end of each fiscal year to determine the bonus bid deferral period. The deferral period was changed from nine years to ten years effective 2018/19 and remains the same today.
- The Public Accounts reports Crown sale revenue on the deferred basis for both actual revenues collected and forecast values. On a cash basis, bonus bid actual revenues in fiscal 2022/23 was \$0, however, on a deferral basis the result is approximately \$81 million due to the deferred revenue of previous years being brought forward. Tenure rental and fee revenue received in fiscal 2022/23 totalled approximately \$40 million (Appendix 1, Table 2).
- In consideration of the June 2021 Yahey decision, the Ministry paused PNG tenure dispositions in July 2021 until further notice. Resumption of PNG tenure dispositions is expected to occur in fiscal 2023/24 now that the Province has signed agreements

2023/24 Transition Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

with Blueberry River First Nations and four other Treaty 8 First Nations (Halfway River, Doig River, Fort Nelson and Saulteau).

- Total PNG tenure revenue is expected to be moderate in future years due to less land being available to develop and used for alternative purposes to advancing other land use policy initiatives such as the conservation of species at risk (e.g., caribou recovery) and protecting Treaty 8 rights.

Cross Reference: Petroleum and Nature Gas Tenuring and Disposition

Attachments: Appendix 1 - Petroleum and Natural Gas Tenure Revenue

Contact:

Nathaniel Amann- Blake	ADM	Oil and Gas Division	250 889-1990
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Appendix 1 – Petroleum and Natural Gas Tenure Revenue

Table 1: Bonus bid revenue for each fiscal year from 1978 to 2022.

Fiscal Year	Hectares Disposed	Total Tender Bonus	Average Price (\$/ha)
1978-1979	525,919	\$136,353,878.50	\$259.27
1979-1980	506,006	\$206,474,454.69	\$408.05
1980-1981	313,924	\$129,955,601.38	\$413.97
1981-1982	623,760	\$53,982,370.63	\$86.54
1982-1983	151,970	\$17,025,074.03	\$112.03
1983-1984	122,202	\$33,292,304.42	\$272.44
1984-1985	273,409	\$59,583,349.35	\$217.93
1985-1986	386,785	\$89,170,448.47	\$230.54
1986-1987	210,250	\$25,896,026.49	\$123.17
1987-1988	315,834	\$59,420,094.84	\$188.14
1988-1989	524,777	\$112,302,592.61	\$214.00
1989-1990	428,227	\$86,701,338.77	\$202.47
1990-1991	494,980	\$121,214,108.92	\$244.89
1991-1992	346,036	\$55,022,701.42	\$159.01
1992-1993	202,485	\$35,322,638.02	\$174.45
1993-1994	680,241	\$184,786,092.78	\$271.65
1994-1995	678,490	\$187,108,587.13	\$275.77
1995-1996	737,934	\$133,718,316.06	\$181.21
1996-1997	617,281	\$170,621,056.00	\$276.41
1997-1998	683,028	\$175,513,891.51	\$256.96
1998-1999	344,363	\$67,265,539.82	\$195.33
1999-2000	809,775	\$206,928,360.11	\$255.54
2000-2001	907,335	\$418,006,044.29	\$460.70
2001-2002	686,413	\$312,170,642.18	\$454.79
2002-2003	828,144	\$279,945,821.89	\$338.04
2003-2004	705,519	\$625,662,664.63	\$886.81
2004-2005	552,151	\$280,184,531.50	\$507.44
2005-2006	605,984	\$555,643,094.49	\$916.93
2006-2007	616,740	\$607,070,149.31	\$984.32
2007-2008	655,897	\$1,222,303,262.97	\$1,863.56
2008-2009	653,509	\$2,424,577,402.13	\$3,710.09
2009-2010	379,077	\$896,436,856.41	\$2,364.79
2010-2011	376,431	\$817,954,200.86	\$2,172.92
2011-2012	216,768	\$286,611,897.52	\$1,322.21
2012-2013	104,281	\$115,240,077.25	\$1,105.09
2013-2014	118,588	\$220,535,910.71	\$1,859.68
2014-2015	131,597	\$334,804,215.11	\$2,544.16
2015-2016	58,735	\$15,930,804.57	\$271.23
2016-2017	112,107	\$61,229,320.02	\$546.17
2017-2018	103,292	\$140,930,898.56	\$1,364.39
2018-2019	25,786	\$50,331,994.69	\$1,951.91
2019-2020	20,330	\$12,779,852.54	\$628.62
2020-2021	269	\$807.00	\$3.00
2021-2022	5,729	\$3,782,616.79	\$660.26
2022-2023	0	\$0.00	\$0.00
As of March 14, 2023			
5 yr. avg. (2018/19 – 2022/23)	10,423	\$13,379,054.20	\$648.76
10 yr. avg. (2013/14 - 2022/23)	57,643	\$84,032,642.00	\$982.94
15 yr. avg. (2008/09 – 2022/23)	153,767	358,743,123.61	1,366.97

Table 2: PNG tenure revenue forecast.

PNG Tenure Revenue	<i>Actual</i> (\$ million)	<i>Budget 2022 Forecast</i> (\$ million)	<i>Current Forecast</i> (\$ million)	Advice/Recommendations; Government Financial Information
	21/22	21/22	22/23	
Bonus Bids (cash basis)	4	-	-	
Bonus Bids (deferred basis)	91	91	81	
Fees and Rentals	52	50	50	

2023/24 Transition Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Resource Stewardship Initiatives with Treaty 8 First Nations

Drafted: March 13, 2023

Issue: Advancing Resource Stewardship Initiatives with Treaty 8 First Nations

Response:

- In January 2023, the Province and Blueberry River First Nations (Blueberry) signed an agreement that will guide a partnership approach to land, water and resource stewardship that ensures Blueberry members can meaningfully exercise their Treaty 8 rights and provide stability and predictability for industry in the region.
- In January 2023, the Province and four Treaty 8 First Nations (Fort Nelson, Saulteau, Halfway River and Doig River First Nations) also reached consensus on a collaborative approach to land and resource planning, and to advance regional stewardship initiatives in northeastern B.C.
- The Ministry of Energy, Mines and Low Carbon Innovation (Ministry) will play a key role in advancing the above work collaboratively with Treaty 8 First Nations and other natural resource agencies.

Background/Status:

- In January 2023, the Province signed agreements with Blueberry and four other Treaty 8 First Nations (Saulteau, Halfway River, Doig River, Fort Nelson) committing to new approaches for responsible resource stewardship and development and ensuring the meaningful exercise of Treaty 8 rights.
- The agreements follow a June 2021 B.C. Supreme Court ruling that determined that Province breached the treaty and infringed on the constitutionally protected Treaty 8 rights of Blueberry as result of the cumulative impacts of industrial development over many years.
- The agreements reflect a partnership approach for the planning and management of lands and resources to address the cumulative impacts of industrial development and ensure the meaningful exercise of Treaty 8 rights in the territory, restore the land, and provide stability and predictability for industry in the region.
- The Ministry is taking steps to align oil and gas development and interests with the provisions and commitments identified in the agreements, including leading oil and gas development planning in specified areas to reduce incremental impacts and protect Treaty rights.

2023/24 Transition Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Current Status/Next Steps

- Ministry staff are actively working with Treaty 8 First Nations to advance the work identified in the agreements. The Ministry has a lead role in planning initiatives for the PNG sector.

Contact:

Nathaniel Amann-Blake	ADM	Oil and Gas Division	250 889-1990
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2023/24 Transition Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osbourne

Title: Petroleum and Natural Gas Development and Agriculture

Revised: March 13, 2023

Issue: Interaction between oil and gas development and agricultural land use in the Agricultural Land Reserve in northeast British Columbia

Response:

- The Province has taken action to look at the interaction between oil and gas development and agriculture in British Columbia's (BC) Agricultural Land Reserve (ALR) in northeast BC (NEBC).
- This action includes the formation of a Deputy Minister-level Task Force that is charged with developing a northeast ALR Strategy and establishing an increased Agricultural Land Commission (ALC) presence to support farmers and ranchers in the ALR in NEBC.
- The Ministry of Energy, Mines and Low Carbon Innovation (EMLI) has a long history of working with the Ministry of Agriculture and Food (AF) and local governments in providing services that are focused on educating farmers and oil and gas companies about accessing private land to ensure each party benefits from the process and relationship.

Background/Status:

- In NEBC, concerns have been raised that there is an imbalance between the amount of oil and gas development and agriculture use within the ALR.
- In January 2018, AF tasked an Independent Advisory Committee (Advisory Committee) to revitalize the ALR and the ALC by leading a Province-wide engagement process and providing strategic advice through recommendations for consideration by Government.
- In December 2019, the Advisory Committee submitted a final report with the recommendations for the Minister of AF's consideration, including Recommendation 25, which is specific to the interaction of oil and gas development and agricultural land use in NEBC.
- Recommendation 25 states: Immediately work to address the imbalance between oil and gas development and agriculture in BC's northeast ALR:
 - Form a Deputy Minister-level, multi-agency, multi-jurisdictional Task Force to develop a northeast ALR Strategy; and
 - Establish an increased ALC presence to support farmers and ranchers in BC's northeast ALR.
- In February 2020, a Deputy Minister Task Force (DMTF) was established (see the attached Terms of Reference (ToR) to consider Recommendation 25. The Task Force is comprised of the Deputy Minister of AF, the Deputy Minister of the Ministry, the Chief Executive Officer (CEO) of the ALC, and the Commissioner and CEO of

2023/24 Transition Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osbourne

the BC Energy Regulator.

- To consider Recommendation 25, the Task Force will first develop a comprehensive and factual public facing report that will provide:
 1. the history and current context in NEBC with respect to oil and gas and agricultural land use; and,
 2. an examination of the existing policy and regulatory frameworks for both sectors.
- An Assistant Deputy Minister committee supporting the DMTF completed a draft background report in May 2021.
- The background report objectively describes how oil and gas and agricultural land use have evolved over time in the ALR in NEBC, and includes the examination of existing policies and regulatory frameworks to identify any gaps that may warrant attention or change.
- The background report was not brought forward to the DMTF for review at that time in order to address pressing issues related to the COVID-19 pandemic, Provincial emergency management response (e.g., flooding in lower mainland) and provisions stipulated by the BC Supreme Court in *Yahey v BC*.
- It has been approximately 2 years since the background report was completed and the report needs to be updated to reflect current events and brought forward to the DMTF for review.

Supporting Farmers

- Between 2012 - 2018, the Ministry and the Peace River Regional District (PRRD) cost-shared the establishment of the Farmer's Advocacy Office (FAO).
- In February 2020, the Ministry, AF and the PRRD signed a memorandum of understanding to establish and implement the Farmer's Information Service (FIS), which builds on the learnings from the services provided previously by the FAO.
- The FIS opened in December 2020 and is currently cost-shared between the Ministry and AF. The total spend to deliver the FIS in 2022-23 was \$78,000.
- Between April 2022 and September 2022, 20 client interactions were documented, reflecting a low to moderate demand for the service delivered by the FIS.
- The FIS is designed to better assist farmers and other landowners in their understanding of oil and gas development on their lands to reduce conflicts and maximize benefits to both parties.

Attachments: Appendix 1 – ToR Task Force

Contact:

Nathaniel	ADM	Oil and Gas Division	250 889-1990
Amann Blake			

**Terms of Reference
Deputy Minister Task Force
Agriculture and Oil & Gas in Northeast British Columbia**

Preamble: In January 2018, the Minister of Agriculture tasked an Independent Revitalization Committee to revitalize the Agricultural Land Reserve (ALR) and the Agricultural Land Commission (ALC) by leading a province-wide engagement process and providing strategic advice through recommendations for consideration by Government. The Revitalization Committee submitted final recommendations for the Minister's consideration including Recommendation 25¹ specific to the interaction of oil and gas development and agricultural land use in Northeast BC (NEBC). From the Revitalization Committee's report:

Immediately work to address the imbalance between oil and gas development and agriculture in BC's Northeast ALR:

1. *Form a Deputy Minister-level, multi-agency, multi-jurisdictional Task Force to develop a Northeast ALR Strategy; and,*
2. *Establish an increased ALC presence to support farmers and ranchers in BC's Northeast ALR.*

Committee: A Deputy Minister/Commissioner level Task Force (Task Force) is established to consider Recommendation 25 from the Revitalization Report. The DM Task Force is comprised of:

- Deputy Minister of Agriculture;
- Deputy Minister of Energy, Mines and Petroleum Resources;
- Chief Executive Officer, Agricultural Land Commission; and
- Commissioner and Chief Executive Officer, BC Oil and Gas Commission.

Accountability: The Task Force will examine the findings and recommendations from the Revitalization Report and, where and if appropriate, develop recommendations and initiate actions as may be necessary in providing Government's response to the Report.

The Task Force will begin its work by developing a comprehensive and factual public facing report which will provide:

- the history and current context in NEBC with respect to oil and gas and agricultural land use; and
- an examination of the existing policy and regulatory frameworks for both sectors.

The report will guide additional work as identified by the Task Force including:

- Determination of any regulatory or legislative enhancements which may be warranted;

¹ See Appendix 1 for the full recommendation

- Consideration of all available information the Task Force deems appropriate including information from the recent Farmington Landowners Group trials and the Peace River Regional District, local Farmers/Ranchers; and
- Consultation as appropriate and/or as required with Indigenous Communities, landowners, local governments, industry and others.

Support: To support the work of the Task Force, an Executive Committee is formed comprised of:

- Assistant Deputy Minister, Ministry of Agriculture
- Assistant Deputy Minister, Oil and Gas Division, Ministry of Energy, Mines and Petroleum Resources
- Director, Agricultural Land Commission; and
- Executive Vice President/Chief Operating Officer, BC Oil and Gas Commission.

Roles: The Task Force will:

- Adopt these Terms of Reference;
- Meet as required to provide direction on analysis, reporting and other work to be done by the Executive Committee;
- Provide the appropriate linkage between Ministries and Cabinet/ELUC;
- Manage any concerns or disputes arising from the work; and
- Ensure the work of the Member Ministries and Commissions is aligned and coordinated.

The Executive Committee will:

- Review the recommendations and actions as outlined in the Revitalization Committee final report related to oil and gas and agriculture interactions and provide the outcome of the review and any further considerations to the Task Force, including:
 - Developing a public facing comprehensive report on Agricultural and Oil and Gas land use within the ALR in NEBC;
 - Responding to direction from the Task Force;
 - Identifying challenges and opportunities to be addressed;
 - Undertaking a review of the existing data/information available to assist in informing the Task Force; and
 - Making recommendations on next steps.

Relationships: The Task Force will provide any findings or recommendations arising from their work to the Deputy Minister Committee for Natural Resources (DMCNR) for review and discussion prior to advancing any recommendations to Government. Any such recommendations should be advanced utilizing the existing committee structures provided by the Assistant Deputy Minister Committee on Natural Resources (ADMCNR) and the DMCNR.

- Principles: The Task Force and the Executive Committee will:
- Develop fact based information and background on all matters before the Task Force;
 - Provide a balanced and reasoned approach, mindful of divergent views, and supported by staff and subject matter experts; and
 - Seek consensus directions and recommendations, or where consensus is not possible, document the reasons for lack of consensus and possible paths forward.
- Expenses: Individual Ministries and Commissions are responsible for their respective travel costs, subject to government travel guidelines and requirements.

Appendix 1

From the Revitalization Report Recommendation 25 and Associated Actions: Need for a Deputy-Minister Task Force and Strategy

Actions:

1. *Establish a Deputy Minister- level task force with internal and external agriculture partners and stakeholders from the natural resource sector. Direct the Task Force to:*
 - *Develop a strategy to address the significant resource extraction issues impacting the ALR and its farmers and ranchers in BC's Peace River Region*
 - *Review, among other considerations, the following issues and take actions as required:*
 - *How to balance surface rights of the farmer/rancher with sub-surface rights of the extractor*
 - *How the farmer/rancher will be given authority to influence negotiations on the farm and location of oil and gas facilities and infrastructure.*
 - *How the comments made to the task force by the farmers/ranchers will be accommodated in the balance process*
 - *Whether the delegation agreement between the ALC and the BC Oil and Gas Commission is the correct approach or if there is an alternative approach that would better protect the agricultural interest and restore confidence in the regulatory system over the long term*
 - *Complete a fulsome impact assessment of oil and gas activity with the ALR*
 - *Determine how farmers can access ongoing professional independent support*
2. *Build a memorandum of understanding and operational agreement between the ALC and the BC Oil and Gas Commission for sharing impact assessments and other information so they can work more effectively together.*
3. *Consider whether/what portion of royalties from oil and gas development in the ALR should be directed to a regional agriculture development fund.*

Need for Increased ALC and Ministry Presence

Actions:

1. *The Committee recommends the Ministry of Agriculture work with other natural resource ministries to ensure the ALC and the Ministry are sufficiently resourced to increase presence and support for the ALR protection and for farmers and ranchers in BC's Northeast ALR.*

Title: Overview of British Columbia's Natural Gas Industry

Drafted/Revised: March 10, 2023

Issue: British Columbia's natural gas industry plays a key role both for the province's economy and as a reliable and affordable source of energy

Response:

- British Columbia is Canada's second largest producer of natural gas and plays a key role in meeting both domestic demand as well as in neighbouring jurisdictions in the Pacific Northwest as well as across Canada.
- British Columbia's natural gas industry has a significant role in British Columbia's economy regularly invests between \$5 billion and \$9 billion on an annual basis.
- Over 1 million household and businesses rely on British Columbia's natural gas for heating, to cook food and more recently natural gas has started to be used more extensively in our transportation system.

Background/Status:

- British Columbia is Canada's second largest producer of natural gas and if viewed independently is the world's seventeenth largest natural gas producing jurisdiction in the world ahead of exporting countries such as Nigeria and Indonesia.
- In 2022, British Columbia produced over 6 billion cubic feet per day (Bcf/d) of natural gas. Just under 20 per cent of this is consumed domestically, with the remainder exported through pipelines into Washington State or into Alberta.
- Natural gas is produced in the northeastern part of British Columbia, predominantly from the Montney Formation. Development of tight gas in the Montney Formation is the primary factor behind British Columbia's gas production more than doubling from 2010, when production averaged 2.88 Bcf/d.
- Provincial revenues (royalties along with bonus bids, rents on drilling rights and leases) from natural gas development totaled \$1.05 Billion in 2021/22. Due to higher prices and increased production, revenues are currently projected to exceed \$2.2 Billion in 2022/23 and remain above \$2.0 Billion in 2023/24.
- Several pipelines transport natural gas produced in British Columbia including Enbridge's Westcoast Pipeline (also referred to as the Enbridge BC Pipeline) and pipelines operated by FortisBC and Pacific Northern Gas (PNG). FortisBC and PNG supply natural gas to most of the domestic, commercial and industrial users in the province and are regulated by the British Columbia Utilities Commission.

- Several liquefied natural gas (LNG) export facilities have been proposed in the province with only two having advanced to either commence construction (LNG Canada) or commence site preparation ahead of construction starting (Woodfibre LNG).
- FortisBC operates two smaller scale LNG facilities: Tilbury LNG, on Tilbury Island near Vancouver, and Mt. Hayes, near Ladysmith on Vancouver Island.
 - Tilbury has been in operation since 1971. It serves local markets during peak winter demand, provides LNG for marine bunkering as well as fleet vehicles, and has, in recent years, started producing LNG for electricity generation in Whitehorse, Yukon, and Inuvik, Northwest Territories.
 - Mt. Hayes was built in 2011 and provides gas to customers on Vancouver Island during high demand periods or gas system outages.
- Nearly 30 per cent of the energy used in British Columbia comes from natural gas according to the Canada Energy Regulator (CER). FortisBC alone supplies natural gas to approximately 1.2 million customers (households & businesses).
- According to Statistics Canada, British Columbia's oil and natural gas sector employed over 50,000 individuals in 2021. Many of these (over 40,000) are classified as oil and gas engineering construction and are primarily engaged in the construction of oil and gas lines, mains, refineries, and storage tanks.
- As well, from an annual survey conducted by Statistics Canada, companies in British Columbia's oil and gas sector regularly invest between \$5 billion and \$9 billion in new developments (capital expenditures) and on-going operations (operating expenditures) in British Columbia.
- According to the *Provincial Inventory of Greenhouse Gas Emissions*, emissions from British Columbia's oil and gas sector totaled 12.8 million tons in 2020 which is over 1 million tons lower than what was recorded in 2007 (despite more than double the production). In the *CleanBC Roadmap to 2030*, the Province made a commitment to reduce emissions from oil and gas by 33-38 per cent by 2030, compared to 2007 levels.

Contact:

Nathaniel Amann-Blake ADM Oil and Gas Division 250-889-1990

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: LNG Projects: Status and Facts (inc Emissions)

Drafted/Revised: March 13, 2023

Issue: Liquefied Natural Gas (LNG) and Liquefied Petroleum Gas (LPG) projects at various stages of development

Response:

- British Columbia's natural gas industry is operated by the private sector. The development of an LNG export facility is based on the commercial viability of each project and takes many years before operations can commence.
- Global demand for LNG and LPG products, such as propane, continued to expand in 2022 and looking ahead these energy products are expected to continue to play a significant role around the world.
- British Columbia's natural gas and propane export projects have continued to evolve with three projects having already shipped cargoes to global markets.
- One project (LNG Canada) is currently under construction and others have signaled that they could commence construction in 2023.

Background/Status:

LNG Projects

Tilbury LNG:

- The Tilbury LNG facility has been operating since 1971, contributing to the security of supply of BC's natural gas distribution system in the lower mainland. The facility is owned and operated by FortisBC.
- The Phase 1A expansion has been completed and is part of a two-phase, \$4.5 billion build out plan for the facility. The \$425 million Phase 1A involved a new liquefaction train and storage tank brought into commercial service in 2018.
- The FortisBC plan to further develop the facility over the next 5 years would see additional liquefaction and infrastructure to support LNG marine bunkering (Tilbury Marine Jetty and Phase 1B) developed, followed by additional storage and processing capacity for LNG export (Phase 2).
- At present the facility has the ability to produce 0.25 million tonnes per annum (MTPA) of LNG. At full capacity (inclusive of Phase 2) the facility would be capable of producing nearly 3.5 MTPA.
- FortisBC and Seaspac are proposing the Tilbury Marine Jetty, which is currently under consideration for its Environmental Assessment Certificate (EAC).

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Fortis' Tilbury facility can play a key role in meeting the growing demand for LNG by the marine sector within the Port of Vancouver, the Port of Prince Rupert, and other major ports on the west coast of North America.
- Expansion of the Tilbury facility has been opposed by a number of municipalities and First Nations including the cities of Vancouver, Richmond and Port Moody, and Tsawwassen, Squamish and Tsleil-Waututh First Nations.
- In August 2022, the Musqueam Indian Band (MIB) announced that it had signed an agreement with FortisBC that could see MIB have an equity ownership stake in the project. In January 2023, the Snuneymuxw First Nation signed an agreement with FortisBC to work in close collaboration on the Tilbury projects.

LNG Canada:

- The LNG Canada Project is a 28 MTPA facility that is located near Kitimat. In 2018 the project announced a positive Final Investment Decision on the first phase of development and is currently constructing the first two trains that would produce and export 14 MTPA.

Woodfibre LNG:

- The Woodfibre LNG Project is a proposed 2.1 MTPA facility that is located near Squamish BC. In October 2020, Woodfibre LNG Ltd. Received a 5-year extension for the deadline of their EAC.

Cedar LNG:

- The Cedar LNG Project is a proposed floating liquefied natural gas facility in Kitimat, within the traditional territory of the Haisla Nation. The project is being proposed by the Haisla Nation and Pembina Pipelines and would export 3 MTPA of LNG.
- The project would receive its natural gas from the Coastal GasLink pipeline, the same pipeline that is providing feedstock to LNG Canada.
- In March 2023, Cedar LNG received an EAC from the BC Environmental Assessment Office (EAO). The BC EAO also carried out a federal impact assessment under a substitution agreement and federal approval was granted shortly after BC's.
- In March 2023, Cedar LNG entered into an MOU for a 20-year liquefaction services agreement with ARC Resources. The parties are working towards finalizing a definitive agreement for 1.5 MTPA of LNG.

Port Edward LNG:

- Port Edward LNG is proposing to develop a small-scale, 0.3 MTPA LNG export facility that will utilize ISO-containers and ship through the Port of Prince Rupert.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- The project has entered into an agreement with the Municipality of Port Edward for the land as well as Pacific Northern Gas Pipeline for its feedstock.
- The facility does not trigger an Environmental Assessment and has received an LNG Facilities Permit from the BC Energy Regulator.

Ksi Lisims LNG:

- On March 12, 2021, the Nisga'a Nation announced that it had entered into a Collaborative Endeavors Agreement with Western LNG and Rockies LNG Partners for the assessment and development of an LNG facility in the Nass Area.
- The project envisions exporting upwards of 12 MTPA of LNG and is exploring the use of a floating Liquefied Natural Gas facility.
- The project submitted its initial project description with the Environmental Assessment Office in the summer of 2021 and its detailed project description early in 2022. The project received a readiness decision from the Environmental Assessment Office to proceed into the assessment process.
- Of the two proposed pipelines that could provide feedstock to the facility, Ksi Lisims LNG has indicated that they have chosen to work with TC Energy's proposed Prince Rupert Gas Transmission.

LPG Projects

Ridley Island Propane Export Terminal:

- AltaGas' Ridley Island Propane Export Terminal (RIPET) was Canada's first propane export facility and has an export license to export up to 92,000 barrels per day (bpd). The terminal offloads approximately 50 to 60 rail cars of liquid propane from BC and Alberta each day, which is then delivered to global markets through approximately 20 to 30 marine shipments per year.
- Since commencing operations in 2018, RIPET now accounts for approximately 10 per cent of the propane imported into Japan, who imported over \$1.8 billion worth of propane from Canada in 2022.
- In 2022, RIPET shipped 1.7 million tonnes, 17% higher than 2021.

Prince Rupert Terminal:

- Pembina's Prince Rupert Terminal is a propane export terminal located on Watson Island in the vicinity of Prince Rupert. The terminal can handle an average of 20,000 barrels per day with a capacity maximum of 25,000 barrels per day.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- On April 9, 2021, Pembina began loading propane onto vessels destined for international markets with some of the initial cargos destined for Hawaii and the majority of their 2021 cargoes landing in South Korea.
- In 2022, the terminal handled over 538,000 tonnes, a 45% increase over 2021.

Vopak Pacific Canada:

- Vopak Development Canada Inc., a wholly owned subsidiary of Royal Vopak, is investigating the opportunity to construct, own and operate a new bulk liquids storage facility on port lands in Prince Rupert.
- The project is expected to store liquefied petroleum gas' such as propane and butane, clean petroleum products as well as methanol. All products will be transported to the facility (from both BC and Alberta) via the existing CN Railway line before being exported to predominantly Asian markets.
- In 2022 the project received provincial and federal environmental approvals.

New Natural Gas Transmission Pipelines

Prince Rupert Gas Transmission Pipeline:

- The Prince Rupert Gas Transmission Project is a proposed (TC Energy) 900-kilometre natural gas pipeline that would run from Hudson's Hope to Lelu Island near Prince Rupert.
- PRGT's EAC is set to expire on November 25, 2024 unless the pipeline is substantially started before that date.

Westcoast Connector Gas Transmission:

- The Westcoast Connector Gas Transmission (WCGT) is a proposed (Enbridge) 850-kilometre natural gas pipeline from the Cypress area in northeast BC to Ridley Island, near Prince Rupert.
- WCGT's EAC is also set to expire on November 25, 2024. Enbridge has requested an emergency order extending the deadline to 2029, citing the COVID-19 pandemic and the *Yahey* decision as reasons for the delay on the project.

Attachment: Appendix 1 – Current LNG Export Projects

Contact:

Nathaniel Amann-Blake ADM Oil and Gas Division 250 889-1990

Appendix 1: Current LNG Export Projects

Project	Location	Volume (MTPA)	Estimated Emissions (MT) & Intensity (CO2e/tonne)	Regulatory Approvals				Estimated Capital Expenditures (Cdn, Billions)	Estimated Jobs
				CER Export License	Environmental Assessment		LNG Facility Permit		
					Provincial	Federal			
Under Construction (Modeled into CleanBC)									
LNG Canada Phase 1 (Shell, PETRONAS, PetroChina, Mitsubishi, KOGAS)	Kitimat	14	2.1 (0.15)	✓	✓	✓	✓	\$20	Construction: 10,000 ¹ Operations: 950 ¹
Major Regulatory Approvals Issued (Not Modeled into CleanBC)									
LNG Canada Phase 2 (Shell, PETRONAS, PetroChina, Mitsubishi, KOGAS)	Kitimat	14	2.1 (0.15)	✓	✓	✓	✓	\$14-\$20	Construction:3,300 Operations: tbd
Woodfibre LNG ² (Pacific Energy, Enbridge)	Squamish	2.1	0.13-0.17 (0.06-0.08)	✓	✓	✓	✓	\$2	Construction: 800 Operations: 100+
Port Edward LNG (PELNG)	Port Edward	0.3	Business Information	✓	N/A – Sub EA		✓	\$0.3	Construction: 150 Operations: 60
Skeena LNG ³	Terrace	0.15		✓	N/A – Sub EA		✓	\$0.3	Construction: 150 Operations: 60
Obtaining Regulatory Approvals (Not Modeled into CleanBC)									
Cedar LNG (Haisla First Nation, Pembina Pipeline)	Kitimat	3	0.24 (0.08)	✓	✓	✓	Application Anticipated	\$1.8 - \$2.5	Construction: 500 Operations: 100+
Tilbury Marine Jetty (FortisBC, Seaspan, Musqueam IB)	Delta	N/A	0.006	N/A	Application Referred Oct 2022		N/A	\$0.15	Construction:tbd Operations: tbd
Tilbury LNG Phase 1B (FortisBC, Musqueam IB)	Delta	0.65	0.05 (0.076)	✓	N/A – Sub EA		Not Submitted	\$1.1B	Construction: 250 Operations: 30

¹ Project, pipeline and upstream

² Issued a Notice to Proceed to its prime contractor on April 14, 2022

³ Undergoing ownership change

Project	Location	Volume (MTPA)	Estimated Emissions (MT) & Intensity (CO2e/tonne)	Regulatory Approvals				Estimated Capital Expenditures (Cdn, Billions)	Estimated Jobs
				CER Export License	Environmental Assessment		LNG Facility Permit		
					Provincial	Federal			
Tilbury LNG Phase 2 (FortisBC, Musqueam IB)	Delta	2.5	0.19 (0.076)	✓	Application Anticipated Q1 2023		Not Submitted	\$3 - \$3.5	Construction: 1,100 Operations: 110
Ksi Lisims LNG (Nisga'a Nation, Western LNG, Rockies LNG)	Wil Milit (Nisga'a Territory)	12	0.2 – 1.87 ⁴ (0.02-0.16)	✓	received Readiness Decision		Not Submitted	\$10	Construction: tbd Operations: 150 - 200

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⁴ Depending on power source (gas drive vs. electrified)

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: New Energy Action Framework and LNG

Drafted/Revised: March 10, 2023

Issue: The Government's newly announced Energy Action Framework and five conditions for LNG development.

Response:

- On March 14, 2023 the Province announced a New Energy Action Framework that will ensure oil and gas sector projects fit within BC's climate commitments.
- The framework builds on the Province's five conditions for Liquefied Natural Gas (LNG) projects to meet:
 - Proposals must provide a fair return for our resource;
 - Proposals must provide commitments of jobs and training opportunities for British Columbians, including equity groups;
 - Proposals must respect and make partners of First Nations;
 - Proposals must protect our air, land and water, including living up to our climate commitments; and
 - Proposals must provide benefits to communities.
- In addition to an emissions cap for the oil and gas industry, BC will require that all proposed LNG facilities in or entering the environmental assessment process have a credible plan to be net zero by 2030.
- The Framework and conditions provide a road map for the successful development of an LNG project in BC.

Background/Status:

- In 2017 BC established four key conditions to ensure British Columbians benefit from LNG development. These four conditions formed the basis for government's discussions with LNG Canada and the development of the 2018 fiscal framework.
- At that time these conditions were listed as:
 - A fair return for BC's natural resources.
 - Jobs and training opportunities for British Columbians.
 - Respect and make partners of First Nations.
 - Protect BC's air, land and water, including living up the Province's climate commitments.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Following LNG Canada's Final Investment Decision on October 1, 2018, the Premier stated that he was of the view that LNG Canada and the Coastal GasLink pipeline projects have met the four conditions.

Updating the LNG Framework:

- The four LNG conditions established in 2017 align with the foundational principles established in Ministerial Mandate letters; in 2022 government added a new (fifth) condition and expanded the original four.
- The new condition will support communities and regional districts in which LNG projects advance. While new industrial developments result in an increased tax base for a community, there remains a timing issue where new infrastructure and services need to be provided prior to those taxes being realized.
- The wording of the condition regarding jobs and training was also expanded to be inclusive of equity groups. This clarification reflects on the importance of having a diverse workforce and aligns with the stated foundational principle of equity and anti-racism.

New Energy Action Framework:

- On March 14, 2023 the Province announced a new Energy Action Framework that will ensure oil and gas sector projects fit within BC's climate commitments and create new opportunities for people in the clean energy sector.
- Measures under the new energy action framework include:
 - requiring all proposed LNG facilities in or entering the environmental assessment (EA) process to pass an emissions test with a credible plan to be net zero by 2030;
 - putting in place a regulatory emissions cap for the oil and gas industry to ensure B.C. meets its 2030 emissions-reduction target for the sector;
 - establishing a clean-energy and major projects office to fast track investment in clean energy and technology and create good, sustainable jobs in the transition to a cleaner economy; and
 - creating a BC Hydro task force to accelerate the electrification of BC's economy by powering more homes, businesses, and industries with renewable electricity.

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: LNG Bunkering

Drafted/Revised: March 13, 2023

Issue: Update on LNG marine bunkering in British Columbia

Response:

- The use of Liquefied Natural Gas (LNG) as a marine fuel (LNG bunkering) to power and decarbonize the world's ocean-going vessels is expanding, and British Columbia (BC) is well positioned to benefit from this growth.
- Projects such as LNG bunkering in the Port of Vancouver have the potential to bring economic benefits and improve air quality in the Lower Mainland, Fraser River basin and coastal communities.
- Both BC Ferries and Seaspan have been powering vessels using LNG since 2016 and the joint venture between Haisla Nation and Seaspan announced that the LNG Canada tugs will also be partly powered by LNG.
- According to BC Ferries using LNG on the Spirit-class ferries means that carbon dioxide emissions will be cut by 12,500 tonnes every year – the equivalent to taking 2,500 cars off the road. BC Ferries is also realizing lower operating costs by switching from diesel to LNG.
- LNG marine bunkering can displace conventional bunker fuel oil with clean natural gas produced in BC and enhances economic activity at the Port of Vancouver.

Background/Status:

- On January 1, 2020, the International Maritime Organization (IMO) introduced a global 0.5% Sulphur cap and targets to reduce greenhouse gas (GHG) emissions 40% by 2030 and 70% by 2050 when compared to 2008 levels.
- LNG as a marine fuel is an attractive option to meet the IMO 2020 regulations, benefiting from lower Sulphur, Nitrogen and Carbon emissions than oil-based fuels.
- Effective from January 1, 2023 the Vancouver Port Authority's EcoAction Program provides discounts on harbour fees for taking steps to reduce a ship's environmental footprint including using alternative fuels such as LNG.
- Greenhouse gas (GHG) emissions from maritime transport are estimated to account for 3% of the total human induced GHG emissions. LNG bunker fuel from BC, where GHG intensity and methane emissions are reduced during production, are a part of the pathway to reducing maritime related GHG emissions.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- BC Ferries aims to meet the Clean BC 2030 climate targets by reducing the GHG intensity of their operations, including transitioning the fuel sources from non-renewable diesel to LNG and renewable diesel. In the future, BC Ferries plans to use renewable LNG and electricity to power its fleet.
 - BC Ferries has displaced nearly a quarter of total diesel fuel consumption with cleaner LNG produced in BC.
 - BC Ferries currently operates 6 LNG dual-fueled ferries.
- LNG bunker fuel is produced at FortisBC's Tilbury LNG facility, which is looking to expand (Phase 1B) to meet the rising demand for LNG as a marine fuel. The expansion would add 0.65 mtpa of capacity.
 - The Tilbury LNG facility uses electricity as a power source in the liquefaction process, making its LNG among the lowest carbon intensity of LNG produced available.
- The Tilbury Marine Jetty is proposed by Tilbury Jetty LP, an affiliate of FortisBC, and would be located adjacent to the Tilbury LNG facility. This project, through providing ship loading services for LNG, would enable ship-to-ship LNG marine fueling in the Port of Vancouver.
- On February 28, 2022, it was reported that Seaspan had confirmed the order for 2 LNG bunker vessels, with the option to buy a third. The first two are scheduled to be delivered in 2024 costing approximately \$40 million each. The vessels are to be constructed in China by CIMC Sinopacific Offshore and Engineering.
 - Seaspan has been operating 2 LNG dual-fueled ferries since 2016.
- HaiSea Marine, a partnership formed between the Haisla Nation and Seaspan, will provide ship-assist and escort services to LNG carriers navigating Douglas Channel and approaches to LNG Canada. The harbor tugs will be battery electric powered, while the larger escort tugs will be LNG dual-fueled. The first of two dual-fuel tugs was completed and undocked on January 17, 2023.
- LNG powered car carriers started to call on the Port of Vancouver in 2022, and with the number of LNG powered carrier vessels and cruise ships increasing, the local demand is expected to increase.

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Gasoline Prices & the Fuel Price Transparency Act

Drafted: March 14, 2023

Issue: An update on gasoline prices and the Fuel Price Transparency Act in British Columbia.

Response:

- Since 2019, this government has taken a series of proactive steps to provide a greater level of transparency to how fuel prices are set around the province.
- The *Fuel Price Transparency Act* (FPTA) aims to “look behind the curtain” of the market for gasoline and diesel by collecting information and publishing from companies selling fuel in the province.
- As administrator of the FPTA, the British Columbia Utilities Commission (BCUC) has launched and maintains an open and transparent website that provides insights into the various components that make up our fuel prices (the price of crude oil, wholesale margins, retail margins and taxes).
- We believe information behind fuel pricing should be available to British Columbians. By pulling back the curtain, companies will be publicly accountable for unexplained markups and cost increases.
- If the BCUC identifies any egregious market behaviour, government will review the evidence and take appropriate action to protect British Columbians.
- The Province does not believe a reduction or suspension of motor fuel taxes is a long-term solution to affordability concerns.

Background/Status:

- Retail price at the pump consists of the following major components:
 - Crude Oil Price
 - Wholesale Margin
 - Retail Margin
 - Taxes
- GasPricesBC.ca, an informational website managed by the BCUC, was launched and provides citizens with interactive dashboards that show how fuel prices can differ by city, year, fuel type, and other components.
- GasPricesBC.ca has a breakdown of these specific costs for BC cities in comparison to other cities in Canada historically.
- British Columbians pay some of the highest gasoline prices in Canada, made up of higher-than-average taxes in Vancouver and Victoria, and higher-than-average

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

wholesale margins throughout the province (see Appendix 1 for a breakdown and comparison).

Fuel Price Transparency Act (FPTA):

- The Final Report of the BCUC Inquiry into Gasoline and Diesel Prices in BC included findings that there was an oligopoly in the wholesale fuel market that displayed characteristics of a natural monopoly. The report also identified a price premium of approximately \$0.13 per litre on gasoline sold in southern BC that the BCUC could not explain based on the information available.
- In response to this report, the Province enacted the FPTA in November 2019 to enable the collection of information that could be used to inform future policy decisions, to improve competition in the market, and to increase transparency.
- In its role as administrator of the FPTA, the BCUC has undertaken special projects in response to public requests for information about fuel prices in BC.
- The analysis from one of these special projects has concluded that retailers were not taking advantage of high crude prices due to the conflict in Eastern Europe to earn excess retail fuel margins. Also, the gasoline price spike in September 2022 was due in large part to unplanned refinery outages and gasoline shortages.
- Next steps in the administration of the FPTA include a deeper analysis into the unexplained 13 cent price premium, as well as looking further into some BC cities that pay higher than expected retail prices like Squamish and Gibson. The further collection of quality data and analysis could potentially inform government policy on the fuel market.

Other Governments' Response to High Fuel Prices:

- Alberta announced a suspension of the provincial fuel tax effective April 1, 2022, subject to quarterly review. From September to December 2022, the tax was re-instated at 4.5 cents per litre. Effective January 2023 until June 2023, the provincial fuel tax is suspended again.
- Ontario announced a reduction in their provincial fuel tax from 14.7 cents per litre to 9.0 cents per litre effective July 1, 2022 until December 31, 2023.

Attachments: Appendix 1 – Gasoline Prices Across Canada
Appendix 2 – Taxes on Gasoline Across Canada

Contact:

Nathaniel Amann- ADM Oil and Gas Division 250 889-1990
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Appendix 1 – Gasoline Prices Across Canada

Table 1 - Average Gasoline Prices in Canada in Select Cities (2023)

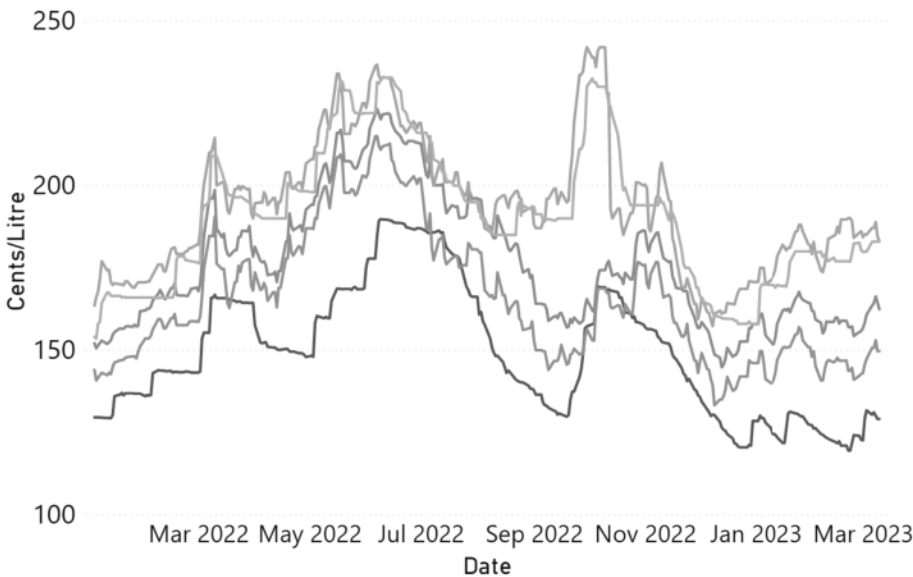
City / Area	Crude Price	Wholesale Margin	Retail Margin	Taxes	Total Price
Canada (avg)	66.23	30.75	8.70	46.49	152.17
Edmonton	59.72	30.42	8.16	27.13	125.43
Halifax	73.95	23.58	8.14	45.20	150.87
Montreal	73.95	25.69	6.68	52.99	159.31
Regina	59.72	32.02	12.82	43.11	147.66
Toronto	63.23	28.42	8.32	46.98	146.95
Winnipeg	59.72	34.12	13.80	42.19	149.83
Abbotsford	59.72	57.07	10.07	43.69	170.54
Fort St. John	59.72	48.57	19.50	43.70	171.49
Kamloops	59.72	50.40	7.04	43.23	160.39
Kelowna	59.72	50.40	9.89	43.34	163.35
Prince George	59.72	48.57	7.49	43.13	158.91
Vancouver	59.72	57.07	8.17	56.71	181.67
Victoria	59.72	58.67	8.24	49.45	176.08

- Final prices at the pump are set by either a retail fuel marketer (an individual or company that sells or consigns fuel to individual retail stations) or are established by the franchisee or independent retailer who has purchased the fuel from a retail fuel marketer. BC's retail fuel market is comprised of roughly 54% marketer-controlled and 46% dealer-controlled retail stations.

Exhibit 2 - Gasoline Prices Since January 2022

Comparison of Daily Fuel Prices by Component for Selected Cities

City ● Edmonton ● Montréal ● Toronto ● Vancouver ● Victoria



City
Multiple selections

Date
1/1/2022
3/10/2023

Fuel Type
☐ Diesel
☒ Regular Gasoline

Component
☐ Crude Price
☐ Retail Price (ex tax)
☒ Retail Price (inc tax)
☐ Wholesale Price

Appendix 2 – Taxes on Gasoline Across Canada

Gasoline and diesel prices have increased across Canada and have put an increased focus on the amount of taxes paid at the pump.

Table 1 - Gasoline Taxes Paid at the Pump by Province (cents per litre)

	Excise Tax	Fuel Taxes	Carbon Levies	Total Pre-Sales Tax	Sales Tax(s)
British Columbia – Vancouver	10	27.00	11.05	48.05	5%
British Columbia – Victoria Area	10	20.00	11.05	41.05	5%
British Columbia – Rest of province	10	14.50	11.05	35.55	5%
Alberta	10	13.00	11.05	34.05	5%
Alberta (Effective April 1, 2022) ¹	10	0.00	11.05	21.05	5%
Saskatchewan	10	15.00	11.05	36.05	5%
Manitoba	10	14.00	11.05	35.05	0% ²
Ontario	10	14.70	11.05	35.75	13%
Ontario (Effective July 1, 2022)	10	9.00	11.05	30.05	13%
Quebec – Montreal	10	22.20	8.85 ³	41.05	14.98%
Quebec – RAGIM ⁴	10	15.55	8.85 ³	34.40	14.98%
Quebec – Rest of province	10	19.20	8.85 ³	38.05	14.98%
New Brunswick	10	10.87	11.05	31.92	15%
Nova Scotia	10	15.50	11.05 ⁵	36.55	15%
Newfoundland and Labrador	10	14.50	11.05	35.55	15%
Prince Edward Island	10	8.47	11.05	29.52	14%
Yukon	10	6.20	11.05	27.25	5%
Northwest Territories	10	10.70 ⁶	11.70	32.40	5%
Nunavut	10	6.40	11.05	27.45	5%

¹ Alberta's fuel tax was partially reintroduced from September to December 2022 at 4.5 cents a litre but is now suspended again until July 2023.

² Manitoba's PST does not apply to gasoline or diesel fuel.

³ Quebec has a cap-and-trade system in place. Many factors can influence the carbon cost of Quebec fuels, including changes in the market price of units and the timing of the purchase of emission units. The figure in the table is an estimated cost based on recent auctions.

⁴ Quebec provides reduced rates in designated regions bordering on Ontario or New Brunswick.

⁵ Nova Scotia is transitioning from a cap-and-trade system to the federal backstop plan in 2023.

⁶ In the NWT, gasoline is taxed at 6.4 cents per litre in communities not served by a highway system.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Royalty Review – programs, outcomes, and next steps

Drafted/Revised: March 13, 2023

Issue: Update on implementation of the new royalty framework

Response:

- A comprehensive review of B.C.'s legacy oil and natural gas royalty system was launched in October 2021, the first such review in almost 30 years.
- The new royalty framework announced in May 2022 eliminated several royalty incentive programs identified as inefficient and provided the parameters of a new revenue-minus-cost royalty system.
- A transition period leading up to the new royalty system began on September 1, 2022 and will end when the new system is implemented September 2024.
- Remaining implementation steps include re-purposing existing unused deep well royalty credits held by industry to land restoration and emissions reductions initiatives and establish the revenue-minus-cost system.

Background/Status:

- When oil and natural gas resources are produced in B.C., the Province charges producers either a royalty or a freehold production tax (collectively called the royalty system) on behalf of British Columbians.
- The Ministry of Energy Mines and Low Carbon Innovation (EMLI) has responsibility for royalty system policy while the Ministry of Finance (FIN) administers the collection of revenues under the royalty system.
- A comprehensive review of B.C.'s legacy oil and natural gas royalty system was launched by EMLI in October 2021, the first such review in almost three decades.
- An independent assessment of the legacy oil and natural gas royalty framework concluded that the entire royalty framework should be reformed to address a myriad of issues within the current system including incentive programs that no longer functioned as intended and have become economically inefficient.
- On May 19, 2022, the Province announced a new oil and gas royalty system that eliminated several royalty incentive programs identified as inefficient and provides a bridge towards re-purposing existing unused deep well royalty credits held by industry to land restoration and emissions reductions initiatives as well as to a new revenue-minus-cost (RMC) royalty system.
- The framework established a transition period leading up to the launch of the new system on September 1, 2024.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Royalty transition period underway

- Effective Sept. 1, 2022, new wells (i.e., those that begin drilling on or after that date) are not eligible to qualify for the old deep-well royalty program, the Marginal Well Royalty program, the Ultra marginal Royalty program, the Low Productivity Royalty program, or the Clean Growth Infrastructure Royalty programs.
- Wells drilled beginning Sept. 1, 2022, will pay a 5% royalty rate for the equivalent of the first 12 production months (8,760 production hours of production). At the end of this period, these wells will pay the prevailing price-sensitive royalty rates.
- Older wells (wells that begin drilling before Sept. 1, 2022) continue pay royalties based on the legacy royalty framework until Sept. 1, 2024.
- Effective Sept. 1, 2024, these wells will transition to the rules of the new royalty framework. After this date, these wells will not be eligible for rate reductions under the Marginal Well Royalty program, the Ultra marginal Royalty program, the Low Productivity Royalty program, or the Clean Growth Infrastructure Royalty programs.

Implementing the new royalty system

- Producers will have the option to transfer unused deep-well deductions to the Healing the Land and Emissions Reduction (HLER) program before September 1, 2026. The HLER program will support work above and beyond regulatory requirements to reduce emissions or cumulative impacts on the land base.
- Amendments to the Petroleum and Natural Gas Royalty and Freehold Production Tax Regulation are required to enable the creation of the HLER Program and to create a mechanism to move existing deep-well deductions to the HLER program. These amendments are expected to be complete in Spring 2023 and the HLER program begin shortly thereafter.
- The new framework is based on the RMC that uses price-sensitive royalty rates designed to achieve a return of approximately 50% of profits on the public resource. The Petroleum and Natural Gas Royalty and Freehold Production Tax Regulation requires an extensive set of amendments to establish the RMC, which is expected to be completed in late Spring 2023.
- EMLI and FIN are actively working to make the administrative changes and information technology enhancements necessary to ensure that the RMC and HLER program function properly.

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Healing the land and emissions reduction

Drafted/Revised: March 13, 2023

Issue: Transitioning a major fossil fuel incentive to land restoration and emissions reduction

Response:

- In May 2022 the Province announced a new oil and gas royalty system that eliminates fossil fuel incentive programs, including the deep well royalty program, the largest such program.
- Under the royalty new system, existing deep well deductions, totaling approximately \$2.5 billion will expire in four years unless transferred to a new environmentally focused land healing and emissions reductions program.
- Under the new Healing the Land and Emissions Reduction program, companies may use transferred deep well deductions to land healing and emission-reduction work, but only if it is beyond regulatory requirements.
- The new program is based on consultations with industry, environmental groups and First Nations and is expected to be established in late Spring 2023.

Background/Status:

- The Deep Well Royalty Program was created in 2003 and was initially intended to offset higher drilling and completion costs incurred by wells considered particularly deep. The reduction program is sometimes viewed as a fossil fuel subsidy.
- Significant changes in the last three decades in market conditions, drilling technology and costs, and global concerns on the need to address climate change made continuation of the Deep Well Royalty Program inconsistent with a fair return on oil and gas resources and BC climate action objectives.
- Since the creation of the Deep Well Royalty Program, accumulation of deductions by oil and gas producers has outpaced spending of deductions, creating a total balance of approximately \$2.5 billion.
- On Oct. 7, 2021, the Ministry of Energy, Mines and Low Carbon Innovation (EMLI) launched a comprehensive review of B.C.'s decades-old oil and gas royalty system to ensure it would be modernized, aligned with the government's climate goals and provides a fair return for British Columbians.
- On May 19, 2022, the Province announced a new oil and gas royalty system that eliminated several royalty incentive programs identified as inefficient and

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

provides a bridge towards re-purposing existing unused deep well royalty credits held by industry to land restoration and emissions reductions initiatives.

Repurposing Deep Well Deductions

- Before Sept. 1, 2026 oil and gas producers with deep well deduction balances have the option of either continuing to apply deep well deductions against royalty payable or transfer to the new Healing the Land and Emissions Reduction (HLER) program.
- After September 1, 2026 any deep well deduction balances that were unspent or not transferred to the HLER program expire.
- The HLER program will support work above and beyond regulatory requirements to reduce emissions or cumulative impacts on the land base.
- Based on consultations with industry, environmental groups and First Nations, the HLER program is anticipated to allow for the following types of expenditures by oil and gas producers:
 - Contributions to the Indigenous-led restoration funds being established in Northeast BC;
 - Projects affixing emissions monitoring and reduction technologies on well sites;
 - Projects planting vegetation at reclaimed well sites over and above regulation;
 - Projects electrifying oil and gas production facilities;
 - Carbon capture and storage projects.
- As contributions to restoration funds or HLER projects are completed by oil and gas producers, the producers will receive a reduction in royalties payable equal to the HLER project cost.
- Amendments to the Petroleum and Natural Gas Royalty and Freehold Production Tax Regulation are required to enable the creation of the HLER Program and to create a mechanism to move existing deep-well deductions to the HLER program. These amendments are expected to be complete in Spring 2023 and the HLER program begin shortly thereafter.

Attachment: Government Financial Information

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

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Page 273 of 475

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Page 274 of 475

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Upstream Investment Environment, Social and Governance

Drafted/Revised: March 13, 2023

Issue: The Province provides a competitive edge in Environmental, Social and Governance performance (ESG), amid a financially challenging competitive environment for upstream investment.

Response:

- The natural gas industry is a global industry with over 50 producing jurisdictions in the world. British Columbia (BC) is the seventeenth largest-producing jurisdiction in the world and advantaged in its prolific natural gas resource in the liquids rich Montney formation.
- BC's government regulation and policy enables BC to retain strong Environment, Social and Governance (ESG) performance relative to peers. Examples include methane regulation, health and safety standards, local hiring initiatives and commitments to reconciliation with Indigenous peoples.
- The Royalty Review aims to keep BC a competitive jurisdiction to invest in while ensuring it achieves government's goals of economic development, fair return on the resource and environmental protection.

Background/Status:

Upstream Investment and Competitiveness

- Competitiveness is defined as the extent to which the business environment is conducive to attracting investment in the upstream natural gas sector.
- The Ministry of Energy, Mines and Low Carbon Innovation (EMLI) has been conducting bi-annual competitiveness assessments since 2001 that look at the province's competitive position versus Alberta. Starting in 2011, given the changes in production patterns brought about by tight and shale gas development, the competitiveness assessments changed the scope of comparison to assess additional North American formations.
- The most recent of these analyses was conducted as part of the royalty review. It evaluated and compared BC's market access, resource base, fiscal competitiveness, and climate policy to three other production basins and jurisdictions: Montney in Alberta, Permian in Texas and Marcellus in Pennsylvania. The study concluded that the Government of BC has established a competitive policy and regulatory environment that balances positives such as the province's world-class resources with the geographic reality of being at the end of a pipeline to distant markets.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Appendix 1 provides the BC upstream investment figures and percentages of BC investment as a share of total Canadian investment from 2004 to 2020 (source: Canadian Association of Petroleum Producers - CAPP)

ESG

- It is becoming common for investors to consider both traditional economic factors as well as companies' ESG performance when making capital investment decisions. This investor type includes everything from small mutual funds to banks, and from private wealth funds to large public pension funds. Many of these entities have an explicit mandate to consider ESG factors for all investment decisions.
- By producing products using practices that are assessed as being responsible, BC may possess a competitive advantage over other jurisdictions. Negative factors in other jurisdictions include lower safety standards, issues with environmental protection, high greenhouse gas emissions, or a lack of regulatory oversight.
- Several initiatives are underway in the Ministry to explore how to share data pertaining to BC ESG performance with the public and interested investors. Work is also being done to explore the use third-party verifiers to evaluate and compare BC's performance to industry and voluntary standards.
- There are investors and consumers who value high ESG performance because they lower investment risk and indicate benefits to society and the environment.
- For industry participants, BC's solid ESG performance may lead to being a preferential supplier, differential prices, and the securing of niche markets with strict sourcing requirements.
- In May 2022, ARC Resources received certification under Equitable Origin's EO100™ Standard for Responsible Development for its northeast BC assets. ARC now holds the largest certified production base under this standard by a Canadian energy producer. In September 2022, Crew Energy received certification under Equitable Origin's EO100™ for its Northeast British Columbia Development in Canada, achieving among the highest scores.

Attachments: Appendix 1 – BC Oil and Gas Upstream Industry Capital Investment and % of Canadian Investment

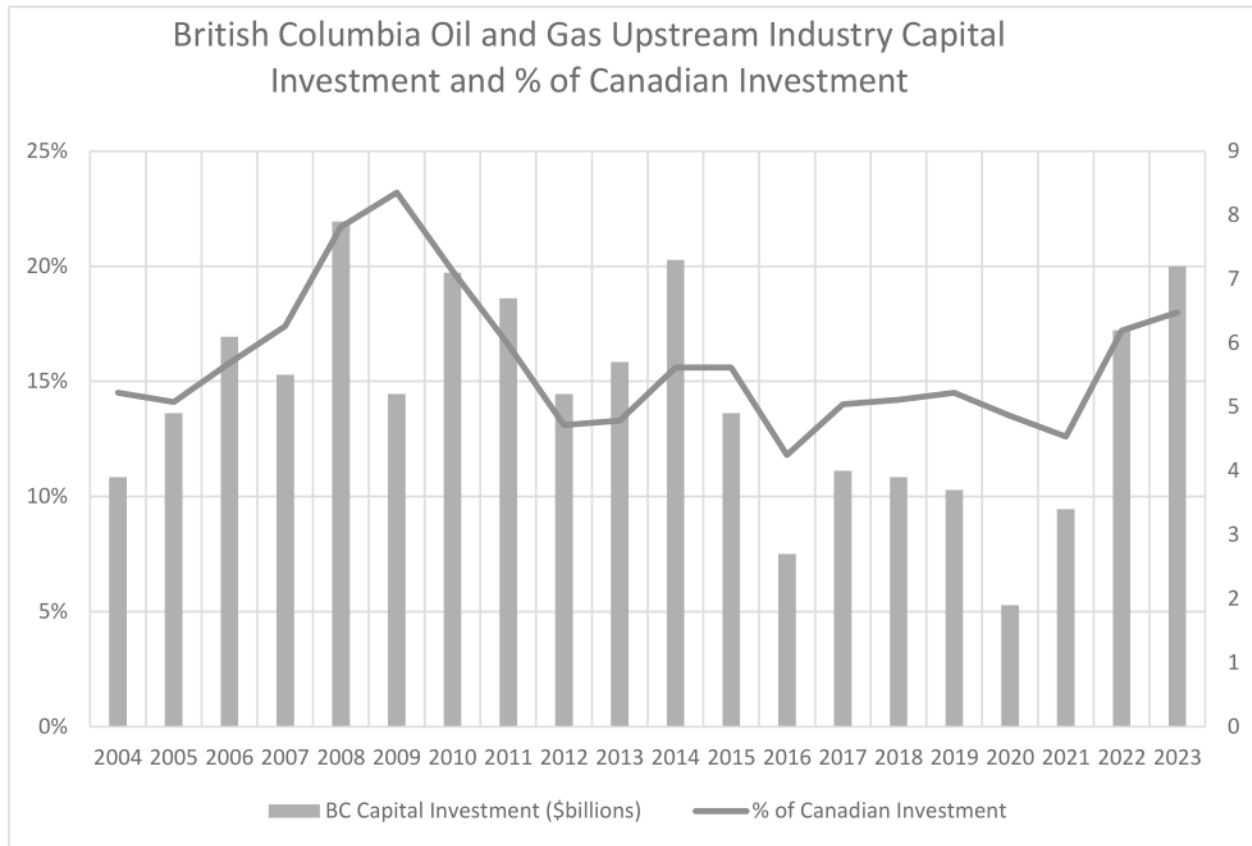
Contact:

Nathaniel Amann-Blake	Assistant Deputy Minister	Oil and Gas Division	250 889-1990
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Appendix 1:



2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Questions on Subsidies to Oil and Gas Producers

Drafted/Revised: March 13, 2023

Issue: Inefficient Fossil Fuel Subsidies and efforts to transition subsidies to clean tech and clean energy sectors

Response:

- The fundamental characteristic of all subsidies is to reduce the market price or an item below its cost of production through government provision of economic benefits or financial aid to producers or consumers of certain goods or services.
- British Columbia scarcely provides any fiscal measures to produce or consume hydrocarbons.
- The ongoing royalty review has already ended the largest incentives to oil and gas production and is transitioning the largest program to land healing and emissions reduction projects.

Background/Status:

General Principles Concerning Subsidies

- Subsidies, both in general and for the energy sector, are defined in a variety of ways in international agreements and by international organizations of which Canada is a member.
- The fundamental characteristic of all subsidies is to reduce the market price of an item below its cost of production through government provision of economic benefits or financial aid to producers or consumers of certain goods or services.
- Subsidies can include tax expenditures, grants and contributions, government loans or loan guarantees at favourable rates, resources sold by government at below-market rates, research and development funding, and government intervention in markets to lower prices.
- The motives of a subsidy include:
 - support a desirable economic activity like export promotion.
 - keep prices of economic goods or services low relative to market prices.
 - support financial viability of firms engaged in critical or strategic industries; and
 - induce investment to reduce unemployment and stimulate macroeconomic activity.
- Governments may also provide fiscal measures to incentivize major investments in its jurisdiction that may not otherwise occur due to inter-jurisdictional tax competition. Decisions to provide reduced taxes or other financial relief, which may be construed

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

as a subsidy, in this context are generally predicated on economic and financial modelling indicating that the economic benefits of a project (in terms of jobs, capital investment, and tax revenue) exceed the cost of the incentives provided.

Consumption and Production Subsidies in British Columbia (BC)

- Regarding fossil fuel consumption, British Columbia (BC) provides scarcely any subsidies.
 - BC motor fuel tax generally applies to fuel sold for use or used to power internal combustion engines (e.g., cars, boats, airplanes, stationary engines etc.) and propane and is among the highest rates in North America.
 - The BC carbon tax generally applies to the purchase or use of fuels such as gasoline, diesel, natural gas, heating fuel, propane and coal, and the rate is expected to increase through 2030 in line with federal carbon pricing requirements.
 - Provincial Sales Tax (PST) generally applies to internal combustion engine (ICE) vehicles and home heating systems, typically at higher rates than non-ICE (e.g., electric) vehicles and systems.
 - The PST exemption for consumption of electricity, natural gas, fuel oil, which may be deemed a subsidy, has been in place for several years to reduce the cost of a necessity of heating and powering homes.

Eliminating Fossil Fuel Subsidies in the BC Oil & Gas Royalty System

- BC's legacy oil and gas royalty system featured three royalty credit programs and four royalty reduction programs. These credits and royalty reduction programs (sometimes viewed as fossil fuel subsidies) allowed producers to lower their royalty payments to the province, and total annual use can exceed \$1 billion per year.
- A comprehensive review of B.C.'s oil and natural gas royalty system was launched by EMLI in October 2021, the first such review in almost three decades.
- An independent assessment of the current oil and natural gas royalty framework concluded that the entire royalty framework should be reformed to address a myriad of issues within the current system including the royalty credit and reduction programs no longer function as intended and have become economically inefficient.
- On May 19, 2022, the Province announced a new oil and gas royalty system that increases the royalties' oil and gas producers pay BC for the resource, and eliminates the Deep Well Royalty Credit Program, the largest oil and gas subsidy, as well as other outdated and inefficient programs, such as the Marginal Well, Ultra-marginal Well, Low Productivity Well Rate Reduction and the Clean Growth Infrastructure Royalty programs.
- A transitional system, including elimination of Deep Well credits and other programs, took effect on Sept. 1, 2022, with a new royalty framework scheduled to be in place effective Sept. 1, 2024.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Under the new system, oil and gas producers' existing deep well credits will expire on September 1, 2026, unless transferred to a healing the land and emissions reduction (HLER) program. Using the transitional HLER pool, producers may use credits to fund healing the land and emission-reduction work, but only if it is beyond regulatory requirements.

Attachments: Appendix 1 – Inventory of production and consumption fiscal measures pertaining to the oil and gas sector

Contact:

Nathaniel Amann-Blake	ADM	Oil and Gas Division	250 889-1990
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Appendix 1: Inventory of production and consumption fiscal measures pertaining to the oil and gas sector.

Production-focused measures

Measure Name	Measure Description	Who Qualifies	Does Clean Tech/Energy Qualify?	Estimated Cost/ forgone revenue	Last Decision on this Policy	Rationale for this Measure
<i>Natural Gas Tax Credit</i>	Corporate Income Tax (CIT); Credit calculated at 3% of the cost of natural gas and can reduce effective BC corporate income tax rate from 12% to 9% - making BC more competitive with Alberta (AB) at 8%	Qualifying corporations that own natural gas immediately after the natural gas passed through a liquefied natural gas (LNG) facility inlet meter for a major LNG facility	No	Credit not yet claimed; generates CIT that may otherwise be paid to AB	BILL 10 – 2019 INCOME TAX AMENDMENT ACT, 2019, April 11, 2019;	Encourages companies to keep their sales operations in BC and pay BC CIT, instead of having CIT leaked to AB;
<i>Long Term Royalty Agreement</i>	A long-term royalty agreement would establish the royalty to be paid by the person to the government, and the method of calculating the royalty, on petroleum or natural gas produced from a specified location or class of locations. Such an agreement would provide long-term certainty for an investor/producer of natural gas.	Minister may, with the approval of the Lieutenant Governor in Council, enter, with a person, into an agreement establishing the royalty to be paid by the person to the government, and the method of calculating the royalty.	Yes, if the methane were to be used to produce clean hydrogen (produced using either CCS or pyrolysis)	If market prices exceed the price stated in the agreement, then the province would forego those potential revenues	Sole agreement signed in 2015 and was tied to the now cancelled Pacific Northwest LNG project	Providing long-term certainty (stability) on royalty payments can provide a greater level of certainty for investors.
<i>Specified Major Projects – Provincial Sales Tax Deferral</i>	Provincial Sales Tax (PST); Replaces upfront PST obligation arising from taxable construction costs with future operating performance payments, subject to negotiation	Projects as specified under Part 5.1 of the Provincial Sales Tax Exemption and Refund Regulation, B.C. Reg. 97/2013	Yes, provided size of investment and economic benefits are multi-billion dollar in nature	For LNG Canada: \$596 million in deferred payments over 20-year period beginning Nov. 2018	B.C. Reg. 196/2018 and Order in Council 513/2018, approved and ordered October 2, 2018	Deferred PST payments improves project cash flow and defers payments until major project has been underway for some time to compete nationally and globally.
<i>Standard industrial electricity rates</i>	Provides BC Hydro industrial electricity rates and some related. transmission infrastructure to industrial facilities in B.C., including LNG	BC Hydro Customers with large amounts of energy and invest in electrical infrastructure that allows them to receive service at high voltage. Most transmission accounts receive service under rate schedule 1823 of the Electric Tariff	Yes, provided the Clean Tech/Energy firm is an industrial facility;	No Cost	B.C. Reg. 197/2018 and Order in Council 512/2018, approved and ordered October 2, 2018	Many BC industries are energy-intensive and globally competitive; the provision of standard B.C. industrial rates improves project economics and global competitiveness and creates a level BC playing field among all industrial users.
<i>CleanBC Industrial Incentive Program²</i>	Provides up to 100% of incremental carbon tax paid beyond \$30/metric.	Open to all industrial operations that are required to report under the	Yes, provided it is an industrial operation subject to GGIRCA	\$170 million annually	Generally, set by policy & B.C. Reg. 580/2019 and Order	Provides B.C. industries the ability to compete in global markets more effectively where

Appendix 1: Inventory of production and consumption fiscal measures pertaining to the oil and gas sector.

	tonne of CO ₂ e if facility exceeds (meets) world leading intensity. standard (benchmark reviewed every 5 years)	Greenhouse Gas Industrial Reporting and Control Act (GGIRCA) – generally emit more than 10,000 tonnes of CO ₂ e per year	Yes, would generally qualify ²	\$186 million annually across all industries; Oil & Gas sector accounts for about \$87 million	in Council 231/2019, approved and ordered October 2, 2018	competitors may be located in jurisdictions with low or no carbon price.
<i>PST Exemption for Production machinery and equipment (PM&E)</i>	Provides an exemption to help reduce the cost of certain PM&E for businesses in the manufacturing, software development, Local government power generation, oil and gas, mining and logging industries	Broad exemption open to many industries; qualifying manufacturers may include boat builders, dental laboratories, potters, , etc.			Exemption was originally created in 2001, was reinstated as part of the return to PST	B.C. administers one of the only three remaining retail sales taxes (RSTs) in Canada; RSTs disincentivize business investment by taxing production inputs, as compared to provinces with no sales tax (e.g. Alberta) or with value-added taxes (six provinces), the PM&E exemption helps B.C. maintain a more competitive RST ³ .

¹ Clean Tech/Energy firms can access The CleanBC Industrial Electrification Rates that intended to help existing and new industrial customers connect to BC Hydro's grid by offering discounted rates to encourage the use of clean electricity – LNG does not qualify for these beneficial rates.

² This is system is changing in Budget 2023, with implementation in 2024.

³ General exemptions include specific tests that would need to be assessed on a project or facility basis. The Ministry of Finance is available to provide a determination on a case-by-case basis.

⁴ Canadian provinces and American states with RSTs generally provide broad machinery and equipment exemptions to avoid taxing inputs on the production of finished products that will often be taxed as consumption goods.

Consumption-focused measures

Measure Name	Measure Description	Who Qualifies	Does Clean Tech/Energy Qualify?	Estimated Cost	Last Decision on this Policy	Rationale for this Measure
<i>Residential PST exemption for consumption of electricity, natural gas, fuel oil</i>	PST exemption Provides a PST exemption to reduce the cost of residential energy	Residential consumers of electricity, natural gas, and fuel oil	Yes, to the extent the energy is produced by a Clean Tech solution and consumed by residential users.	\$289 million annually	N/A	Provides an exemption to reduce the cost of necessities
<i>Greenhouse Carbon Tax Relief Grant</i>	Provides carbon tax relief to B.C. commercial vegetable, floriculture, wholesale nursery and forest seedling operations, up to 80% of the carbon tax paid by eligible growers on their purchase of natural gas and propane	Corporation, partnership, or individual(s) operating a commercial greenhouse in B.C. for the entire 2022 production year, and is using natural gas or propane in the operation of their Eligible Production Area	No, carbon tax relief for consumption of natural gas and/or propane	N/A	N/A	Reduce the economic cost of energy-intensive commercial greenhouse operations.

Appendix 1: Inventory of production and consumption fiscal measures pertaining to the oil and gas sector.

	consumed for heating and producing CO2 for eligible production greenhouses	for heating or the production of CO2 for Eligible Crop fertilization.				

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Oil and Gas Legislation and Regulatory Development

Drafted/Revised: March 10, 2023

Issue: Recent and Upcoming Amendments to Legislation and Regulations

Response:

- In fall 2022, British Columbia (BC) passed the *Energy Statutes Amendment Act* to support implementation of the CleanBC Roadmap to 2030.
- Once fully implemented, the legislation will add regulation of hydrogen production and underground storage of carbon dioxide from any source to the previously named BC Oil and Gas Commission's responsibilities.
- In February 2023, portions of the legislation were brought into force to rename the BC Oil and Gas Commission to the BC Energy Regulator, restructure its board, and appoint a new board of directors.
- The new structure increases the size of the board and requires Indigenous representation to improve inclusion and better reflect the expanded energy resource mandate.
- To underscore the board's independence from the management team, the Regulator's chief executive officer no longer serves as a member.
- The legislation will also provide the newly named regulator with an expanded liability framework and the tools needed to ensure oil and gas activity obligations are met, lessening pressure on the orphan fund.
- Work is underway on regulatory amendments to complete implementation of this legislation.
- Other initiatives underway include regulations to support the Royalty Review and the Blueberry River First Nations Implementation Agreement.

Background/Status:

Energy Statutes Amendment Act

- Bill 37, *Energy Statutes Amendment Act 2022*, received Royal Assent in November 2022. Bill 37 made the following changes to the oil and gas legislative framework:
 - gave the BC Energy Regulator new responsibilities to regulate the hydrogen energy industry,
 - modernized the structure of the BC Energy Regulator board of directors,
 - clarified government's authority to regulate the safe and effective storage of carbon dioxide from any source, and

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- expanded the regulator's authority to hold those engaged in an oil and gas activity (such as wells, facilities and pipelines) responsible for cleanup and restoration costs.
- Most provisions in the bill did not come into force immediately. In February 2023, portions of Bill 37 were brought into force to rename the BC Oil and Gas Commission to the BC Energy Regulator, restructure the board, and appoint a new board of directors.
- These changes ensure that the new board will have the diversity, capacity and technical experience to effectively regulate the energy resource industries when the rest of Bill 37 and the supporting regulations are brought into force later this year.
- Along with bringing Bill 37 into force, a regulation is proposed to bring into force an amendment from Bill 15, *Energy, Mines and Petroleum Resources Statutes Amendment Act 2018*. This will give the BC Energy Regulator power under the *Heritage Conservation Act* to authorize or require heritage inspections and investigations.

Underground Storage of Carbon Dioxide

- Amendments to the Petroleum and Natural Gas Storage Reservoir Regulation are proposed to modernize the application requirements, provide transparency on the decision-making process in regulation, and encourage the use of underground storage reservoirs for carbon capture and storage. These regulatory amendments support legislative amendments in the *Energy Statutes Amendment Act 2022 (Bill 37)*.
- Consultation with First Nations is complete and included seven meetings with individual Nations. Engagement with industry is underway and has included meetings with the Canadian Association of Petroleum Producers, the Explorers and Producers Association of Canada, and individual companies such as NorthRiver Midstream and Tourmaline Oil.
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Blueberry River First Nations

- The Blueberry River First Nations (BRFN) Implementation Agreement responds to the BC Supreme Court *Yahey v. British Columbia* case where the court found that the province had unjustifiably infringed on BRFN's Treaty 8 rights.
- The BRFN Implementation Agreement commits the Province to use legislative or regulatory tools to implement specific sections of the agreement.
- Legislative and regulatory changes are being proposed to provide the BC Energy Regulator with the direction and authority to implement the oil and gas components of the agreement.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Cross Reference: Carbon Capture and Storage
Royalty Review – Progress and Outcomes
BC Supreme Court *Yahey v. British Columbia* Decision

Contact:
Nathaniel Amann- ADM Oil and Gas Division 778 698-7270
Blake

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: CleanBC Roadmap to 2030 – Oil and Gas Industry

Drafted: March 10, 2023

Issue: Climate action to reduce emissions from the oil and gas sector.

Response:

- In October 2021, the Province released the CleanBC Roadmap to 2030 – a detailed plan to meet British Columbia's (BC) climate targets and set the province on the path to net-zero emissions by 2050.
- Building on actions already underway through the CleanBC plan, the Roadmap establishes commitments and actions to reduce greenhouse gas (GHG) emissions produced by the oil and gas industry in line with its sectoral target of 33 to 38 percent reductions from 2007 levels by 2030.
- We are driving delivery of our ministry's CleanBC Roadmap to 2030 commitments and actions to ensure we meet our legislated GHG goals.
- To accomplish this, we are working closely with the Ministry of Environment and Climate Change Strategy (ENV) to develop policies and regulations.
- Our new energy action framework announced on March 14, 2023 will put in place a regulatory emissions cap for the oil and gas industry to ensure BC meets its 2030 emissions-reduction target for the sector.
- We will also require all proposed Liquefied Natural Gas (LNG) facilities in or entering the environmental assessment process to have a credible plan to be net zero by 2030.
- We are currently on track to meet and even exceed our 45 percent methane emissions reduction target by 2025 and have established a clear pathway forward to meeting our 2030 and 2035 targets.
- Work is underway to enable additional electrification of upstream oil and gas facilities. The creation of a BC Hydro task force to accelerate the electrification of BC's economy as part of the new energy action framework will further support these efforts.

Background/Status:

- In March 2021, BC became the first province in Canada to set sectoral targets covering emissions across the economy. The oil and gas industry is currently responsible for around 50 percent of industrial emissions and 20 percent of BC's total emissions. The sectoral target for the oil and gas industry aims to reduce emissions 33 percent to 38 percent below 2007 levels by 2030. The CleanBC Roadmap to 2030 committed that the Province would implement policies and programs to ensure the oil and gas sector meets its sectoral targets.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- On March 14, 2023, the Province announced its new energy action framework that will ensure oil and gas sector projects fit within BC's climate commitments. Under the new energy action framework, the Province will:
 - require all proposed LNG facilities in or entering the environmental assessment process to pass an emissions test with a credible plan to be net zero by 2030;
 - put in place a regulatory emissions cap for the oil and gas industry to ensure BC meets its 2030 sectoral target;
 - establish a clean-energy and major projects office to fast-track investment in clean energy; and
 - create a BC Hydro task force to accelerate the electrification of BC's economy.
- Roadmap commitments and actions to support GHG emissions reductions in the oil and gas sector include:
 - Strengthened methane emissions targets of a 75 percent reduction target from 2014 levels by 2030 and near elimination of methane emissions by 2035.
 - Requiring all new, large oil and gas facilities to be net-zero by 2050.
 - Increasing the carbon tax to \$170 per tonne by 2030 and promoting the electrification of upstream oil and gas production.
 - Enabling carbon capture and storage (CCS).
 - Establishing declining carbon intensity thresholds, over time, for hydrogen produced from natural gas.
 - Integrating emissions reductions into the review of the rules for oil and gas royalties to ensure the royalty system will help meet provincial emission reduction targets.
 - Cleaning up 100 percent of current orphan wells in BC before 2030.
- The Ministry of Energy, Mines and Low Carbon Innovation (EMLI) is also engaged with its Government of Canada partners to further support oil and gas GHG and methane emissions reduction policies.

Reduction and Elimination of Methane Emissions:

- An emissions reduction target of 45 percent was established in the province's precursor climate strategy, the CleanBC plan released in 2018. Methane emissions regulation is a key policy instrument for achieving methane emissions reductions. Amendments to the *Oil and Gas Activities Act* (OGAA) Drilling and Production Regulation (DPR), came into force on January 1, 2020.
- In April 2020, BC concluded an equivalency agreement with the federal government, making the federal methane regulations inapplicable in the Province.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- BC is well on track to exceed the 2025 target. The 2020 provincial inventory data indicated methane emissions had declined by 22 percent from 2014 levels.
- The Roadmap commits to a stricter 75 percent emissions reduction target, from 2014 levels, by 2030 and near elimination by 2035. Initial EMLI modelling indicates the 2030 target can be achieved through additional amendments to the DPR. Work is underway to design these regulatory changes with the expectation these will be finalized in early 2024.
- BC is also working with experts, industry, non-profits and environmental groups to make sure we have an accurate picture of methane emissions in the oil and gas sector. In addition to research sponsored under BC's, Methane Emissions Reduction Collaborative, the Province is leading work with academia and the United Nations Environmental Programme to improve quantification of fugitive methane emissions from the oil and gas sector.

Net-Zero Ready Industrial Operations:

- The Roadmap includes a requirement that all new large industrial facilities, including oil and gas facilities, must have a plan to achieve net-zero GHG emissions by 2050. The New Energy Action Framework will require all proposed Liquefied Natural Gas (LNG) facilities in or entering the environmental assessment process to have a credible plan to be net zero by 2030.
- EMLI is presently working with ENV on the policy that will determine the legislation and guidance on net-zero requirements for new large industrial projects. As the lead ministry, it is expected ENV will initiate engagement with Indigenous partners and stakeholders in spring 2023.

Increasing the Carbon Price

- BC's carbon tax will meet or exceed federal carbon price requirements, so that the tax rate will increase each year until it reaches \$170 per tonne by 2030.
- As part of Budget 2023, the Province announced a transition to an output-based carbon pricing system (OBPS) in 2024. This OBPS will ensure significant emissions reductions for industry, including oil and gas, while also providing flexible options to meet their compliance obligations.

Carbon Capture and Storage

- CCS, an important emissions reduction and mitigation strategy for the oil and gas sector, has been advanced through legislative amendments in November 2022, and proposed amendments to storage reservoir regulations for spring 2023. The amendments in OGAA and the *Petroleum and Natural Gas Act*, with the subsequent proposed regulatory changes, work to clarify the license requirements for storage reservoirs and expand rights for the Province to explore for, access, develop and use storage reservoirs.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- BC is supporting research into the geological potential across the province for permanent underground storage. The recently released Northeast BC Geological Carbon Capture and Storage Atlas identifies the most suitable formations and locations for carbon storage in the Northeast.

Cross Reference: 20 – Carbon Capture and Storage

Contact:

Nathaniel Amann-Blake ADM Oil and Gas Division 250 889-1990

Title: **Carbon Capture and Storage**

Drafted: **March 13, 2023**

Issue: **Carbon Capture and Storage is advancing as an important greenhouse gas emissions mitigation technique needed to achieve oil and gas sector emission reductions.**

Response:

- Our CleanBC: Roadmap to 2030 acknowledges that full decarbonization of British Columbia's (BC) industry will require the use of carbon capture and storage (CCS) and we are advancing a provincial framework to guide its deployment.
- CCS technologies are critical to reduce emissions in hard-to-abate industrial sectors such as the oil and gas sector.
- Oil and gas operators in Northeast BC are some of industries front runners, looking to advance CCS projects in the next few years to reduce their emissions and are paving the way for other industrial sectors.
- CCS can also support the emerging low-carbon hydrogen industry when hydrogen produced from natural gas is combined with CCS.
- Last fall we advanced legislative amendments under Bill 37 that provided needed clarity on the use of storage reservoirs as well as enabling deep underground storage of carbon dioxide from other industrial sources.
- In 2022 we were also able to provide clarity on fiscal measures by successfully working with the federal government to ensure that BC's CCS projects would be eligible for the federal CCS Investment Tax Credit.
- In this process the federal government reviewed and confirmed that BC's regulatory regime for CCS will ensure safe and permanent carbon dioxide storage.
- Through funding under the Roadmap to 2030, BC is supporting important research to assess the geological potential for permanent underground storage in promising regions across the province.
- We are fulfilling our Roadmap commitment to integrate emission reduction goals into our royalty system by developing a new program to be launched this year that will support emission reduction projects such as CCS.

Background/Status:

- The *Petroleum and Natural Gas Act* (PNGA) outlines the tenure process for carbon dioxide storage in BC. The Ministry of Energy, Mines and Low Carbon Innovation (EMLI) is currently developing related regulations to provide clarity on requirements for storage reservoir licences, adding greater transparency to the robust review process and opening the tenure process to non-oil and gas sector participants.

- The BC Energy Regulator (BCER) is responsible for permitting storage reservoir activities. Its rigorous requirements for subsurface storage of substances ensure the integrity of the well(s) and the subsurface reservoir in which the carbon dioxide is to be contained. CSA Standard Z741 are used for monitoring and reporting of CCS projects in BC. In addition, BCER requires additional measurement, monitoring, testing and reporting which are specified in the approval process.
- The BCER has provided regulatory oversight for subsurface storage projects since 1996 in the form of acid gas (a mixture of carbon dioxide & hydrogen sulphide) disposal well approvals, collectively storing 2.6 million tonnes of total carbon dioxide via the 16 approved disposal wells.
- EMLI and the BCER have produced new guidance documents to support proponents' ability to acquire tenure and permits for CCS projects.
- In February 2023, Geoscience BC concluded its work on the Northeast BC Geological Carbon Capture and Storage Atlas. The Atlas provides a detailed summary of potential storage reservoirs in Northeast BC, splitting findings between opportunities in deep saline aquifers and depleted pools. The geological assessment received government funding with data provided by the BCER.
- BC worked closely with Environment and Climate Change Canada (ECCC) and Natural Resources Canada in the summer and fall of 2022 on a detailed review of BC's regulatory framework regarding geological sequestration.
- On November 15, 2022, EMLI received a letter from ECCC informing staff that the federal minister approved BC as a prescribed jurisdiction under the proposed federal CCUS ITC concluding that BC's regulatory framework around geological sequestration is sufficient to ensure that carbon dioxide is permanently stored.

Offshore CCS Development:

- BC has jurisdiction over offshore development depending on the location of the activities. Typically, it is those waters between land and very close to shoreline. This includes any inlets and the Strait of Georgia. All other ocean waters that are still within Canada's economic zone are federal jurisdiction.
- Where BC has jurisdiction, its subsurface tenure framework applies. Current Provincial policy is not to proceed with offshore oil and gas exploration or drilling. Commercial offshore storage of carbon dioxide has not been contemplated. There are however academic studies underway looking at potential opportunities for offshore CCS. EMLI staff are following this research to see how it might inform future policy.

CCS in the Lower Mainland:

- Exemptions under the Petroleum and Natural Gas Storage Reservoir Regulation of the PNGA are intended to prevent the granting of exploration and storage reservoir licences in the subsurface area below the Lower Mainland. The exemption was put in place the 1990's in response to concerns about potential natural gas storage.

- There is no clear understanding of the potential storage opportunity in the region. Multi-year research into the characteristics of the geological storage zones of the Lower Mainland is needed before CCS could be considered.
- EMLI staff are reviewing a Simon Fraser University (SFU) research proposal that would help address the geological storage knowledge gap. Research funding from Roadmap to 2030 is available for geologic assessments. Results from this SFU type of research can help inform future policy for CCS in the lower mainland.
- Metro Vancouver is currently giving consideration to developing CCS projects in the region and is working on a CCS strategy. They are aware of the current regulation that prevents underground storage projects advancing in the Lower Mainland.

Attachment: Appendix 1 – Provincial Funding by Program for CCS projects

Cross Reference: CleanBC Roadmap to 2030 – Oil and Gas

Contact:

Nathaniel Amann-Blake ADM Oil and Gas Division 250 889-1990

Appendix 1 – Provincial Funding by Program for CCS projects

The following provides a summary of carbon capture and storage (CCS) projects receiving provincial funding support.

Clean Industry Fund

- The Ministry of Environment and Climate Change Strategy (ENV) manages the Clean Industry Fund (CIF).
- CIF received 14 CCS related project applications in 2021 and 2022. Of them, eight received funding – with projects spread between six companies. Funding went to carbon capture systems technologies and feasibility studies for further CCS technologies within specific gas facilities.
- ENV has released publicly information on the five projects approved in 2021. The projects include:
 - 2021 FS - NorthRiver Midstream \$180,000
 - 2021 FS - Tourmaline Oil \$300,000
 - 2021 FS - NorthRiver Midstream \$150,000
 - 2021 FS - Tidewater Midstream \$48,750
 - 2021 FS - Veresen Midstream \$96,000
- The 2022 program results have not been made public yet.

Clean Growth Infrastructure Royalty Program

- The Clean Growth Infrastructure Royalty Program (CGIRP) is a Ministry of Energy, Mines and Low Carbon Innovation (EMLI) program that ran from 2019 - 2022 and will no longer be offered as a result of the royalty review.
- CGIRP received two CCS related project applications in 2022, from two different natural gas producers.
- Both applications were successfully accepted into the program and will receive funding to support a portion of the total costs of capturing emissions from surface infrastructure and sequestering the gas into underground reservoirs.
- Information about these projects has not yet been shared publicly.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Hydraulic Fracturing and Responsible Resource Development

Drafted/Revised: March 13, 2023

Issue: Responsible natural gas development.

Response:

- British Columbians rely on natural gas and want to know that it is being responsibly developed in a way that does not harm our shared environment.
- British Columbia (BC) has extensive experience in regulating the oil and gas industry and comprehensive regulatory requirements under the *Oil and Gas Activities Act* and its regulations.
- In 2018 we asked an independent scientific panel to review the practice of hydraulic fracturing in BC and the associated regulations to ensure that BC's natural gas development is safe and responsible.
- The Scientific Review of Hydraulic Fracturing report, released in February 2019, concluded that the regulatory regime appears robust, and it made no recommendations to curtail hydraulic fracturing.
- The report made recommendations, identifying improvements that could be made including more research to address knowledge gaps.
- Since 2019, specific actions in response to the recommendations from the report have been completed across government and by the BC Energy Regulator (previously known as the BC Oil and Gas Commission).
- BC is now focused on ongoing programs and policies that will continue to ensure its commitment to responsible natural gas development is met.

Background/Status:

Response to Independent Review Panel Report

- In response to the independent review panel report, an action plan was developed by a cross-agency working group to address the scientific panel's recommendations by focusing on improvements to regulatory and policy tools and processes, increasing scientific research and baseline monitoring, and improving relationships with Indigenous peoples.
- Research actions have advanced through projects launched under the Oil and Gas Research Innovation Society (OGRIS) and through collaborations with Geoscience BC and other academic institutions.
- BC continues environmental management work in a collaborative way across agencies. This includes ongoing water monitoring in collaboration with First

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Nations, work on significantly reducing methane emissions and dedicated efforts to reclaim orphaned and dormant sites.

Overview of key actions

- Initiating the Pilot Collaborative Water Monitoring Program in January 2020, to collect baseline water quantity and water quality data in the Peace River region. This partnership program includes participation by Treaty 8 First Nations, which have co-selected the monitoring sites and will be bringing Indigenous knowledge and perspectives to the program. Program partners will be providing training in baseline water monitoring to local First Nations. Anticipated completion date for this project is December 31, 2023.
- Collaborating with University of BC's (UBC) Engineering and Environmental Research Initiative to study gas migration and regional hydrogeology.
- Working with industry and the federal government, as part of the BC Seismic Research Consortium to improve seismic knowledge in Northeast BC.
- Creating the Methane Emissions Research Collaborative to improve data accuracy and evaluate new technologies aimed at the detection and reduction of methane emissions.
- Advancing a Regional Strategic Environmental Assessment with Treaty 8 First Nations for assessing cumulative impacts to surface water quality and quantity, moose, old growth forests, peaceful enjoyment, and environmental livelihood.

Contact:

Nathaniel Amann-Blake ADM Oil and Gas Division 250 889-1990

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Federally Funded Programs for Dormant and Orphan Well Clean-up

Drafted/Revised: March 9, 2023

Issue: Programs are creating jobs for British Columbians, stimulating the economy, and cleaning up the environment.

Response:

- British Columbia (BC) has taken action over the past three years to accelerate the decommissioning and restoration of dormant/inactive, orphan, and legacy oil and gas well sites with \$120 million of funding from the federal government received in spring 2020.
- BC created and delivered three new programs that were launched in spring 2020 with final allocations of: \$74.9 million to the Dormant Sites Reclamation Program (DSRP); \$40.1 million to the Orphan Sites Supplemental Reclamation Program (OSSRP); and \$5.0 million to the Legacy Sites Reclamation Program (LSRP). Work under the programs concluded in February 2023.
- The DSRP has supported closure work at 2275 dormant oil and gas sites.
- Under the OSSRP, more than 515 wellsites had work completed under the OSSRP, most of which received multiple activities (e.g., both decommissioning and restoration). A total of \$9 million of the \$40 million in OSSRP funding was expensed on contracts awarded to companies that were owned or partnered with Treaty 8 communities.
- Under the LSRP, the \$5 million in federal funding was used to support nine projects led by six Treaty 8 First Nations to investigate and/or restore legacy (i.e., old) seismic lines.
- It is estimated the three programs created up to 1200 jobs for British Columbians. For the DSRP, eligibility was restricted to only oil and gas field service contractors based in BC, with verified company registration in BC, office in BC, and operations in BC.
- BC actively worked with Indigenous peoples and Indigenous-owned companies in the design and implementation of all three programs.

Background/Status:

- The DSRP was directed at BC-based natural gas service sector contractors to apply for a financial contribution to undertake and complete work on the reclamation of dormant sites (i.e., wells that have been inactive for five consecutive years and are unlikely to be returned to service). Successful applicants were provided with up to \$100,000, or 50 percent of total costs, whichever is less, for dormant site clean-up projects.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- An orphan designation is given by the BC Energy Regulator (the Regulator) to wells and associated operating areas when the operator is insolvent or cannot be located. Orphan sites represent a financial and environmental liability directly to the province and are managed by the Regulator.
- The federal terms for funding dictated that orphan work must be incremental to that already planned by the Regulator. The OSSRP supported \$40.1 million in supplemental orphan well clean-up work.
- The DSRP and OSSRP included an on-line well site nomination process that provided the opportunity for Indigenous peoples, landowners, and local governments to nominate sites to be considered for priority remediation. A total of 1853 nominations were received by 14 Indigenous Nations as well as communities and landowners, the majority submitted by Indigenous Nations.
- Work under the programs had to be completed and dispersed by BC by February 14, 2023, as per the agreement with the federal government. Any funds not dispersed must be returned to the federal government by May 15, 2023.
- For the DSRP, of the \$74.9 million allocated, \$62.1 million was spent. The BC based wellsite clean-up and restoration industry sector were working flat out over the last three years and did not have the capacity to get to some approved work items and complete other work items resulting in the underspend.
- For the DSRP, the \$62.1 million in financial contributions made toward dormant site clean-up leveraged an additional \$135.6 million investment funded by oil and gas well permit holders on dormant well clean-up. The result was a total of \$197.7 million spent on dormant well clean-up.
- Regarding the \$12.8 million in unspent funds, the Ministry has sent a letter to the federal government indicating BC intends to direct those funds to BC's indigenous-led Restoration Funds that have been negotiated with First Nations as a result of the BC Supreme Court *Yahey v. British Columbia* decision.
- There are legacy disturbances in northeast BC associated with historic oil and gas development. These sites consist primarily of historic seismic cut lines and have long lasting effects on habitat and ecosystems.
- Under the LSRP, \$5 million was used to support nine projects led by six Treaty 8 First Nations to investigate and/or restore legacy (i.e., old) seismic lines. A total of 154 kilometres of old seismic were treated and restored under the LSRP.

Contact:

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Sierra Yoyo Desan Road

Drafted/Revised: March 9, 2023

Issue: Road maintenance contract

Response:

- The Sierra Yoyo Desan (SYD) Road is a 180-kilometre-long road that is the primary corridor to over 27,000 square kilometres of oil and natural gas tenures and assets located east and north of Fort Nelson.
- The Ministry of Energy, Mines and Low Carbon Innovation (Ministry) is responsible for the SYD Road under a 99-year lease of the road to the Ministry from the British Columbia Transportation Financing Authority (BCTFA) who owns the SYD Road.
- The SYD Concession Agreement (CA) that began in 2004 ended on in 2020. It was replaced with a three-year maintenance contract, competed through a competitive procurement process, which began October 1, 2020.
- Oil and gas producers continue to fund road maintenance through the payment of road use fees as required under the Sierra Yoyo Desan Road System of Charges Order, approved by an Order in Council.
- Total annual maintenance costs in the second year of the new contract (October 1, 2021, to September 30, 2022) were \$3.8 million. This is a significant reduction from the approximately \$7 million per year under the CA. Much of this reduction was the result of ending availability payments for large, amortized, capital upgrades completed back in 2005.
- Given the lower level of revenue from road charges needed to meet annual maintenance costs, a 55 percent reduction in road use charges was approved on July 12, 2021. This new level of revenue has proven sufficient to fully meet road maintenance costs.
- SYD Road Users who pay the road use charges are all oil and gas producers using the SYD Road, and ministry staff actively works with them to provide them with the opportunity for input into road maintenance priorities.

Background/Status:

- The SYD Road provides the only year-round access for producers to active producing oil and gas operations, including over two dozen active gas plants, facilities and compressor sites, hundreds of kilometres of pipelines and over 1,600 producing natural gas wells.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- The SYD Road provides access to traditional territory for the Fort Nelson First Nation including numerous hunting and trapping sites and their cultural education centre located at kilometre 37 of the SYD Road.
- The BC Energy Regulator (Regulator) emphasizes that the road provides access to considerable orphan and dormant wells and is essential for necessary abandonment and site remediation work by the Regulator and industry.
- Dozens of Fort Nelson residents have jobs associated with the natural gas operations in the area and use the SYD Road to go to work each day.
- The Ministry is responsible for the SYD Road from kilometre 8 located at the Fort Nelson airport to the end of the SYD Road at kilometre 188. This responsibility, which began in 2004, is charged under a 99-year lease of the road to the Ministry from the BCTFA who owns the SYD Road.
- The SYD Road was previously administered by the Ministry through a Public-Private Partnership (P3) Concession Agreement (CA) that started in 2004.
- Following a competitive procurement process using BC Bid, the CA was replaced with a shorter-term, three-year maintenance contract commencing on October 1, 2020. Ledcor Highways Ltd. was the successful bidder and has been providing effective road maintenance services.
- The SYD System of Charges remains in effect, and road use charges collected from oil and gas producers continue to fund all maintenance work on the SYD Road. To help share the burden for funding maintenance on the SYD Road, oil and gas royalty payors receive back 50 percent of road use charges in the form of a royalty deduction. This royalty deduction, which began in 1998 prior to the CA, continues to be a feature of the road charges arrangement with road users and has been accounted for as part of the recent Royalty Review to continue going forward. The annual total amount of royalty deduction currently and moving forward is very small, at about \$1.9 million.
- The short-term three-year contract (which has an option to be extended to a fourth year) allows time to assess how the new contract is working and the ability of road users to continue to pay. It meets the Fort Nelson First Nation's strong desire that the province continue to manage the road, and it also allows the Ministry to further re-evaluate the degree of the province's longer-term involvement with the road.

Contact:

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Trans Mountain Expansion Project Overview

Revised: March 13, 2023

Issue: Trans Mountain Expansion Project Overview

Response:

- Provincial staff meet regularly with Trans Mountain Corporation (TMC) to work through issues related to permitting. Provincial agencies will continue to support permitting until completion of the project.
- The project is providing economic benefits to the Province and will provide revenue sharing through the C5 Agreement of \$25-50 million over 25 years. The funding will fund green initiatives for communities along the pipeline.
- The Trans Mountain Expansion Project (TMEP) requires approximately 1710 provincial permits, all of which require consultation with Indigenous groups. Approximately 1635 provincial permits have been issued to.
- On March 10, 2023 TMEP's projected cost was revised from \$21.4 billion to \$30.9 billion. The federal government has reaffirmed the pipeline's financial viability through independent audits and will seek to divest ownership closer to completion date, with a focus on Indigenous led ownership groups.
- The economic impact, employment, industry skills and training investments, and indigenous agreements are located in Appendix 1.

Background/Status:

- TMEP falls under the Canadian Energy Regulator's (CER) jurisdiction as it crosses provincial borders.
- TMEP is organized into seven spreads. Spreads 1 and 2 are in Alberta, and Spreads 3 to 7 are in British Columbia (BC). Spreads 6 and 7 are in the Lower Mainland. Spread 7 includes the Burnaby Terminal, Burnaby Mountain Tunnel and Westridge Marine Terminal. (See Appendix 3 – TMEP Map).
- TMEP will twin TMC's existing 1150-kilometre pipeline within the existing right-of way, where possible, from Edmonton to Vancouver.
- The existing pipeline has a sustainable capacity of 300,000 barrels per day (bbl/d) and the new pipeline will add a sustainable capacity of 590,000 bbl/d.
- On April 6, 2017, BC signed an agreement with Kinder Morgan (to be honoured by the federal government) that provides for revenue sharing of up to \$1 billion over 20 years that is to go towards initiatives and projects that protect the environment and benefit communities. The agreement also commits BC to establish and maintain a project office to facilitate a timely and efficient regulatory

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

and decision-making process for all provincial regulatory matters related to TMEP or the existing pipeline system.

- The Infrastructure Projects and Strategic Initiatives (IPSI) branch in EMLI maintains regular connection to TMEP's project team and the relevant agencies to ensure any emerging issues are identified and addressed early and proactively, where possible. Operational relationships are strong between TMC and the BC Government, resulting in most issues being addressed at that level. Permit Status for the Period Ending March 9, 2023:

AGENCY & PERMIT TYPE	TOTAL NOT YET SUBMITTED	TOTAL IN TECHNICAL REVIEW	TOTAL APPROVED PERMIT APPLICATIONS	GRAND TOTAL
BC ENERGY REGULATOR	0	8	198	206
MINISTRY OF FORESTS	2	47	136	185
BC PARKS	0	0	6	6
MINISTRY OF ENVIRONMENT AND CLIMATE CHANGE STRATEGY	2	1	4	7
MINISTRY OF TRANSPORTATION & INFRASTRUCTURE	8	7	1287	1302
AGRICULTURAL LAND COMMISSION	0	0	4	4
GRAND TOTAL	12	63	1635	1710

Over the next year, the key focus areas for IPSI in relation to the TMEP are:

- Supporting the timely and efficient permitting for the remaining approximately 100 project-related provincial permits.
- Facilitating resolution on non-permit related construction challenges including impacts to the provincial Spotted Owl Breeding Facility and construction related road issues such as Highway 1 temporary closures.
- Designing and establishing the Condition 5 fund to ensure it is ready to receive and disburse funds when the TMEP commences service.
- Supporting agencies in the transition from construction to operations (i.e. permitting to compliance/ongoing maintenance focus).

Attachments: Appendix 1 – Trans Mountain Expansion Project Construction Benefits
Appendix 2 – Maps of Trans Mountain Expansion Project

Contact:

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Nathaniel Amann-Blake ADM Oil and Gas Division 250 889-1990

2023/24 Estimates Note

Advice to the Minister

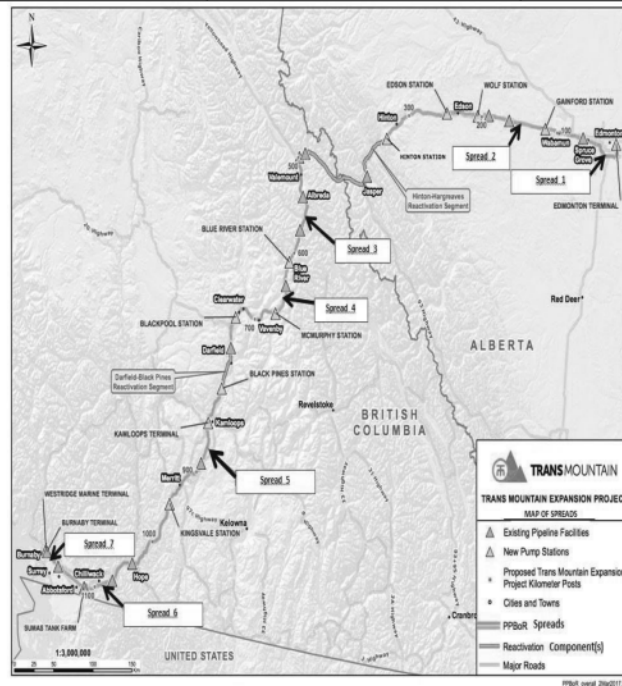
Ministry: Ministry of Energy, Mines and Low Carbon Innovation

Minister Responsible: Josie Osborne

APPENDIX 1

Trans Mountain Expansion Project Construction Benefits

Facility Locations Burnaby, Westridge, Sumas, Edmonton	Project Owner Canada Development Investment Corporation	Total Expanded Capacity 890,000 bbl/d	Pipeline Length 1173 km	Projected In-service Q1 2024
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Economic Impact

Capital Expenditures \$ 30.9B	Operating Expenditures unknown	Total Government Revenues \$5.7B over first 20 years in operation	Life of the Project unknown	GHG Emissions 20.3-25.7Mt (production, processing and refining of products associated with the full transportation capacity)
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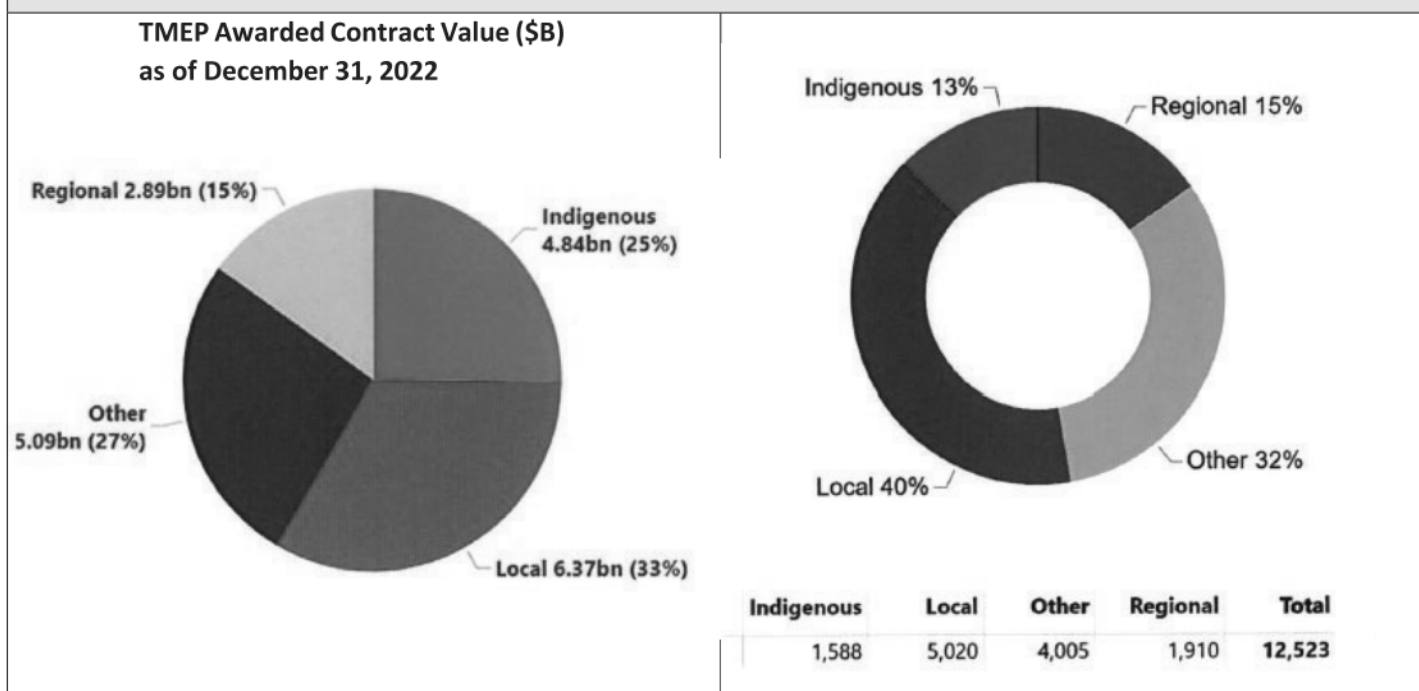
Employment

Current Employment ~12,523 in BC (28,997 project wide)	Peak Employment N/A	Est Secondary jobs Unknown	Operational Jobs Unknown	Employment Diversity 15% regional 40% local 13% Indigenous 32% Other
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Industry Skills and Training Investments

Industry Contributions to Initiatives >\$70.5 (through project-specific MBAs with Indigenous Groups)	Investment in Training Programs for Indigenous People \$1,320,000	Investment in Project-Specific Training for Contractors >\$4,250,000	Funding for Annual Awards and Scholarships at BC Post-Secondary Institutions >\$1.2M	Women Trades Training (YourPlace) N/A
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Procurement and Employment



Indigenous Agreements

Trans Mountain has signed 69 agreements with Indigenous groups in BC and Alberta (\$580M in benefits/opportunities for Indigenous Communities)	Trans Mountain will provide BC with up to \$1B over 20 years to BC Clean Communities Program to be accessed by communities for local social and environmental projects across the province.
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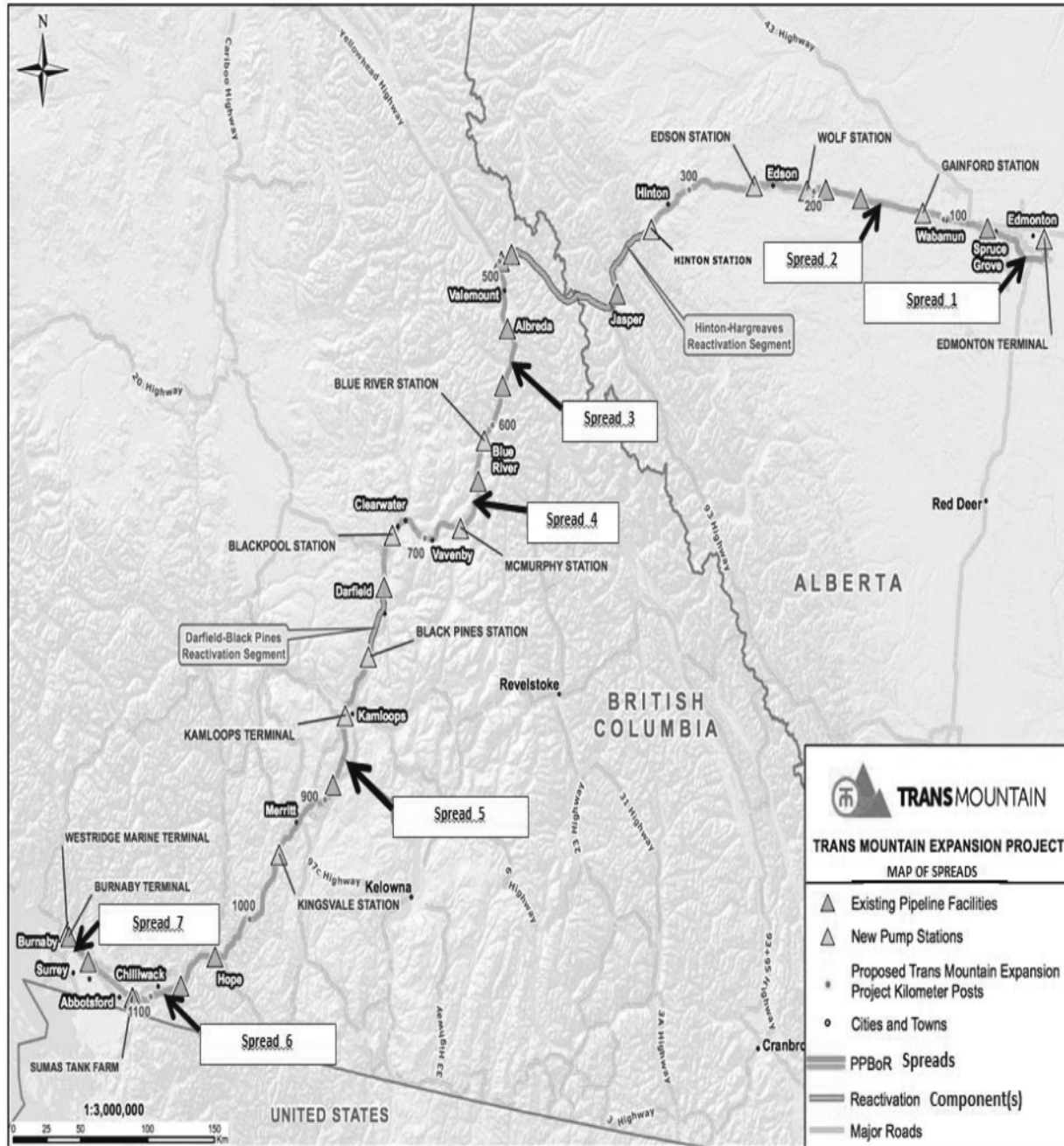
Authorizations

Permit approvals, authorizations or agreements required 1,710	Permit approvals, authorizations or agreements approved 1,650 (7% outstanding)	Canada Energy Regulator Project Certificate and Environmental Assessment Certificate Received
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

APPENDIX 2 MAP OF TRANS MOUNTAIN EXPANSION PROJECT



Contact:
Nathaniel Amann- ADM Oil and Gas Division 250 889-1990
Blake

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Clean Energy and Major Projects Office

Drafted March 17, 2023

Issue: British Columbia's new energy action framework includes four key actions, including the development of a clean energy and major projects office.

Response:

- The Clean Energy and Major Projects Office will be located in the Ministry of Energy, Mines and Low Carbon Innovation.
- When structured, the new office will work across government to help clean energy projects - including hydrogen, biofuels and renewable natural gas - navigate regulatory processes, access provincial programs, and reach final investment decisions.
- The office will also continue to monitor implementation of already approved projects, including LNG Canada and Woodfibre LNG.
- Provincial staff within the office will support consultations with industry in order to find alignment with the new energy action framework.
- Staff and resources will be finalized over the next few months.

Background/Status:

- On March 14, 2023, British Columbia announced a new energy action framework. It builds on actions outlined in CleanBC to drive clean economic growth, while helping the province meet its legislated climate targets.

Four Actions

- As described in the news release, under the new energy action framework, the Province will:
 - require all proposed LNG facilities in or entering the environmental assessment (EA) process to pass an emissions test with a credible plan to be net zero by 2030;
 - put in place a regulatory emissions cap for the oil and gas industry to ensure B.C. meets its 2030 emissions-reduction target for the sector;
 - establish a clean-energy and major projects office to fast-track investment in clean energy and technology and create good, sustainable jobs in the transition to a cleaner economy; and
 - create a BC Hydro task force to accelerate the electrification of B.C.'s economy by powering more homes, businesses and industries with renewable electricity.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Clean Energy and Major Projects Office

- Organizationally, the Clean Energy and Major Projects Office will be located in the Ministry of Energy, Mines and Low Carbon Innovation (EMLI).
- The structure of the office is anticipated to be done this spring; it will leverage internal EMLI staff and resources.
- When structured, the new office will work across government to help clean energy projects - including hydrogen, biofuels and renewable natural gas - navigate regulatory processes, access provincial programs, and reach final investment decisions. It will also continue to monitor implementation of already approved projects (such as LNG Canada and Woodfibre LNG) to make sure they are benefiting British Columbians.
- The new office will not replace the statutory responsibilities of regulatory authorities, such as the BC Energy Regulator (BCER), but a coordination function will be established.
- A final structure and budget for the Clean Energy and Major Projects Office is subject to internal, EMLI deliberation and will be finalized over the next few months.
- Both the Clean Energy and Major Projects Office and the BC Hydro Taskforce will act on the new energy action framework to find solutions for emissions reduction requirements and to help British Columbia hit provincial climate targets. Consultations will occur with industry, First Nations, environmental groups and others to inform the regulatory emissions cap for the oil and gas industry.

Contact:

Suzanne Manahan	A/Assistant Deputy Minister	LNG Canada Implementation Secretariat	250 952-0729
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: New Energy Action Framework

Drafted March 17, 2023

Issue: British Columbia's new energy action plan includes four key actions.

Response:

- The new energy action framework builds on actions outlined in CleanBC to drive clean economic growth while helping the province meet its legislated climate targets.
- There are four key actions under the framework. The Province will launch engagements with First Nations, industry, and other stakeholders on the final design of the regulatory cap on oil and gas sector emissions.
- Strong, enforceable emissions reduction requirements provide predictability for industry.
- Membership and resources for the Clean Energy and Major Projects Office, as well as the BC Hydro task force, will come together over the next few weeks and months.

Background/Status:

- On March 14, 2023, British Columbia announced a new energy action framework. As described in the news release, the Province will:
 - require all proposed LNG facilities in or entering the environmental assessment (EA) process to pass an emissions test with a credible plan to be net zero by 2030;
 - put in place a regulatory emissions cap for the oil and gas industry to ensure B.C. meets its 2030 emissions-reduction target for the sector;
 - establish a clean-energy and major projects office to fast-track investment in clean energy and technology and create good, sustainable jobs in the transition to a cleaner economy; and
 - create a BC Hydro task force to accelerate the electrification of B.C.'s economy by powering more homes, businesses and industries with renewable electricity.

LNG facilities and EA process

- Proposed LNG facilities in B.C. will be required to have a credible plan to achieve net-zero emissions by 2030 in order to proceed through the environmental assessment process.
- This may involve adopting best-in-class technology to reduce emissions as much as possible and offsetting their remaining emissions through high-quality, verified carbon offset projects.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Emissions cap

- The sectoral target for the oil and gas industry aims to reduce emissions 33% to 38% below 2007 levels by 2030. The CleanBC Roadmap to 2030 committed that the Province would implement policies and programs to ensure the oil and gas sector meets its sectoral targets.
- Starting in April, the Province will launch engagements with First Nations, industry, labour, environmental organizations, local governments and other stakeholders on the final design of the regulatory cap on oil and gas sector emissions, including on issues like how the cap will be allocated, credit trading, and verifiable offsets. Consultations will be complete before the end of the year and the Province intends to implement the regulatory cap as soon as possible to provide the public and industry with certainty.

Clean Energy and Major Project Office

- The Clean Energy and Major Projects Office will be located in the Ministry of Energy, Mines and Low Carbon Innovation (EMLI).
- When structured, the new office will work across government to help clean energy projects - including hydrogen, biofuels and renewable natural gas - navigate regulatory processes, access provincial programs, and reach final investment decisions. It will also continue to monitor implementation of already approved projects (such as LNG Canada and Woodfibre LNG) to make sure they are benefiting British Columbians.

BC Hydro task force

- The new BC Hydro task force will ensure B.C. is well positioned to electrify B.C.'s economy as the province transitions to a clean-energy future. It will accelerate the planning and procurement of new infrastructure needed to power B.C.'s economy with clean electricity. It will also identify and advance Indigenous ownership opportunities in future electricity generation and transmission investments. The task force will include senior officials from the Province and BC Hydro, Indigenous representation and independent expertise.

Contact:

Suzanne Manahan	A/Assistant Deputy Minister	LNG Canada Implementation Secretariat	250 952-0729
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Project and Five Conditions

Drafted March 17, 2023

Issue: Five Conditions for the LNG Canada export facility and Coastal GasLink pipeline projects

Response:

- Government has set five conditions to ensure that LNG projects are constructed and operated in a way that benefits British Columbians and meets the Province's climate commitments.
- LNG investment in B.C. will:
 - Deliver jobs and training opportunities for British Columbians,
 - Provide a fair return for our resources,
 - Respect and make partners of First Nations,
 - Protect our clean air, water and land, and
 - Mitigate community impacts and enhance community benefits.
- The LNG Canada project has created many benefits. Government plays an active role in monitoring the projects' impacts on local communities and First Nations.

Background/Status:

- In 2018, the provincial government announced four conditions for LNG investment to ensure long-term benefits for British Columbians while maintaining strong environmental protections.
- In 2022, British Columbia developed a fifth condition for LNG projects to ensure that companies mitigate impacts and enhance benefits for local communities and First Nations.
- The LNG Implementation Secretariat (Secretariat) continues to monitor LNG Canada and Coastal GasLink's (CGL) progress on these five conditions:

Jobs and Training:

- Total construction workforce: 12,891¹ workers (3,910 British Columbians: 1,571 women and 979 self-identified Indigenous peoples).
- Over \$7.6 million has been spent by LNG Canada/CGL on skills training in B.C., including \$1.5 million towards LNG Canada's Trades Training Fund, resulting in 1,538 apprentices trained and an additional 120 women introduced to construction through the "Your Place" work readiness initiative.

¹ Total using the most recent data from the two projects; January 2023 for LNG Canada and December 2022 for CGL.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Fair Return for Resources:

- \$23 billion in new government revenues over the life of the project.
- Construction of the project represents a 0.7% increase to real GDP for B.C.
- Over \$5.4 billion in subcontracts and procurements awarded by LNG Canada and Coastal GasLink to B.C. businesses.

First Nations Partnerships:

- LNG Canada and CGL have agreements in place with all elected First Nations communities along the pipeline right of way, and facility footprint.
- Collectively, approximately \$4 billion in subcontracts and procurement has been awarded to Indigenous businesses. Over 200 Indigenous businesses have been involved with construction activities.
- Sixteen of 20 First Nations have 10% equity agreements on the GCL pipeline.
- All CGL prime contractors have signed agreements with Indigenous communities in whose territories they are operating. First Nations-led service sector companies are also employed for security, catering and other workforce lodge supports.
- LNG Canada requires employees sign a Workers Code of Conduct and complete Cultural Awareness Training. Coastal GasLink's Community Workforce Advisor program employs members from neighbouring Indigenous communities to lead cultural training programs, and the Construction Monitoring and Community Liaison Program involves Indigenous community members to participate in construction in their territory and report back to their communities.

Environment:

- LNG Canada Phase 1 is accounted for in CleanBC.
- The LNG Canada project is expected to have the lowest GHG emission intensity of any major LNG facility currently in the world – 35% lower than the world's best performing facilities and 60% lower than the global weighted average.
- Vessels assembled by HaiSea Marine will use battery-electric power and natural gas instead of diesel, reducing CO₂e emission by up to 10,000 tonnes a year (at the LNG Canada export facility).
- CGL is using a new kind of technology called Enclosed Vapour Combustors to reduce emissions across project lines.

Community Well-Being:

- Over \$6 million has been spent by LNG Canada and CGL on local community benefits. Examples:
 - \$1.2 million to the Northwest Regional Airport Terrace-Kitimat.
 - \$500,000 provided to the City of Terrace Fire Department for a new highway rescue vehicle.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- \$350,000 provided to Coast Mountain Children's Society to support 14 childcare spaces program in the Kitimat/Haisla area.
 - \$125,000 provided to the Tamitik Status of Women to support programs and services for women and families affected by social issues.
 - \$100,000 provided to Chetwynd and District Hospital.
 - \$100,000 provided to Chetwynd Public Library.
- The Environmental Assessment Certificates (EACs) for the LNG Canada export facility and CGL pipeline projects each have a condition requiring the companies to develop plans to mitigate, and adaptively manage, potential socio-economic effects on community services and infrastructure in their area of construction.
 - In accordance with Condition #14 of their EAC, LNG Canada developed a Community Level Infrastructure and Services Management Plan (CLISMP).
 - In accordance with Condition #24 of their EAC, CGL developed a Socio-economic Effects Management Plan (SEEMP).
- LNG Canada's non-local workers are housed at Cedar Valley Lodge – a world class industrial accommodation to reduce community housing displacement.

Cross Reference: LNG Canada Project Overview
Coastal GasLink Pipeline Overview

Contact:

Suzanne Manahan	A/Assistant Deputy Minister	LNG Canada Implementation Secretariat	250 952-0729
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: LNG Canada Project Overview

Drafted: March 16, 2023

Issue: LNG Canada Export Terminal Project overview

Response:

- LNG Canada is creating new, significant economic opportunities for British Columbia. The project is currently in its fifth year of construction.
- LNG Canada continues to hit critical construction milestones and the plant construction is close to 80% complete. The project is on track to export LNG around mid-decade.
- At \$40 billion, LNG Canada is the largest private sector investment in Canadian history. The project is expected to generate approximately \$23 billion in public revenue over 40 years.
- To date, the LNG Canada project has awarded over \$4 billion in contracts to businesses in B.C. and Canada. That includes around \$2.7 billion to Indigenous-owned businesses.
- The project has a workforce of over 5,000 people as of January 2023.
- Government is working closely with First Nations, local communities and industry to ensure benefits are being realized and that proponents continue to meet the conditions in their Environmental Assessment Certificate and permits.

Background/Status:

- The LNG Canada project is a joint venture comprised of Shell Canada (40%), PETRONAS (25%), PetroChina (15%), Mitsubishi Corporation (15%) and KOGAS (5%).

Project Description:

- On October 1, 2018, LNG Canada made a positive Final Investment Decision (FID) to construct a liquefied natural gas (LNG) export facility in Kitimat, B.C. It is the largest private sector investment in Canadian history.
- The project received a provincial Environmental Assessment Certificate (EAC) and federal approval through a substituted environmental assessment process (single process covering both the Province and Canada) in June 2015. The EAC is inclusive of Phase 1 and Phase 2. Federal export approval was obtained from the National Energy Board in January 2016.
- LNG Canada has all major permits in place from the BC Energy Regulator (BCER) including B.C.'s first LNG facility permit.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- LNG Canada requires that the Coastal GasLink (CGL) pipeline be built as it will supply natural gas for the export facility. The CGL pipeline will have one compressor station that has a capacity of 2.1 billion cubic feet per day {bcf/d}. The LNG Canada export facility will have two liquefaction trains that will produce 14 million tonnes per annum.
- Phase 2 of the LNG Canada project would require two more trains at the Kitimat export facility and an expansion of CGL's capacity with the addition of up to seven compressor stations, totalling 5bcf/d. A final decision on whether to pursue Phase 2 has not been made.

Construction Update:

- The export facility is now in its fifth year of construction. LNG Canada and their engineering procurement and construction contractor, JGC Fluor BC LNG JV (JFJV), continue to hit critical construction milestones and the project is on track to export LNG around mid-decade.
- Various infrastructure modules are arriving at the site on schedule and the vapour flare erection has started. All major works on the berth have been completed and remaining activities, such as testing and coating repairs, are scheduled for Q1 2023.

Benefits:

- Jobs and training: The most recent details provided directly from LNG Canada identifies the total workforce as 5,828 (January 2023), with these numbers estimated to reach a peak of approximately 7,000 later in the year. LNG Canada has invested over \$4 million since 2015 in trades workforce development programs. LNG Canada has prioritized local hiring first, followed by workers from within B.C. and Canada.
- Economic: LNG Canada will generate approximately \$23 billion in public revenue over 40 years.
- Indigenous Nations: LNG Canada has entered into agreements with all affected First Nations. Over \$2.7 billion has been awarded in contracts and procurement to Indigenous businesses.
- Environment/climate: LNG Canada is expected to have the lowest GHG emissions intensity of any LNG facility of its kind in the world. Consultations on Phase 2 will be considerate of B.C.'s new action energy framework.

Cross Reference: Coastal GasLink Pipeline Project Profile
LNG Canada Phase 2

Contact:

Suzanne Manahan	A/Assistant Deputy Minister	LNG Canada Implementation Secretariat	250 952-0729
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Coastal GasLink Pipeline Project Profile

Drafted March 16, 2023

Issue: Coastal GasLink Project Overview

Response:

- The Coastal GasLink project remains on schedule to support LNG Canada's in-service target date around mid-decade.
- The pipeline project is over 84% complete.
- Thousands of people are working on the project. The workforce as of December 2022 was just over 7,000 people.
- Economic benefits continue to increase. Over \$1.5 billion has been awarded to B.C. businesses to date. Of this total, over \$1.22 billion has been awarded to Indigenous businesses.
- Provincial regulators oversee Coastal GasLink's work to ensure it remains in compliance with their permits and provisions under legislation.

Background/Status:

- The Coastal GasLink (CGL) project is a 670-kilometre pipeline that will deliver natural gas from northeastern B.C. to the LNG Canada facility in Kitimat. Once complete, the pipeline will have a capacity of 2.1 billion cubic feet per day (bcf/d). The project is being developed by TC Energy and 65% equity holders, KKR and the Alberta Investment Management Corporation.
- The project received its B.C. Environmental Assessment Certificate (EAC) in October 2014. The EAC covers a Phase 2 pipeline capacity expansion of up to 5 bcf/d, which would require up to seven additional compressor stations. This expansion is dependent on LNG Canada's decision to increase capacity at its export facility in Kitimat. LNG Canada's EAC also covers this expansion, but LNG Canada has not made a final investment decision for Phase 2.
- The CGL project has created thousands of construction jobs and is projected to create up to 35 permanent field positions during operation and maintenance. Should Phase 2 of the LNG Canada project proceed, further permanent field positions will be required.

Construction Update:

- Preliminary work commenced in early 2019, with mechanical completion targeted for the end of 2023.
- The pipeline project is over 84% complete, with the construction progress at 81% complete.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Based on the most recent data from February 2023, there were 7,063 workers across the project at the end of December 2022.

First Nations:

- To date, over \$1.5 billion has been awarded to local B.C. businesses by CGL. Of this total, over \$1.22 billion has been awarded to Indigenous-owned businesses or their joint venture partnerships.
- CGL has signed community and project agreements with all 20 elected First Nations along the pipeline right-of-way.
- Option agreements to purchase an equity stake in the Coastal GasLink Pipeline Limited Partnership have been formally signed by 16 of 20 First Nations communities.
- The Province has signed pipeline benefits agreements (PBAs) with 17 of the 20 First Nations along the pipeline right-of-way. Each mutually exclusive provincial agreement provides Nations with financial support to address their priorities, such as training and education, contracting and employment.

Government Oversight:

- The BC Energy Regulator (BCER) and the Environmental Assessment Office (EAO) have been working closely to oversee compliance and enforcement of the CGL project's construction activities¹. The BCER has conducted over 400 inspections² of CGL to date; the EAO has conducted 68 inspections³ since construction started in 2019.
- As part of the escalating enforcement action in 2022, the EAO signed a compliance agreement with CGL requiring the project to take more stringent measures to protect waterways from erosion and sediment in areas of new construction. The EAO has issued several warnings and orders since construction started, predominantly related to sediment and erosion control, as well as three fines (\$170,100 in May 2022, \$72,500 in February 2022 and \$213,600 in January 2023).
- The EAC also requires CGL to have plans to manage socio-economic effects directly associated with the project. CGL has had five administrative and two field-based EAO inspections in regards to their Socio-economic Effects Management Plan, and was found fully compliant in all cases.

Cross Reference: LNG Canada Project Overview

Contact:

¹ Other agencies include the Ministry of Forest, Federal Department of Fisheries and Oceans, and Environment and Climate Change Canada.

² Resulting in two orders, a dozen tickets, cited 49 deficiencies, plus three warning letters.

³ Resulting in 52 warnings, 17 orders to cease/prevent/remedy, and three administrative penalties.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Suzanne Manahan	A/Assistant Deputy Minister	LNG Canada Implementation Secretariat	250 952-0729
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Coastal GasLink Section 7 Construction

Drafted: March 16, 2023

Issue: Milestones and challenges for Section 7 of the Coastal GasLink pipeline

Response:

- Section 7 of the Coastal GasLink pipeline project is showing significant progress.
- This section of the pipeline is where Coastal GasLink is micro-tunneling under the Morice River.
- The Morice River micro-tunneling work is 81% complete.
- Construction activities are guided by regulations, including permit conditions and environmental management plans.
- Provincial regulators are closely monitoring Coastal GasLink's activities.

Background/Status:

- Section 7 of the Coastal GasLink (CGL) project, which is 77 kilometres in length, is south of the District of Houston and north of Morice Lake.

Construction

- Section 7 is 100% cleared, 81.2% of grading is complete and 51.5% of piping has been installed.
- The Prime Contractor for Section 7, O.J. Pipelines, is collaborating with three Indigenous nations including Natanlii Development Corporation (Skin Tyee Nation), Yinka Dene Economic Development Limited Partnership (Wet'suwet'en First Nation) and Kyah Development Corporation (Witset First Nation).

Water Crossings

- CGL uses both trenched and trenchless crossing methods with an environmental and engineering assessment conducted to determine which method is best.
- CGL is micro-tunneling under the Morice River using a trenchless crossing method. The tunnel is being constructed 11 meters underneath the river without affecting the flow of the river.
- Tunnel boring work under the Morice River is around 81% complete.
- The Clore River, a tributary of the Skeena River in the area, was recently subject to scrutiny by the David Suzuki Foundation. Provincial inspections found no instances of non-compliance; the work on the Clore River is now complete.
- CGL's construction activities, including water crossings, are guided by regulations including permit conditions and environmental management plans.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Injunction/Direct Action

- Construction activities in Section 7 have been subject to direct action activities in the past.
- The Supreme Court granted CGL with an interlocutory injunction on December 31, 2019.
- Direct action activities have diminished over the past calendar year, with the most recent example being anonymous claims made online that multiple pieces of pipeline infrastructure had been damaged before it was put in the ground.
- CGL is conducting a quality review and the RCMP have opened a formal investigation; to date no damages have been found.

Cross Reference: Coastal GasLink Pipeline Project Profile

Contact:

Suzanne Manahan	A/Assistant Deputy Minister	LNG Canada Implementation Secretariat	250 952-0729
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: LNG Canada Phase 2

Drafted: March 16, 2023

Issue: British Columbia is discussing a possible Phase 2 expansion with LNG Canada; the project must continue to meet provincial conditions and consultations will consider the new energy action framework.

Response:

- The provincial government is discussing a possible Phase 2 expansion with LNG Canada, and how that can be achieved while meeting British Columbia's five conditions for LNG development.
- Discussions will also consider B.C.'s new energy action framework.
- There will be a task force established to accelerate the electrification of our economy.
- BC Hydro has an expression of interest out now to identify demand for electricity in northern B.C. Cost and time estimates will be developed as potential transmission upgrade projects proceed.
- At this time, LNG Canada has not made a final investment decision about Phase 2.

Background/Status:

- The LNG Canada project received a provincial Environmental Assessment Certificate (EAC) and federal approval through a substituted environmental assessment process (single process covering both the Province and Canada) in June 2015. The EAC is inclusive of Phase 1 and Phase 2.
- On October 1, 2018, LNG Canada made their final investment decision (FID) to construct Phase 1 of their export facility in Kitimat, B.C. on the traditional territory of the Haisla Nation.
- Currently, LNG Canada's liquefaction process will operate on natural gas turbines as permitted. Phase 1 of the facility consist of two liquefaction trains that will produce 14 million tonnes per annum.
- LNG Canada has all the necessary permits they need to build Phase 2. These permits allow for the use of gas-fired turbines to power two additional trains at the site in Kitimat. The Coastal GasLink (CGL) project would require up to an additional seven compressor stations along the pipeline's right-of-way.
- BC Hydro is aware of LNG Canada's Phase 2 ambitions to electrify. An assessment is underway to consider the industrial demand for new transmission

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

infrastructure to the North Coast of B.C. BC Hydro has released an expression of interest to identify potential industrial customers.

- Provincial engagement and consultations will move forward in recognition of British Columbia's four key action items associated with the new energy action framework:
 - require all proposed LNG facilities in or entering the environmental assessment (EA) process to pass an emissions test with a credible plan to be net zero by 2030;
 - put in place a regulatory emissions cap for the oil and gas industry to ensure B.C. meets its 2030 emissions-reduction target for the sector;
 - establish a clean-energy and major projects office to fast-track investment in clean energy and technology and create good, sustainable jobs in the transition to a cleaner economy; and
 - create a BC Hydro task force to accelerate the electrification of B.C.'s economy by powering more homes, businesses and industries with renewable electricity.
- To date, LNG Canada has not made a FID for Phase 2.

Cross Reference: LNG Canada Project Overview
Government's Five Conditions for LNG

Contact:

Suzanne Manahan	A/Assistant Deputy Minister	LNG Canada Implementation Secretariat	250 217-1567
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Status Update on Woodfibre LNG Project

Drafted/Revised: March 21, 2023

Issue: Woodfibre LNG

Response:

- Woodfibre LNG is proposing a 2.1 million tonnes per annum (MTPA) facility that will utilize electrically driven liquefied natural gas (LNG) trains situated on privately-owned upland.
- Woodfibre LNG announced a Notice to proceed on April 14, 2022, and has announced approval of pre-construction budget of \$600M; construction is slated to begin in Q2 2023.
- The Woodfibre LNG projects capital investment is estimated to be \$5.1 billion inclusive of pipeline, and hundreds of jobs.
- Several significant commercial agreements have been completed.
- Woodfibre LNG, FortisBC and the Province have concluded impact benefit agreements with Squamish First Nation.
- Intergovernmental Communications

Background/Status:

Woodfibre is permitted and has communicated its intentions to commence construction Q1 2023 with pre-construction activities currently underway. Woodfibre has finalized several key commercial agreements and has achieved significant milestones in project development:

- Received environmental approvals from the BC Environmental Assessment Office, Canadian Environmental Assessment Agency, and a Squamish Nation Environmental Assessment Agreement;
- In 2020 Woodfibre was granted an extension to its Environmental Assessment Certificate for 5 additional years;
- Received its facilities permit from the BC Oil and Gas Commission;
- Pacific Oil and Gas completed the acquisition of Canbriam Energy, representing one of the largest investments in BC's upstream sector since 2014.
- Fully permitted on major Federal permits, permit plan in place for the issuance of supporting provincial and federal permits;
- Concluded concluding commercial agreements with BC Hydro and FortisBC;

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Concluded Impact Benefit Agreements with Squamish Nation in 2019 and is in negotiations with remaining impacted nations;
- Nearing completion of economic and competitiveness analysis in partnership with province and Canada.
- Woodfibre commercial offtake agreements have the project's LNG capacity near fully committed;
- Underway with decommissioning, pre-construction work onsite;
- Local consultations regarding this project (over 320 community sessions) and the LNG industry in general have taken place over the past several years; and
- On June 9, 2017 the National Energy Board issued Woodfibre LNG a 40-year export licence.
- District of Squamish has flagged concerns about impacts of out-of-town workers on local services, community safety, and the residential rental market. Woodfibre LNG is committed to addressing concerns through existing committees and communication channels, and are planning on building a worker accommodation facility outside of the town centre pending permit approval.
- Intergovernmental Communications

• PROJECT TABLE

Proponent	Pacific Oil and Gas / Royal Golden Eagle
Location	Squamish area (former Woodfibre pulp mill site)
Proposed Size	2.1 MTPA
Export Licence	40-year licence issued
Environmental Assessment	Federal and Provincial approvals completed
Pipeline	Eagle Mountain – Woodfibre Gas Pipeline
Estimated Investment	\$5.1 billion (with pipeline)
Jobs	Construction: 650 Operations: 100

Contact:

Suzanne Manahan Executive Lead Deputy Ministers Office 250 217 1567

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Woodfibre LNG

Drafted/Revised: March 21, 2023

Issue: FortisBC Eagle Mountain Pipeline

Response:

- In support of the Woodfibre LNG facility, FortisBC will be constructing a 47 KM expansion of the existing natural gas pipeline system that currently serves Squamish, the Sunshine Coast and Vancouver Island.
- The Eagle Mountain Pipeline (EGP) adds a new 24-inch pipe, beginning north of Coquitlam watershed and terminating at the Woodfibre facility.
- FortisBC has issued a limited Notice to Proceed contract valued at \$341M CAD for the tunnel component of the pipeline project; the total Capital investment for the pipeline and processing facility is estimated to be \$5.1 billion
- Pipeline construction is expected to start Q2 of 2023
- Intergovernmental Communications

Background/Status:

- In addition to pipeline expansion, FortisBC will be increasing or constructing compression stations along the pipeline route.
- In Coquitlam, FortisBC will increase the size of two new electric powered compressor units at the existing Eagle Mountain station and will reconfigure the station to accommodate the expansion within the existing footprint, minimizing the environmental and visual impacts of this work.
- In Squamish, a new compression station will be constructed to keep the gas moving through the existing system to the facility. FortisBC initially applied for approval on the Mount Mulligan site. District of Squamish and local First Nations expressed concerns with that location and as a result, FortisBC is assessing an alternative location within the certified project area of the Woodfibre facility. Geotechnical assessments and regulatory approvals remain.
- FortisBC has issued a limited Notice to Proceed contract to Frontier-Kemper Constructors, a contract valued at \$341M CAD for the tunnel component of the pipeline project.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- FortisBC has a well-developed permit plan and designated project team for the EGP, the Oil and Gas Commission and other regulators have approved multiple permits for both the pipeline and compression facilities. Intergovernmental Communications
- District of Squamish (DoS) has flagged concerns about impacts of out-of-town workers on local services, community safety, and the residential rental market. FortisBC is committed to addressing concerns through existing committees and communication channels, and are planning on building a worker accommodation facility outside of the town centre pending permit approval from DoS.
- FortisBC and Woodfibre LNG have concluded commercial discussions with respect to construction security and transportation agreements. Commercial agreements will require a regulatory process prior to commencement of construction.
- the tolling amount assigned to Rate Schedule 50 and security/ financing provision associated with pipeline construction and operation.
- EGP's Environmental Assessment Certificate (EAC) will expire Q3, 2021. FortisBC's regulatory has been approved for a 1 time, 5 years extension of the existing EAC.
- Intergovernmental Communications

Attachments: N/A

Cross Reference: N/A

Contact:

Suzanne Manahan Executive Lead Deputy Ministers Office 250 952-0729

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: United Nations Declaration on the Rights of Indigenous Peoples (UN Declaration) Implementation

Drafted/Revised: March 15, 2023

Issue: Ministry actions to implement the UN Declaration

Response:

- Our Government is committed to advancing reconciliation with Indigenous people and aligning provincial legislation with the United Nations Declaration on the Rights of Indigenous People (UN Declaration), as required under *Declaration on the Rights of Indigenous People's Act* (Declaration Act).
- EMLI is committed to implement the *Declaration on the Rights of Indigenous People's Act* (Declaration Act) Action Plan, to align B.C.'s laws with the UN Declaration, and support negotiations of new kinds of shared decision-making agreements.
- EMLI is working in consultation and cooperation with Indigenous peoples and First Nation organization to deliver on priorities identified in the Declaration Act Action Plan by advancing modernize land use planning (MLUP) to develop a co-management approach to land and resource management with Indigenous partners, supporting negotiations of new kinds of shared decision-making agreements, and modernizing the *Mineral Tenure Act* (MTA).
- The Ministry is working with the First Nations Leadership Council (FNLC) to remove legislative and policy barriers to Indigenous participation in the clean energy sector, develop processes to ensure the principles of the UN Declaration are reflected in the annual audits and alignment with the Code Review Committee, and develop a path forward on MTA modernization.
- EMLI developed a Reconciliation Plan to support Government's activities toward implementing the UN Declaration.

Background/Status:

- This Government's commitment to reconciliation is reflected in the Concrete Actions for Implementing the Commitment Document, the Ten Draft Principles to Guide the Province's Relationship with Indigenous People, Ministers' mandate letters, and the Declaration Act.
- EMLI is implementing of UN Declaration through three key areas laid out in the Declaration Act Action Plan:
- The Ministry of Water, Land and Resource Stewardship (WLRS) is taking a coordinated and proactive approach to modernize land use planning (MLUP) to

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

implement **Action 2.6**. EMLI is committed to supporting sector interests through MLUP in coordination with WRLS and is currently working to update geological data and coordinate with WRLS to ensure mineral exploration and mining interests are considered throughout the planning lifecycle.

- EMLI was a lead partner along with other natural resource ministries in negotiating a suite of collaborative stewardship and cumulative effects initiatives with the Blueberry River First Nations agreement and six other Treaty 8 First Nations, through the Consensus Document. EMLI also participated in negotiations of the first consent-based decision-making agreement between Tahltan Central Government and the Province in relation to the Eskay Creek mine environmental assessment.
- The Ministry is leading **Action 2.14** to modernize the MTA in consultation and cooperation with First Nations and First Nation organizations. EMLI is working with First Nation organizations to develop a path forward on MTA modernization that aligns with the newly released Interim Approach to Implement the Requirements of Section 3 of the Declaration Act delivered by the Declaration Act Secretariat.
- Under the **Action 4.43** EMLI has committed to collaboratively develop recommendations on strategic policies and initiatives for clean and sustainable energy with Indigenous partners. EMLI in partnership with FNLC are engaging First Nations rights holders and organizations through the Indigenous Clean Energy Opportunities process aimed at positioning First Nations to fully participate in current and future opportunities in B.C.'s clean energy sector to improve the economic, environmental, social, and cultural outcomes for First Nations in B.C.

Relationship Protocol:

- Signed in September 2021, the Relationship Protocol commits EMLI to work with FNLC in the spirit of the UN Declaration, as a pathway for economic and social benefits that support a better future for Indigenous people on issues of common interest areas of energy, mines, and low carbon innovation in British Columbia.
- An annual workplan describes the activities both Parties agree to undertake jointly, which includes:
 - collaboration with the Audit Unit and Code Review Committee to develop processes to ensure the principles of the UN Declaration are reflected in the annual audits and alignment with the Code Review Committee work;
 - partnering with EMLI's Electricity and Alternative Energy Division on the Indigenous Clean Energy Opportunities engagement process;

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- collaboration on the *Mineral Tenure Act* (MTA) modernization process in consultation and cooperation with First Nations and First Nation organizations; and
- joint discussions with Natural Resources Canada on the Regional Energy and Resource Tables on the following priorities: Clean fuels, Electrification, Critical Minerals, and Carbon Capture, Utilization and Storage.

Reconciliation Plan:

- The EMLI Reconciliation Plan supports implementation of the Province's commitment to advance reconciliation through four pillars:
 - supporting implementation of the Declaration Act and ensuring the Ministry is able to meet its obligations under Section 3 of the Declaration Act,
 - profiling current ministry initiatives that support reconciliation with Indigenous peoples,
 - providing a staff consultation and cooperation guidance toolkit (e.g. policy and supports for consultation and cooperation with Indigenous peoples on matters that impact them, such as strategic policy decisions and legislative and regulatory amendments), and
 - implementing a staff Reconciliation Learning program.
- A comprehensive Learning Plan provides staff the knowledge, tools, and resources they need to understand and advance reconciliation in the context of their work, and to support the creation of a culturally safe environment.

Cross Reference:

Code Review Note

Mines Audits Unit

Declaration Act Action Plan/Indigenous Clean Energy Opportunities process

MTA Reform/Modernization

Contact:

Simon Coley

Assistant Deputy
Minister

Strategic and
Indigenous Affairs
Division

778 698-7176

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Strategic and Indigenous Affairs Division Overview

Drafted/Revised: March 13, 2023

Issue: Strategic and Indigenous Affairs Division Overview

Response:

- The Strategic and Indigenous Affairs Division (SIAD) supports mandate delivery of the Ministry of Energy, Mines and Low Carbon Innovation (EMLI) and EMLI's Divisions on its energy, mining and natural gas mandates.
- SIAD supports EMLI efforts to advance reconciliation with Indigenous Nations including supporting negotiation of agreements related to the mining and energy sectors (e.g. the Blueberry River First Nations and Treaty 8 agreements).
- SIAD supports EMLI's advancement of policy, agreement and Action Plan work under the *Declaration on the Rights of Indigenous Peoples Act* (DRIPA) and ensures that First Nations actively participate in natural resource development in their traditional territories.
- SIAD carries out corporate oversight and coordination of policies such as land use planning, service plan development, reporting requirements that transect multiple Ministry business lines, and intergovernmental relations to assist EMLI taking strategic approaches to the delivery of its programs and services.

Background/Status:

- SIAD was formed in late 2017 to address the need for corporate assistance and oversight of reconciliation-related initiatives and strategic policy functions. Administrative and operational components such as Freedom of Information and the Correspondence Unit were transferred from SIAD to the Deputy Minister's Office to align with similar arrangements across government.
- SIAD's mission is: Advance the Ministry's vision through collaborative leadership and championing policy and negotiation initiatives, integrating Indigenous, external, and intergovernmental perspectives, and through corporate planning and reporting.
- The Division has four goals: a healthy, empowered and integrated workforce, a leader in low carbon innovation, collaborative and shared governance with First Nations and an effective and trusted regulatory framework.
- SIAD's two branches align with its goals: Indigenous Affairs Branch (IAB) and Strategic Initiatives Branch (SIB):

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- **IAB** leads EMLI's involvement in the corporate implementation of the *Declaration on the Rights of Indigenous Peoples Act* (DRIPA), including the DRIPA Action Plan. Highlights of IAB activity include:
 - implementing EMLI's Indigenous Reconciliation Plan and associated intranet site and works with all EMLI divisions to implement the Truth and Reconciliation Commission's Calls to Action, and the Government of B.C.'s 10 Principles.
 - providing a point of contact with cross-government partners on Government's reconciliation-related priorities.
 - advising EMLI staff on consultation and cooperation with Indigenous peoples for policy, regulatory and legislative initiatives.
 - co-ordinating ministry participation in reconciliation tables, and leading EMLI's participation in Indigenous Nation negotiations related to major projects (e.g.) the Tahltan negotiations, collaborative mining tables and Site C related tables (West Moberly cumulative effects litigation settlement);
 - leading EMLI's budget management within the provincial Indigenous Funding Envelope; and
 - leading the First Nations Leadership Council Relationship Protocol implementation and First Nations Energy and Mining Council coordination.
- **SIB** supports the ministry on those strategic planning, land use planning, intergovernmental and policy files that transect multiple agencies and business lines. Examples include: Energy and Mines Ministers' Conference, Council of the Federation, and Federal/Provincial forums. SIB also supports energy and climate policy relating to CleanBC and manages all EMLI's corporate reporting processes.
- SIAD's 2023/24 Estimates budget is \$2.669 million.

Contact:

Simon Coley

Assistant Deputy
Minister

Strategic and
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Tahltan Nation Overview

Drafted/Revised: March 15, 2023

Issue: Summary of current initiatives

Response:

- The Province has a number of initiatives underway with the Tahltan Nation (Tahltan) with the goal of addressing Tahltan concerns in partnership and achieving a world class mining and wildlife management regime through a combination of new land use strategies, economic development support, decision-making reforms, and reconciliation initiatives.
- The Shared Prosperity Agreement (SPA), signed March 2020, set out several interim strategies which included land use planning to create new conservation areas and co-managed development areas. The SPA provided \$20M in financial resources which included \$16M for economic development support and \$4M for implementation and negotiation support.
- The Province will continue to co-development conservation areas, environmental and land management tools with Tahltan, in alignment with the Tahltan Stewardship Initiative, B.C.'s modernization of the Land Use Planning (MLUP) process including the Permitting Efficiency Pilot, and in consideration of strategies related to Critical Minerals, 30 by 30 conservation goals and CleanBC initiatives.
- The Province will continue to work with Tahltan on shared decision-making agreements for new and existing projects such as the Eskay Creek Revitalization Project and the Red Chris Mine EA Amendment Process.

Background/Status:

- Several of the interim strategies planned in the SPA are incomplete due to COVID 19 impacts, shifting priorities, and limits to TCG administrative capacity. The establishment of a senior Government to Government strategic framework or of a Senior Officials Table, as described in the SPA, to provide oversight to the many Tahltan-B.C. initiatives has not materialized. Tahltan and the Province agreed at the First Nations Leadership Gathering in November 2022 to pausing work on the broader Foundation Agreement.
- B.C. has been responsive to Tahltan priorities such as the Eskay Creek consent agreement, Wildlife Accord, and Jade Placer Interim Measures. Emerging

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

priorities include the request for an RCMP presence in Iskut, improvements to Highway 37 and a pharmacy in Iskut.

- The recently mandated MLUP project with Tahltan presents an opportunity to address diverse interests such as conservation, development and exploration activities with new land management strategies that include shared priorities such as conservation, Critical Minerals, and CleanBC initiatives.
- Implementing shared decision making and the MLUP process will increase transparency and permitting efficiency while providing guidance to proponents on permissible activities and geographies.
- The Province and Tahltan are committed to working together to develop strong governance mechanisms between the two parties.

Contact:

Simon Coley

Assistant Deputy
Minister

Strategic and
Indigenous Affairs

250-507-6585

2023/24 Estimates Debate

Ministry of Water, Land and Resource Stewardship

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Issue: BRFN and Treaty 8 First Nations Agreement Implementation

Recommended Response:

- In January, government signed multiple, historic reconciliation agreements with Blueberry River First Nations (BRFN) and other Treaty 8 First Nations.
- The agreements are designed to address the cumulative impacts of industrial activity, which have negatively impacted their treaty rights. And specifically in Blueberry River's case, infringed their treaty rights.
- It is our obligation to better protect Treaty 8 rights, and honour the treaty signed on behalf of British Columbians, over 100 years ago.
- Five provincial ministries have responsibility for implementing these agreements, including the funding assigned.
- WLRS is responsible for stewardship, land use planning, water, Together for Wildlife, restoration, and some cumulative effects management aspects of the agreements.

Additional Response points (if needed):

- The Agreements signed January 18 were posted in early March, with minor redactions given the ongoing nature of similar negotiations with three other Treaty 8 Nations at the time.
- Agreements with West Moberly, McLeod Lake and Prophet River First Nations are expected in the last two weeks of March and will be posted as soon as the parties are ready.
- The cross-government teams responsible for implementation are engaging stakeholders as part of the work.

Restoration:

- We are committed to creating two independent entities with Treaty 8 Nations over the next few months, consistent with our agreements.

2023/24 Estimates Debate

Ministry of Water, Land and Resource Stewardship

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- We have committed over ^{Government Financial} to restoration for these Funds, over the next ten years.
- We will seek contributions from other organizations to both contribute to this ^{Government Financial} and contribute more over time.

Key Facts:

Four Treaty 8 Nations who signed Letters of Agreement and Revenue Sharing Agreements on January 18: Saulteau, Halfway River, Doig River and Fort Nelson. These agreements are based on a co-developed “Consensus Document” which is a framework document addressing initiatives needed to better protect treaty rights and support responsible resource development.

Fiscal components of agreements (with accountable ministry noted in parentheses):

- BRFN restoration fund (“Blueberry River Restoration Society”): ^{Government} commitment by June 30, 2025 (WLRS).
- Treaty 8 restoration fund: ^{Government} commitment by 2031 (WLRS).
- BRFN capacity funding: ^{Government Financial Information} for various components (MIRR).
- Treaty 8 Nation capacity funding (each) including FY22/23: ^{Government} years generally, and shared ^{Government} for stewardship, cumulative effects and land use planning activities (MIRR and WLRS).
- Wildlife management: All Treaty 8 Nations (including BRFN) shared: ^{Government Financial} years, ^{Gover} specific this FY (WLRS and FOR).
- Water quantity management: BRFN/BC only: Up to ^{Government Financial Information: Intergovernmental} specific to this FY (WLRS).
- Incentive payments for rapid development and restoration planning: BRFN - up to ^{Gover} by 2025; Treaty 8 shared - up to ^{Gover} by 2025 (MIRR and EMLI).
- Honouring the Treaty action plans: BRFN - ^{Government} Treaty 8 shared - ^{Government} (MIRR).
- Revenue sharing based on model for 10% of petroleum and natural gas revenues: BRFN - ^{Government Financial} minimum, can increase based on PNG activity generating royalties, ^{Gover} min. specific to this FY; Treaty 8 – over ^{Government Financial} expected, will vary based on PNG activity generating royalties, with minimum contributions set by Nation (MIRR). No revenue sharing for timber harvesting.

Date Prepared/Revised: March 3, 2023

Ministry Executive Sponsor:

Name: Morgan Kennah

Phone: 250-896-6268

Alternate Contact for Issue:

Name: James Cuell, Executive Director

Phone: 250 877-1615

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Federal/Provincial Energy Transition and Economic Opportunities

Drafted/Revised: March 16, 2023

Issue: Update on Regional Energy and Resource Tables

Response:

- The Ministry of Energy, Mines and Low Carbon Innovation (EMLI) views the work of the Regional Energy and Resource Tables (Regional Tables) as an important process to advance alignment of federal and provincial programs and policies to accelerate the transition to a net-zero economy.
- Indigenous reconciliation is a foundational principle for the Regional Tables, and we are working closely with the First Nations Energy and Mining Council on plans for extensive engagement with Indigenous nations over the coming months.
- We are focusing our Regional Tables work on the following opportunity areas: critical minerals; electricity (built environment, transportation, and transmission); clean fuels (including hydrogen); the forest bioeconomy; and carbon management technology and systems.
- A sixth overarching area collaboratively identifies areas where regulatory requirements can be better aligned, to ensure B.C. and Canada can attract the needed investments to position BC as a leader in the clean energy solutions the world will need to achieve net zero emissions by 2050.

Background/Status:

Current Status

- SIAD is working with Natural Resources Canada on a joint public announcement on the Regional Tables to highlight the progress made to date.
- The public update is targeted for late April or early May and will outline early actions and funding announcements, and medium-term policies and strategic collaborations that will contribute to advancing industrial development in the context of a low carbon future.
- Longer term work with the Regional Tables will focus on “place-based strategies” to support the transition to the low carbon economy including: critical electrical infrastructure; regulatory alignment; developing carbon management technologies and the forest bioeconomy; further build-out of clean fuels projects and infrastructure; further alignment of Federal and Provincial building and transportation energy efficiency programs; and workforce transition strategies.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Background

- On June 1, 2022, the Honourable Minister Jonathan Wilkinson launched the first phase of Regional Tables with B.C. to capitalize on energy transformation opportunities, economic strategies, and sustainable jobs. Newfoundland and Labrador and Manitoba also signed on as the first provincial partners.
- Since then, Ontario, New Brunswick, Nova Scotia, Prince Edward Island and the Northwest Territories have joined.
- B.C.'s ministries of EMLI, Jobs, Economic Development, and Innovation (JEDI), Forests (FOR), and Environment and Climate Change Strategy (ENV) have initiated work under the five priority areas and formed working groups.
- On February 1-2, 2023, Premier David Eby led a delegation of B.C. Ministers, including Minister Osborne, to Ottawa. During this trip, the work of the Regional Tables was discussed with federal Ministers François-Philippe Champagne, Jonathan Wilkinson and Steven Guilbeault.
- On February 23, 2023, EMLI's Deputy Minister Shannon Baskerville met with NRCan's Deputy Minister John Hannaford to discuss progress of the Regional Tables.

Contact:

Les MacLaren

ADM

Electricity and
Alternative Energy

778 698-7183

Ministry of Energy, Mines and Low Carbon Innovation

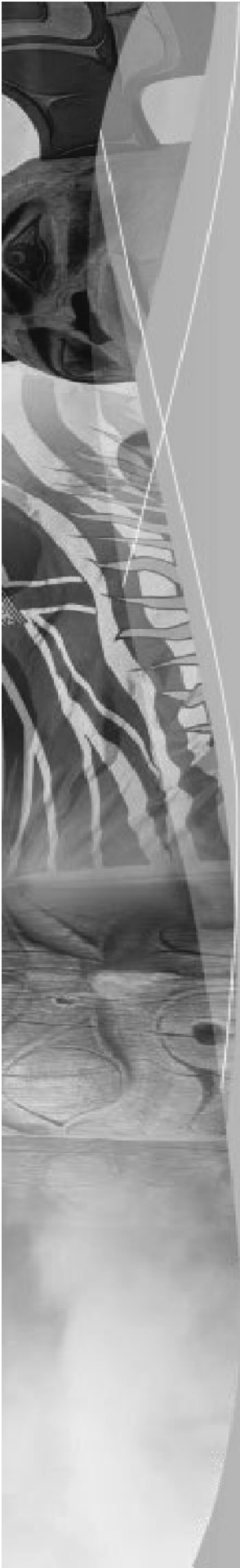
February 2023 – 23/24 Estimates

Budget and Ministry Key Documents (Prepared by CSNR)

Budget Highlights.....	1
i. Minister Briefing Slides	
ii. Estimates Summary	
Service Plan & Estimates Blue Book	2
Minister Mandate Letter	3

MINISTRY OF ENERGY, MINES AND LOW CARBON INNOVATION
2023 Budget Highlights

Government Financial Information



Budget 2023

Ministry of Energy, Mines and Low Carbon Innovation

Minister Briefing
February 2023




Ministry Budget 2022/23 – 2025/26

Government Financial Information



Budget 2023 Highlights

Government Financial Information



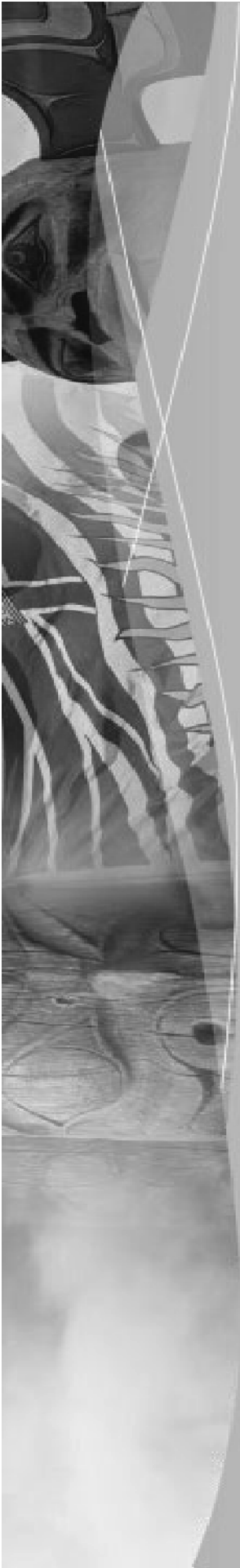
Clean BC Base Budget Funding (Current & Prior Year)

Government Financial Information



Total Three Year (including contingency)

Government Financial Information



Questions ?

MINISTRY OF ENERGY, MINES AND LOW CARBON INNOVATION
Budget 2023 Estimates Summary

Government Financial Information

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Ministry Service Plan

Drafted/Revised: March 13, 2023

Issue: Ministry of Energy, Mines and Low Carbon Innovation Service Plan
2023/24

Response:

- Goals and objectives outlined in this service plan support Government's four priorities:
 - attainable and affordable housing,
 - safer communities,
 - improved health care, and
 - a sustainable, clean, secure and fair economy.
- The Ministry of Energy, Mines and Low Carbon Innovation (EMLI) is well positioned to deliver on the Service Plan for fiscal 2023/24.
- EMLI's core priorities in fiscal 2023/24 support a clean, secure and fair economy and include significant efforts to meet CleanBC targets and goals, achieve our stated DRIPA actions and ensure that the energy and mining sectors provide jobs and business opportunities and drive the transition to a low carbon economy.
- I believe this is an excellent service plan that ensures the responsible development of B.C.'s energy and mining sectors.

Background/Status:

- EMLI's Service Plan was prepared in accordance with the Service Plan Guidelines released by the Crown Agencies and Board Resourcing Office (CABRO) in November 2022. The coordination of Ministry and Crown Corporation service plans is performed by CABRO at the Ministry of Finance.
- The EMLI 2023/24 Service Plan is consistent with the Minister's December 7, 2022 Mandate Letter from Premier Eby.
- The 2023/24 goals, objectives and strategies, both new and carried forward, expand upon the Ministry's 2022/23 – 2024/25 Service Plan published in February 2022.
 - Goal 1: An innovative, low carbon energy portfolio that advances CleanBC economic opportunities across all sectors.
 - Objective 1.1: Accelerate efforts to decarbonize B.C.'s energy sectors and usage to support the provincial CleanBC plan.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Objective 1.2: Quality programs and incentives that encourage British Columbians to choose greener homes, buildings and transportation.
- Goal 2: A sustainable and competitive mining sector that supports Indigenous reconciliation, reflects high environmental, social and governance (ESG) standards and contributes to the transition to a low carbon economy with responsibly produced minerals and metals.
 - Objective 2.1: A strong, responsible, low carbon and innovative mining sector that creates good, family supporting jobs.
 - Objective 2.2: Oversight of the mining industry is continuously improved to protect the environment, health and safety, and the public interest.
- Goal 3: B.C.'s oil and gas industry reduces its carbon footprint in a manner that supports economic sustainability, advances Indigenous reconciliation and exhibits high environmental, social, and governance (ESG) performance.
 - Objective 3.1: Policies, technologies and processes that support the reduction of greenhouse gas (GHG) emissions in the oil and gas sector.
 - Objective 3.2: Value-added development of B.C.'s oil and gas resources to maximize the benefits to all British Columbians and provide a fair return from our resources.
- The Service Plan supports Government's commitment to implement the *B.C. Declaration on the Rights of Indigenous Peoples Act* and Calls to Action of the Truth and Reconciliation Commission through several goals and strategies.
- During development of the EMLI Service Plan, a thorough review of current resources was completed to enable the Ministry to focus on programs designed to achieve Service Plan goals and objectives.
- The Service Plan incorporates direction from the CleanBC plan and includes goals, objectives and strategies that make progress towards the CleanBC targets to protect our air, land and water.
- The complete 2023/24 Service Plan is attached.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Attachment: 2023/24 Service Plan

Contact:

Simon Coley	Assistant Deputy Minister	Strategic and Indigenous Affairs Division	778-698-7176
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Ministry of Energy, Mines and Low Carbon Innovation

2023/24 – 2025/26 Service Plan

February 2023



For more information on the Ministry of Energy, Mines and Low Carbon Innovation contact:

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Published by the Ministry of Energy, Mines and Low Carbon Innovation

Minister's Accountability Statement



The Ministry of Energy, Mines and Low Carbon Innovation 2023/24 – 2025/26 Service Plan was prepared under my direction in accordance with the *Budget Transparency and Accountability Act*. I am accountable for the basis on which the plan has been prepared.

A handwritten signature in dark ink, appearing to read 'Josie', with a stylized flourish extending to the right.

Honourable Josie Osborne
Minister of Energy, Mines and Low Carbon Innovation
February 14, 2023

Table of Contents

Minister's Accountability Statement	3
Strategic Direction.....	5
Purpose of the Ministry.....	5
Operating Environment.....	6
Performance Planning	8
Financial Summary	20
Appendix A: Public Sector Organizations	21

Strategic Direction

In 2023/24, the Government of British Columbia will continue our work to make life better for people in B.C., improve the services we all rely on, and ensure a sustainable province for future generations. Government will focus on building a secure, clean, and fair economy, and a province where everyone can find a good home – whether in a rural area, in a city, or in an Indigenous community. B.C. will continue working toward true and meaningful reconciliation by supporting opportunities for Indigenous Peoples to be full partners in an inclusive and sustainable province. The policies, programs and projects developed over the course of this service plan period will focus on results that people can see and feel in four key areas: attainable and affordable housing, strengthened health care, safer communities, and a secure, clean and fair economy that can withstand global economic headwinds.

This 2023/24 service plan outlines how the Ministry of Energy, Mines and Low Carbon Innovation will support the government's priorities and selected action items identified in the December 2022 [Minister's Mandate Letter](#).

Purpose of the Ministry

The [Ministry of Energy, Mines and Low Carbon Innovation](#) (Ministry) is responsible for British Columbia's (B.C.'s) electricity, alternative energy, hydrogen, oil, and natural gas sectors and related infrastructure, and the province's mining and mineral exploration sectors. These sectors are made up of diverse interests that use and develop energy, low carbon fuels and electricity generation, transmission, and distribution infrastructure and that explore for and produce oil, natural gas, coal, and valuable minerals. To support Government's coordinated climate, energy and economic objectives, the Ministry focuses on advancing energy efficiency and clean or renewable energy sources and technologies, making sure that the energy we use, develop and export is the cleanest possible.

The Ministry facilitates electricity, mining and oil and gas sectors which are globally competitive, demonstrate leading environmental practices, and advance reconciliation with Indigenous peoples, while providing opportunities and quality jobs for British Columbians and a fair return on resources to support the province's priorities.

The Ministry carries out this work in support of the [CleanBC plan and Roadmap to 2030](#), as well as commitments to Indigenous reconciliation. In fulfilling its mandate, the Ministry consults and collaborates with other ministries and levels of government, private sector stakeholders, Indigenous people, communities, regulators, environmental and industry organizations, and the public.

The Ministry supports the Minister in discharging responsibilities for the following Crown Corporations: [British Columbia Hydro and Power Authority](#) (BC Hydro), the [BC Energy Regulator](#), formerly the [Oil and Gas Commission](#) (BCER), and is also responsible for the [Assayers Certification Board of Examiners](#).

Operating Environment

The CleanBC Roadmap to 2030 and the StrongerBC Economic Plan set out the Government's integrated approach for long-term low carbon energy production and use, reducing greenhouse gas (GHG) emissions, and economic recovery. Ministry programs further the advancement of the Province's climate goals through the decarbonization of energy used in the built environment, transportation, and industry. The Site C Project continues, and once complete in 2025, will provide 1,100 megawatts of clean electricity to the BC Hydro grid. The Ministry continues to work with the First Nations Leadership Council to engage with First Nations on current and future opportunities in B.C.'s low carbon energy sector.

Increased global demand for zero-emission vehicles (ZEVs), combined with supply chain shortages across the automotive sector, is driving up the price of both new and used ZEVs. To increase supply of ZEVs to B.C., the Ministry has committed to increase the stringency of the light-duty ZEV mandate and implement regulated targets for medium- and heavy-duty ZEVs. To ensure success of ZEV mandates, CleanBC Go Electric programing is supporting the market transformation with funding and rebate programs in all critical areas including the installation of charging infrastructure in both new and existing residential buildings.

There is a need for energy efficiency as well as fuel-switching policies in the transportation sector. To this end, the Ministry committed to develop, along with other ministries, a Clean Transportation Action Plan to be released in 2023 that will outline further actions to reduce emissions, increase energy efficiency, through reducing distances travelled and switching to more energy-efficient modes like walking, cycling, bus, rail, and marine, and move to low carbon energy in the transportation sector. B.C.'s ZEV sector continues to deliver jobs and significant economic opportunities across the province, supporting approximately 11,300 full-time jobs and contributing \$1.15 billion to the provincial gross domestic product.

B.C. is partnering with the Federal government on the Regional Energy and Resource Tables (RERT), an initiative created by Canada to enable provinces to address barriers and seize economic opportunities enabled by the transition to a low carbon economy. RERT will focus on priority areas and joint Federal-Provincial actions, including aligning resources, timelines, and regulatory processes to accelerate goals outlined in CleanBC and StrongerBC.

Investors and ratings agencies remained increasingly motivated by quantifying new kinds of financial risk. Beyond simple shareholder returns and revenues, markets continued to look for stable investments that align with long-term global goals (i.e., Paris Agreement, the UN Sustainable Development Goals, etc.) and analysts and regulators are including social, environmental and governance (ESG) factors in their investment and procurement decisions. An increased focus on ESG principles is another critical viewpoint for projects and business ventures in the natural resource sector impacting access to capital and overall competitiveness.

B.C.'s mining industry had a strong start to 2022/23 with prices for the province's primary mineral commodities at or near record highs. Commodity markets experienced headwinds

mid 2022 due to tightening global monetary policy and a global energy crisis. While the short-term outlook remains subdued, the long-term outlook remains positive with the demand for critical minerals expected to grow significantly. B.C. is Canada's largest producer of copper and only producer of molybdenum and has potential for nickel, cobalt, graphite, rare earth elements, niobium, platinum group minerals, tantalum, vanadium, and zinc. B.C.'s low carbon mining sector has significant potential to attract global investment and a fair share of the \$3.8 billion in federal funds earmarked for a critical minerals strategy. With new mines and mine expansions anticipated in the near future, the Ministry continues to focus on Indigenous consultation and permitting improvements. The implementation of the *Declaration Act* Action Plan including a commitment to Modernize the *Mineral Tenure Act* that has been identified as a priority by First Nations leadership will be key to the long-term outlook for the sector. The Ministry is working with the First Nation Leadership Council (FNLC) to plan next steps for the MTA modernization process. It is anticipated that there will be multiple stages of collaboration, and individual First Nations, First Nations Organizations and Industry will have multiple opportunities for involvement in the MTA modernization which is anticipated to be a multi-year process.

Through the Natural Resource Sector Compliance Management Framework, the Office of the Chief Inspector of Mines (OCIM) provides regulatory oversight of mines and mineral exploration using a range of activities. With more than 3000 permitted mine sites in the province, the Ministry has prioritized inspections in consideration of site and operational risks, to ensure that inspection resources are allocated to the highest risk sites. The OCIM also engages with Indigenous Nations with the goal of increasing collaboration in compliance activities. These activities include general engagement, and training, inspection planning and mine visits, which include mine tours, or accompanied inspections.

On November 24, 2022, Bill 37, the Energy Statutes Amendment Act received Royal assent. Bill 37 establishes the BC Energy Regulator, formerly the BC Oil and Gas Commission, Additional amendments in Bill 37 clarify government's authority to regulate the safe and effective storage of carbon dioxide from any source, advancing a provincial approach to carbon capture, utilization and storage, a key action in the CleanBC Roadmap to 2030. In 23/24 the Ministry will bring Bill 37 into force to expand the BC Energy Regulator's responsibilities to include hydrogen and make consequential amendments.

The majority of natural gas produced in the province continues to make its way via pipelines to Alberta, eastern Canada and into the United States, with the remainder supplying domestic consumers. Strong demand for natural gas throughout North America is expected to continue into 2023. In terms of domestic consumption, the Ministry continues to develop policies, such as the Greenhouse Gas Reduction Standard, to decarbonize BC's natural gas grid and place a cap on emissions from gas consumption in the buildings and industry sectors¹

B.C.'s natural gas production continued to expand in 2022/23, growing on average by 13% year-over-year with annual production expected to exceed 6.7 billion cubic feet per day for the

¹ Excluding the upstream oil and gas and Liquefied Natural Gas sectors, which are subject to other regulatory regimes to reduce GHG emissions.

first time. This increased production combined with a higher realized price has translated into an estimated increase of \$1.5 billion to the Province's projected royalties for 2022/23 (totalling \$2.4 billion). Strong demand for British Columbia's natural gas is expected to continue in the coming years and, when combined with the province's new oil and gas royalty system supported by a new land-healing and emissions-reduction pool program, could result in continued strong royalty revenues.

The LNG Canada project is on track for an in-service date around 2025. Both the export facility and its connecting Coastal GasLink pipeline are hitting key milestones and are expected to have steady construction workforce numbers throughout 2023/24. First Nations and local communities are benefitting with contracts and new job opportunities as LNG Canada plans for hundreds of long-term permanent positions. The Woodfibre LNG and Eagle Mountain Pipeline project made progress with the announcement of Woodfibre issuing their final Notice to Proceed in April 2022 and the announcement of a pre-construction budget of \$600M. FortisBC's Eagle Mountain Pipeline has announced a limited Notice to Proceed, and a contract valued at \$341M for the tunnel components of the pipeline project.

The Province and Blueberry River First Nations (Blueberry River) have reached an agreement that will guide a partnership approach to land, water and resource stewardship that ensures Blueberry River members can meaningfully exercise their Treaty 8 rights and provide stability and predictability for industry in the northeast region. In addition, the Province and four Treaty 8 First Nations (Fort Nelson, Saulteau, Halfway River and Doig River First Nations) also reached consensus on a collaborative approach to land and resource planning, and to advance regional solutions to benefit everyone living in northeastern B.C. and Treaty 8 territory. The Ministry continues to work with Treaty 8 Nations to implement the agreement.

Performance Planning

Goal 1: An innovative, low carbon energy portfolio that advances CleanBC economic opportunities across all sectors.

This goal is key to supporting the CleanBC Plan and Roadmap to 2030. The Ministry facilitates energy sectors which demonstrate leading environmental practices while providing opportunities and quality jobs for British Columbians.

Objective 1.1: Accelerate efforts to decarbonize B.C.'s energy sectors and usage to support the provincial CleanBC plan.

Decarbonization of the B.C. economy supports the (GHG) greenhouse gas reduction targets set out in the CleanBC Plan and Roadmap to 2030.

Key Strategies

- Continue to incorporate direction from the CleanBC plan and CleanBC Roadmap to 2030 into ministry legislation, policies, programs, and operations to meet provincial energy, economic and climate goals.
- Continue to implement the BC Hydrogen Strategy through the BC Hydrogen Office to support the decarbonization of B.C.'s economy and energy systems.
- Work with other ministries, Indigenous communities, local governments, utilities, and other stakeholders to develop a Clean Transportation Action Plan for 2023, that takes an "efficiency first" approach to decarbonizing the transportation sector, and that focuses on five pillars: reduce distance travelled, increase mode shift, improve vehicle efficiency, adopt zero-emission vehicles, use clean fuels.
- Continue to implement legislation and policies to advance energy efficiency and conservation in the built environment, including highest energy efficiency standards and a system to provide energy efficiency information on listed homes.
- Develop and implement a climate-aligned energy framework for B.C. with an overall goal of maximizing our province's production of clean energy to use at home and for export.
- Work with BC Hydro to implement its Electrification Plan and develop options for Indigenous ownership and/or equity interest in new BC Hydro infrastructure and Indigenous partnership in clean energy projects.

Discussion

The strategies under Objective 1.1 focus on electrification, low carbon fuels and energy-efficient transportation options, industrial decarbonisation and energy efficiency, all of which support the decarbonization of the B.C. Economy and the CleanBC plan. The Ministry will work with other agencies and stakeholders, including Indigenous nations and communities, to provide opportunities in a more sustainable, greener economy. The Ministry will continue to monitor progress on its CleanBC policies and programs.

The Ministry continues to reduce GHG emissions from transportation fuels through B.C.'s Low Carbon Fuel Standard (LCFS). The LCFS remains one of the most successful approaches to reducing GHGs from transportation. It requires fuel suppliers to progressively decrease the average carbon intensity of the fuels they supply to users in B.C. Effective January 1, 2023, the LCFS increased its stringency by raising the carbon-intensity reduction requirement for gasoline and diesel fuel pools from 20% to 30% by 2030, relative to 2010 levels.

In Spring 2022, the Ministry introduced Bill 15, the Low Carbon Fuels Act (Act), expected to come into force on January 1, 2024. The new Act is intended to enable more GHG reductions and accelerate the transition to low-carbon energy.

The Ministry will continue to implement legislation and policies to advance decarbonization of the natural gas industry, promote energy efficiency and zero-emission vehicles in the transportation sector, including increasing light-duty ZEV targets, under the Zero-Emissions

Vehicles Act and Regulations, and establish targets for other vehicle weight classes, as well as mode shift, energy intensity and vehicle kilometre reduction targets.

The Ministry in conjunction with the Ministry of Transportation and Infrastructure is developing the Clean Transportation Action Plan which purpose is to identify the next set of concrete actions to ensure British Columbia meets its legislated and CleanBC Roadmap to 2030 transportation targets and will be released in 2023.

The Ministry will continue to work with Canada and stakeholders to expand electrification of industries of all sizes across sectors to fast-track their efforts to go green.

This includes continuing to work with BC Hydro to ensure the Province's generation, transmission and distribution assets continue to deliver reliable and cost-effective service.

The Ministry will also work to reduce GHG emissions in the buildings and industry sectors through development of a cap on GHG emissions arising from fossil natural gas consumption in these sectors.

Objective 1.2: Quality programs and incentives that encourage British Columbians to choose greener homes, buildings and transportation.

The Ministry encourages consumers and businesses to switch to low carbon transportation and heating fuels in support of CleanBC outcomes.

Key Strategies

- Increase affordability and accessibility of clean transportation options through GoElectric program investments in public awareness, skills training, advanced research and commercialization, home and workplace charging rebates, public charging and hydrogen fuelling infrastructure, fleets, vehicle rebates across all vehicle classes, and commercial vehicle pilots.
- Work with utility, private and public partners to complete B.C.'s Electric Highway by 2024, to ensure geographic connectivity for EVs across all highways and major roads in B.C., and to install 10,000 public chargers by 2030.
- Enhance utility and provincial energy efficiency programs through improved accessibility, alignment with CleanBC and supports for low-income households.

Discussion

The strategies under Objective 1.2 support clean energy and efficiency upgrades for low-income households and encourage British Columbians to shift to sustainable modes of travel, which will help reduce emissions and make homes more comfortable and affordable. The Ministry will focus on the implementation of programs and raising public awareness, while monitoring its progress towards the listed outcomes.

The CleanBC Roadmap to 2030 (released in October 2021) proposes to complete B.C.'s Electric Highway by 2024 and reach a target of 10,000 public EV charging stations in B.C. by 2030. As of

January 2023, there are over 3,800 public charging stations in B.C., including over 850 fast charging stations.

The CleanBC Go Electric Program was designed to reduce barriers to the adoption of electric vehicles (EVs), including the cost of vehicles, access to infrastructure, public awareness, and skills training. It has been highly successful in starting the transition to a transportation system that is powered by clean energy. British Columbia is a leader in the adoption of ZEVs and has one of the highest uptake rates of zero-emission vehicles in North America. In 2023, the CleanBC Go Electric Passenger Vehicle Rebate program will be transitioning its funding source to revenues generated from BC Hydro's sale of credits created through the Low Carbon Fuel Standard.

In 2021, light-duty zero-emission vehicle sales represented 13% of all new light-duty vehicle sales in British Columbia. The Ministry will continue to build off this success and in 2023 will draft legislation to increase light-duty vehicle sales targets under the Zero-Emission Vehicles (ZEV) Act to 26% of new light-duty vehicles sold by 2026, 90% by 2030, and 100% by 2035.

The CleanBC Better Homes and Better Buildings program provides financial incentives to help households, businesses and the public sector save energy and reduce GHG through heating equipment replacement and building envelope improvements. CleanBC Better Homes and Better Buildings has \$71.6 M in base funding from fiscal 2023 through fiscal 2025.

Performance Measures

Performance Measure[s]	2022/23 Forecast	2023/24 Target	2024/25 Target	2025/26 Target
[1a] Clean, renewable and low carbon energy as a share of total utility and transportation energy sales ¹	32%	33%	34%	35%

Data Source: Compiled by the Ministry of Energy, Mines and Low Carbon Innovation and includes data from BC Hydro.

¹ The following data is tracked to provide the performance measure: BC Hydro's performance in clean procurement; FortisBC's performance in deploying Renewable Natural Gas; relative sales of electricity and natural gas using data from the largest utilities; and transportation fuels data.

Discussion

The provincial energy objectives in the CleanBC plan confirm the role of electricity and other low carbon fuels (such as hydrogen, bioenergy, and geothermal) in reducing emissions where they displace higher carbon energy sources. This performance measure directly relates to the goal of an innovative, low carbon energy portfolio in BC, by measuring the proportion of clean, renewable, and low carbon energy relative to GHG emitting energy sources. An increasing share of clean, renewable and low carbon energy will be achieved through measures such as increasing the proportion of biofuels in transportation; supporting fuel switching from fossil natural gas to electricity or low carbon alternatives (e.g. renewable natural gas) by gas utility customers. Targets under this measure are projected from historical performance, with 1% improvement per year selected for consistency with 2030 CleanBC targets.

Performance Measures

Performance Measure[s]	2022/23 Forecast	2023/24 Target	2024/25 Target	2025/26 Target
[1b] Zero-Emission Vehicle sales per cent of new light-duty vehicle sales.	10%	23%	28%	32%
[1c] Zero-Emission vehicle sales per cent of on-road medium- heavy-duty vehicle sales	0.5%	1%	3%	5%

Data Source: Compiled by Ministry of Energy, Mines and Low Carbon Innovation staff from ZEV sales. The Zero-Emission Vehicles Regulation defines a light-duty vehicle as one that weighs 3,856kg (8,500lbs) or less.

Discussion

Transportation accounted for 38 per cent of B.C.'s total GHG emissions in 2021. As a result, to reduce GHG emissions and meet B.C.'s climate targets, significant and sustained action needs to be taken to reduce GHG emissions from light, medium and heavy-duty vehicles. Increased adoption of ZEVs will contribute to reductions in B.C.'s GHG emissions and improve air quality. Performance measure 1b measures progress towards Government's target of increasing the number of light duty ZEVs in B.C., reaching 100% of all new light-duty vehicle sales by 2035, while new measure 1c tracks Government's commitment to implement a medium- and heavy-duty vehicle ZEV standard. Due to the increasing pressure ZEVs place on clean energy supplies and infrastructure, transitioning to clean electricity and hydrogen in the transportation sector necessitates significant efforts to reduce overall transportation energy demand (e.g., shift goods movement from truck to rail, and passenger movement from individual vehicles to walking, cycling, transit including passenger rail, etc.). The Clean Transportation Action Plan will outline further policies and performance measures in that area.

Goal 2: A sustainable and competitive mining sector that supports Indigenous reconciliation, reflects high environmental, social and governance (ESG) standards and contributes to the transition to a low carbon economy with responsibly produced minerals and metals.

A sustainable sector provides opportunities for all British Columbians, while contributing to a clean economy that combats climate change.

Objective 2.1: A strong, responsible, low carbon and innovative mining sector that creates good, family supporting jobs.

Innovation in mining contributes to the sector's competitiveness and fosters technological change which supports sustainable employment.

Key Strategies

- Modernize the *Mineral Tenure Act* in accordance with the *Declaration Act* Action Plan.
- Support reconciliation with Indigenous peoples, continuously improve consultation and engagement processes on relevant permit applications and support work on strategic agreements for major mine developments through the newly created Priorities Advancement and Indigenous Relations Branch.
- Continue to improve the authorizations review process for mining applications by implementing updated guidance documents and policies, as well as streamlined processes for application reviews for major and regional mines and exploration projects.
- Develop a BC Critical Minerals Strategy to position BC to supply materials to the emerging clean global economy, accelerate the domestic low-carbon shift and access federal funding opportunities.
- Update regulatory and policy tools that support and align improving B.C.'s stewardship of biodiversity and land use planning with a competitive, prosperous low carbon mining future.
- Develop options to launch a Mining Innovation Hub to support training in new technology, low carbon approaches, environmental management and regulatory excellence.

Discussion

The strategies focus on innovation, reconciliation with Indigenous peoples, engagement and process improvement. These initiatives all contribute to a mining sector that is both competitive and sustainable, supporting the creation of lasting employment for all British Columbians. Through the federal/provincial Regional Energy and Resource Tables, the Ministry will be contributing to and monitoring progress towards a Critical Minerals Strategy and exploring options for federal funding.

The Ministry is currently evaluating options for development of a BC Critical Minerals Strategy which will guide work in this policy area and to access BC's share of the \$3.8 billion in federal funds earmarked for critical minerals in Canada.

The Ministry sees an opportunity to develop a BC Critical Minerals Strategy that is complementary to the federal strategy while advancing provincial interests. BC is engaging with federal counterparts to explore opportunities for collaboration on critical minerals initiatives, including funding for Indigenous engagement, geological assessments and downstream/manufacturing/recycling related activities.

The BC Geological Survey has initiated a modest, 3-year critical minerals program in 2022/23 in collaboration with the Climate Action Secretariat in support of the CleanBC Roadmap to 2030. This \$1.85 million program will focus on completing initial geological assessments to understand critical minerals production potential.

Objective 2.2: Oversight of the mining industry is continuously improved to protect the environment, health and safety, and the public interest.

Industry oversight contributes to both a safe and sustainable sector which produces the minerals needed to transition to a low carbon economy.

Key Strategies

- Continue enhancing environmental, climate and health and safety standards by reviewing legislation and regulations and continuing the work of the Code Review Committee to ensure the Health, Safety and Reclamation Code for Mines in B.C. is responsive to emerging trends and changing standards of practice and contributes to reconciliation with Indigenous nations.
- Ensure that owners of mining and exploration projects are bonded and responsible for environmental clean up costs associated with any abandoned projects and continue to support the Public Interest Bonding Strategy for all large industrial sites led by the Ministry of Environment and Climate Change Strategy.
- Continue implementing the mine audits program by evaluating the effectiveness of the regulatory framework for mining in B.C. and implementing actions in response to recommendations.
- Ensure timely communication about health and safety incidents to support continuous improvement opportunities for mine operators.
- Continue identifying abandoned mines and assessing and mitigating public hazards.

Discussion

The strategies reflect a combined oversight focus on responsible development, the environment, health and safety as well as the impacts of the sector on climate. This supports the continuous improvement envisioned in Objective 2.2. Continuing audits, the Code Review Committee's ongoing work, and the internal tracking of mine inspections per performance measure 2b will ensure tangible results over the coming fiscal.

Performance Measures

Performance Measure[s]	2022/23 Forecast	2023/24 Target	2024/25 Target	2025/26 Target
[2a] B.C.'s share of Canadian mineral resource development investments	16.5%	17%	17.5%	18%

Data Source: Ministry of Energy, Mines and Low Carbon Innovation and Natural Resources Canada

This may be influenced by provincial actions related to critical minerals and reconciliation, as well as overall global market conditions.

Discussion

The Ministry continuously strives to attract long-term investment in B.C.'s mining sector and related service industries. Government can help to reduce risk and sustain investment levels through streamlined processes for mine project permitting, and this measure reflects the B.C. mining sectors' competitive performance. Since 2017, B.C. has seen its share of Canadian mineral resource development investment increase by approximately 0.4% annually. An annual increase of 0.5% for this performance measure is now a realistic target for B.C., especially considering that overall Canadian investment increased by more than 30% from 2020 to 2021 with another anticipated increase in 2022. The level of investment in B.C.'s mineral resources is a measure of the sector's competitiveness. Additionally, given the increasing focus on responsible investment by financial institutions, it is also a reflection of B.C.'s high ESG standards.

Performance Measures

Performance Measure[s]	2022/23 Forecast	2023/24 Target	2024/25 Target	2025/26 Target
[2b] Minimum mine inspections	1600	1600	1600	1600

Data Source: Manually compiled by Ministry of Energy, Mines and Low Carbon Innovation.

Discussion

Compliance verification is a key regulatory oversight under the Natural Resource Compliance Management Framework for ensuring mines are operating responsibly and protecting the environment, human health and public safety. In Budget 2019, Government strengthened the Ministry's ability to undertake compliance verification work through increased funding to hire new Mines Inspectors. With this consistent and stable funding, the OCIM can properly allocate resources to plan for a consistent minimum number of inspections, year-over-year, while maintaining the ability to work collaboratively with Indigenous Nations on compliance activities, and to efficiently and effectively respond to complaints, undertake escalated enforcement as necessary and respond to and investigate incidents. Planned versus actual inspection targets are monitored and adjusted as necessary, with the OCIM often exceeding the inspection target through efficiencies and responsible use of resources. The 1,600 inspection targets year over year are in line with the extra resources allocated in Budget 2019 (when the targets were 1,350) and allow some flexibility for Ministry staff to apply a risk-based approach to enforcement.

Goal 3: B.C.'s oil and gas industry reduces its carbon footprint in a manner that supports economic sustainability, advances Indigenous reconciliation and exhibits high environmental, social and governance (ESG) performance.

The Ministry strives to ensure that B.C. oil and gas is produced responsibly and contributes to positive social and economic outcomes for all British Columbians.

Objective 3.1: Policies, technologies and processes that support the reduction of greenhouse gas emissions in the oil and gas sector.

Reducing the carbon footprint of oil and gas activities enhances the industry's ESG performance.

Key Strategies

- Work with the BC Energy Regulator and the Climate Action Secretariat (CAS) to develop a policy framework that requires new oil and gas facilities to minimize greenhouse gas emissions as much as possible and achieve net zero emissions by 2050.
- Work with the BC Energy Regulator and CAS on the development of a sector-specific approach to reducing methane emissions through world-class regulations and research, an integrated methane measurement and monitoring program, and the promotion of innovative technologies.
- Encourage industry to invest in emission reduction technologies through the development and launch of a new program that will repurpose deep well credits into a land-healing and emissions-reduction project pool and explore options for transitioning any remaining oil and gas subsidies to clean energy and tech sectors.
- Work with the BC Energy Regulator and CAS to ensure an appropriate enabling environment to support the deployment of carbon capture and sequestration to reduce carbon dioxide emissions from the oil and gas sector.

Discussion

This objective and its strategies support Government's climate goals and the implementation of the CleanBC Roadmap to 2030 in relation to the oil and gas sector. The strategies all focus on emissions reduction and the storage of greenhouse gases. GHG reduction positively impacts the province's carbon footprint and supports its ESG credibility. This in turn contributes to long-term economic sustainability, ensuring that the sector can continue to provide high-paying jobs and revenue to the Province as it transitions to a low-carbon energy future.

The Roadmap to 2030 includes commitments to reduce (GHG) emissions produced by the oil and gas industry in line with its sectoral target of 33-38 percent reductions from 2007 levels by

2030. This includes a commitment to achieve a 75 percent reduction in methane emission from 2014 levels by 2030 and near elimination of methane emissions by 2035. Through its work with BCER and CAS, EMLI will review and strengthen methane emissions regulations to ensure achievement of the 2030 target. Delivery of other commitments in the Roadmap to 2030 supported by these strategies include:

- Requiring all new large oil and gas facilities (including LNG facilities) to submit plans to achieve net zero emissions by 2050;
- Advancing a provincial approach to carbon capture, utilization and storage and negative emissions technologies.

Objective 3.2: Value-added development of B.C.'s oil and gas resources to maximize the benefits to all British Columbians and provide a fair return from our resources.

Oil and natural gas activities generate revenues to the Crown that support services such as health care and education and facilitate reconciliation with First Nations.

Key Strategies

- Promote price transparency and public accountability in the gasoline and diesel market through the implementation of the *Fuel Price Transparency Act*.
- Implement B.C.'s new oil and gas royalty system that encourages additional oil and gas emissions reduction projects, supported by a new land-healing and emissions-reduction pool program.
- Oversee and support the continued implementation of the LNG Canada Project and Woodfibre LNG Project to ensure government's goals and expectations are being met.
- Add value to B.C.'s abundant natural gas resources by continuing to work with industry, Indigenous Peoples, BC Hydro, and the Climate Action Secretariat to ensure oil and gas development and related infrastructure supports CleanBC and clean growth.
- Advance the production and use of hydrogen by creating regulatory certainty for the BC Energy Regulator's expanded role in order to generate economic opportunities, reduce emissions and transition to clean energy.
- Continue to work with companies involved in or pursuing LNG projects to ensure alignment to B.C.'s framework for natural gas development and specifically the five conditions, which now include a commitment from industry that local communities benefit.
- Work to implement a cumulative effects and conservation management framework in Northeast B.C. with respect to oil and gas development, as part of the Province's commitment to meeting the B.C. Supreme Court declarations from *Yahey v B.C.*

Discussion

The strategies focus on transparency, GHG emission reduction, and initiatives that support clean growth and reconciliation with Indigenous peoples. This value-added approach supports the positive economic and social outcomes envisaged by the goal and objective for the responsible development of B.C.'s oil and gas resources. A fair return provides revenue that supports valuable public services like health care and education. In addition to measure 3b, which reports our investment relative to Canada, the Ministry will work with its industry and regulatory partners to ensure that development occurs in a responsible manner.

The Roadmap commits BC to a net zero future, which will be backed by legislation. As a result of its net zero pledge, the Province will be instituting a new requirement for all new industrial facilities, including oil and gas facilities, to have enforceable plans to achieve net-zero emissions by 2050.

Performance Measures

Performance Measure[s]	2022/23 Forecast	2023/24 Target	2024/25 Target	2025/26 Target
[3a] Annual GHG reductions from infrastructure improvements under royalty programs	210,000 tonnes	290,000 tonnes	410,000 tonnes	500,000 Tonnes

Data Source: Ministry of Energy, Mines and Low Carbon Innovation

Discussion

This measure tracks the GHG reductions from oil and gas infrastructure royalty programs, which directly relates to the environmentally responsible development of oil and gas resources in B.C. The purpose of the programs is to help achieve the oil and sectoral targets and methane reduction targets, while also facilitating job creation, rural development and maintaining competitiveness. Through royalty deductions, infrastructure royalty programs partner with industry in projects to advance new technologies and processes that reduce methane emissions and promote innovative infrastructure including electrification projects to support reaching GHG emission reduction targets.

In order to receive royalty deductions under the infrastructure programs, project proponents for emission reduction projects must submit an Emissions Reductions Report that documents emissions reductions attributed to completion of the project and include a Verification Statement provided by an accredited third-party.

On May 19, 2022, the Province announced a new oil and gas royalty system. The new royalty system encourages additional oil and gas emissions reduction projects, which will be supported through a new land-healing and emissions-reduction pool program. Using this pool, companies may transfer existing deep-well credits to a pool to fund healing the land and emission-reduction work that goes beyond regulatory requirements. This new program will

contribute to achieving the emission reduction targets under Performance Measure 3a in addition to the emission reductions achieved from projects approved under previous infrastructure programs as those projects are completed and emission reductions are verified.

Performance Measures

Performance Measure[s]	2022/23 Forecast ¹	2023/24 Target	2024/25 Target	2025/26 Target
[3b] Relative annual investment in natural gas and oil exploration and development (B.C. as % of Canada)	N/A	14%	14%	14%

Data source: Ministry of Energy, Mines and Low Carbon Innovation based on information from Statistics Canada and Canadian Association of Petroleum Producers Net Cash Expenditure historical data and forecasts. All data is only available and provided by calendar year.

¹ Statistics Canada data not available until later in 2023

Discussion

Investment in the development of and reducing emissions from B.C.'s oil and gas resources are important for maximizing value to British Columbians. Maintaining B.C.'s share of annual investment in Canadian oil and gas resources, including value-added oil and gas development and the reduction of the carbon intensity of natural gas production, supports job creation, economic growth, and infrastructure development in B.C., and is important to provincial revenues and economic growth. The target is set to maintain B.C.'s share of investment at a level consistent with recent years reflecting government's goal to see the responsible development of the province's resources. Investment in B.C.'s oil and gas resources and the return it provides to the Province in the form of revenues support the provision of benefits and services to British Columbians. These revenues also provide the means to advance reconciliation with B.C.'s Indigenous Nations.

Financial Summary

Core Business	2022/23 Restated Estimates ¹	2023/24 Estimates	2024/25 Plan	2025/26 Plan
Operating Expenses (\$000)				
Mines Competitiveness and Authorizations	24,551	28,383	23,716	24,207
Mines Health, Safety and Enforcement	12,693	13,670	13,898	13,898
Electricity and Alternative Energy	38,888	41,365	41,598	41,598
Oil and Gas	17,271	17,706	17,795	17,795
Strategic and Indigenous Affairs	2,515	2,669	2,695	2,695
Executive and Support Services	13,638	14,615	13,469	13,651
Innovative Clean Energy Fund Special Account	2,403	10,128	7,933	7,933
Total	111,959	128,536	121,104	121,777
Capital Expenditures (\$000)				
Executive and Support Services	586	546	546	546
Total	586	546	546	546
Other Financing Transactions (\$000)				
BC Energy Regulator Receipts	(44,000)	(45,000)	(46,000)	(47,000)
BC Energy Regulator Disbursements	44,000	45,000	46,000	47,000
Net Cash Requirements (Source)	0,000	0,000	0,000	0,000
Total Receipts	(44,000)	(45,000)	(46,000)	(47,000)
Total Disbursements	44,000	45,000	46,000	47,000
Total Net Cash Requirements (Source)	0,000	0,000	0,000	0,000

¹ For comparative purposes, amounts shown for 2022/23 have been restated to be consistent with the presentation of the 2023/24 Estimates.

Further information on program funding and vote recoveries is available in the [Estimates and Supplement to the Estimates](#).

Appendix A: Public Sector Organizations

As of February 28, 2022, the Minister of Energy, Mines and Low Carbon Innovation is responsible and accountable for the following:

BC Energy Regulator

The BC Energy Regulator is a single-window regulatory agency with responsibilities for regulating oil, gas, hydrogen and renewable geothermal operations in B.C. The BC Energy Regulator regulates activities from exploration and development to pipeline transportation and reclamation.

BC Hydro

BC Hydro is one of the largest electricity suppliers in Canada, generating and delivering electricity to 95 per cent of the population of B.C., and serving over four million people.

Assayers Certification Board of Examiners

The Board of Examiners provides for the training, examination, and certification of assayers. This ensures that assayers practicing in the province meet the high standards of competency required by the mining and securities industries and that skilled and qualified assayers are available in B.C. as well as other jurisdictions.

MINISTRY OF ENERGY, MINES AND LOW CARBON INNOVATION

The mission of the Ministry of Energy, Mines and Low Carbon Innovation is to facilitate sustainable, safe, environmentally responsible, and competitive natural gas, oil, energy, and mining sectors for the benefit of British Columbians and effective service delivery in all areas of business.

Government Financial Information

MINISTRY OF ENERGY, MINES AND LOW CARBON INNOVATION**Government Financial Information**

MINISTRY OF ENERGY, MINES AND LOW CARBON INNOVATION**Government Financial Information**

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MINISTRY OF ENERGY, MINES AND LOW CARBON INNOVATION**Government Financial Information**

MINISTRY OF ENERGY, MINES AND LOW CARBON INNOVATION
(\$000)

Government Financial Information



December 7, 2022

Honourable Josie Osborne
Minister of Energy, Mines and Low Carbon Innovation
Parliament Buildings
Victoria, BC V8V 1X4

Dear Minister Osborne:

Thank you for agreeing to serve as Minister of Energy, Mines and Low Carbon Innovation. I trust in your leadership at this critical time to deliver results for the people of British Columbia.

British Columbians continue to recover from and respond to the upheaval caused by the COVID-19 pandemic and climate related natural disasters, while global inflation is driving up costs for more households and the world's economic outlook is concerning. Now more than ever, we need to focus on building a secure, low emission, sustainable economy, and a province where everyone can find a good home – whether you live in a rural area, in a city, or in an Indigenous community. We will continue working toward true and meaningful reconciliation by supporting opportunities for Indigenous Peoples to be full partners in the inclusive and sustainable province we are building together.

Our government is committed to delivering on the mandate British Columbians gave us in 2020. Together we can make life better for people in B.C., improve the services we all rely on, and ensure a sustainable province for future generations.

As we renew our work, my priority as Premier is to deliver results that people can see and feel in four key areas:

- **Attainable and affordable housing:** In the wake of soaring prices and record migration to B.C., we will take on the important work of building new homes that are actually attainable for the middle class, while continuing our work to address the housing crisis for those in distress on our streets.

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**Office of the
Premier**

Web Site:
www.gov.bc.ca

Mailing Address:
PO Box 9041 Stn Prov Govt
Victoria BC V8W 9E1

Location:
Parliament Buildings
Victoria

- **Safer communities:** To address concerns about public safety, both for the people struggling with mental health and addiction on our streets, as well as the feeling that downtown centres are not as safe as they were before the pandemic, we will work with our partners at all levels of government, the justice and health care systems, the non-profit sector, and community leaders to find solutions for this complex challenge facing our province, and work overtime to seize the assets of high-level criminals.
- **Improved health care:** Amid unprecedented pressures we will continue to work to strengthen our public health care system, from family doctors to new hospitals, so care is there for each of us when we need it.
- **A sustainable, clean, secure, and fair economy:** We will continue our work investing in British Columbians, fighting racism and promoting equity, and building a clean economy that addresses our obligations to combat climate change by driving down emissions, while creating good, family supporting jobs.

Energy is central to our economic growth, our response to climate change, and to delivering the basics that British Columbians expect – heat, light, transportation, and so much more. How and where we deliver energy, and how we leverage our natural energy advantages as a solution to the generational challenge of climate change, will determine how our province is positioned to benefit from the low-carbon economy of the future for generations to come.

British Columbia has significant environmental, social and governance (ESG) advantages in our partnerships with First Nations, our high standards for major project environmental protection, and our commitment to transparent and independent permitting and corporate regulation. Combined with our rich mineral and metal deposits across the province, this puts British Columbia in an enviable position to help deliver high-standard products from our mining sector to build global solutions to climate change.

Applying innovation in partnership with the private sector, labour, First Nations, and end users will ensure British Columbia doesn't just produce raw materials, but turns them into an economic development engine of related technologies that are ready for deployment around the world. British Columbia can and should be a leader in using our energy, mining and innovation to address the challenges faced by the world.

Since 2020, our government has made considerable progress on important initiatives including:

- Launching the transitional phase of a new oil and gas royalty system that puts the interests of British Columbians first and replaces outdated and inefficient fossil fuel subsidies

- Accelerating zero emission vehicle adoption by increasing the maximum rebate amounts for eligible electric vehicles and ensuring they are going to those who need them most, increasing rebates to buy and install charging infrastructure at home and work, expanding the public network of charging stations across the province, and exempting used zero emission vehicles from PST.
- Driving made-in-B.C. innovation through the establishment of a new 'B.C. Centre for Innovation and Clean Energy' where areas such as carbon capture and storage and renewable fuels will be advanced.

As you continue to make progress on items in your previous mandate letter, over the remaining period of this mandate I expect you to prioritize making progress on the following:

- Drive delivery of your ministry's CleanBC Roadmap to 2030 policies and programs on time and on target to help ensure we meet our legislated GHG goals.
- Develop targeted programs to support clean energy and efficiency upgrades for low-income and rental housing that will help reduce emissions while making our homes more comfortable and affordable, with support from Ministers of Housing, Environment and Climate Change Strategy, and Social Development and Poverty Reduction.
- Develop and implement a climate-aligned energy framework for B.C. with an overall goal of maximizing our province's production of clean energy to use at home and for export.
- Improve timing and transparency of permitting processes to support sustainable economic development while maintaining high levels of environmental protection, aligned with cross-government work on permitting led by the Minister of Water, Land and Resource Stewardship.
- Work with BC Hydro to implement its Electrification Plan and to ensure the province is well positioned to electrify B.C.'s economy and industry, including options for Indigenous ownership and/or equity interest in BC Hydro infrastructure and Indigenous partnership in clean energy projects.
- Work with the Minister of Environment and Climate Change Strategy to develop policies and regulations that meet B.C.'s 2030 sectoral and methane targets for the oil and gas sector while ensuring alignment with the federal cap on oil and gas emissions.

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- In collaboration with the Minister of Transportation and Infrastructure, complete the Clean Transportation Action Plan to support shifts to sustainable modes of travel, advance modern transportation systems, and help meet our ambitious greenhouse gas targets for the transportation sector.
- Work with the BC Utilities Commission to identify an appropriate role for the Commission in supporting B.C.'s clean energy transition, in alignment with our province's climate goals to achieve net zero by 2050 and affordability objectives.
- Review and identify opportunities to transition fossil fuel subsidies to the clean tech and clean energy sectors.
- Support B.C.'s mining sector by launching the Mining Innovation Hub and expedite a provincial critical minerals strategy that positions British Columbia to take advantage of the emerging clean global economy.
- Advance the co-development of a modernized *Mineral Tenure Act* with First Nations and Indigenous organizations, in alignment with the DRIPA Action Plan commitment.

To assist you in meeting the commitments we have made to British Columbians, you are assigned a Parliamentary Secretary for the Sustainable Economy. You will work closely together and ensure your Parliamentary Secretary receives appropriate support to deliver on the priorities outlined in the mandate letter issued to them.

Our work together must continue to evolve to meet the changing needs of people in this province. Issues not contemplated by this letter will come forward for government action and I ask you to bring such matters forward for consideration by the Planning and Priorities Committee of Cabinet, with the expectation that any proposed initiatives will be subject to the usual Cabinet and Treasury Board oversight and include measurable outcomes for British Columbians. Your ministry's priorities must reflect our government's overall strategic plan as determined by Cabinet.

British Columbians expect their elected representatives to work together to advance the public good. That means seeking out, fostering, and championing good ideas regardless of their origin. I expect you to reach out to elected members from all parties as you deliver on your mandate. Further, you will build thoughtful and sustained relationships both with title holders and through public and stakeholder engagement plans that incorporate diverse perspectives early in the policy development process. Federal partnerships and resources will be particularly important and, on behalf of our government, you will engage with the federal government on advancing priorities to improve the lives of British Columbians.

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As a Cabinet, we will uphold the highest standards of ethics, collaboration, and good conduct in service of the public, and as a Minister of the Crown, you are expected to review, understand, and act according to the *Members' Conflict of Interest Act*. You will establish a collaborative working relationship with your Deputy Minister, and the public servants under their direction, who provide the professional, non-partisan advice that is fundamental to delivering on our government's priorities. Your Minister's Office must meet the highest standards for integrity and provide a respectful, rewarding environment for all staff.

The rural and urban challenges that we face are urgent and complex. In response, we must be forward-thinking, strategic, and ready to work across disciplines and old divisions in new ways. Labour shortages are a major issue globally, and British Columbia is no exception, including in the public service. Maintaining the BC Public Service as an employer of excellence will be key to retaining and recruiting the diverse professionals we rely on to deliver essential services, advice, and analysis.

At the core of this work is listening and responding to the priorities of people in B.C. Together, we can deliver results in very real ways – ways that people can see, feel, and touch, and that change their lives for the better. Thank you for doing this important work with me.

Sincerely,

A handwritten signature in black ink, appearing to read "David Eby", with a long, sweeping horizontal line extending to the right.

David Eby, KC
Premier

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Minister Josie Osborne's Mandate Letter

Drafted March 15, 2023

Issue: Comparison between former EMLI Minister Ralston's and EMLI Minister Osborne's Mandate Letters

Response:

- Minister Osborne's December 2022 mandate letter demonstrates continuity on several important objectives outlined in former Minister Ralston's February 2022 mandate letter including:
 - Updating the Oil and Gas Royalty System
 - Advancing CleanBC Goals
 - Enhancing the energy efficiency of homes
- The letter details on how EMLI will contribute to a clean economy which will drive down emissions while creating good, family supporting jobs.
- It also contains new direction or enhanced directions regarding:
 - Developing a climate-aligned energy framework
 - Improving the transparency and timing of permitting
 - Implementing a BC Hydro electrification plan, including pursuing First Nations equity interest in infrastructure
 - Completing the Transportation Action Plan
 - Identifying an appropriate role for the BCUC in supporting B.C.'s clean energy transition
 - Aligning our oil and gas sectoral emission targets with the Federal cap
 - Developing a critical minerals strategy
 - Modernize the *Mineral Tenures Act*

Background/Status:

- Former EMLI Minister Bruce Ralston's (MBR) February 2022 mandate letter contained direction from former Premier Horgan to inter alia advance CleanBC goals, undertake a review of oil and gas royalty credits, and enhance energy efficiency programs and incentives for residential and commercial buildings.
- Minister Josie Osborne (MJO) received a mandate letter on December 7, 2022 from Premier Eby providing direction on 11 policies and programs to implement over the remainder of Government's mandate. The supporting briefing notes mentioned in

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

the following paragraphs are repeated in this section of the briefing binder in the order in which they are discussed:

- **Direction 1 (Partial New Direction)**: Drive delivery of your ministry's CleanBC Roadmap to 2030 policies and programs on time and on target to help ensure we meet our legislated GHG goals. MBR's letter contained direction to advance CleanBC goals. Please see:
 - BN #1 (EAED) - CleanBC Go Electric Programs,
 - BN #7 (EAED) - CleanBC Better Homes and Better Buildings Program,
 - BN #15 (OGD) - CleanBC Roadmap to 2030 - Oil and Gas Industry,
 - BN #21 (EAED) - CleanBC,
 - BN #22 (EAED) - Decarbonising BC's Gas Grid (GGRR, GHG Reduction Standard).
- **Direction 2 (Partial New Direction)**: Develop targeted programs to support clean energy and efficiency upgrades for low-income and rental housing that will help reduce emissions while making our homes more comfortable and affordable, with support from Ministers of Housing, Environment and Climate Change Strategy, and Social Development and Poverty Reduction. MBR's letter had broader enhancement of "energy efficiency programs for residential and commercial buildings". Please see:
 - BN #7 (EAED) - CleanBC Better Homes and Better Buildings Program
- **Direction 3 (New Direction)**: Develop and implement a climate-aligned energy framework for B.C. with an overall goal of maximizing our province's production of clean energy to use at home and for export. Please see:
 - BN #25 (EAED) - Climate Aligned Energy Framework
- **Direction 4 (New Direction)**: Improve timing and transparency of permitting processes to support sustainable economic development while maintaining high levels of environmental protection, aligned with cross-government work on permitting led by the Minister of Water, Land and Resource Stewardship. Please see:
 - BN #2 (MCAD) - Permitting Regional Mines
 - BN #3 (MCAD) - Major Mines Permitting Timelines

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- **Direction 5 (Partial New Direction)**: Work with BC Hydro to implement its Electrification Plan and to ensure the province is well positioned to electrify B.C.'s economy and industry, including options for Indigenous ownership and/or equity interest in BC Hydro infrastructure and Indigenous partnership in clean energy projects. MBR's letter had "fast track the expansion of electrification". New is the request to explore Indigenous ownership/partnership in infrastructure/projects. Please see:
 - BN #13 (EAED) - Industrial Electrification and the North Coast Expression of Interest
 - BN #14 (EAED) - Rates and Rate Design (Tiered Residential Rates & Income Impacts, Industrial Rate Flattening & BCH's planned engagements on rate design)
- **Direction 6 (Partially New Direction)**: Work with the Minister of Environment and Climate Change Strategy to develop policies and regulations that meet B.C.'s 2030 sectoral and methane targets for the oil and gas sector while ensuring alignment with the federal cap on oil and gas emissions. MBR's Mandate Letter had "Implement world-leading methane reduction regulations and technologies". Please see:
 - BN #15 (OGD) - CleanBC Roadmap to 2030 - Oil and Gas Industry
 - BN #16 (OGD) - Carbon Capture and Storage
- **Direction 7 (New Direction)**: In collaboration with the Minister of Transportation and Infrastructure, complete the Clean Transportation Action Plan to support shifts to sustainable modes of travel, advance modern transportation systems, and help meet our ambitious greenhouse gas targets for the transportation sector. Please see:
 - BN #5 (EAED) - Clean Transportation Action Plan
- **Direction 8 (New Direction)**: Work with the BC Utilities Commission to identify an appropriate role for the Commission in supporting B.C.'s clean energy transition, in alignment with our province's climate goals to achieve net zero by 2050 and affordability objectives. Please see:
 - BN #26 (EAED) – Evolving Role of the BCUC

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- **Direction 9 (New Direction)**: Review and identify opportunities to transition fossil fuel subsidies to the clean tech and clean energy sectors. To review oil and gas Royalty credits was in MBR letter. Please see:
 - BN #11 (OGD) - Healing the Land and Emissions Reduction
- **Direction 10 (Partial New Direction)**: Support B.C.'s mining sector by launching the Mining Innovation Hub and expedite a provincial critical minerals strategy that positions British Columbia to take advantage of the emerging clean global economy. Mining Innovation Hub is carried over from MBR letter, critical minerals strategy is new in MJO's letter. Please see:
 - BN #32 (MCAD) - Critical Minerals
- **Direction 11 (New Direction)**: Advance the co-development of a modernized Mineral Tenure Act with First Nations and Indigenous organizations, in alignment with the DRIPA Action Plan commitment. Please see:
 - BN #31(MCAD) - Mineral Tenure Act Reform/Modernization (w/ Banks Island Gold/Gitxaala Reference)
- MJO's letter lists three initiatives on which government has made progress:
 - Launching the transitional phase of a new oil and gas royalty system that puts the interests of British Columbians first and replaces outdated and inefficient fossil fuel subsidies. MBR letter's focus was on a fair return for resources and environmental protection. Please see:
 - BN #10 (OGD) - Royalty Review – programs, outcomes, and next steps
 - Accelerating zero emission vehicle adoption by increasing the maximum rebate amounts for eligible electric vehicles and ensuring they are going to those who need them most, increasing rebates to buy and install charging infrastructure at home and work, expanding the public network of charging stations across the province, and exempting used zero emission vehicles from PST. This was two separate items under MBR's letter (ZEVs and Charging Stations). Please see:
 - BN #1 (EAED) - CleanBC Go Electric Programs
 - BN #2 (EAED) - Zero Emission Vehicle Act / Regulation

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
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- Driving made-in-B.C. innovation through the establishment of a new B.C. Centre for Innovation and Clean Energy' where areas such as carbon capture and storage and renewable fuels will be advanced. This was a deliverable under MBR's letter. Please see:
 - BN #24 (EAED) - Centre for Innovation and Clean Energy.

Attachments: Appendix 1 – MJO Mandate Letter
Appendix 2 – MBR Mandate Letter

Contact:

Simon Coley	ADM	SIAD	778 698-7176
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December 7, 2022

Honourable Josie Osborne
Minister of Energy, Mines and Low Carbon Innovation
Parliament Buildings
Victoria, BC V8V 1X4

Dear Minister Osborne:

Thank you for agreeing to serve as Minister of Energy, Mines and Low Carbon Innovation. I trust in your leadership at this critical time to deliver results for the people of British Columbia.

British Columbians continue to recover from and respond to the upheaval caused by the COVID-19 pandemic and climate related natural disasters, while global inflation is driving up costs for more households and the world's economic outlook is concerning. Now more than ever, we need to focus on building a secure, low emission, sustainable economy, and a province where everyone can find a good home – whether you live in a rural area, in a city, or in an Indigenous community. We will continue working toward true and meaningful reconciliation by supporting opportunities for Indigenous Peoples to be full partners in the inclusive and sustainable province we are building together.

Our government is committed to delivering on the mandate British Columbians gave us in 2020. Together we can make life better for people in B.C., improve the services we all rely on, and ensure a sustainable province for future generations.

As we renew our work, my priority as Premier is to deliver results that people can see and feel in four key areas:

- **Attainable and affordable housing:** In the wake of soaring prices and record migration to B.C., we will take on the important work of building new homes that are actually attainable for the middle class, while continuing our work to address the housing crisis for those in distress on our streets.

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- **Safer communities:** To address concerns about public safety, both for the people struggling with mental health and addiction on our streets, as well as the feeling that downtown centres are not as safe as they were before the pandemic, we will work with our partners at all levels of government, the justice and health care systems, the non-profit sector, and community leaders to find solutions for this complex challenge facing our province, and work overtime to seize the assets of high-level criminals.
- **Improved health care:** Amid unprecedented pressures we will continue to work to strengthen our public health care system, from family doctors to new hospitals, so care is there for each of us when we need it.
- **A sustainable, clean, secure, and fair economy:** We will continue our work investing in British Columbians, fighting racism and promoting equity, and building a clean economy that addresses our obligations to combat climate change by driving down emissions, while creating good, family supporting jobs.

Energy is central to our economic growth, our response to climate change, and to delivering the basics that British Columbians expect – heat, light, transportation, and so much more. How and where we deliver energy, and how we leverage our natural energy advantages as a solution to the generational challenge of climate change, will determine how our province is positioned to benefit from the low-carbon economy of the future for generations to come.

British Columbia has significant environmental, social and governance (ESG) advantages in our partnerships with First Nations, our high standards for major project environmental protection, and our commitment to transparent and independent permitting and corporate regulation. Combined with our rich mineral and metal deposits across the province, this puts British Columbia in an enviable position to help deliver high-standard products from our mining sector to build global solutions to climate change.

Applying innovation in partnership with the private sector, labour, First Nations, and end users will ensure British Columbia doesn't just produce raw materials, but turns them into an economic development engine of related technologies that are ready for deployment around the world. British Columbia can and should be a leader in using our energy, mining and innovation to address the challenges faced by the world.

Since 2020, our government has made considerable progress on important initiatives including:

- Launching the transitional phase of a new oil and gas royalty system that puts the interests of British Columbians first and replaces outdated and inefficient fossil fuel subsidies

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- Accelerating zero emission vehicle adoption by increasing the maximum rebate amounts for eligible electric vehicles and ensuring they are going to those who need them most, increasing rebates to buy and install charging infrastructure at home and work, expanding the public network of charging stations across the province, and exempting used zero emission vehicles from PST.
- Driving made-in-B.C. innovation through the establishment of a new 'B.C. Centre for Innovation and Clean Energy' where areas such as carbon capture and storage and renewable fuels will be advanced.

As you continue to make progress on items in your previous mandate letter, over the remaining period of this mandate I expect you to prioritize making progress on the following:

- Drive delivery of your ministry's CleanBC Roadmap to 2030 policies and programs on time and on target to help ensure we meet our legislated GHG goals.
- Develop targeted programs to support clean energy and efficiency upgrades for low-income and rental housing that will help reduce emissions while making our homes more comfortable and affordable, with support from Ministers of Housing, Environment and Climate Change Strategy, and Social Development and Poverty Reduction.
- Develop and implement a climate-aligned energy framework for B.C. with an overall goal of maximizing our province's production of clean energy to use at home and for export.
- Improve timing and transparency of permitting processes to support sustainable economic development while maintaining high levels of environmental protection, aligned with cross-government work on permitting led by the Minister of Water, Land and Resource Stewardship.
- Work with BC Hydro to implement its Electrification Plan and to ensure the province is well positioned to electrify B.C.'s economy and industry, including options for Indigenous ownership and/or equity interest in BC Hydro infrastructure and Indigenous partnership in clean energy projects.
- Work with the Minister of Environment and Climate Change Strategy to develop policies and regulations that meet B.C.'s 2030 sectoral and methane targets for the oil and gas sector while ensuring alignment with the federal cap on oil and gas emissions.

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- In collaboration with the Minister of Transportation and Infrastructure, complete the Clean Transportation Action Plan to support shifts to sustainable modes of travel, advance modern transportation systems, and help meet our ambitious greenhouse gas targets for the transportation sector.
- Work with the BC Utilities Commission to identify an appropriate role for the Commission in supporting B.C.'s clean energy transition, in alignment with our province's climate goals to achieve net zero by 2050 and affordability objectives.
- Review and identify opportunities to transition fossil fuel subsidies to the clean tech and clean energy sectors.
- Support B.C.'s mining sector by launching the Mining Innovation Hub and expedite a provincial critical minerals strategy that positions British Columbia to take advantage of the emerging clean global economy.
- Advance the co-development of a modernized *Mineral Tenure Act* with First Nations and Indigenous organizations, in alignment with the DRIPA Action Plan commitment.

To assist you in meeting the commitments we have made to British Columbians, you are assigned a Parliamentary Secretary for the Sustainable Economy. You will work closely together and ensure your Parliamentary Secretary receives appropriate support to deliver on the priorities outlined in the mandate letter issued to them.

Our work together must continue to evolve to meet the changing needs of people in this province. Issues not contemplated by this letter will come forward for government action and I ask you to bring such matters forward for consideration by the Planning and Priorities Committee of Cabinet, with the expectation that any proposed initiatives will be subject to the usual Cabinet and Treasury Board oversight and include measurable outcomes for British Columbians. Your ministry's priorities must reflect our government's overall strategic plan as determined by Cabinet.

British Columbians expect their elected representatives to work together to advance the public good. That means seeking out, fostering, and championing good ideas regardless of their origin. I expect you to reach out to elected members from all parties as you deliver on your mandate. Further, you will build thoughtful and sustained relationships both with title holders and through public and stakeholder engagement plans that incorporate diverse perspectives early in the policy development process. Federal partnerships and resources will be particularly important and, on behalf of our government, you will engage with the federal government on advancing priorities to improve the lives of British Columbians.

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As a Cabinet, we will uphold the highest standards of ethics, collaboration, and good conduct in service of the public, and as a Minister of the Crown, you are expected to review, understand, and act according to the *Members' Conflict of Interest Act*. You will establish a collaborative working relationship with your Deputy Minister, and the public servants under their direction, who provide the professional, non-partisan advice that is fundamental to delivering on our government's priorities. Your Minister's Office must meet the highest standards for integrity and provide a respectful, rewarding environment for all staff.

The rural and urban challenges that we face are urgent and complex. In response, we must be forward-thinking, strategic, and ready to work across disciplines and old divisions in new ways. Labour shortages are a major issue globally, and British Columbia is no exception, including in the public service. Maintaining the BC Public Service as an employer of excellence will be key to retaining and recruiting the diverse professionals we rely on to deliver essential services, advice, and analysis.

At the core of this work is listening and responding to the priorities of people in B.C. Together, we can deliver results in very real ways – ways that people can see, feel, and touch, and that change their lives for the better. Thank you for doing this important work with me.

Sincerely,

A handwritten signature in black ink, appearing to read 'David Eby', with a long horizontal flourish extending to the right.

David Eby, KC
Premier



February 25, 2022

Honourable Bruce Ralston
Minister of Energy, Mines and Low Carbon Innovation
Parliament Buildings
Victoria, British Columbia V8V 1X4

Dear Minister Ralston:

Thank you for agreeing to serve British Columbians as Minister of Energy, Mines and Low Carbon Innovation.

In this past year, as a member of Cabinet, your work has contributed to this government's efforts to support British Columbians as they face the impacts of COVID-19. People throughout the province continue to work together to stay safe and rebuild their lives and communities from the effects of the pandemic. Our government remains committed to getting through the pandemic and its aftereffects by building on this resilience and focusing on what matters most to people.

British Columbians voted for a government focused on their priorities: providing better health care for people and families, delivering affordability and security in our communities, and investing in good jobs and livelihoods in a clean-energy future.

I expect you –with support of your ministry – to focus on the commitments detailed in our platform, *Working for You*, along with the following foundational principles:

- **Putting people first:** Since 2017, our government has focused on making decisions to meet people's needs. That focus drove our work in our first term and will continue to be our priority. British Columbians are counting on the government to keep them safe and to build an economic recovery that works for everyone, not just those at the top. Keeping people at the centre of everything we do means protecting and enhancing the public services people rely on and working to make life more affordable for everyone.

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- **Lasting and meaningful reconciliation:** Reconciliation is an ongoing process and a shared responsibility for us all. The unanimous passage of the *Declaration on the Rights of Indigenous Peoples Act* was a significant step forward in this journey. True reconciliation will take time and ongoing commitment to work with Indigenous peoples as they move toward self-determination. Our government – and every ministry – must remain focused on creating opportunities for Indigenous peoples to be full partners in our economy and providing a clear and sustainable path for everyone to work toward lasting reconciliation.
- **Equity and anti-racism:** Our province's history, identity and strength are rooted in its diverse population. Yet racialized and marginalized people face historic and present-day barriers that limit their full participation in their communities, workplaces, government, and their lives. Our government has a moral and ethical responsibility to tackle systemic discrimination in all its forms – and every ministry has a role in this work. While our caucus elected a record number of women, more work remains to address gender equity. Delivering on our commitments to address racial discrimination will require a commitment by all of government to ensure increased IBPOC (Indigenous, Black and People of Colour) representation within the public service, including in government appointments. Our efforts to address systemic discrimination must also inform policy and budget decisions by reviewing all decisions through a Gender-Based Analysis Plus (GBA+) lens.
- **A better future through fighting climate change:** In 2018, our government launched our CleanBC climate action plan. CleanBC puts British Columbia on the path to a cleaner, better future by building a low-carbon economy with new clean-energy jobs and opportunities, protecting our air, land and water and supporting communities to prepare for climate impacts. It is every Minister's responsibility to ensure your ministry's work continues to achieve CleanBC's goals.
- **A strong, sustainable economy that works for everyone:** We will continue our work to support British Columbians through the pandemic and the economic recovery by investing in health care, getting people back to work, helping businesses and communities, and building the clean, innovative economy of the future. Our plan will train the workforce of tomorrow, help businesses hire and grow and invest in the infrastructure needed to build our province.

The pandemic has reminded us that we're strongest when we work together. Delivering on our commitments to people will require a coordinated effort with your cabinet and caucus colleagues, supported by the skilled professionals in the public service. You will also support your cabinet colleagues to do their work, particularly where commitments cross ministry lines.

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British Columbians expect their elected representatives to work together to advance the broader public good despite their partisan perspectives. That means seeking out, fostering, and championing good ideas, regardless of their origin. I expect you to reach out to elected members from all parties as you deliver on your mandate. Further, you will build thoughtful and sustained relationships through public and stakeholder engagement plans that connect with people to incorporate their perspectives early in the policy development process. These plans must include measurable outcomes and ensure active dialogue and ongoing outreach in your ministry's actions and priorities.

Over the course of our mandate, I expect you will make progress on the following items:

- Work with cabinet colleagues to advance clean economic opportunities and CleanBC goals as our government responds to and recovers from the COVID-19 pandemic.
- Accelerate the adoption of zero emission vehicles with income-tested rebates, new incentives for purchasing used electric vehicles and an expansion of the CleanBC Specialty-Use Vehicle Incentive program.
- Increase vehicle charging capacity by providing additional incentives to expand home and workplace electric vehicle charging.
- Enhance energy efficiency programs and incentives for residential and commercial buildings, including Property Assessed Clean Energy financing to help homeowners make energy-saving retrofits and repay the cost of them over time.
- Establish the BC Centre for Innovation and Clean Energy to drive made-in-BC innovations such as carbon capture and storage and renewable fuels.
- Drawing on the findings of the independent review, ensure the cost and schedule pressures facing construction of the Site C project are addressed in a manner that protects the best interests of British Columbians.
- Undertake a review of oil and gas royalty credits to ensure they meet BC's goals for economic development, a fair return on our resources and environmental protection.
- Complete implementation of the Fuel Price Transparency Act to ensure oil and gas companies are publicly accountable for unexplained markups and price increases.
- Implement world-leading regulations and technologies to support detection and reduction of harmful methane emissions in the oil and gas sector.

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- Work with the federal government and BC Hydro to fast track the expansion of electrification by working with industries of all sizes across sectors to make it easier for them to go green.
- Continue to implement the recommendations of the Mining Jobs Task Force to strengthen this important sector and create good jobs for people.
- Create a Mining Innovation Hub to identify and support innovation, training for workers in new technologies, regulatory excellence, environmental management, and low-carbon approaches.
- Support the Minister of Environment and Climate Change Strategy to ensure owners of large industrial projects are bonded moving forward so that they – not BC taxpayers – pay the full costs of environmental cleanup if their projects are abandoned.

Our work as a government must continually evolve to meet the changing needs of people in this province. Issues not contemplated in this letter will come forward for government action and I ask you to bring such matters forward for consideration by the Planning and Priorities Committee of cabinet, with the expectation that any proposed initiatives will be subject to the usual cabinet and Treasury Board oversight. Your ministry's priorities must reflect our government's overall strategic plan as determined by cabinet.

All cabinet members are expected to review, understand and act according to the *Members' Conflict of Interest Act* and conduct themselves with the highest level of integrity. As a minister of the Crown, your conduct will reflect not only on you, but on cabinet and our government.

You are responsible for providing strong, professional, and ethical leadership within cabinet and your ministry. You will establish a collaborative working relationship with your deputy minister and the public servants under their direction who provide the professional, non-partisan advice that is fundamental to delivering on our government's priorities. You must ensure your minister's office meets the highest standards for integrity and provides a respectful and rewarding environment for all staff.

My commitment to all British Columbians is to do my level best to make sure people's lives are better, safer, and more affordable. I believe the challenges we face can and will be overcome by working together. By way of this letter, I am expressing my faith that people can expect the same commitment from you.

Sincerely,

A handwritten signature in black ink, reading "John J. Horgan". The signature is fluid and cursive, with a long horizontal stroke at the end.

John Horgan
Premier

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Title: CleanBC Go Electric Program

Drafted: March 15, 2023

Issue: Investments to stimulate increased uptake of zero-emission vehicles (ZEVs), and further economic development in the ZEV sector in British Columbia

Response:

- British Columbia (B.C.) is a leader in clean transportation, with the second highest zero-emission vehicle (ZEV) adoption rate in North America in 2022 (18.1% of new light-duty vehicle sales in B.C. compared to 18.8% in California), one of the largest public charging networks in Canada, the largest public hydrogen fuelling network in Canada, a world-leading hydrogen and fuel cell industry, and a ZEV maintenance training program offered at four post-secondary institutions.
- The CleanBC Go Electric Program has been highly successful in: reducing market barriers; encouraging the adoption of ZEVs by British Columbians; leveraging private, municipal, and federal investment in ZEVs and infrastructure in B.C.; and supporting new economic opportunities in the ZEV sector.
- The CleanBC Go Electric Program provides rebates for zero-emission light-duty vehicles, medium- and heavy-duty trucks and buses, marine vessels, and airport and port ground equipment, and makes investments in infrastructure, training, public outreach, and economic development.
- Budget 2023 includes an additional \$40 million for the Go Electric Commercial Vehicle Pilots Program.
- In 2023, the CleanBC Go Electric Passenger Vehicle Rebate program is transitioning its funding source to revenues from BC Hydro's sales of credits obtained through the Low Carbon Fuel Standard.
- In August 2022, the CleanBC Go Electric Passenger Vehicle Rebate program implemented income testing to improve ZEV affordability and accessibility for low- and middle-income customers.
- In May 2019, the Province passed the *Zero-Emission Vehicles Act* (ZEV Act) which requires automakers to meet ZEV sales targets reaching 10% of new light duty vehicle sales by 2025, 30% by 2030, and 100% by 2040. The CleanBC Roadmap to 2030 accelerated the ZEV sales targets to 26% by 2026, 90% by 2030 and 100% by 2035, and announced the introduction of new ZEV targets for medium- and heavy-duty vehicles. The purpose of the ZEV Act is to ensure increased ZEV availability and choice at more affordable prices in B.C.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Background/Status:

- In 2011, B.C. introduced ZEV programming, currently called the CleanBC Go Electric Program (the Program). Including Budget 2023, and fiscal year-end funding in Fiscal 2023, more than \$515 million has been committed to make ZEVs more affordable and reduce greenhouse gas emissions.
- A total of \$45.7 million was approved for 2022-2023 fiscal year-end funding, which includes \$26 million for the Public Charging program, \$19.5 million for Medium and Heavy-Duty Infrastructure program, and \$0.2 million for First Nations low-carbon transportation planning. Budget 2023 approved a further \$40 million for the Commercial Vehicle Pilots Program.
- As of December 31, 2022, the Program has led to:
 - almost 110,000 new light-duty ZEVs on the road;
 - over 1,000 ZEVs in commercial applications, such as forklifts, medium/heavy duty vehicles, cargo e-bikes and port and airport ground equipment;
 - over 70 early-market commercial medium/heavy-duty ZEVs for diverse on-road and off-road applications, as well as 60 commercial vehicle charging points;
 - over 70 electric school buses;
 - over 3,000 public Level 2 charging stations, and 854 fast-charging stations across 277 locations;
 - a network of four public hydrogen fueling stations in Metro Vancouver and Greater Victoria, with two more planned to be operational by the end of 2023, the majority of which are at existing gas stations;
 - automotive technician training at four B.C. technical institutions, electrician training, and eleven research and academic projects;
 - an economic development program for B.C.'s ZEV sector supporting 21 ZEV projects leading to approximately 180 additional full-time equivalent jobs; and
 - a multi-faceted outreach and awareness program called Emotive, including include community awareness and planning funding.
- There are multiple Program streams:
 - The income-tested passenger vehicle rebate provides up to \$4,000 for small light-duty ZEVs priced below \$55,000, or for larger light-duty ZEVs priced below \$70,000, including minivans, sport utility vehicles, and pickup trucks. The rebate may be combined with federal rebates, for a total rebate of up to \$9,000 per ZEV.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

- Home and workplace charger rebates, which provide up to \$350 for charging stations in homes, and up to \$2,000 for charging stations and free EV advisor services in apartments, condos and workplaces. Rebates up to \$3,000 are available to complete an EV Ready Plan for condominiums and apartments and up to \$600/parking stall for electrical infrastructure upgrades (maximum of \$120,000 per complex). Increased rebates are available for Indigenous communities and businesses.
- Public infrastructure funding, which provides up to 50% funding for public fast charging stations (up to \$80,000). Increased rebates of up to 90% of project costs (to a maximum of \$130,000) per station are available for Indigenous-owned DCFC stations.
- Hydrogen fuelling infrastructure funding, which provides funding for public hydrogen fuelling stations. Through the 2021 RFP, five stations received capital funding of \$850,000 per station and an additional \$100,000 to support operations and maintenance.
- Commercial Vehicle Pilots Program, which provides funding for vehicles, infrastructure, and data analysis to support zero-emission technologies. The fourth funding call is open and accepting applications until March 31, 2023. The first two funding calls allocated funding to 22 projects.
- Supporting a pilot program with the Vancouver Fraser Port Authority that is expected to support the deployment of twelve low and zero-emission drayage trucks, a biofuel-based switch locomotive, and a biofuel-based harbour patrol vessel.
- Specialty Use Vehicle Incentive program which provides a rebate up to 33% for e-cargo bikes, electric motorcycles, low-speed vehicles, medium/heavy-duty vehicles, airport and port vehicles, and utility vehicles. Medium/-heavy-duty rebates may be combined with federal rebates, for total rebates of up to \$300,000.
- Fleets program which provides funding for ZEV fleet and infrastructure assessments, electrical upgrades, installations of charging stations, and advising services.
- School Bus program which provides public, private, and Indigenous schools with funding for ZEV buses and charging stations.
- “Emotive”, the province-wide ZEV public outreach program developed and delivered under partnerships with local governments and community organizations, including Indigenous communities.
- Funding to upgrade electrician and automotive technician training to incorporate charging infrastructure and ZEVs.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

- The Advanced Research and Commercialization program which supports projects that create jobs and lead to economic growth in the ZEV industry sector in B.C. A new Commercial Vehicle Innovation Challenge is expected to launch shortly to help attract international investment to B.C. companies and address the current technology gap in the hard-to-decarbonize commercial vehicle sector.
- CleanBC Go Electric Programs support growth of B.C.'s ZEV sector, which has over 270 companies and organizations involved in all aspects of the supply chain employing more than 11,000 jobs, producing \$2.1 billion in total economic output and contributing \$1.15 billion to the provincial gross domestic product.

Cross Reference:

Zero Emission Vehicles Act

Low Carbon Fuel Standard

Clean Transportation Action Plan

Contact:

Les MacLaren	ADM	Electricity and Alternative Energy Division	778 698-7183
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: CleanBC Better Homes and Better Buildings Program

Drafted/Revised: March 16, 2023

Issue: CleanBC Better Homes and Better Buildings Program Overview

Response:

- The CleanBC Better Homes and Better Buildings program provides financial incentives to help households, businesses and the public sector save energy and reduce greenhouse gas emissions (GHG) through heating equipment replacement and building envelope improvements.
- The program launched in September 2018 as a two-year, \$24 million retrofit program co-funded by the Province and the federal government through the Low Carbon Economy Leadership Fund.
- Under the CleanBC plan, the program was extended and provided additional funding.
- CleanBC Better Homes and Better Buildings has \$71.6 million in base funding from fiscal 2022/23 through fiscal 2024/25.
- The program portfolio includes:
 - commercial retrofit incentives for large complex buildings;
 - commercial retrofit incentives for small buildings;
 - commercial new construction incentives;
 - residential retrofit incentives;
 - residential low-interest retrofit financing;
 - residential income-qualified incentives;
 - residential new construction incentives;
 - Indigenous community retrofit incentives; and
 - specialized energy coaching support for small businesses, Indigenous communities and civic organizations.
- As of February 2023, CleanBC Better Homes and Better Buildings has provided 45,765 residential retrofit rebates and 1,361 income-qualified rebates, approved pre-registrations for 1,000 residential new construction projects and disbursed 296 incentives, and approved 327 capital incentives for commercial, institutional, and multi-unit residential building energy efficiency and fuel-switching projects.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- As of April 1, 2022, the Province no longer contributes top-up incentives for conventional residential and commercial natural gas space and water heating equipment.

Background/Status:

- The Ministry of Energy, Mines and Low Carbon Innovation (Ministry) launched a \$24 million retrofit program in September 2018, co-funded through the federal Low Carbon Economy Leadership Fund.
- The Program was allocated an additional \$40.6 million in Provincial base funding over fiscal year 2019/20 to 2021/22, and now has \$71.6 million in base funding for fiscal year 2022/23 to fiscal 2024/25.
- Budget 2022 provided an additional \$42 million in contingencies to continue energy efficiency incentives and market supports through the program, including \$16 million over three years to provide new top-up incentives, such as heat pump incentives for northern and rural homeowners.
- The program includes:
 - **Better Homes:**
 - Residential retrofit rebates for fuel-switching to heat pumps, high efficiency windows, doors and insulation in fossil-fuel heated homes;
 - Low-interest financing for fuel-switching to heat pumps;
 - High value incentives for income-qualified households;
 - Incentives for building to higher steps of the BC Step Code with electric heating, and for installing heat pumps in new construction; and
 - A single application for Provincial, BC Hydro, FortisBC, and local government incentives.
 - **Better Buildings:**
 - Energy study and capital incentives for commercial, institutional, and multi-unit residential buildings and social housing to support fuel-switching and energy efficiency improvements.
 - **Online hubs and energy coaching:**
 - Online web hubs for homeowners and businesses to access information, incentives (provincial, utility and local government) and

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

supports to reduce energy use and GHG emissions in homes (www.betterhomesbc.ca) and buildings (www.betterbuildingsbc.ca).

- Free energy coaching services for homeowners, contractors, small businesses, Indigenous communities, and civic organizations.
- In July 2022, new northern top-up incentives were launched for residential and commercial programs, retroactive to April 1, 2022. Rural top-up incentives are in development and will be launched later in 2023.
- Program participation remains robust.
- The Ministry continues to increase awareness of heat pumps and available incentives through public and contractor education and marketing.
- The Ministry has worked with BC Hydro, FortisBC, and the Home Performance Stakeholder Council to develop best practice installation guidelines and training curriculum for heating systems and envelope improvements and is now subsidizing the cost of this training for those becoming registered members of the Home Performance Contractor Network (HPCN). CleanBC Better Homes is transitioning to requiring use of an HPCN member in order to access all residential incentives. It is now required for heat pump, insulation and all income-qualified incentives. This will help foster quality workmanship and maximize energy efficiency and emission reductions.
- In August 2022, the CleanBC Better Homes New Construction program was fully subscribed.
- As of April 1, 2022 Provincial top-up incentives for gas-fired equipment in both residential and commercial programs ended in order to prioritize clean fuel-switching incentives.
- The Ministry is developing options to support clean energy and energy efficiency upgrades for low-income and rental housing that will help reduce emissions while making homes more comfortable and affordable.

Cross Reference: 06 – Clean Building Strategy
08 – Utility Demand-Side Management
21 – CleanBC

Contact:

Les MacLaren	Assistant Deputy Ministry	Electricity and Alternative Energy	778-698-7183
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: CleanBC Roadmap to 2030 – Oil and Gas Industry

Drafted: March 10, 2023

Issue: Climate action to reduce emissions from the oil and gas sector.

Response:

- In October 2021, the Province released the CleanBC Roadmap to 2030 – a detailed plan to meet British Columbia's (BC) climate targets and set the province on the path to net-zero emissions by 2050.
- Building on actions already underway through the CleanBC plan, the Roadmap establishes commitments and actions to reduce greenhouse gas (GHG) emissions produced by the oil and gas industry in line with its sectoral target of 33 to 38 percent reductions from 2007 levels by 2030.
- We are driving delivery of our ministry's CleanBC Roadmap to 2030 commitments and actions to ensure we meet our legislated GHG goals.
- To accomplish this, we are working closely with the Ministry of Environment and Climate Change Strategy (ENV) to develop policies and regulations.
- Our new energy action framework announced on March 14, 2023 will put in place a regulatory emissions cap for the oil and gas industry to ensure BC meets its 2030 emissions-reduction target for the sector.
- We will also require all proposed Liquefied Natural Gas (LNG) facilities in or entering the environmental assessment process to have a credible plan to be net zero by 2030.
- We are currently on track to meet and even exceed our 45 percent methane emissions reduction target by 2025 and have established a clear pathway forward to meeting our 2030 and 2035 targets.
- Work is underway to enable additional electrification of upstream oil and gas facilities. The creation of a BC Hydro task force to accelerate the electrification of BC's economy as part of the new energy action framework will further support these efforts.

Background/Status:

- In March 2021, BC became the first province in Canada to set sectoral targets covering emissions across the economy. The oil and gas industry is currently responsible for around 50 percent of industrial emissions and 20 percent of BC's total emissions. The sectoral target for the oil and gas industry aims to reduce emissions 33 percent to 38 percent below 2007 levels by 2030. The CleanBC Roadmap to 2030 committed that the Province would implement policies and programs to ensure the oil and gas sector meets its sectoral targets.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- On March 14, 2023, the Province announced its new energy action framework that will ensure oil and gas sector projects fit within BC's climate commitments. Under the new energy action framework, the Province will:
 - require all proposed LNG facilities in or entering the environmental assessment process to pass an emissions test with a credible plan to be net zero by 2030;
 - put in place a regulatory emissions cap for the oil and gas industry to ensure BC meets its 2030 sectoral target;
 - establish a clean-energy and major projects office to fast-track investment in clean energy; and
 - create a BC Hydro task force to accelerate the electrification of BC's economy.
- Roadmap commitments and actions to support GHG emissions reductions in the oil and gas sector include:
 - Strengthened methane emissions targets of a 75 percent reduction target from 2014 levels by 2030 and near elimination of methane emissions by 2035.
 - Requiring all new, large oil and gas facilities to be net-zero by 2050.
 - Increasing the carbon tax to \$170 per tonne by 2030 and promoting the electrification of upstream oil and gas production.
 - Enabling carbon capture and storage (CCS).
 - Establishing declining carbon intensity thresholds, over time, for hydrogen produced from natural gas.
 - Integrating emissions reductions into the review of the rules for oil and gas royalties to ensure the royalty system will help meet provincial emission reduction targets.
 - Cleaning up 100 percent of current orphan wells in BC before 2030.
- The Ministry of Energy, Mines and Low Carbon Innovation (EMLI) is also engaged with its Government of Canada partners to further support oil and gas GHG and methane emissions reduction policies.

Reduction and Elimination of Methane Emissions:

- An emissions reduction target of 45 percent was established in the province's precursor climate strategy, the CleanBC plan released in 2018. Methane emissions regulation is a key policy instrument for achieving methane emissions reductions. Amendments to the *Oil and Gas Activities Act* (OGAA) Drilling and Production Regulation (DPR), came into force on January 1, 2020.
- In April 2020, BC concluded an equivalency agreement with the federal government, making the federal methane regulations inapplicable in the Province.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- BC is well on track to exceed the 2025 target. The 2020 provincial inventory data indicated methane emissions had declined by 22 percent from 2014 levels.
- The Roadmap commits to a stricter 75 percent emissions reduction target, from 2014 levels, by 2030 and near elimination by 2035. Initial EMLI modelling indicates the 2030 target can be achieved through additional amendments to the DPR. Work is underway to design these regulatory changes with the expectation these will be finalized in early 2024.
- BC is also working with experts, industry, non-profits and environmental groups to make sure we have an accurate picture of methane emissions in the oil and gas sector. In addition to research sponsored under BC's, Methane Emissions Reduction Collaborative, the Province is leading work with academia and the United Nations Environmental Programme to improve quantification of fugitive methane emissions from the oil and gas sector.

Net-Zero Ready Industrial Operations:

- The Roadmap includes a requirement that all new large industrial facilities, including oil and gas facilities, must have a plan to achieve net-zero GHG emissions by 2050. The New Energy Action Framework will require all proposed Liquefied Natural Gas (LNG) facilities in or entering the environmental assessment process to have a credible plan to be net zero by 2030.
- EMLI is presently working with ENV on the policy that will determine the legislation and guidance on net-zero requirements for new large industrial projects. As the lead ministry, it is expected ENV will initiate engagement with Indigenous partners and stakeholders in spring 2023.

Increasing the Carbon Price

- BC's carbon tax will meet or exceed federal carbon price requirements, so that the tax rate will increase each year until it reaches \$170 per tonne by 2030.
- As part of Budget 2023, the Province announced a transition to an output-based carbon pricing system (OBPS) in 2024. This OBPS will ensure significant emissions reductions for industry, including oil and gas, while also providing flexible options to meet their compliance obligations.

Carbon Capture and Storage

- CCS, an important emissions reduction and mitigation strategy for the oil and gas sector, has been advanced through legislative amendments in November 2022, and proposed amendments to storage reservoir regulations for spring 2023. The amendments in OGAA and the *Petroleum and Natural Gas Act*, with the subsequent proposed regulatory changes, work to clarify the license requirements for storage reservoirs and expand rights for the Province to explore for, access, develop and use storage reservoirs.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- BC is supporting research into the geological potential across the province for permanent underground storage. The recently released Northeast BC Geological Carbon Capture and Storage Atlas identifies the most suitable formations and locations for carbon storage in the Northeast.

Cross Reference: 20 – Carbon Capture and Storage

Contact:

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2022/23 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Title: CleanBC

Drafted/Revised: March 10, 2023

Issue: CleanBC Implementation – Roadmap to 2030

Response:

- British Columbia's (B.C.'s) 2018 climate plan, CleanBC and the updated 2021 CleanBC Roadmap to 2030 (Roadmap), are detailed plans on how the Province will create an equitable, resilient, low carbon future to meet our greenhouse gas (GHG) emissions targets.
- The focus of CleanBC is on energy efficiency, clean fuels and electrification in order to reduce GHG emissions and overcome B.C.'s reliance on fossil fuels.
- In Budget 2023, Government announced an additional \$44 million in new funding to support CleanBC and the Roadmap over three years, including more funding for the CleanBC Go Electric Commercial Vehicle Pilots (CVP) Program, support for the BC Hydrogen Office, and enhancements to regulatory compliance and enforcement tools for both light and medium/heavy duty vehicles.
- The Roadmap sets out to maximize reductions in GHG emissions by expanding clean transportation programs and the BC Low Carbon Fuel Standard, implementing a GHG emissions cap for natural gas utilities, continuing to implement the B.C. Hydrogen Strategy, and building out the CleanBC Better Homes and Buildings programs.
- The 2022 provincial GHG forecast has yet to be released, but the 2021 forecast projects that the GHG emissions curve will have begun to bend downwards starting in 2020, due in part to CleanBC actions and temporary emissions reductions from the COVID-19 pandemic.
- The 2022 Climate Change Accountability Report states the carbon intensity of B.C.'s economy has decreased 24% since 2007, and GHG emissions per capita has gone down 19% since 2007.
- The Climate Solutions Council provides independent advice to Government on CleanBC to strengthen our actions moving forward.

Background/Status:

- CleanBC and the Roadmap are a collaborative effort of many ministries across the B.C. Government.

2022/23 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

- The Ministry plays a leading role in developing policies, programs, and standards that decarbonize energy systems, improve energy efficiency, and reduce GHG emissions across B.C.'s economy.
- B.C.'s legislated emission targets for 2030, 2040 and 2050 are 40%, 60% and 80% below 2007 levels, respectively. The Province has also set sectoral targets and will develop legislation to ensure B.C. reaches net-zero emissions by 2050.
- In 2020, a new interim GHG reduction target was set at 16% below 2007 levels by 2025. It provides a benchmark on the road to 2030.
- Launched in December 2018, CleanBC set out the pathway to achieve 75% of the 2030 emission reduction target.
- The recently released Roadmap, together with CleanBC, set out actions to achieve 100% of the 2030 target.
- The Roadmap includes a wide range of accelerated and expanded actions that will be implemented in this mandate to reduce pollution and build a cleaner, stronger economy for everyone, including:
 - accelerated Zero Emission Vehicle Standard targets, a strengthened Low Carbon Fuel Standard, and a new emissions cap for natural gas utilities;
 - a revised carbon pricing system to meet or exceed the federal benchmark, with supports for people and businesses;
 - requirements for new industry projects to have enforceable plans to reach net-zero emissions by 2050;
 - near elimination of methane emissions by 2035 in oil and gas, mining, industrial wood waste and other sectors; and,
 - a new program to support local government climate and resiliency goals with predictable funding.
- The Province conservatively expects the Roadmap to lead to gross domestic product increases of 19% by 2030 and job growth of 7% by 2030. The economic benefits could be greater if, for example, new clean technologies cost less than expected, or more jurisdictions accelerate their climate ambitions.
- In 2020, B.C.'s net GHG emissions were 63.5 megatonnes (Mt) of carbon dioxide equivalent (CO₂e). This represents a net decrease of 3% from 2007 levels (-2.0 Mt CO₂e), mainly due to the impacts from the COVID-19 pandemic.
- In 2022, the Province released the annual Climate Change Accountability Report which outlined progress over the previous year of CleanBC implementation.

2022/23 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Transportation Successes:

- In 2020, transportation remained the largest source of B.C.'s emissions. While emissions from this sector decreased 8% from 2019 (likely due to impacts of COVID-19), emissions since 2007 have increased 12%. This is because of increases from heavy-duty vehicles (+24%) and light-duty vehicles (+2%).
- B.C. is a leader in clean transportation. In 2022, B.C. had the second highest zero-emission vehicle (ZEV) adoption rate in North America (18.1% of new light-duty vehicle sales). The province has one of the largest public charging networks in Canada, the largest public hydrogen fuelling network in Canada, and a world-leading hydrogen and fuel cell industry.
- In May 2019, the Province passed the *Zero-Emission Vehicles Act* (ZEV Act) which requires automakers to meet increasing ZEV sales targets reaching 10% of new light duty vehicle sales by 2025, 30% by 2030, and 100% by 2040. The Roadmap accelerated the ZEV sales targets to 26% by 2026, 90% by 2030 and 100% by 2035, and announced the introduction of new ZEV targets for medium- and heavy-duty vehicles. The purpose of the ZEV Act is to ensure increased ZEV availability and choice at more affordable prices in B.C.
- Budget 2022 includes \$40 million (M) more for the CleanBC Go Electric Commercial Vehicle Pilot (CVP) Program which supports businesses, non-profits, and eligible public entities looking to deploy commercial ZEVs, including: medium- and heavy-duty on-road vehicles, rail, marine, aircraft, and off-road equipment, along with supporting infrastructure. This builds on existing CleanBC programs, such as \$49M invested to date in the CVP program and is also in addition to over \$200M for light-duty ZEV rebates announced in Budget 2022.
- The Roadmap committed to developing a Clean Transportation Action Plan to identify the next set of concrete actions across five foundational areas: vehicle kilometres travelled (VKT) reduction; mode shift to efficient modes; vehicle efficiency; ZEVs; and fuel efficiency - to ensure BC meets its legislated and Roadmap transportation targets.
- Budget 2023 includes \$100M more, over three years, to support the CleanBC Active Transportation Strategy with capital funding for more active transportation networks that are safe, accessible, and convenient for pedestrians, cyclists, transit riders and motorists – of all ages and abilities. This builds on \$48M provided in Budgets 2021 and 2022.
- The B.C. Low Carbon Fuel Standard (LCFS) is the single largest contributor to meeting the targets set out under CleanBC.
- The LCFS increased the carbon intensity reduction requirement from 20% to 30% by 2030 in the gasoline and diesel fuel pools.

2022/23 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

- At a 30% reduction in carbon intensity by 2030, the LCFS is expected to deliver a total of 5.7 million tonnes of reductions in B.C. GHG emissions in 2030, which represents 19% of CleanBC's current 2030 target (with indirect support for an additional 6% from ZEVA).
- Additional policy changes to the LCFS that are supported by the Roadmap include:
 - Recognizing jet fuel as a new category of fuel, and enabling regulations to create other fuel categories, such as marine fuels.
 - Recognizing the use of alternatives to diesel fuel to generate electricity in remote communities not connected to the Provincial grid.
 - Expanding the scope of Part 3 Agreements (soon to be called Initiative Agreements) to increase the supply of low carbon fuels in BC by enabling support for new proponents and new business opportunities.
- In order to meet the increased demand for cleaner fuels, the Roadmap committed the Province to ramping up new production of 1.3 billion litres of renewable fuels by 2030.
- Initiative Agreements under the LCFS currently support projects that could result in the production of 570 million litres of low-carbon fuel by 2028. The Ministry will continue to work with industry to achieve the 1.3 billion litre production goal for 2030.

Clean Industry Successes:

- In 2020, emissions in the industrial sector, excluding oil and gas, were down 9% compared to 2019 and 8% compared to 2007. One driver of these reductions is lower industrial output that was experienced during the COVID-19 pandemic.
- In 2020, emissions in the oil and gas sector were almost unchanged from 2019, and down 7% from 2007. Reductions from baseline can be attributed to reductions in the carbon intensity of upstream natural gas production, including reductions in venting and flaring, requiring leak detection and repair, and limiting certain equipment (pneumatic devices, seals, tanks, and surface casing vents).
- In January 2021, Government announced the CleanBC Industrial Electrification Rates comprised of two categories – clean industry and innovation, and fuel switching. The rates provide a 7-year discount from BC Hydro's standard industrial electricity rate: 20% in years 1-5, 13% in year 6 and 7% in year 7.
- In January 2021, Government announced that it directed \$84.4M from the Government of Canada's Investing in Canada Infrastructure Program (ICIP) to create a new CleanBC Facilities Electrification Fund that will provide support to customers to reduce the costs of connecting to the electricity grid or upgrading their connections to use more electricity and reduce air pollution.

2022/23 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

- The Province invested \$83.5M in 32 emissions reduction projects across the province together with industry in 2021 through the CleanBC Industry Fund.
- The Province continues implementation of Canada's first comprehensive hydrogen strategy by a province – the B.C. Hydrogen Strategy (Strategy). To help grow B.C.'s hydrogen economy, the Strategy outlines 63 policy actions to increase the production, use and export of low-carbon hydrogen.
- In March 2022, the BC Hydrogen Office (Office) was established to expand hydrogen development and streamline projects from proposal to construction. In Budget 2023, the Office received funding to staff five positions to help facilitate hydrogen's role to decarbonize sectors where direct electrification is not as practical.
- To lower carbon emissions and drive the transition from fossil natural gas to renewable gas, the Province is putting in place a new GHG emissions cap for BC's natural gas utilities. The cap will be set at 6 Mt of carbon dioxide emissions per year for 2030, which is 47% lower than 2007 levels. Gas utilities will have the flexibility to undertake a broad range of actions and investments to reduce the GHG emissions associated with the use of the natural gas they provide to their customers.

Buildings and Communities Successes:

- Emissions in the buildings and communities sectors have fallen by 12% compared to 2007 levels, driven by decreases in emissions from residential and commercial buildings (-8%).
- The CleanBC Better Homes and Better Buildings program provides financial incentives to help households, businesses and the public sector save energy and reduce GHG through heating equipment replacement and building envelope improvements.
- CleanBC Better Homes and Better Buildings has \$71.6M in base funding from fiscal 2023 through fiscal 2025. In February 2022, the program introduced a stand-alone income qualified program, providing high value incentives to low- and moderate-income households, which is complementary to current residential and income-qualified rebates.
- As of March 2022, the program has provided 35,315 residential retrofit rebates, approved pre-registrations for 445 residential new construction projects and disbursed 149 incentives, and approved 264 capital incentives for commercial, institutional, and multi-unit residential building energy efficiency and fuel-switching projects.
- Sixty-one communities now reference the B.C. Energy Step Code in municipal policy or regulation for new building construction. The Step Code sets out a series of energy efficiency requirements beyond the base B.C. Building Code.

2022/23 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

- The Roadmap announced new requirements for all new buildings to be zero carbon and new space and water heating equipment to be of the highest efficiency by 2030.
- In 2022, the CleanBC Remote Community Energy Strategy (RCES) has achieved 5% of the CleanBC commitment to reduce the GHG emissions from diesel electricity generation in remote communities by 80% by 2030.
- RCES programs support the capacity of Indigenous remote communities, and the planning, development and implementation of diesel-displacing energy efficiency and renewable energy generation projects.

Cross Reference:

Zero Emission Vehicles Act/ Regulation
CleanBC Go Electric Program
Clean Transportation Action Plan
Low Carbon Fuel Standard
CleanBC Electrification Rates

CleanBC – Better Homes and Buildings
Renewable Gas Legislation
BC Hydrogen Strategy
Remote Community Energy Strategy

Contact:

Les MacLaren	ADM	Electricity and Alternative Energy	778-698-7183
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Decarbonising BC's Natural Gas Public Utility Grid

Drafted/Revised: March 8, 2023

Issue: Progress to date on development of the Greenhouse Gas Reduction Standard, and regulatory considerations to enable natural gas public utilities to take actions now to achieve their proposed 2030 legislative obligations.

Response:

- To dramatically lower carbon emissions and drive the transition from fossil natural gas to low carbon gas, we're putting in place a new GHG emissions cap for BC's natural gas utilities.
- The Greenhouse Gas Reduction Standard (GHGRS) implements a commitment in the CleanBC Roadmap to 2030.
- The standard would require gas utilities to further lower GHG emissions from fossil natural gas used to heat homes and buildings and power industry, reducing emissions from around 11 megatonnes in 2007 to about 6 megatonnes in 2030 (a 47% reduction).
- Gas utilities will determine how best to meet the cap, and will have flexibility to undertake a broad range of actions and investments to reduce GHG emissions associated with the use of natural gas they provide to their customers.
- Utility plans are expected to include displacement of fossil natural gas with low carbon alternatives, such as Renewable Natural Gas produced from organic sources and hydrogen produced from natural gas using carbon capture and storage technology. This approach would maintain BC's energy reliability, while giving consumers a choice between electricity and low carbon gas to meet their space and water heating and/or industrial process needs.
- The BC Utilities Commission (the Commission or BCUC) would have the mandate to review gas utilities' plans, investments, and expenditures to ensure they're aligned with the GHG emissions cap, and cost effective, helping to mitigate gas rate increases for people and businesses.
- We anticipate tabling legislation to implement the GHGRS in 2024.
- However, public gas utilities will need to take action now to meet the proposed emissions cap.

Continued...

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- As a result, we're contemplating making regulatory amendments this spring to allow gas utilities to acquire significant volumes of low carbon gases, and to recover the costs from their ratepayers. The amendments will also put more stringent measures in place to ensure these acquisitions lead to credible emissions reductions in BC.

Background/Status:

- Under the CleanBC Roadmap to 2030 (Roadmap), Government has committed to implementing a legislated requirement for FortisBC and Pacific Northern Gas (the gas utilities) to limit the GHG emissions of their buildings and industry (excluding Liquefied Natural gas and upstream oil and gas) customers to around 6.04 MT by 2030. This proposed emissions cap aligns with BC's sectoral GHG targets.
- Amendments to the *Utilities Commission Act* are needed to require the gas utilities, under the oversight of the BCUC, to undertake activities and/or invest in technologies to meet this cap but would not specify specific things utilities must do.
- The Commission already regulates gas utilities. Gas utilities would be responsible for seeking approval from the Commission on how they plan to comply with the GHGRS.
- The GHGRS, like similar Roadmap initiatives, would drive substantive increases in natural gas rates as gas utilities seek to recover the costs of meeting the emissions cap from their ratepayers.
- Financial modelling, done in early 2022 before the current inflationary pressures took hold, suggests the GHGRS plus the escalating carbon tax and other climate initiatives could increase gas rates by between 60-100% by 2030. The modelling suggests that cost impacts could be lower (40-60%) for customers who reduce natural gas consumption through energy efficiency measures or fuel-switching to clean electricity.
- BCUC oversight will play a key role in mitigating rate increases by ensuring gas utility spending plans are cost effective, and by using existing tools, such as rate levelization and deferral accounts to smooth costs over periods of up to 40 years. Additionally, Government could develop targeted supports, for example expanded energy efficiency incentives for low-income residential customers, and/or enhanced CleanBC funding to accelerate decarbonization for gas-dependent industries like cement, pulp and paper, and agriculture.
- The Ministry is also examining potential implications for BC's long-term energy reliability. Currently, the natural gas grid plays an important role in providing capacity to meet BC's demand during cold weather peaks, supplying around

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

two-thirds of the energy needed for buildings, industry, and transportation during those periods. The other one-third is provided through BC Hydro's system, operating at its maximum existing capacity (about 11,000 MW).

- While enhanced electrification will be critical to meeting BC's climate targets, it is likely low carbon gas options like low carbon gases would be needed to ensure peak demand can be met in a cost-effective manner, at least over the foreseeable future. Relying solely upon electrification without a substantial build out of BC Hydro's system would create a significant risk that insufficient energy would be available to heat British Columbian's homes and power our industries.
- Advice/Recommendations; Cabinet Confidences

- To position gas utilities for success in meeting the ambitious GHGRS emissions cap in the meantime, the Ministry is seeking to expand the gas utilities' ability to voluntarily acquire significant volumes of low carbon gas supplies at a cost of up to \$31/gigajoule¹, or about 6-10 times the average price of fossil gas, under the Greenhouse Gas (Clean Energy) Reduction Regulation (GGRR).
- The GGRR amendments would also put more stringent measures in place to ensure gas utility actions would lead to credible emissions reductions and contribute to BC's legislated economy-wide emission reduction targets.
- Advice/Recommendations; Cabinet Confidences

Attachments: N/A

Cross Reference: #24 Climate Aligned Energy Plan – BCUC Mandate

Contact:

Les MacLaren	Assistant Deputy Minister	Electricity and Alternative Energy Division	778-698-7183
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¹ \$2021. Under current regulation, the applicable price cap escalates each year with inflation, as measured by the Consumer Price Index.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: CleanBC Better Homes and Better Buildings Program

Drafted/Revised: March 16, 2023

Issue: CleanBC Better Homes and Better Buildings Program Overview

Response:

- The CleanBC Better Homes and Better Buildings program provides financial incentives to help households, businesses and the public sector save energy and reduce greenhouse gas emissions (GHG) through heating equipment replacement and building envelope improvements.
- The program launched in September 2018 as a two-year, \$24 million retrofit program co-funded by the Province and the federal government through the Low Carbon Economy Leadership Fund.
- Under the CleanBC plan, the program was extended and provided additional funding.
- CleanBC Better Homes and Better Buildings has \$71.6 million in base funding from fiscal 2022/23 through fiscal 2024/25.
- The program portfolio includes:
 - commercial retrofit incentives for large complex buildings;
 - commercial retrofit incentives for small buildings;
 - commercial new construction incentives;
 - residential retrofit incentives;
 - residential low-interest retrofit financing;
 - residential income-qualified incentives;
 - residential new construction incentives;
 - Indigenous community retrofit incentives; and
 - specialized energy coaching support for small businesses, Indigenous communities and civic organizations.
- As of February 2023, CleanBC Better Homes and Better Buildings has provided 45,765 residential retrofit rebates and 1,361 income-qualified rebates, approved pre-registrations for 1,000 residential new construction projects and disbursed 296 incentives, and approved 327 capital incentives for commercial, institutional, and multi-unit residential building energy efficiency and fuel-switching projects.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- As of April 1, 2022, the Province no longer contributes top-up incentives for conventional residential and commercial natural gas space and water heating equipment.

Background/Status:

- The Ministry of Energy, Mines and Low Carbon Innovation (Ministry) launched a \$24 million retrofit program in September 2018, co-funded through the federal Low Carbon Economy Leadership Fund.
- The Program was allocated an additional \$40.6 million in Provincial base funding over fiscal year 2019/20 to 2021/22, and now has \$71.6 million in base funding for fiscal year 2022/23 to fiscal 2024/25.
- Budget 2022 provided an additional \$42 million in contingencies to continue energy efficiency incentives and market supports through the program, including \$16 million over three years to provide new top-up incentives, such as heat pump incentives for northern and rural homeowners.
- The program includes:
 - **Better Homes:**
 - Residential retrofit rebates for fuel-switching to heat pumps, high efficiency windows, doors and insulation in fossil-fuel heated homes;
 - Low-interest financing for fuel-switching to heat pumps;
 - High value incentives for income-qualified households;
 - Incentives for building to higher steps of the BC Step Code with electric heating, and for installing heat pumps in new construction; and
 - A single application for Provincial, BC Hydro, FortisBC, and local government incentives.
 - **Better Buildings:**
 - Energy study and capital incentives for commercial, institutional, and multi-unit residential buildings and social housing to support fuel-switching and energy efficiency improvements.
 - **Online hubs and energy coaching:**
 - Online web hubs for homeowners and businesses to access information, incentives (provincial, utility and local government) and

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

supports to reduce energy use and GHG emissions in homes (www.betterhomesbc.ca) and buildings (www.betterbuildingsbc.ca).

- Free energy coaching services for homeowners, contractors, small businesses, Indigenous communities, and civic organizations.
- In July 2022, new northern top-up incentives were launched for residential and commercial programs, retroactive to April 1, 2022. Rural top-up incentives are in development and will be launched later in 2023.
- Program participation remains robust.
- The Ministry continues to increase awareness of heat pumps and available incentives through public and contractor education and marketing.
- The Ministry has worked with BC Hydro, FortisBC, and the Home Performance Stakeholder Council to develop best practice installation guidelines and training curriculum for heating systems and envelope improvements and is now subsidizing the cost of this training for those becoming registered members of the Home Performance Contractor Network (HPCN). CleanBC Better Homes is transitioning to requiring use of an HPCN member in order to access all residential incentives. It is now required for heat pump, insulation and all income-qualified incentives. This will help foster quality workmanship and maximize energy efficiency and emission reductions.
- In August 2022, the CleanBC Better Homes New Construction program was fully subscribed.
- As of April 1, 2022 Provincial top-up incentives for gas-fired equipment in both residential and commercial programs ended in order to prioritize clean fuel-switching incentives.
- The Ministry is developing options to support clean energy and energy efficiency upgrades for low-income and rental housing that will help reduce emissions while making homes more comfortable and affordable.

Cross Reference: 06 – Clean Building Strategy
08 – Utility Demand-Side Management
21 – CleanBC

Contact:

Les MacLaren	Assistant Deputy Ministry	Electricity and Alternative Energy	778-698-7183
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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Climate Aligned Energy Framework

Drafted/Revised: March 28, 2023

Issue: Development of a Climate Aligned Energy Framework

Response:

- A Climate Aligned Energy Framework (Framework) will support the delivery of CleanBC Roadmap objectives and legislated GHG emissions reduction targets.
- The Framework will also need to consider other key priorities, such as energy affordability for households and businesses, continued access to reliable clean energy even during periods of peak demand, the energy action framework (including an emissions cap on the oil and gas industry), and Indigenous reconciliation.
- Once finalized, the Framework will provide guidance for Government energy-related policies, which will support decarbonizing BC's energy mix transitioning to a net zero emissions economy over the next 30 years (e.g, Renewable Natural Gas, hydrogen, biofuels, electricity, emissions caps, LNG environmental assessment guidance for net zero emissions plans) .
- The Ministry is collaborating with the Ministry of Environment's Climate Action Secretariat, the Environmental Assessment Office, the Ministry of Jobs, Economic Development and Innovation and energy utilities to move forward on developing the Framework.

Background/Status:

- As part of Premier Eby's December 7, 2022, mandate letter to Minister Osborne, he included expectations for the Minister to make progress on several priorities including:
 - "develop and implement a climate aligned energy framework for B.C. with an overall goal of maximizing our province's production of clean energy to use at home and for export."
- The Climate Aligned Energy Framework will be inclusive of the "new energy action framework" that was announced March 14, 2023 in association with the

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Cedar LNG project environmental assessment certificate approval. This framework committed the Province to:

- require all proposed LNG facilities in or entering the environmental assessment (EA) process to pass an emissions test with a credible plan to be net zero by 2030;
 - put in place a regulatory emissions cap for the oil and gas industry to ensure B.C. meets its 2030 emissions-reduction target for the sector;
 - establish a clean-energy and major projects office to fast-track investment in clean energy and technology and create good, sustainable jobs in the transition to a cleaner economy; and
 - create a BC Hydro task force to accelerate the electrification of B.C.'s economy by powering more homes, businesses and industries with renewable electricity.
-
- The Ministry is working in collaboration with other agencies, including the Climate Action Secretariat and BC Hydro to undertake analysis to inform the development of the framework that considers BC's potential future energy mix and the extent to which electricity, natural gas, liquid fuels, hydrogen and other resources are relied upon to power BC's vehicles, buildings, communities and industry.
 - The framework is intended to support the delivery of CleanBC Roadmap (Roadmap) objectives and legislated GHG emissions reduction targets.
 - In addition to electrification, the Roadmap primarily leverages several other mechanisms such as energy efficiency, demand destruction, low carbon gases and fuels, and carbon pricing to reach its targets.
 - Focusing primarily on electrification to achieve BC's climate objectives may create affordability challenges for households and business, energy resiliency challenges during times of winter peak energy use, and significant feasibility challenges related to realistic timelines for the development of infrastructure and availability of clean firm electricity sources. Currently, 16% of BC's energy needs are met through electricity, whereas 67% of these needs are met through fossil fuels.
 - BC's electricity system could be expanded along with the decarbonisation of its gas system and liquid fuels to optimize these energy systems to mitigate challenges, particularly in the short and medium term while industry specific fuel switching, energy storage, and other clean energy technologies continue to be developed.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Achieving BC's legislated greenhouse gas (GHG) emissions reductions targets will require a fundamental transformation of BC's energy system.
- Further analysis on the opportunities and challenges of transitioning to a low-carbon energy system will be explored in collaboration with the Climate Action Secretariat, the Ministry of Jobs, Economic Development and Innovation (JEDI), the Premier's Office, BC Hydro and FortisBC to inform development of the Framework.

Cross Reference: 22 - Decarbonising BC's Gas Grid (GGRR, GHG Reduction Standard)

26 – Evolving the Role of the BCUC

Contact:

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Permitting Regional Mines

Drafted/Revised: March 6, 2023

Issue: Industry concerns regarding timelines for processing applications for regional mines

Response:

- The Ministry is aware of industry concerns regarding long timelines for the processing of Notice of Work (NoW) applications for permits on regional mines and has been implementing numerous ways to reduce timelines.
- Regional mines include mineral and coal exploration, placer, aggregate and stone quarries.
- The Ministry has made changes to the permit intake process to streamline the process, and to ensure that applications are received by technical reviewers as early in the process as possible.
- Ministry staff continue to improve the NoW application form and develop accompanying materials to provide more guidance to proponents.
- Ministry staff have also been holding permitting workshops around the province to provide training, share knowledge, and to remain accessible and transparent with industry.
- The Ministry received funding for 13 new positions to help with regional permitting and all these positions have been filled.
- The new resources, along with the process improvements, are helping to reduce the backlog of files and are starting to improve permitting timelines.

Background/Status:

- Permitting timelines have been impacted by the volume of applications being submitted in this high cycle for mineral exploration and the increasingly challenging environment for consultation with Indigenous Nations.

Mandate Commitment – Permitting Timelines:

- The Ministry received funding for 13 new positions to help with regional permitting and all these positions have been filled.
- The new resources and process improvements are having a positive impact on reducing the backlog of applications (currently 116, a reduction of 30% from a backlog of 151 in January 2022) and is starting to reduce permitting timelines for new submissions.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- The Ministry has also made improvements to application forms and has provided guidance to industry to assist them in submitting high quality applications that can be processed faster.

Mandate Commitment – Transparency:

- The Ministry has been providing permitting workshops at industry events around the province to ensure staff are accessible and transparent with requirements.
- Staff have been meeting with the leadership of the Association for Mineral Exploration BC and BC Stone, Sand, and Gravel Association regularly to share permitting data and to remain transparent with progress.
- A new permitting database is allowing data to be collected and analyzed in a timely manner so that adjustments can be made as needed to improve the process; this is improving internal transparency for decision making.
- Regional Operations Branch introduced a permit intake window (batching) pilot project in the fall, for mineral exploration files. The goal is to provide a scheduled approach to permit reviews and provide proponents with more predictability with respect to when their applications will be reviewed and when feedback will be provided to them.

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Major Mines Permitting Timelines

Drafted/Revised: March 14, 2023

Issue: Industry concerns regarding timelines for permitting major mines

Response:

- The Ministry is aware of industry concerns regarding the timelines required to review applications for major mines and has been working on numerous ways to find efficiencies in the process.
- Major Mines include producing mineral and coal mines.
- Major Mine applications are typically technically complex, involve multiple agencies, include multiple rounds of review, and significant engagement with Indigenous Nations.
- Expected timeline for referral of Major Works permit to Statutory Decision Making (SDM) is 6 to 12 months from acceptance of revised application to permit referral.
- The Ministry has increased permitting staff capacity through additional Full Time Employee (FTE), 5 over the past 3 years.
- The Ministry created a technical compliance branch, with 7 new FTEs in the past 2 years, enabling a shift of compliance and enforcement function off the permitting staff.
- The Ministry has increased Indigenous Relations capacity through the creation of a new branch, with 7 new FTE hired in 2022, and 2 additional FTE planned over the next year.
- Ministry staff have been improving application process and information requirement guidance for proponents.
- The Ministry has implemented the Departure from Approval Policy, with nearly 100 projects being processed in an average of 21 days, since 2020.
- The Ministry is continuously developing and implementing guidance and tools to ensure that the detailed requirements for amendment applications are clear and consistent for industry during the development of their applications, which will result in reduced review timelines.
- Ministry staff have implemented a streamlined review process for small, narrowly scoped, applications that has reduced timelines by 1 to 3 months.

Background/Status:

- The expected timeline for the review of a Major Works Application, from acceptance of the final Application to referral to the Senior Decision Maker is 6 to

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

12 months. Recent examples include Blackwater (10 months), New Afton C-Zone (10 months), Kemess Underground Project (7 months).

- Major Work applications are technically complex, require detailed review by Ministry staff, and are subject to timeline extensions created by the proponent or the resolution of Indigenous Nation concerns, which are outside the control of Ministry staff.
- The Major Mines Office has increased its capacity to conduct application reviews with the addition of 5 FTE over the past 3 years. This includes geoscience, geotechnical engineering, and reclamation technical experts and project management staff.
- Prior to 2021, major mines permitting staff also held Indigenous consultation and compliance and enforcement functions. The Ministry has created new branches to enable the Major Mines Office to focus on the application review process. The Technical Compliance Branch was created in 2021. The Priorities Advancement and Indigenous Relations Branch was created in 2022.
- In 2021/22 a total of 38 amendments were processed. To date, in 2022/23 over 30 amendments have been processed.
- The Ministry has developed both external and internal policies and procedures to assist in streamlining the application review process, including, updated application information requirements, major mines authorization guide, and improved coordination with The Ministry of Environment and Climate Change Strategies (ENV) on joint applications.
- The Ministry developed and implemented the Departure from Approval process in 2020 to provide a pathway for mine sites to self-assess proposed changes as 'non-substantial' as well as a pathway to request that the Ministry make the determination. Since 2020 nearly 100 submissions have been determined to be non-substantial and were able to be implemented by mines without the need for an amendment process. The average time to process these requests is 21 business days.
- The Ministry is constantly developing guidance and tools for industry. These include the Technology Readiness Levels (TRL) guidance, released in 2022, to help development of innovative technologies. The Major Mines Standardized Reclamation Security Calculator, currently under development, will provide a consistent calculation of reclamation liability cost estimates. These tools will help ensure that the requirements for amendment applications are clear for industry, enable more consistent applications, which will result in reduce review timelines.
- The Ministry has developed and implemented a streamlined review process for small, narrowly scoped, applications. This includes expedited pre-application

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

steps and shorter review timelines. Initial results have reduced process timelines by 1 to 3 months.

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Industrial Electrification and North Coast Expression of Interest

Drafted/Revised: March 15, 2023

Issue: Electrification of industry will require expansion of BC Hydro's transmission infrastructure

Response:

- Electrification is one of the pathways identified in the CleanBC Roadmap to 2030 leading to reduced or avoided emissions in the industrial sector.
- BC Hydro's Electrification Plan, released in September 2021, has a significant industrial electrification focus with an expectation of adding 2,800 gigawatt-hours of incremental load from the industrial sector alone.
- British Columbia (B.C.) has an opportunity to support global energy security through the export of lower carbon energy produced using BC Hydro's clean electricity from upstream gas production to the point of export.
- Electrification of industry including critical minerals metals mining, ports and LNG processing facilities, provides a mechanism for the industrial sector to meet B.C.'s sectoral targets allowing for investment certainty and is aligned with B.C.'s and Canada's climate ambitions.
- To facilitate further industrial growth in B.C.'s northwest in line with provincial and federal climate ambitions requires new electricity infrastructure. Expansion of transmission supply to B.C.'s North Coast will also support the \$1.5 billion dedicated to support critical mineral projects under the federal government's Critical Minerals Strategy.
- BC Hydro launched a non-binding expression of interest (EOI) on February 15, 2023, to gauge interest by customers on the North Coast in electrifying. The EOI is part of a multi phased approach to determine needs on the coast and inform transmission expansion plans.
- BC Hydro and the Ministry of Energy, Mines and Low Carbon Innovation are also engaging with First Nations along the proposed North Coast transmission expansion corridor on opportunities for transmission line co-ownership.

Continued...

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Electrification of industry on the North Coast and pursuing options for Indigenous ownership of BC Hydro infrastructure align with deliverables in this Ministry's mandate letter including supporting the Province's critical minerals strategy.

Background/Status:

- B.C.'s industrial sector accounts for 40% of B.C.'s GHG emissions, mostly due to compressors in the natural gas sector, diesel engines in mining and forestry, and process heat in the forest products industry. Industry represents the largest electrification opportunity to reduce emissions in B.C.
- BC Hydro's northwest service area is supplied with electricity through a single radial 500 kilovolt (kV) transmission line that runs from Prince George to Terrace. BC Hydro is anticipating significant growth along the North Coast of British Columbia, with critical mining projects, port electrification, proposed liquefied natural gas (LNG) projects, fuel processing / shipping projects under consideration.
- To date, proponents in the North Coast area have expressed interest in electrifying projects, which total nearly 3,000 megawatts (MW) of electricity demand with nearly half that demand coming from new or expanding critical mineral and metal mining projects and the electrification of ports.
- This level of demand far exceeds the transmission capacity of the existing system even with the partially federally funded Prince George to Terrace Capacitors project that will increase the capacity of the existing radial line from 800 MW to 1300 MW by 2027.
- To meet the anticipated demand will require adding a second 500 kilovolt (kV) transmission circuit across the three segments of the existing North Coast radial line at a capital cost of about \$3 billion and is expected to take 8-10 years from development to in-service.
- The line would support North Coast LNG projects, in or entering the environmental assessment (EA) process, to pass an emissions test with a credible plan to be net zero by 2030, as announced March 14, 2023 as part of the new energy action framework.

North Coast Expression of Interest:

- BC Hydro launched an Expression of Interest on February 15 to gauge interest and ensure that a new line is appropriately sized to meet the electrification demand in the North Coast.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Many of the Nations along the proposed transmission line route are members of the First Nations Climate Initiative (FNCI) and/or the First Nations Major Projects Coalition (FNMPC), and have expressed support for net zero LNG, expanded transmission capacity and Indigenous equity ownership of transmission infrastructure.
- The current interconnection process, which does not allow BC Hydro to group interconnection requests, is challenging for the Northwest as individual customers do not want to be responsible for triggering these significant transmission upgrades and therefore paying for the infrastructure. The uncertainty of whether a project will advance makes engagement with First Nations challenging.
- As a result, BC Hydro is proposing a different multi-phased approach to develop new transmission capacity in the Northwest.
- The first stage is a two-month non-binding EOI to determine the demand for electricity in the region. Subsequent stages of the process will require financial commitment from each company who requires capacity (in the form of security). This will require a new transmission interconnection tariff, which will require government direction.
- The benefits of this approach include the following:
 - Information about customer electricity needs will be received earlier and will be used to inform transmission system planning in the region.
 - Security for project development costs is distributed across multiple customers rather than a single customer, which will reduce a barrier to initiating transmission line upgrades, increase project certainty, and in turn enable engagement with First Nations.
 - Transmission line upgrades can be optimized based on customer demand and location.
- For the standard interconnection process, BC Hydro is required to enter all transmission load connection requests into the connection queue in the order of requests received (i.e., “first come, first served.”)
- The end-to-end duration for customer connections varies significantly depending on complexity, other BC Hydro work, external factors such as weather, regulatory requirements, First Nations consultation and stakeholder requirements, and customer-driven changes. A typical overall timeline for a new transmission connection is two to four years.
- Following the Expression of Interest, customers may be asked to submit a transmission service request or complete interconnection studies. The Expression of Interest will not replace the interconnection request process.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Up to 14 First Nations could be affected by a new North Coast transmission line between Prince George and Terrace. BC Hydro's relationships with these Nations are at various stages based on current and past projects.
- Senior level EMLI staff have also communicated the desire of government to work with BC Hydro and First Nations on processes and models for Indigenous co-ownership of transmission infrastructure in B.C. at a First Nation gathering on March 3 in Vancouver.

North Montney

- One of the projects that BC initiated with its federal partners as part of the 2019 Memorandum of Understanding on Electrification of BC's Natural Gas Sector was the North Montney Regional Electrification Project that would extend BC Hydro's grid into the North Montney basin where no electrical infrastructure currently exists. Some of these upstream gas processing facilities will feed LNG plants on BC's coast.
- The Project was put on hold pending outcome of negotiations between the Province and Blueberry River First Nation following the *Yahey* decision. On January 18, 2023, the Province reached an agreement with the Blueberry River First Nation and as a result there is an opportunity to resume some natural gas activities in the North Montney area.
- BC Hydro is in discussion with proponents in the North Montney on approaches to electrify their upstream gas processing facilities.
- BC Hydro and the Province are also exploring partial Indigenous ownership of transmission infrastructure in the North Montney.

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osbourne

Title: Rates and Rate Design

Drafted: March 16, 2023

Issue: BC Hydro is considering opportunities to advance updated rate designs to provide customers with choices that better meet their electricity needs.

Response:

- The current structure of tiered electricity rates in British Columbia were designed to encourage electricity conservation, and they have accomplished that objective.
- As electricity prices increased, tiered rates have further increased the cost of electric heat and may discourage adoption of electric vehicles (EVs).
- However, any change to flatten the tiered rate structure would result in increases (albeit mostly small) in bills for most BC Hydro customers.
- Changes to rate structures are made through public processes before the British Columbia Utilities Commission (BCUC), to ensure that all ratepayers' interests are considered.
- BC Hydro is submitting a series of rate design applications this spring, including
 - a pricing principles application proposing that rate increases be allocated evenly among all components of its Residential Inclining Block (RIB) rate so that the majority of customers with relatively low electricity consumption will not experience higher bill impacts.
 - A proposed optional time of use rate that would reduce the cost of charging EVs overnight, and
 - A proposed flattening of industrial rates to remove a barrier to growth and electrification.
- The BCUC will decide whether to accept BC Hydro's proposals.
- BC Hydro plans to consult on additional rate options in the next few months.

Background/Status:

- BC Hydro currently has a two-tiered rate for residential customers based on electricity consumption.
- Under tiered rates, Customers are charged one rate for electricity up to a certain threshold in each billing period, and a higher rate for all electricity use beyond that threshold. This "tiered" rate was designed to reflect approximate long-term costs of

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osbourne

new supply to encourage conservation, although in recent years the tiers have become significantly more expensive than the cost of new supply.

- BC Hydro's rates increase by 2%, on an interim basis, on April 1, 2023. This follows a 1.4% interim bill decrease on April 1, 2022, a 1.16% increase on April 1, 2021 and a 1.62% rate decrease on April 1, 2020.
- BC Hydro is applying to have its proposed 2% net rate increase on April 1, 2023 spread proportionately across all three energy charges to avoid creating larger bill impacts for customers with lower electricity consumption.
- As of April 1, 2023 BC Hydro's proposed charges for its Residential Inclining Block (RIB) rate, paid by nearly all of its residential customers, are:
 - Customer basic charge of 21.10 ¢ per day (~\$13.00 per 2-month billing period);
 - Step 1 is 9.59¢ per kWh for the first 1,350 kWh in an average two-month billing period (22 kWh per day); and
 - Step 2 is 14.22¢ per kWh over the 1,350 kWh Step 1 threshold.

All of BC Hydro's electricity rates are also subject to a 1% credit through BC Hydro's Deferral Account Rate Rider.

- In its decision on FortisBC's 2017 Rate Design Application, and with the support of most of FortisBC's customer groups, the BCUC approved FortisBC's plan to phase out the RCR over five years resulting in a single flat rate by 2023.
- On January 1, 2023, FortisBC completed its five-year transition from a two-tiered rate to a flat rate.
- Charges for FortisBC's bi-monthly residential service rate are as follows:
 - Customer Charge \$42.42 based on 60-day billing period; and
 - All kWh are billed at 13.266¢ per kWh.
- Single-family homes, those using electricity for space and water heating, and those with pools, hot tubs, EV service equipment, poor insulation, multigenerational families, and secondary suites are among the types of residences that are likely to use more power and experience higher electricity bills under tiered rates than under the flat rate charged by New Westminster's municipal utility or Fortis Electric.
- Natural gas utilities, such as FortisBC, advertise a cost comparison between natural gas and the second-tier electric rate to persuade customers to switch to natural gas for space and water heating.
- Some customers believe they are being penalized if they have consumption in the higher second tier. Customers can have considerable annual consumption at the higher Tier 2 rate (about 40%) and still be better off than under the former flat rate.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osbourne

Customers with a Tier 2 consumption greater than 40% of annual consumption are worse off.

- It is ultimately a BCUC decision, informed by evidence and arguments, whether to approve BC Hydro's rate proposals.
- However, to maintain affordability, Government is providing a letter of support for BC Hydro's proposal to apply rate increases evenly to all components of its RIB rate rather than disproportionately to the fixed charge or Tier 1 rate.

Alternative Rate Designs:

- While the RCR and RIB rates are meeting their conservation objectives, they are working against electrification by increasing the cost of high-efficiency electric heat in single-family homes and EV charging, thereby increasing a perception of a higher price for electricity relative to natural gas and other fuels.
- In its decision on BC Hydro's Fiscal 2019/2020 and 2020/2021 Revenue Requirements Application, the BCUC noted it shared customer groups' concerns that BC Hydro's current rate design may be out of date and may no longer achieve the objectives that it was meant to achieve.
- As part of the second phase of the Comprehensive Review of BC Hydro (Phase 2), the Ministry of Energy, Mines and Low Carbon Innovation, Ministry of Environment and Climate Change Strategy, BC Hydro, and energy industry experts looked at rate designs that could support GHG emission reductions.
- Phase 2 found the two-tier rate structure made sense when BC Hydro was in deficit and cost of additional electricity supply was much higher than it is today but that stepped rates were now a disincentive to electrify in both the residential and industrial sectors.
- It also noted that optional rates, such as an optional time of use rate, an interruptible rate allowing BC Hydro to manage hot water heating, or a discounted rate for heat pumps, could provide customers with more choice, make electricity more affordable, and reduce emissions.
- Informed by feedback from the Phase 2 Review, and engagement with its customers, BC Hydro applied to apply to the BCUC for an optional time of use rate that would better support CleanBC on March 3, 2023.
- This optional rate would charge a 5 cent per kilowatt-hour premium during evening hours when demand peaks on BC Hydro's system while giving a 5 cent discount overnight.
- This rate design would provide most customers with the opportunity to save if they can shift when they consume electricity, as total residential consumption is similar in the shorter peak demand period to the longer overnight period.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osbourne

- Customers with electric vehicles could an average of roughly \$57 per year by charging their vehicles overnight at the discounted rate, and most customers with electric heat would realize a benefit - roughly \$6 per year for apartments or \$38 per year for single family homes - due to higher heating demand overnight.
- Mandatory time of use rates will not be brought forward.
- In addition to an optional time of use rate for residential customers, BC Hydro applied for a flat transmission rate for its industrial customers on March 16, 2023.
- This rate will more closely align the cost of energy for industrial customers to the marginal cost to BC Hydro of supplying them with energy.
- Impacts on individual industrial customers will range from savings of 8% to increased costs of 11%.
- To minimize the impact on those customers who face bill increases as a result of the change in rate structure, BC Hydro proposes to flatten its industrial rates over three years.
- Just under 2/3 of responses to a survey BC Hydro sent to industrial customers following a series of four consultation workshops 'somewhat' or 'strongly' agreed that BC Hydro's proposed rate struck an appropriate balance.
- BC Hydro plans to engage on potential additional optional rate designs in the coming months.

Impacts of Tiered Rates at Different Household Incomes:

- While energy use is not strongly associated with income in BC, customers with higher energy use pay more under inclining block rates.
- The BCUC's 2017 Residential Inclining Block Rate report (RIB Report) found that most customers paid lower rates under the RCR in every income bracket, although a somewhat higher proportion of households with at least \$80,000 in household income paid higher bills under tiered rates.
- The same report found some correlation between income and electricity consumption across most income groups for BC Hydro.
- BC Hydro customers with household income of less than \$20,000 were likely to have lower than average consumption and households with income of \$120,000 or more were likely to have higher than average consumption; however, some customers in each income bracket consumed in the highest use bands.
- Overall, BC Hydro's input to the RIB Report found that nearly 90% of its low-income customers paid lower bills under the RIB rate, 7% paid higher bills, and 1% had bills more than 10% higher as a result of the RIB rate.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osbourne

- However, the smaller group of BC Hydro customers with low incomes and high energy consumption are particularly impacted by the RIB rate. In BC Hydro's evaluation report for the first year of the Customer Crisis Fund (CCF), submitted to the BCUC in 2019, it noted that the average CCF applicant used over 15,000 kWh per year. For BC Hydro's customers, the average consumption was under 10,000 kWh per year.
- The majority of CCF applicants were among the highest-consumption quartile of BC Hydro customers while only 4% of applicants were among the lowest-quartile.
- When FortisBC applied to the BCUC to flatten its tiered rate structure in 2017, the BC Old Age Pensioners Association and other anti-poverty groups supported the proposal.
- In its decision to phase out FortisBC's tiered rate, the BCUC found that the bill impacts of moving to a flat rate were adequately addressed by FortisBC's proposed five-year transition plan.
- BC Hydro and FortisBC each have energy efficiency programs to help with low-income affordability.
- Both utilities offer free energy savings kits to help low-income homes reduce their energy use, as well as an Energy Conservation Assistance Program to provide advice on saving energy and free installation of energy-saving products.
- BC Hydro's CCF provides grants up to \$600 to qualifying customers experiencing a temporary financial crisis, such as loss of employment or benefit income, unanticipated medical expenses, or a death in the family and who have fallen behind on their BC Hydro bills.

Cross Reference: 9 – Affordability and BC Hydro Rates

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: CleanBC Roadmap to 2030 – Oil and Gas Industry

Drafted: March 10, 2023

Issue: Climate action to reduce emissions from the oil and gas sector.

Response:

- In October 2021, the Province released the CleanBC Roadmap to 2030 – a detailed plan to meet British Columbia's (BC) climate targets and set the province on the path to net-zero emissions by 2050.
- Building on actions already underway through the CleanBC plan, the Roadmap establishes commitments and actions to reduce greenhouse gas (GHG) emissions produced by the oil and gas industry in line with its sectoral target of 33 to 38 percent reductions from 2007 levels by 2030.
- We are driving delivery of our ministry's CleanBC Roadmap to 2030 commitments and actions to ensure we meet our legislated GHG goals.
- To accomplish this, we are working closely with the Ministry of Environment and Climate Change Strategy (ENV) to develop policies and regulations.
- Our new energy action framework announced on March 14, 2023 will put in place a regulatory emissions cap for the oil and gas industry to ensure BC meets its 2030 emissions-reduction target for the sector.
- We will also require all proposed Liquefied Natural Gas (LNG) facilities in or entering the environmental assessment process to have a credible plan to be net zero by 2030.
- We are currently on track to meet and even exceed our 45 percent methane emissions reduction target by 2025 and have established a clear pathway forward to meeting our 2030 and 2035 targets.
- Work is underway to enable additional electrification of upstream oil and gas facilities. The creation of a BC Hydro task force to accelerate the electrification of BC's economy as part of the new energy action framework will further support these efforts.

Background/Status:

- In March 2021, BC became the first province in Canada to set sectoral targets covering emissions across the economy. The oil and gas industry is currently responsible for around 50 percent of industrial emissions and 20 percent of BC's total emissions. The sectoral target for the oil and gas industry aims to reduce emissions 33 percent to 38 percent below 2007 levels by 2030. The CleanBC Roadmap to 2030 committed that the Province would implement policies and programs to ensure the oil and gas sector meets its sectoral targets.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- On March 14, 2023, the Province announced its new energy action framework that will ensure oil and gas sector projects fit within BC's climate commitments. Under the new energy action framework, the Province will:
 - require all proposed LNG facilities in or entering the environmental assessment process to pass an emissions test with a credible plan to be net zero by 2030;
 - put in place a regulatory emissions cap for the oil and gas industry to ensure BC meets its 2030 sectoral target;
 - establish a clean-energy and major projects office to fast-track investment in clean energy; and
 - create a BC Hydro task force to accelerate the electrification of BC's economy.
- Roadmap commitments and actions to support GHG emissions reductions in the oil and gas sector include:
 - Strengthened methane emissions targets of a 75 percent reduction target from 2014 levels by 2030 and near elimination of methane emissions by 2035.
 - Requiring all new, large oil and gas facilities to be net-zero by 2050.
 - Increasing the carbon tax to \$170 per tonne by 2030 and promoting the electrification of upstream oil and gas production.
 - Enabling carbon capture and storage (CCS).
 - Establishing declining carbon intensity thresholds, over time, for hydrogen produced from natural gas.
 - Integrating emissions reductions into the review of the rules for oil and gas royalties to ensure the royalty system will help meet provincial emission reduction targets.
 - Cleaning up 100 percent of current orphan wells in BC before 2030.
- The Ministry of Energy, Mines and Low Carbon Innovation (EMLI) is also engaged with its Government of Canada partners to further support oil and gas GHG and methane emissions reduction policies.

Reduction and Elimination of Methane Emissions:

- An emissions reduction target of 45 percent was established in the province's precursor climate strategy, the CleanBC plan released in 2018. Methane emissions regulation is a key policy instrument for achieving methane emissions reductions. Amendments to the *Oil and Gas Activities Act* (OGAA) Drilling and Production Regulation (DPR), came into force on January 1, 2020.
- In April 2020, BC concluded an equivalency agreement with the federal government, making the federal methane regulations inapplicable in the Province.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- BC is well on track to exceed the 2025 target. The 2020 provincial inventory data indicated methane emissions had declined by 22 percent from 2014 levels.
- The Roadmap commits to a stricter 75 percent emissions reduction target, from 2014 levels, by 2030 and near elimination by 2035. Initial EMLI modelling indicates the 2030 target can be achieved through additional amendments to the DPR. Work is underway to design these regulatory changes with the expectation these will be finalized in early 2024.
- BC is also working with experts, industry, non-profits and environmental groups to make sure we have an accurate picture of methane emissions in the oil and gas sector. In addition to research sponsored under BC's, Methane Emissions Reduction Collaborative, the Province is leading work with academia and the United Nations Environmental Programme to improve quantification of fugitive methane emissions from the oil and gas sector.

Net-Zero Ready Industrial Operations:

- The Roadmap includes a requirement that all new large industrial facilities, including oil and gas facilities, must have a plan to achieve net-zero GHG emissions by 2050. The New Energy Action Framework will require all proposed Liquefied Natural Gas (LNG) facilities in or entering the environmental assessment process to have a credible plan to be net zero by 2030.
- EMLI is presently working with ENV on the policy that will determine the legislation and guidance on net-zero requirements for new large industrial projects. As the lead ministry, it is expected ENV will initiate engagement with Indigenous partners and stakeholders in spring 2023.

Increasing the Carbon Price

- BC's carbon tax will meet or exceed federal carbon price requirements, so that the tax rate will increase each year until it reaches \$170 per tonne by 2030.
- As part of Budget 2023, the Province announced a transition to an output-based carbon pricing system (OBPS) in 2024. This OBPS will ensure significant emissions reductions for industry, including oil and gas, while also providing flexible options to meet their compliance obligations.

Carbon Capture and Storage

- CCS, an important emissions reduction and mitigation strategy for the oil and gas sector, has been advanced through legislative amendments in November 2022, and proposed amendments to storage reservoir regulations for spring 2023. The amendments in OGAA and the *Petroleum and Natural Gas Act*, with the subsequent proposed regulatory changes, work to clarify the license requirements for storage reservoirs and expand rights for the Province to explore for, access, develop and use storage reservoirs.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- BC is supporting research into the geological potential across the province for permanent underground storage. The recently released Northeast BC Geological Carbon Capture and Storage Atlas identifies the most suitable formations and locations for carbon storage in the Northeast.

Cross Reference: 20 – Carbon Capture and Storage

Contact:

Nathaniel Amann-Blake ADM Oil and Gas Division 250 889-1990

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Carbon Capture and Storage

Drafted: March 13, 2023

Issue: Carbon Capture and Storage is advancing as an important greenhouse gas emissions mitigation technique needed to achieve oil and gas sector emission reductions.

Response:

- Our CleanBC: Roadmap to 2030 acknowledges that full decarbonization of British Columbia's (BC) industry will require the use of carbon capture and storage (CCS) and we are advancing a provincial framework to guide its deployment.
- CCS technologies are critical to reduce emissions in hard-to-abate industrial sectors such as the oil and gas sector.
- Oil and gas operators in Northeast BC are some of industries front runners, looking to advance CCS projects in the next few years to reduce their emissions and are paving the way for other industrial sectors.
- CCS can also support the emerging low-carbon hydrogen industry when hydrogen produced from natural gas is combined with CCS.
- Last fall we advanced legislative amendments under Bill 37 that provided needed clarity on the use of storage reservoirs as well as enabling deep underground storage of carbon dioxide from other industrial sources.
- In 2022 we were also able to provide clarity on fiscal measures by successfully working with the federal government to ensure that BC's CCS projects would be eligible for the federal CCS Investment Tax Credit.
- In this process the federal government reviewed and confirmed that BC's regulatory regime for CCS will ensure safe and permanent carbon dioxide storage.
- Through funding under the Roadmap to 2030, BC is supporting important research to assess the geological potential for permanent underground storage in promising regions across the province.
- We are fulfilling our Roadmap commitment to integrate emission reduction goals into our royalty system by developing a new program to be launched this year that will support emission reduction projects such as CCS.

Background/Status:

- The *Petroleum and Natural Gas Act* (PNGA) outlines the tenure process for carbon dioxide storage in BC. The Ministry of Energy, Mines and Low Carbon

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Innovation (EMLI) is currently developing related regulations to provide clarity on requirements for storage reservoir licences, adding greater transparency to the robust review process and opening the tenure process to non-oil and gas sector participants.

- The BC Energy Regulator (BCER) is responsible for permitting storage reservoir activities. Its rigorous requirements for subsurface storage of substances ensure the integrity of the well(s) and the subsurface reservoir in which the carbon dioxide is to be contained. CSA Standard Z741 are used for monitoring and reporting of CCS projects in BC. In addition, BCER requires additional measurement, monitoring, testing and reporting which are specified in the approval process.
- The BCER has provided regulatory oversight for subsurface storage projects since 1996 in the form of acid gas (a mixture of carbon dioxide & hydrogen sulphide) disposal well approvals, collectively storing 2.6 million tonnes of total carbon dioxide via the 16 approved disposal wells.
- EMLI and the BCER have produced new guidance documents to support proponents' ability to acquire tenure and permits for CCS projects.
- In February 2023, Geoscience BC concluded its work on the Northeast BC Geological Carbon Capture and Storage Atlas. The Atlas provides a detailed summary of potential storage reservoirs in Northeast BC, splitting findings between opportunities in deep saline aquifers and depleted pools. The geological assessment received government funding with data provided by the BCER.
- BC worked closely with Environment and Climate Change Canada (ECCC) and Natural Resources Canada in the summer and fall of 2022 on a detailed review of BC's regulatory framework regarding geological sequestration.
- On November 15, 2022, EMLI received a letter from ECCC informing staff that the federal minister approved BC as a prescribed jurisdiction under the proposed federal CCUS ITC concluding that BC's regulatory framework around geological sequestration is sufficient to ensure that carbon dioxide is permanently stored.

Offshore CCS Development:

- BC has jurisdiction over offshore development depending on the location of the activities. Typically, it is those waters between land and very close to shoreline. This includes any inlets and the Strait of Georgia. All other ocean waters that are still within Canada's economic zone are federal jurisdiction.
- Where BC has jurisdiction, its subsurface tenure framework applies. Current Provincial policy is not to proceed with offshore oil and gas exploration or drilling. Commercial offshore storage of carbon dioxide has not been contemplated. There are however academic studies underway looking at potential opportunities

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

for offshore CCS. EMLI staff are following this research to see how it might inform future policy.

CCS in the Lower Mainland:

- Exemptions under the Petroleum and Natural Gas Storage Reservoir Regulation of the PNGA are intended to prevent the granting of exploration and storage reservoir licences in the subsurface area below the Lower Mainland. The exemption was put in place in the 1990's in response to concerns about potential natural gas storage.
- There is no clear understanding of the potential storage opportunity in the region. Multi-year research into the characteristics of the geological storage zones of the Lower Mainland is needed before CCS could be considered.
- EMLI staff are reviewing a Simon Fraser University (SFU) research proposal that would help address the geological storage knowledge gap. Research funding from Roadmap to 2030 is available for geologic assessments. Results from this SFU type of research can help inform future policy for CCS in the lower mainland.
- Metro Vancouver is currently giving consideration to developing CCS projects in the region and is working on a CCS strategy. They are aware of the current regulation that prevents underground storage projects advancing in the Lower Mainland.

Attachment: Appendix 1 – Provincial Funding by Program for CCS projects

Cross Reference: CleanBC Roadmap to 2030 – Oil and Gas

Contact:

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Appendix 1 – Provincial Funding by Program for CCS projects

The following provides a summary of carbon capture and storage (CCS) projects receiving provincial funding support.

Clean Industry Fund

- The Ministry of Environment and Climate Change Strategy (ENV) manages the Clean Industry Fund (CIF).
- CIF received 14 CCS related project applications in 2021 and 2022. Of them, eight received funding – with projects spread between six companies. Funding went to carbon capture systems technologies and feasibility studies for further CCS technologies within specific gas facilities.
- ENV has released publicly information on the five projects approved in 2021. The projects include:
 - 2021 FS - NorthRiver Midstream \$180,000
 - 2021 FS - Tourmaline Oil \$300,000
 - 2021 FS - NorthRiver Midstream \$150,000
 - 2021 FS - Tidewater Midstream \$48,750
 - 2021 FS - Veresen Midstream \$96,000
- The 2022 program results have not been made public yet.

Clean Growth Infrastructure Royalty Program

- The Clean Growth Infrastructure Royalty Program (CGIRP) is a Ministry of Energy, Mines and Low Carbon Innovation (EMLI) program that ran from 2019 - 2022 and will no longer be offered as a result of the royalty review.
- CGIRP received two CCS related project applications in 2022, from two different natural gas producers.
- Both applications were successfully accepted into the program and will receive funding to support a portion of the total costs of capturing emissions from surface infrastructure and sequestering the gas into underground reservoirs.
- Information about these projects has not yet been shared publicly.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Clean Transportation Action Plan

Drafted/Revised: March 13, 2023

Issue: Clean Transportation Action Plan, a commitment under the CleanBC Roadmap to 2030

Response:

- CleanBC's Roadmap to 2030 (Roadmap) committed to developing a Clean Transportation Action Plan (CTAP) to be released by the end of 2023.
- The CTAP is part of a comprehensive approach, as outlined in the Roadmap, to meet British Columbia's (B.C.) transportation sector greenhouse gas (GHG) reduction target of 27-32% below 2007 levels by 2030, and to achieve net-zero GHG emissions by 2050.
- The Province has already taken significant actions to reduce transportation GHG emissions, including through programs, policies and regulations that support active transportation, zero-emission vehicles (ZEV), and clean fuel adoption. Examples include: the suite of Go Electric programs, the *Zero Emission Vehicles Act*, and the Low Carbon Fuel Standard (LCFS).
- Building off existing work, and other ongoing Provincial transportation work, the purpose of the CTAP is to identify the next set of concrete actions across five foundational areas – reducing vehicle kilometres travelled (VKT); mode shift to efficient modes; increasing vehicle efficiency; switching to ZEVs; and using clean fuels.
- Decarbonizing and increasing energy efficiency in B.C.'s transportation sector helps in achieving Government priorities such as supporting clean jobs and increased affordability, all while stimulating province-wide economic activity.

Background:

- The Ministry plays a leading role in developing policies, programs and standards that improve the energy efficiency and reduce GHG emissions in the transportation sector.
- B.C.'s transportation sector accounts for approximately 39% of provincial GHG emissions: approximately 14% from light-duty vehicles, 14% from medium- and heavy-duty vehicles, and 11% from marine vessels, rail, aircraft, off-road equipment.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- In 2019, transportation emissions had risen 22% in B.C. since 2007, largely due to increasing emissions from heavy-duty vehicles, rising vehicle populations, and increasing fuel consumption.
- CleanBC and the recently released CleanBC Roadmap to 2030 (Roadmap), identify additional transportation targets including:
 - ZEV targets:
 - accelerated *Zero Emission Vehicle Act* targets - 26% of new light-duty vehicles by 2026, 90% by 2030, 100% by 2035; and
 - new ZEV targets for medium- and heavy-duty vehicles aligned with California or leading jurisdictions.
 - VKT reduction targets: reduce light-duty VKT by 25% by 2030, compared to 2020.
 - Mode share targets: increase share of trips (e.g., commuting for work and personal activities) made by walking, cycling, transit to 30% by 2030, 40% by 2040, and 50% by 2050.
 - Energy intensity targets for personal and commercial transportation: reduce the energy intensity of goods movement (tonne-kilometres) by at least 10% by 2030, 30% by 2040, and 50% by 2050, relative to 2020.
- The CTAP will take a long-term view to realize the GHG benefits of all potential actions, such as compact, complete communities that take longer to yield results but provide significant benefits.
- To achieve the 2030 and 2050 targets, CTAP policies will need to be stringent and effective enough to change behavior in all travel modes.
- The CTAP is being developed by the Ministry of Energy, Mines, and Low Carbon Innovation, the Ministry Environment, and the Ministry of Transportation and Infrastructure.
- Ongoing engagement with Indigenous Nations on CTAP started in Summer 2022. Engagement with local governments started in Fall 2022. A consultation paper was issued to technical stakeholders in February 2023, with responses due in April 2023. The CTAP is anticipated to be released by the end of 2023.

Cross Reference:

01 - CleanBC Go Electric Programs

02 - Zero-Emission Vehicles Act & Regulation

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Evolving the Role of the British Columbia Utilities Commission (BCUC)

Drafted/Revised: March 22, 2023

Issue: Adapting the role of the BCUC to support BC's clean energy transition, in alignment with BC's climate goals and affordability objectives.

Response:

- In the same way we are taking active steps to align BC's energy system with our climate targets and other key priorities, we are committed to re-examining the role of the BC Utilities Commission.
- The BCUC has served British Columbians admirably to date as the economic regulator of public energy utilities, most of whom operate as natural monopolies.
- As we move forward, we will be working closely with the BCUC and others to determine how its powers and mandate can be adapted to better enable it to incorporate new responsibilities. For example, this could include overseeing the implementation of a cap on emissions for natural gas utility for buildings and industry customers under the Greenhouse Gas Reduction Standard.

Background/Status:

- As an economic regulator, the BCUC primarily considers cost implications to public utility ratepayers when assessing utility applications. In the absence of policy direction from Government, the BCUC is limited in its ability to consider other objectives such as climate targets and affordability within rate classes (e.g., setting different rates for lower and higher-income residential customers of a utility).
- Achieving BC's greenhouse gas (GHG reduction) targets will require a fundamental restructuring of BC's energy system, including a re-think of the roles of electricity, gas, and other public utilities.
- This includes opportunities to leverage utility spending, and utilities' close relationship with their customers, to implement GHG reduction initiatives and influence customer behaviour.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Currently, it is often difficult for utilities to obtain the approval of the BCUC for these kinds of initiatives within BC's current public regulatory framework.
- Government does have the ability to provide policy direction to the BCUC by using its powers under the *Utilities Commission Act* to direct certain outcomes, for example, directing the BCUC to set a BC Hydro electrification rate. Also, under the *Clean Energy Act*, the Greenhouse Gas Reduction Regulation provides a framework for utility projects to proceed in support of greenhouse gas reductions.
- However, moving forward, a re-examination of the role of the BCUC is required to ensure public utilities can play a key role in advancing climate action, while also mitigating costs for utility customers and maintaining reliable access to energy, including during peak periods of consumption.
- The Minister's Mandate letter includes a deliverable to "Work with the BC Utilities Commission in supporting BC's clean energy transition, in alignment with our province's climate goals to achieve net zero by 2050, and affordability objectives.
- The Climate Solutions Council (CSC) supports this deliverable. In its 2022 report, it raised concerns about the capacity of the BCUC to consider climate-related initiatives such as the Greenhouse Gas Reduction Standard within the BCUC's present mandate. CSC recommends Government consider a fundamental transformation of the BCUC to align decision-making with decarbonizing the energy system.
- The reframing of the BCUC role will be informed by the direction set under the Climate Aligned Energy Framework (the Framework).
- As part of development of the Framework, the Ministry will continue to work with the BCUC to identify potential new responsibilities that would support timely decision-making and greater consideration of Government policy objectives in the Commission's regulation of public utilities.

Cross Reference: # 22 Decarbonising BC's Gas Grid (GGRR,
GHG Reduction Standard)

25 Climate Aligned Energy Framework

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Healing the land and emissions reduction

Drafted/Revised: March 13, 2023

Issue: Transitioning a major fossil fuel incentive to land restoration and emissions reduction

Response:

- In May 2022 the Province announced a new oil and gas royalty system that eliminates fossil fuel incentive programs, including the deep well royalty program, the largest such program.
- Under the royalty new system, existing deep well deductions, totaling approximately \$2.5 billion will expire in four years unless transferred to a new environmentally focused land healing and emissions reductions program.
- Under the new Healing the Land and Emissions Reduction program, companies may use transferred deep well deductions to land healing and emission-reduction work, but only if it is beyond regulatory requirements.
- The new program is based on consultations with industry, environmental groups and First Nations and is expected to be established in late Spring 2023.

Background/Status:

- The Deep Well Royalty Program was created in 2003 and was initially intended to offset higher drilling and completion costs incurred by wells considered particularly deep. The reduction program is sometimes viewed as a fossil fuel subsidy.
- Significant changes in the last three decades in market conditions, drilling technology and costs, and global concerns on the need to address climate change made continuation of the Deep Well Royalty Program inconsistent with a fair return on oil and gas resources and BC climate action objectives.
- Since the creation of the Deep Well Royalty Program, accumulation of deductions by oil and gas producers has outpaced spending of deductions, creating a total balance of approximately \$2.5 billion.
- On Oct. 7, 2021, the Ministry of Energy, Mines and Low Carbon Innovation (EMLI) launched a comprehensive review of B.C.'s decades-old oil and gas royalty system to ensure it would be modernized, aligned with the government's climate goals and provides a fair return for British Columbians.
- On May 19, 2022, the Province announced a new oil and gas royalty system that eliminated several royalty incentive programs identified as inefficient and

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

provides a bridge towards re-purposing existing unused deep well royalty credits held by industry to land restoration and emissions reductions initiatives.

Repurposing Deep Well Deductions

- Before Sept. 1, 2026 oil and gas producers with deep well deduction balances have the option of either continuing to apply deep well deductions against royalty payable or transfer to the new Healing the Land and Emissions Reduction (HLER) program.
- After September 1, 2026 any deep well deduction balances that were unspent or not transferred to the HLER program expire.
- The HLER program will support work above and beyond regulatory requirements to reduce emissions or cumulative impacts on the land base.
- Based on consultations with industry, environmental groups and First Nations, the HLER program is anticipated to allow for the following types of expenditures by oil and gas producers:
 - Contributions to the Indigenous-led restoration funds being established in Northeast BC;
 - Projects affixing emissions monitoring and reduction technologies on well sites;
 - Projects planting vegetation at reclaimed well sites over and above regulation;
 - Projects electrifying oil and gas production facilities;
 - Carbon capture and storage projects.
- As contributions to restoration funds or HLER projects are completed by oil and gas producers, the producers will receive a reduction in royalties payable equal to the HLER project cost.
- Amendments to the Petroleum and Natural Gas Royalty and Freehold Production Tax Regulation are required to enable the creation of the HLER Program and to create a mechanism to move existing deep-well deductions to the HLER program. These amendments are expected to be complete in Spring 2023 and the HLER program begin shortly thereafter.

Attachment: Appendix 1 - Estimated Deep Well Account Balances for Specified Operators

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Contact:

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Page 456 of 475

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Page 457 of 475

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Critical Minerals

Drafted/Revised: March 17, 2023

Issue: Efforts to advance critical minerals priorities for BC

Response:

- Critical minerals are metals and non-metals that are considered essential to the economy and whose supply may be at risk due to geological scarcity, geopolitical issues, trade policy or other factors.
- British Columbia (BC) contributes to Canada's critical minerals supply chain as the largest producer of copper and only producer of molybdenum.
- BC has potential to produce other critical minerals, but further geoscience work is required to better understand this opportunity.
- In December 2022, the Minister of Energy, Mines and Low Carbon Innovation's mandate letter contained direction to "*expedite a provincial critical minerals strategy that positions British Columbia to take advantage of the emerging clean global economy.*"
- Budget 2023 provides \$6 million over three years to develop a BC Critical Minerals Strategy. The strategy aims to drive potential future clean economic development through increased access to geoscience to facilitate critical mineral exploration, and assess potential for critical minerals processing and manufacturing.

Background/Status:

- Demand for critical minerals is projected to rapidly increase to meet increased demand for green technologies and infrastructure. For example, demand for nickel, copper, and cobalt to produce electric vehicle batteries is expected to increase by 14x, 10x and 3x, respectively, by 2030, according to BloombergNEF.
- In March 2021, Canada published a Critical Minerals list identifying minerals of key national importance. The list includes 31 minerals considered critical to economic success to Canada and key trading partners.
- BC provided input on the development of the federal list and is participating in federal/provincial/territorial tables to advance critical minerals development in Canada.
- Canada announced \$3.8 billion over eight years (commencing in 2022-23) in Budget 2022 to implement Canada's first Critical Minerals Strategy to capitalize on the growing need for these minerals. The Strategy was launched in December 2022.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- In March 2023, the Canadian Government announced over \$344 million in funding under the Canadian Critical Minerals Strategy for five new programs and initiatives including a Critical Minerals Technology and Innovation Program, Critical Minerals Geoscience and Data Initiative, Global Partnerships Program, Northern Regulatory Initiative, and the renewal of the Critical Minerals Centre of Excellence.
- The United States, United Kingdom, and some provincial governments (Saskatchewan, Quebec, Ontario, Alberta) have invested significant resources in plans to capitalize on the growing demand for critical minerals and to ensure strong, reliable supply chains. Other jurisdictions are actively developing strategies.
- BC has substantial potential to produce additional critical minerals and to develop a full critical minerals value chain, including development of greater refining, smelting, manufacturing, and recycling capacity.
- Budget 2023 provides \$6 million over three years to develop a BC Critical Minerals Strategy. The strategy aims to drive potential future clean economic development through increased access to geoscience to facilitate critical mineral exploration and assess potential for critical minerals processing and manufacturing.
- The Ministry is taking a data-driven, collaborative approach to developing the BC Critical Minerals Strategy. The \$6M funding for strategy development will be directed to support:
 - Geoscience inventory and analysis work, and Indigenous-focused geoscience outreach,
 - Economic analysis of BC's critical mineral development and value chain potential,
 - Engagement with First Nations and stakeholders including industry, academia, and others through initiation of an Advisory Committee to help shape the Strategy, and
 - Further engagement with Indigenous communities and organizations, consistent with the *Declaration Act*.
- The Ministry sees the BC Critical Minerals Strategy as complementary to the federal strategy while advancing provincial interests. BC is engaging with federal counterparts to explore opportunities for collaboration on critical minerals initiatives, including funding for Indigenous engagement, geological assessments and downstream/manufacturing/recycling related activities.
- Critical minerals are a key area of focus for the recently initiated Regional Energy and Resources Table (RERT) between BC and Canada to seize on economic opportunities enabled by the global low-carbon transition.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- RERT is the probable avenue for BC to access a portion of the \$3.8 billion in federal funds earmarked for critical minerals in Canada.

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Mineral Tenure Act (MTA) Modernization

Drafted/Revised: March 10, 2022

Issue: Modernizing the MTA in consultation and collaboration with First Nations and First Nation organizations

Response:

- Modernizing BC's mineral tenure system, including the Mineral Tenure Act (MTA), is a longstanding priority for First Nations and First Nations organizations.
- The Ministry of Energy, Mines, and Low Carbon Innovation (EMLI) committed to modernizing the MTA under the Declaration Act Action Plan.
- EMLI is working with First Nations and First Nation organizations to develop a path forward on consultation and cooperation.
- Multiple stages of engagement are anticipated – and all First Nations will have multiple opportunities for direct and meaningful involvement.
- The MTA is complex – and deep consultation will require significant time and resources.
- There will be a parallel engagement process with industry, labour, and other partners.
- This will be challenging work – but by working closely with First Nations and First Nation organizations, industry, and communities, we can modernize the MTA while maintaining a strong, sustainable mineral exploration and mining sector that continues to contribute to reconciliation and economic prosperity.
- Gitxaala and Ehattesaht First Nations have both launched parallel legal challenges in BC Supreme Court, challenging parts of the current mineral tenure system. The Province cannot comment on matters before the Courts.

Background/Status:

- The MTA sets out BC's laws for registering and maintaining mineral tenure – which determines where people can explore for, develop, and produce minerals.
- Currently, BC's mineral tenure system does not require consultation with First Nations before mineral claims are registered.
- Previous MTA engagement in 2018-9 with First Nations, industry and partners indicates complex and diverse interests surrounding the MTA, particularly between First Nations' modernization priorities and industry's views on maintaining competitiveness.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- Previous engagement around MTA modernization paused in 2019 to accommodate collaborative work on the Declaration on the Rights of Indigenous Peoples Act (Declaration Act) and its implementation.
- In March 2022, a public-facing commitment to modernize the MTA in consultation and cooperation with First Nations and First Nations organizations was added to BC's Declaration Act Action Plan.
- EMLI is in discussions with the First Nations Leadership Council, the Declaration Act Secretariat (DAS), and First Nations to develop an initial consultation and cooperation approach. All First Nations will have the opportunity to provide input on the consultation and cooperation approach.
- The MTA modernization process will align with the DAS's guidance on implementing the Declaration Act and will include multiple stages of outreach to all First Nations, modern treaty First Nations, First Nations organizations, and other Indigenous representative groups.
- First Nations will expect MTA modernization to prioritize alignment with United Nations Declaration on the Rights of Indigenous Peoples (UN Declaration), particularly around First Nations' role in decision-making around tenures (e.g., consent, shared decision-making).
- Gitxaala and Ehattesaht First Nations have both filed petitions in BC Supreme Court, challenging elements of BC's mineral tenure system. The petitions are scheduled to be heard together in April 2023.
- The petitions include claims that (1) the Province has a constitutional duty to consult with First Nations before granting mineral claims on land subject to rights and title claims; (2) parts of the mineral tenure system conflict with the Declaration Act and the UN Declaration.
- The potential scope of MTA modernization is expected to include ideas from previous MTA engagement in 2018-9, the Gitxaala and Ehattesaht cases, the Declaration Act, the First Nations Energy and Mining Council's "Indigenous Sovereignty: Consent for Mining on Indigenous Lands" report, and recent legislative reforms by other natural resource sectors.

Cross Reference: Yellow Giant Mine (Banks Island)

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Royalty Review – programs, outcomes, and next steps

Drafted/Revised: March 13, 2023

Issue: Update on implementation of the new royalty framework

Response:

- A comprehensive review of B.C.'s legacy oil and natural gas royalty system was launched in October 2021, the first such review in almost 30 years.
- The new royalty framework announced in May 2022 eliminated several royalty incentive programs identified as inefficient and provided the parameters of a new revenue-minus-cost royalty system.
- A transition period leading up to the new royalty system began on September 1, 2022 and will end when the new system is implemented September 2024.
- Remaining implementation steps include re-purposing existing unused deep well royalty credits held by industry to land restoration and emissions reductions initiatives and establish the revenue-minus-cost system.

Background/Status:

- When oil and natural gas resources are produced in B.C., the Province charges producers either a royalty or a freehold production tax (collectively called the royalty system) on behalf of British Columbians.
- The Ministry of Energy Mines and Low Carbon Innovation (EMLI) has responsibility for royalty system policy while the Ministry of Finance (FIN) administers the collection of revenues under the royalty system.
- A comprehensive review of B.C.'s legacy oil and natural gas royalty system was launched by EMLI in October 2021, the first such review in almost three decades.
- An independent assessment of the legacy oil and natural gas royalty framework concluded that the entire royalty framework should be reformed to address a myriad of issues within the current system including incentive programs that no longer functioned as intended and have become economically inefficient.
- On May 19, 2022, the Province announced a new oil and gas royalty system that eliminated several royalty incentive programs identified as inefficient and provides a bridge towards re-purposing existing unused deep well royalty credits held by industry to land restoration and emissions reductions initiatives as well as to a new revenue-minus-cost (RMC) royalty system.
- The framework established a transition period leading up to the launch of the new system on September 1, 2024.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Royalty transition period underway

- Effective Sept. 1, 2022, new wells (i.e., those that begin drilling on or after that date) are not eligible to qualify for the old deep-well royalty program, the Marginal Well Royalty program, the Ultra marginal Royalty program, the Low Productivity Royalty program, or the Clean Growth Infrastructure Royalty programs.
- Wells drilled beginning Sept. 1, 2022, will pay a 5% royalty rate for the equivalent of the first 12 production months (8,760 production hours of production). At the end of this period, these wells will pay the prevailing price-sensitive royalty rates.
- Older wells (wells that begin drilling before Sept. 1, 2022) continue pay royalties based on the legacy royalty framework until Sept. 1, 2024.
- Effective Sept. 1, 2024, these wells will transition to the rules of the new royalty framework. After this date, these wells will not be eligible for rate reductions under the Marginal Well Royalty program, the Ultra marginal Royalty program, the Low Productivity Royalty program, or the Clean Growth Infrastructure Royalty programs.

Implementing the new royalty system

- Producers will have the option to transfer unused deep-well deductions to the Healing the Land and Emissions Reduction (HLER) program before September 1, 2026. The HLER program will support work above and beyond regulatory requirements to reduce emissions or cumulative impacts on the land base.
- Amendments to the Petroleum and Natural Gas Royalty and Freehold Production Tax Regulation are required to enable the creation of the HLER Program and to create a mechanism to move existing deep-well deductions to the HLER program. These amendments are expected to be complete in Spring 2023 and the HLER program begin shortly thereafter.
- The new framework is based on the RMC that uses price-sensitive royalty rates designed to achieve a return of approximately 50% of profits on the public resource. The Petroleum and Natural Gas Royalty and Freehold Production Tax Regulation requires an extensive set of amendments to establish the RMC, which is expected to be completed in late Spring 2023.
- EMLI and FIN are actively working to make the administrative changes and information technology enhancements necessary to ensure that the RMC and HLER program function properly.

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Title: CleanBC Go Electric Program

Drafted: March 15, 2023

Issue: Investments to stimulate increased uptake of zero-emission vehicles (ZEVs), and further economic development in the ZEV sector in British Columbia

Response:

- British Columbia (B.C.) is a leader in clean transportation, with the second highest zero-emission vehicle (ZEV) adoption rate in North America in 2022 (18.1% of new light-duty vehicle sales in B.C. compared to 18.8% in California), one of the largest public charging networks in Canada, the largest public hydrogen fuelling network in Canada, a world-leading hydrogen and fuel cell industry, and a ZEV maintenance training program offered at four post-secondary institutions.
- The CleanBC Go Electric Program has been highly successful in: reducing market barriers; encouraging the adoption of ZEVs by British Columbians; leveraging private, municipal, and federal investment in ZEVs and infrastructure in B.C.; and supporting new economic opportunities in the ZEV sector.
- The CleanBC Go Electric Program provides rebates for zero-emission light-duty vehicles, medium- and heavy-duty trucks and buses, marine vessels, and airport and port ground equipment, and makes investments in infrastructure, training, public outreach, and economic development.
- Budget 2023 includes an additional \$40 million for the Go Electric Commercial Vehicle Pilots Program.
- In 2023, the CleanBC Go Electric Passenger Vehicle Rebate program is transitioning its funding source to revenues from BC Hydro's sales of credits obtained through the Low Carbon Fuel Standard.
- In August 2022, the CleanBC Go Electric Passenger Vehicle Rebate program implemented income testing to improve ZEV affordability and accessibility for low- and middle-income customers.
- In May 2019, the Province passed the *Zero-Emission Vehicles Act* (ZEV Act) which requires automakers to meet ZEV sales targets reaching 10% of new light duty vehicle sales by 2025, 30% by 2030, and 100% by 2040. The CleanBC Roadmap to 2030 accelerated the ZEV sales targets to 26% by 2026, 90% by 2030 and 100% by 2035, and announced the introduction of new ZEV targets for medium- and heavy-duty vehicles. The purpose of the ZEV Act is to ensure increased ZEV availability and choice at more affordable prices in B.C.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Background/Status:

- In 2011, B.C. introduced ZEV programming, currently called the CleanBC Go Electric Program (the Program). Including Budget 2023, and fiscal year-end funding in Fiscal 2023, more than \$515 million has been committed to make ZEVs more affordable and reduce greenhouse gas emissions.
- A total of \$45.7 million was approved for 2022-2023 fiscal year-end funding, which includes \$26 million for the Public Charging program, \$19.5 million for Medium and Heavy-Duty Infrastructure program, and \$0.2 million for First Nations low-carbon transportation planning. Budget 2023 approved a further \$40 million for the Commercial Vehicle Pilots Program.
- As of December 31, 2022, the Program has led to:
 - almost 110,000 new light-duty ZEVs on the road;
 - over 1,000 ZEVs in commercial applications, such as forklifts, medium/heavy duty vehicles, cargo e-bikes and port and airport ground equipment;
 - over 70 early-market commercial medium/heavy-duty ZEVs for diverse on-road and off-road applications, as well as 60 commercial vehicle charging points;
 - over 70 electric school buses;
 - over 3,000 public Level 2 charging stations, and 854 fast-charging stations across 277 locations;
 - a network of four public hydrogen fueling stations in Metro Vancouver and Greater Victoria, with two more planned to be operational by the end of 2023, the majority of which are at existing gas stations;
 - automotive technician training at four B.C. technical institutions, electrician training, and eleven research and academic projects;
 - an economic development program for B.C.'s ZEV sector supporting 21 ZEV projects leading to approximately 180 additional full-time equivalent jobs; and
 - a multi-faceted outreach and awareness program called Emotive, including include community awareness and planning funding.
- There are multiple Program streams:
 - The income-tested passenger vehicle rebate provides up to \$4,000 for small light-duty ZEVs priced below \$55,000, or for larger light-duty ZEVs priced below \$70,000, including minivans, sport utility vehicles, and pickup trucks. The rebate may be combined with federal rebates, for a total rebate of up to \$9,000 per ZEV.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

- Home and workplace charger rebates, which provide up to \$350 for charging stations in homes, and up to \$2,000 for charging stations and free EV advisor services in apartments, condos and workplaces. Rebates up to \$3,000 are available to complete an EV Ready Plan for condominiums and apartments and up to \$600/parking stall for electrical infrastructure upgrades (maximum of \$120,000 per complex). Increased rebates are available for Indigenous communities and businesses.
- Public infrastructure funding, which provides up to 50% funding for public fast charging stations (up to \$80,000). Increased rebates of up to 90% of project costs (to a maximum of \$130,000) per station are available for Indigenous-owned DCFC stations.
- Hydrogen fuelling infrastructure funding, which provides funding for public hydrogen fuelling stations. Through the 2021 RFP, five stations received capital funding of \$850,000 per station and an additional \$100,000 to support operations and maintenance.
- Commercial Vehicle Pilots Program, which provides funding for vehicles, infrastructure, and data analysis to support zero-emission technologies. The fourth funding call is open and accepting applications until March 31, 2023. The first two funding calls allocated funding to 22 projects.
- Supporting a pilot program with the Vancouver Fraser Port Authority that is expected to support the deployment of twelve low and zero-emission drayage trucks, a biofuel-based switch locomotive, and a biofuel-based harbour patrol vessel.
- Specialty Use Vehicle Incentive program which provides a rebate up to 33% for e-cargo bikes, electric motorcycles, low-speed vehicles, medium/heavy-duty vehicles, airport and port vehicles, and utility vehicles. Medium/-heavy-duty rebates may be combined with federal rebates, for total rebates of up to \$300,000.
- Fleets program which provides funding for ZEV fleet and infrastructure assessments, electrical upgrades, installations of charging stations, and advising services.
- School Bus program which provides public, private, and Indigenous schools with funding for ZEV buses and charging stations.
- “Emotive”, the province-wide ZEV public outreach program developed and delivered under partnerships with local governments and community organizations, including Indigenous communities.
- Funding to upgrade electrician and automotive technician training to incorporate charging infrastructure and ZEVs.

2023/24 Estimates Note

Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

- The Advanced Research and Commercialization program which supports projects that create jobs and lead to economic growth in the ZEV industry sector in B.C. A new Commercial Vehicle Innovation Challenge is expected to launch shortly to help attract international investment to B.C. companies and address the current technology gap in the hard-to-decarbonize commercial vehicle sector.
- CleanBC Go Electric Programs support growth of B.C.'s ZEV sector, which has over 270 companies and organizations involved in all aspects of the supply chain employing more than 11,000 jobs, producing \$2.1 billion in total economic output and contributing \$1.15 billion to the provincial gross domestic product.

Cross Reference:

Zero Emission Vehicles Act

Low Carbon Fuel Standard

Clean Transportation Action Plan

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Title: Zero-Emission Vehicles Act / Regulation

Drafted/Revised: March 10, 2023

Issue: The *Zero-Emission Vehicles Act* / Regulation (ZEV Act) requires automakers to increase their supply of zero-emission vehicles (ZEVs) to British Columbia (BC)

Response:

- BC's ZEV Act delivers on the Province's CleanBC plan commitment to make ZEVs more affordable and accessible to British Columbians.
- The ZEV Act requires automakers to meet an escalating annual percentage of new light-duty ZEV sales, reaching 10% by 2025, 30% by 2030, and 100% by 2040, which will ensure greater supply and availability of ZEVs.
- The CleanBC Roadmap to 2030, released in 2021, included commitments to increase the ZEV Act targets to 26% of light-duty vehicle sales to be ZEV by 2026, 90% by 2030, and 100% by 2035, and to implement medium- and heavy-duty regulations.
- The ZEV Act provides flexible pathways (through sales, trading of compliance units, initiative agreements for sales of used and medium/heavy duty ZEVs, or purchase agreements), for suppliers to achieve compliance while ensuring that the Province meets its ZEV and GHG targets.
- The Ministry of Energy, Mines and Low Carbon Innovation (Ministry) has developed an online ZEV Reporting System which regulated parties use to demonstrate their compliance with the ZEV Act. Eighteen automakers are actively using the system and have been submitting annual compliance reports since October 2021.
- BC joined Quebec and 14 US states in having a ZEV standard, as well more than 20 countries worldwide who have now either announced a future ban on the sale of new gasoline and diesel cars or targeted 100% of vehicle sales to be ZEVs.
- The ZEV Act is part of a coordinated, and expanding, program of activities under the Province's highly successful CleanBC Go Electric Program that aims to: reduce market barriers; encourage the adoption of ZEVs by British Columbians; leverage private, municipal and federal investment in ZEVs and infrastructure in BC; and support new ZEV sector economic opportunities.
- Budget 2023 includes an additional \$600,000, for total annual funding of \$1,320,000 to enable development, deployment and sustainment of online regulatory reporting tools for both the ZEV Act and Low Carbon Fuel Standard.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Honourable Josie Osborne

Background/Status:

- The ZEV Act passed on May 30, 2019, and the ZEV Regulation on July 30, 2020, to ensure that more ZEVs are available for purchase in BC.
- The ZEV Act was informed by engagement and consultation with the auto industry, local governments, and environmental non-governmental organizations (ENGOS).
- In the Roadmap to 2030, Government announced that the light-duty ZEV targets will be increased, and targets will be developed for medium- and heavy-duty vehicles.
- The ZEV Act sets phased-in annual targets and other compliance requirements, ensuring automakers increase ZEV availability to meet demand.
- Technical reviews of the ZEV Act are held at regular intervals to review market trends, receive input from stakeholders, and allow for any necessary adjustments.
- In July 2022, as part of the first formal review of the ZEV Act, the Ministry released an Intentions Paper on its proposed amendments to the Act and Regulations to stakeholders, including vehicle suppliers, ENGO's, local governments, and other relevant industry stakeholders. The feedback received from stakeholders informed the forthcoming proposed amendments to the Act and Regulations.
- A ZEV Advisory Council is being established to provide input into the Ministry's ZEV programming and policies including the ZEV Act. The ZEV Advisory Council will be comprised of industry, ENGOS, local governments, Indigenous organizations, infrastructure providers, and academics.
- In 2022, BC had the highest uptake of ZEVs in Canada and the second highest in North America. New ZEV sales averaged 18.1% of light-duty vehicle sales over the year.
- In 2022, the Government of Canada announced a mandatory target for all new light-duty cars and passenger trucks sales to be zero-emission by 2035. The mandate includes interim targets of at least 20% by 2026 and at least 60% by 2030, and assumes that B.C. will implement its Roadmap ZEV commitments. BC's ZEV Act was the first in the world to include a 100% ZEV target.

Cross Reference: 01 - CleanBC Go Electric Programs
05 - Clean Transportation Action Plan

Contact:

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2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Title: Centre for Innovation and Clean Energy

Drafted/Revised: March 10, 2023

Issue: Support for innovation and commercialization of clean energy projects to meet CleanBC targets and B.C. Hydrogen Strategy policy actions.

Response:

- In September 2021, as part of StrongerBC, the British Columbia (B.C) Centre for Innovation and Clean Energy (CICE) was announced and became operational on October 25, 2021.
- CICE establishment and operations were funded by \$35 million from B.C., \$35 million from Natural Resources Canada, and \$35 million from Shell Canada, for a total of \$105 million.
- CICE's focus is on initiating new technology to accelerate the path to net-zero emissions by 2050.
- In February 2022, the CICE and the Ministry of Energy, Mines and Low Carbon Innovation (EMLI) established a five-year Trusted Partnership and Shared Cost Arrangement to collaborate on the implementation of the B.C. Hydrogen Strategy.
- As part of the Hydrogen Strategy implementation, EMLI transferred \$998,000 during the fiscal year 2021/22 to CICE to complete four studies on EMLI's behalf:
 1. Northeast B.C. Carbon Capture and Storage (CCS) Atlas
 2. Carbon Intensity of Hydrogen Production Methods Study
 3. BC Hydrogen Regulatory Mapping Study
 4. Metro Vancouver Hydrogen Hub Study

Background:

Centre for Innovation and Clean Energy Activities - 2021/22:

- CICE is a member-based, non-profit corporation designed to support the development and global scaling of B.C.-based energy technologies, including hydrogen, with the primary focus on commercialization.

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

- CICE provides early-stage opportunities in the following areas prioritized for funding and project delivery; the production, use, and distribution of low carbon hydrogen, carbon capture, utilization, and storage (CCUS); biofuels and synthetic fuels (including marine and aviation fuels); renewable natural gas; and battery technology, storage, and energy management systems.
- CICE intends to attract a wide range of companies and partners that share a common focus on low-carbon innovation and scaling up B.C.-based clean-energy technology.
- CICE's mandate is aligned with the B.C. Hydrogen Strategy and the CleanBC Roadmap to 2030 objectives to build B.C.'s low carbon economy.
- To achieve four objectives as part of the initial Strategy implementation, EMLI's financial contribution supported the development of the following four studies:
 - **Carbon Intensity of Hydrogen Production Methods Study:** The study identifies, models, and establishes carbon intensity thresholds for different hydrogen production pathways to help inform decisionmakers on the role of hydrogen in decarbonization.
 - **BC Hydrogen Regulatory Mapping Study:** The study reviews provincial, federal, and international codes, standards, and regulations, and identifies current regulatory gaps that could be addressed when considering hydrogen production, distribution, and storage.
 - **Northeast B.C. Carbon Capture and Storage (CCS) Atlas:** this study identified the significant carbon sequestration potential in northeast B.C. in saline aquifer sites and depleted or nearly-depleted natural gas pools potentially suitable for CCS.
 - **Metro Vancouver Hydrogen Hub Study:** The study analyses the potential demand and supply opportunities for hydrogen in the Metro Vancouver region, within the context of the broader economy of B.C.
- The Northeast B.C. Carbon Capture and Storage (CCS) Atlas was public released in January 2023, and the Carbon Intensity of Hydrogen Production Methods Study and the BC Hydrogen Regulatory Mapping Study will be public released in April 2023.
- EMLI and CICE will continue to collaborate on joint priorities identified in the Trusted Partnership Agreement in support of achieving objectives in the B.C. Hydrogen Strategy and the CleanBC Roadmap to 2030.

Cross Reference: 20 - CleanBC
22 - BC Hydrogen Strategy

2023/24 Estimates Note Advice to the Minister

Ministry: Ministry of Energy, Mines and Low Carbon Innovation
Minister Responsible: Josie Osborne

Contact:

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TABLE 1: Ministry of Energy, Mines and Low Carbon Innovation

KEY STATISTICS

09-Mar-23

Oil and Gas Activity	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total Employment*	33,525	28,895	38,835	34,665	51,750	49,765	54,525	N/A	N/A
Extraction*	1,420	1,435	1,385	1,455	1,680	1,430	1,695	N/A	N/A
Support Activities for Extraction*	2,935	2,510	2,670	2,760	2,810	2,260	2,590	N/A	N/A
Engineering and Construction*	25,670	21,475	31,325	27,080	44,150	43,235	47,225	N/A	N/A
Transportation and Distribution*	3,500	3,475	3,455	3,370	3,110	2,840	3,015	N/A	N/A
Source: Statistics Canada Labour statistics consistent with the System of National Accounts (https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=3610048901)									
GDP at basic prices (millions) - Oil and Gas*	7,264	6,969	8,307	8,980	9,982	10,976	12,326	N/A	N/A
Percent of Total GDP*	3.2%	3.0%	3.5%	3.6%	3.9%	4.4%	4.7%	N/A	N/A
Source: Statistics Canada GDP at basic prices, by industry, provinces and territories (https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=3610040201)									
Production of Natural Gas (million cubic meters)*	48,106	50,131	50,511	57,881	57,683	60,282	64,227	72,087	N/A
Production of Natural Gas (billion cubic feet per day) *	4.65	4.85	4.89	5.60	5.58	5.83	6.21	6.97	N/A
Source: BCER 2021 Oil and Gas Reserves and Production Report / 2022 data Statistics Canada Supply and Disposition of Natural Gas, monthly									
Total Emissions (millions tonnes co2e)*	13.71	13.55	13.52	13.52	12.74	12.79	N/A	N/A	N/A
Oil and Gas Extraction*	6.79	7.21	7.38	7.45	6.66	6.91	N/A	N/A	N/A
Pipeline Transport*	1.60	1.70	1.75	1.66	1.70	1.63	N/A	N/A	N/A
Oil and Natural Gas Fugitive*	4.73	3.94	3.80	3.93	3.86	3.78	N/A	N/A	N/A
Petroleum Refining*	0.60	0.70	0.58	0.48	0.52	0.46	N/A	N/A	N/A
*Source: Provincial Inventory									
	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
							Actual	Forecast	Forecast
Royalties (millions)	\$ 192.33	\$ 220.04	\$ 222.68	\$ 259.11	\$ 158.10	\$ 215.47	\$ 952.01	\$ 2,206.00	\$ 2,016.00
Source: Ministry of Finance									
Mining		2016	2017	2018	2019	2020	2021	2022	2023
							Actual	Forecast	Forecast
Exploration Spending (\$Millions)*		205	246	331.3	329.5	422.7	659.8	740.4	N/A
New Mineral Claim Units Registered*		5,031	5,583	5,776	5,998	4,979	5,062	7,496	5,000
Industry Investment (\$Millions)*		1,916	1,988	2,139	2,291	2,171	2,985	2,981	3,566
Number of Metal and Coal Mines*		13	16	18	15	14	15	16	16
Number of Aggregate Pits and Quarries*		337	389	444	510	564	587	615	549
Value of Production (\$Billions)*		6.7	9.2	9.8	8.9	8.1	12.9	18.0	N/A
Direct Mining Employment (Persons)*		10,057	11,033	11,960	12,244	11,293	12,466	N/A	N/A
Total Minerals Sector Employment (Persons)*		34,910	36,844	39,292	39,150	36,261	39,525	N/A	N/A
		2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
							Actual	Forecast	Forecast
Total Mineral Revenue (\$Millions)		258.2	483.2	404.2	250	75.5	660.2	732.5	588
Electricity		2016	2017	2018	2019	2020	2021	2022	2023
							Actual	forecast	Forecast
Total Generation (GWh)*		74586	69781	64782	70947	74207	68830	N/A	N/A
		2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
							Actual	forecast	Forecast
BC Hydro net Income Before Transfers (\$M)		792	633	692	-381	1292	1276	N/A	N/A
*Data are in calendar years. All others fiscal.									