

MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

BRIEFING NOTE FOR DECISION

PREPARED FOR: Honourable Bruce Ralston, Minister of Energy, Mines and Petroleum Resources

ISSUE: The imminent expiry of the temporary *Environment and Land Use Act* Order placed to prevent the Chief Gold Commissioner from rendering decisions in areas subject to the Caribou Partnership Agreement

BACKGROUND:

In May 2019, the Lieutenant Governor in Council approved the Ministry of Energy, Mines and Petroleum Resources' (EMPR) request for a temporary Order (OIC #266/2019) under section 7 of the *Environment and Land Use Act* (ELUA). The one-year Order prevents the statutory decision maker, under the *Coal Act*, from making decisions on existing applications for coal licenses that are proximate to Williston Reservoir in northeast British Columbia. OIC #266/2019 was created to support the proposed regulatory measures set out in the draft Intergovernmental Partnership Agreement for the Conservation of the Central Group of the Southern Mountain Caribou (Partnership Agreement).

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DISCUSSION:

The temporary OIC #266/2019 is set to expire on May 31, 2020, and EMPR staff are seeking to extend the expiry date for another year, until June 20, 2021. s.16

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Aligning the expiration of OIC #266/2019 through an extension with the broader ELUA OIC #337/2019, allows the Province to more fulsomely consider the approach to caribou recovery and conservation in June 2021, when both Orders would be set to expire. At that time government can choose to either amalgamate the areas captured under ELUA OIC #337/2019, and OIC #266/2019 or continue with two separate Orders in support of the Partnership Agreement.

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OPTIONS:

Option 1: Extend the Order to align with the June 20, 2021 interim moratorium area expiry date.

Pros:

- Provides time for negotiations to occur between WMFN and the company regarding the sale of the property;
- Provides government with the opportunity to conduct a fulsome review of the area intended for caribou conservation and recovery;
- Prevents the Chief Gold Commissioner from proceeding with issuing a decision on the coal licence applications;
- Signals government's commitment to implementation of the Partnership Agreement and the LOA with WMFN; and
- Limits the provincial exposure to compensation in these areas under application.

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RECOMMENDATION:

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Approved / Not Approved



Bruce Ralston, Minister
Ministry of Energy, Mines and Petroleum Resources

Date

April 7, 2020

Attachment: ELUA OIC 266/2019 Area Map

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Page 04 of 98

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MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

BRIEFING NOTE FOR INFORMATION

PREPARED FOR: Honourable Bruce Ralston, Minister of Energy, Mines and Petroleum Resources

ISSUE: BC Hydro Mining Customer Payment Plan

BACKGROUND:

In 2015 and early 2016, low copper and metallurgical coal prices put operations at several British Columbia (BC) mines at risk, resulting in some reducing production and employee levels. To help mitigate these impacts, the Lieutenant Governor in Council issued a direction to the BC Utilities Commission to establish the Mining Customer Payment Plan (MCP) in February 2016.

Introduced in March 2016 as a temporary cost relief to mining companies, qualifying mining customers can temporarily defer payment of a portion of their electricity bills when commodity prices are below a threshold and as commodity prices increase, these deferred amounts are to be repaid, plus interest. The MCP has an end date in March 2021.

Qualifying copper and coal mines in BC can defer up to 75 percent of their electricity costs over two years. These eligible mines include five coal mines and eight metals mines, but not all have participated in the MCP. Six copper mines participated in the program (Huckleberry, Red Chris, Copper Mountain, Mt. Milligan, Mount Polley and Gibraltar). No coal operations have participated in the MCP to date.

Similar programs have been introduced in BC before. The *Economic Development Electricity Rate Discount Act* and the *Critical Industries Act* were implemented during the 1980s as a response to BC Hydro having surplus power and to support industry as it emerged from a recession. In 1997, Government implemented the *Power for Jobs Development Act* to provide specific industries with a preferential development power rate based on available surplus power.

DISCUSSION:

At the beginning of the MCP, as a result of low copper prices, mines were able to defer up to 75 percent of their BC Hydro bill. The deferral rate depends on commodity prices for copper and coal. When prices go below \$3.40 CAD/lb for copper or \$134 CAD/t for coal, electricity costs are deferred until prices rebound above those levels, after which repayment begins.

In August 2017, the balance of participating mines' deferred bill payments (including interest) was \$62.2 million. s.21

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The interest rate was defined for each mine at the outset of the MCPP with higher rates of interest charged to mines carrying relatively lower amounts of debt. This was done to deter those with reasonable access to finance markets from using the MCPP. Interest rate levels were designed, in part, to incentivize prompt repayment.

Even though individual agreements were made between each participating mine and BC Hydro, these rates were not negotiable. ^{s.21} interest rate was 11.3866 percent, while the other participating mines' interest rate was prime plus five percent (ranging from 7.7 percent to 8.95 percent). Participating mines have paid \$9.1M to date in interest through the MCPP.

In February 2018, the Mining Jobs Task Force (MJTF) was established to create and sustain good jobs in the industry and work to ensure BC's economic competitiveness. In December 2018, the MJTF delivered their final report to government and in January 2019, government announced it was embracing its recommended actions. One of the MJTF recommendations was to make the MCPP permanent.

The Mining Association of BC (MABC) is strongly supportive of the MCPP and the MJTF recommendation to make it permanent. MABC views the program as beneficial to enhancing BC's competitiveness and ensuring the viability of BC mines through global market volatility. While the program is supported, MABC has expressed concerns that interest rates charged on deferred amounts under the program are high and should be lowered.

The next steps in reviewing the MCPP involve further engagement with MABC and industry to understand possible areas of program improvement. BC Hydro's involvement with this review is important in balancing ratepayer risk with the needs of industry.

For the month of February 2020, copper prices were low, at approximately CAD3.49/lb. Given the soft outlook for copper and uncertainty about the CAD-USD exchange rate, commodity prices may drop to the level where deferral is applicable. This supports continuing the MCPP to further ensure BC's mining competitiveness.

KEY MESSAGES:

- From an industry perspective, the MCPP has been a success in supporting mining companies at times of low commodity prices.
- Six copper mines have participated in the program (Huckleberry, Red Chris, Copper Mountain, Mt. Milligan, Mount Polley and Gibraltar). As of February 2020, the total balance of the participating mines' deferred bill payments was \$5.3 million.
- MABC supports the MJTF recommendation to make the MCPP permanent but has expressed concern that interest rates on deferred payment balances are too high.

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MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

BRIEFING NOTE FOR INFORMATION

I PREPARED FOR: Honourable Bruce Ralston, Minister Energy, Mines and Petroleum Resources

II ISSUE: Woodfibre LNG: Project Updates

III BACKGROUND:

Woodfibre LNG (Woodfibre) is proposing a 2.1 million tonnes per annum facility on privately owned land in Howe Sound that will utilize electrically driven liquefied natural gas (LNG) trains.

The Project is owned and operated by Woodfibre LNG Limited, a privately held Canadian company headquartered in Vancouver. The company is a subsidiary of Pacific Oil and Gas Limited, which is part of the Singapore-based Royal Golden Eagle group of companies.

Woodfibre has communicated its intentions to issue a Notice to Proceed (Final Investment Decision) in Q2 or early Q3 2020 and commence construction late 2020, pending the conclusion of negotiations with McDermott, the Engineering, Procurement and Fabrication contractor.

Woodfibre has achieved significant milestones in working towards a Notice to Proceed:

- Received environmental approvals from the BC Environmental Assessment Office, Canadian Environmental Assessment Agency, and a Squamish Nation Environmental Assessment Agreement;
- Received its facilities permit from the BC Oil and Gas Commission;
- Fully permitted on major federal permits, permit plan in place for the issuance of supporting provincial, federal and municipal permits;
- Concluded commercial agreements with BC Hydro and substantially completed its commercial agreements with FortisBC;
- Concluded Impact Benefit Agreements with Squamish Nation s.16
- s.16
- s.17
- Underway with decommissioning, pre-construction work onsite.

IV DISCUSSION:

Investments and Benefits:

- Woodfibre LNG project capital investment is estimated between \$1.4 and 1.8 billion.
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- Pacific Oil and Gas has recently announced the acquisition of Canbriam Energy.
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First Nations Benefit Agreements:

Significant agreements have concluded or are near conclusion with impacted nations. The Squamish Nations agreements by Woodfibre, FortisBC and Government were signed on February 22, 2019, in summary:

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With a recent mandate approved, a joint negotiating table has been established between Tsleil-Waututh Nation, Musqueam Indian Band and the Province and is currently in the final stages of term sheet approval.

Environmental Considerations:

In addition to site remediation, an ongoing Environmental Working Group with Squamish Nation has been in place since 2016. The Working Group includes Squamish Nation and Woodfibre LNG representatives supported by input from traditional and cultural knowledge holders and environmental specialists.

Woodfibre intends to use clean energy from the BC Hydro grid for compression resulting in an LNG project with the lowest global emissions profile. Emissions from Woodfibre LNG were taken into consideration and have been confirmed as aligning under the CleanBC plan.

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V ISSUES:

Municipal Tax Rates

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McDermott - Engineering Procurement Fabrication Contract

In Q1 of 2020, McDermott voluntarily entered Chapter 11 bankruptcy protection. As a result, negotiations between McDermott and Woodfibre have slowed awaiting the results of that process. Woodfibre is anticipating a continued relationship with McDermott as the company reorganizes project debt and equity. Expected resolution is Q2, 2020.

With McDermott under a Chapter 11 process, timelines for determining a final investment decision have been challenging. Woodfibre remains committed to starting construction and,

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VI CONCLUSION:

With a Notice to Proceed anticipated in Q2/Q3 2020, Woodfibre LNG is set to play an integral role in BC's energy system and would represent one of the single largest private sector investments in the greater Vancouver area.

Ministry staff will continue to work closely with Woodfibre LNG on the project's regulatory environment and issues resolution.

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MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

BRIEFING NOTE FOR INFORMATION

PREPARED FOR: Honourable Bruce Ralston, Minister of Energy, Mines and Petroleum Resources.

ISSUE: Research and Development by Teck Coal in the Elk Valley

BACKGROUND:

In order to address adverse impacts to water quality from historic and current mining activity in the Elk Valley, the Minister of Environment issued a Ministerial Order to Teck to develop an area-based water quality management plan in 2013. The resulting Elk Valley Water Quality Plan (EVWQP) was submitted in July 2014 and approved in November 2014.

Teck's current implementation of the EVWQP includes a commitment to construct and operate water treatment facilities to reduce selenium and nitrate concentrations from their four operating mines: Greenhills, Elkview, Line Creek and Fording River. Teck is also in the closure stage for the Coal Mountain Mine. Teck has one active water treatment facility (AWTF) successfully treating up to 7500 cubic metres of mine water per day at Line Creek. Construction of a second plant to address the southern portion of Fording River Operations is underway with commissioning expected by the end of 2020. Each AWTF costs approximately \$200-300 million to construct.

Teck is also implementing saturated rock fills (SRFs) as an alternative water quality mitigation. The cost to construct an SRF is estimated at \$40-\$80 million. SRFs are less energy intensive to operate than AWTFs.

Teck is undertaking ongoing research and development to improve the treatment of water for selenium and nitrate, to develop means to treat sulphate and nickel, to prevent and mitigate the formation of calcite in streams, to reduce the release of contaminants from blasting practises, and to construct spoil dumps that release lower contaminant loads.

DISCUSSION:

In the EVWQP initial implementation plan Teck Coal proposed AWTF to address high levels of selenium and nitrate in mine effluent. The facility built at Line Creek targeted selenium and nitrate generated from the areas affected by the 2013 expansion and demonstrated the application of biological treatment for removal of these contaminants from mine water. Commissioning of the plant required additional research and development related to selenium speciation as well as the generation of hydrogen sulphide. Overcoming these technical challenges delayed the implementation of mitigations at other operations by about two years.

The EVWQP indicated that SRF technology was a high priority for research and development. From 2016 to 2019, Teck undertook a large-scale SRF pilot at Elkview to remove selenium and

nitrate from up to 10,000 cubic metres of pit water per day. Permitting and construction work is presently underway to double the capacity of the Elkview SRF and it is expected that this facility will enable Teck to get back in compliance with the EVWQP at Elkview sooner than could be accomplished with an AWTF. Teck continues to research SRF technology to better predict long-term performance.

The EVWQP contains a research and development component to address other water quality issues such as the prevention of calcite formation in streams and removal of sulphate. The EVWQP sets targets to reduce the impacts of these contaminants on the Elk River watershed. Emerging issues such as nickel in mine runoff from certain locations is also being addressed through research and development. The EVWQP outlines Teck's overall approach to advancing technologies from initial research to full deployment. Teck maintains a research and development portfolio and reports these activities annually to government.

As part of recent efforts to better coordinate the oversight efforts of regulators regarding Teck's various activities with the Ktunaxa Nation, an Emerging Technology Working Group has been established. This group will help with to communicate the results of research and development, as well as details surrounding the adaptive management of the EVWQP in regard to new technology.

SUMMARY:

Sustainable mining in the Elk Valley requires successful implementation of the EVWQP. Research and Development is an important aspect of the EVWQP. Resolution of water quality issues in the Elk Valley requires continued research and the development and implementation of innovative technologies.

Attachments: Teck Coal R&D Portfolio Review, Sept 2019 presentation to the Environmental Monitoring Committee

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Page 12 of 98 to/à Page 35 of 98

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MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

BRIEFING NOTE FOR INFORMATION

PREPARED FOR: Honourable Bruce Ralston, Minister of Energy, Mines and Petroleum Resources

ISSUE: Meeting request from Julia Balabanowicz on behalf of Innergex Renewable Energy Inc (Innergex)

BACKGROUND

Julia Balabanowicz is the Director of Government Relations for Innergex. She is also a member of the Clean Energy BC Board of Directors. Clean Energy BC is the industry association for independent power producers (IPPs) operating in British Columbia (BC).

Innergex is a publicly-traded, Quebec-based company and IPP. It currently has an ownership stake in 68 hydroelectric, wind, and solar plants in Canada, the United States, France, and Chile. Over the last several years, they have actively invested in project development and acquisition in BC and have an ownership stake in 21 run of river facilities and one wind facility in the province. Of these facilities, First Nations have equity in two: it developed Kwoiek Creek in equal partnership with the Kanaka Bar Indian Band; and partnered with the Cayoose Creek Development Corp to acquire the assets of the Walden North project. Innergex's most recent projects reached commercial operation in 2017.

Subsequent to Ms. Balabanowicz's letter requesting a meeting to discuss ways in which BC can continue to lead the way in the renewable energy economy, BC Hydro and government released the Phase 2 Review Interim Report (the Interim Report). The interim report discusses the potential to eliminate the self-sufficiency provision in the *Clean Energy Act*, allowing BC Hydro purchase lower-cost clean energy out of province, as well as potential public development of new small-scale generation.

DISCUSSION:

British Columbia is currently in electricity surplus. Because of seasonal low water levels, BC Hydro was a net importer last year; however, exports have exceeded imports in 7 of the last 10 years. BC Hydro's most recent load forecast, from October 3, 2019, projects continuing surpluses in both energy and capacity until 2038. s.13

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This surplus is exported at market prices well below the cost of purchasing electricity from new projects in BC¹, and BC Hydro's customers must make up

¹ Under BC Hydro's historical processes, energy was purchased from IPPs at approximately \$100/MWh - \$120/MWh. Clean Energy BC has argued, for example in its response to the Davidson Report, that it could provide new energy at a cost of roughly \$50/MWh. Although BC Hydro's average export price in F2019 rose to \$54 due to high market prices caused by low water conditions and high natural gas prices due to the Enbridge pipeline explosion, prices on BC Hydro exports have since fallen back to approximately \$41/MWh over the first nine months of fiscal 2020. Long-run average market prices tend to be in the \$20/MWh to \$40/MWh.

this shortfall through their rates. s.13
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To limit rate increases and position BC Hydro for long-term success, government launched a two-phase review of BC Hydro in 2018. The first phase was completed in February 2019, in which purchases from IPPs, like Innergex, were identified as a key driver of BC Hydro's costs and rate increase in both the report on Phase 1 of the review, and in an independent "Zapped" analysis by Ken Davidson. In response to the Davidson Report and the Phase 1 report, government approved measures to reduce BC Hydro's future purchases from IPPs (e.g. indefinitely suspending BC Hydro's Standing Offer Program) while BC Hydro is in surplus.

The second phase of the BC Hydro review was intended to look forward at how BC Hydro could position itself for long-term success, while meeting the province's climate goals, keeping rates affordable for British Columbians, furthering reconciliation with Indigenous Nations, and supporting quality economic development. The Interim Report looks at options for BC Hydro to provide clean energy at the lowest cost. One opportunity identified is to repeal self-sufficiency provisions in the *Clean Energy Act*, allowing BC Hydro to import power from clean or renewable energy resources outside the province where it makes sense to do so. Another is to re-instate the ability of public entities (i.e., BC Hydro) to develop small-scale generation to give the Crown entity more choice and flexibility for determining least-cost solutions. s.13

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Clean Energy BC has posted a response to the Interim Report indicating its interest in engaging with BC Hydro and provide feedback on the Interim Report. This response cites jobs, tax revenues to the province and municipalities, and \$9 billion in industry investment as benefits of the IPP sector. It also argues that IPPs are well-positioned to supply safe and affordable renewable energy while bearing the risks associated with developing and operating projects, and that IPPs can play a role in cultivating opportunities with First Nations communities.

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Innergex and Clean Energy BC has been invited to a stakeholder session to provide comment on the Phase 2 Interim Report and has indicated that it intends to do so. s.13

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ADVICE AND CONCLUSION:

BC Hydro does not need more energy from IPPs in the near to medium term. s.13
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MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

BRIEFING NOTE FOR INFORMATION

PREPARED FOR: Honourable Bruce Ralston, Minister of Energy, Mines and Petroleum Resources

ISSUE: Update on Critical Minerals including Rare Earth Elements

BACKGROUND:

Under United States (US) Executive Order, a critical mineral is a non-fuel mineral essential to the economy and national security, the supply chain of which is vulnerable to disruption, and that serves an essential function in the manufacturing of a product, the absence of which would have significant consequences for the economy or national security. Critical minerals, including those that contain rare earth elements are important in communication technology, aerospace and defence, and clean technology.

In January 2020, Canada and the US announced a Joint Action Plan on Critical Minerals Collaboration (Action Plan), delivering on a commitment by Prime Minister Justin Trudeau and President Donald Trump in June 2019.

The Action Plan advances Canada-US mutual interest in securing supply chains for the critical minerals. Some of the countries that supply these minerals have uncertain trade relationships with the US (i.e. China and Russia) and may control markets. The Action Plan complements the US Federal Critical Minerals Strategy and the Canadian Minerals and Metals Plan (CMMP).

The Action Plan from the US Federal Critical Minerals Strategy includes expanding mineral supply inventories through geoscience and enhancing international trade and cooperation related to imported critical minerals.

Development of the CMMP is led by Natural Resources Canada (NRCan) and centres on positioning Canada as the leading mining nation. The CMMP recognizes that critical minerals and low carbon minerals are key in the development of clean technology products.

DISCUSSION:

The US has identified 35 critical minerals (Attachment 1; other jurisdictions have similar, but different lists). BC produces gallium, germanium, indium and tellurium as by-products of zinc and lead smelting at Teck's Trail operation. Aluminium is produced from imported raw materials at Rio Tinto Alcan's Kitimat smelter. Barite is mined from Fireside deposit in northern BC. Magnesite is mined at Mount Brussilof in southeast BC.

The Canadian government considers molybdenum a critical mineral and BC is well endowed, but low price has caused the closure of BC mines and delayed opening new mines from advanced projects. Molybdenum is co-produced with copper at Gibraltar and Highland Valley mines.

BC has the geological potential to contribute several of the critical minerals applicable to the Action Plan, but market conditions challenge the development of these projects. Given the limited quantity of global demand for these minerals and market volatility (risk), it is difficult for firms to make an investment in these critical mineral deposits. If the domestic development of these critical minerals is a priority, there may be the opportunities for government intervention in the market which appears to be occurring in Quebec and in Australia.

The CMMP identifies a different set of critical materials needed for the “clean tech revolution” and electrification that are more immediately relevant to BC (include copper and silver).

Over the last 10 years, BC Geological Survey, in collaboration with NRCan, has led a national critical mineral project with NRCan directly contributing around \$100k/year to BC from their Targeted Geoscience Initiatives (TGI) 4 and 5. The TGI 5 conclude in March 2020 and BC is interested in renewing this successful and productive research collaboration with the federal government. NRCan is seeking funding for critical minerals in a TGI 6 federal budget request but no decision has been made.

Critical minerals are also being discussed by the National Geological Survey Committee (NGSC) and will be included in the Pan-Canadian Geoscience Strategy as part of the CMMP. How critical minerals will fit into this strategy is still being developed. The BC Geological Survey has expertise that will be valuable. NGSC is tasked with proposing an outline of the Pan-Canadian Geoscience to Ministers at the Energy and Mines Ministers Conference (EMMC) in Whitehorse in July, 2020.

SUMMARY:

- BC has potential for producing critical minerals identified in the Action Plan but, to date, market conditions have limited development.
- BC has a role to play in a national critical minerals approach and will continue to engage through the CMMP.
- It is expected that critical minerals will be included in the next iteration of federal Targeted Geoscience Initiatives and in the Pan-Canadian Geoscience Strategy with opportunities for BC to collaborate with federal and provincial partners.
- BC has considerable technical geoscience expertise on critical minerals that can be leveraged to highlight BC’s critical mineral opportunities and mining competitiveness in this emerging market.

Attachments:

Attachment 1. Mineral commodities considered critical by the US government

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ATTACHMENT 1

Mineral commodities considered critical by the US government

| Critical Mineral | Uses | Canadian % of US Imports |
|-------------------------------|--|--------------------------|
| Aluminum (bauxite) | Used in almost all sectors of the economy | 25-30% |
| Antimony | Batteries and flame retardants | |
| Arsenic | Lumber preservatives, pesticides and semi-conductors | |
| Barite | Cement and petroleum industries | |
| Beryllium | Allowing agent in aerospace and defense technologies | |
| Bismuth | Medical and atomic research | |
| Cesium | Research and Development | 100% |
| Chromium | Stainless steel and other alloys | |
| Cobalt | Rechargeable batteries and superalloys | |
| Fluorspar | Manufacture of aluminum, gasoline and uranium fuel | |
| Gallium | Integrated circuits and optical devices (LEDs) | |
| Germanium | Fiberoptic and night vision applications | |
| Graphite | Lubricants, batteries and fuel cells | 0-5% |
| Hafnium | Nuclear control rods, alloys and high-temperature ceramics | |
| Helium | MRIs, lifting agent and research | |
| Indium | LCD screens | 20-25% |
| Lithium | Batteries | |
| Magnesium | Furnace linings for steel and ceramic manufacturing | 5% |
| Manganese | Steelmaking | |
| Niobium | Steel alloys | 15-20% |
| Platinum group metals | Catalytic agents | |
| Potash | Primarily used as fertilizer | 75-80% |
| Rare earth elements | Batteries and electronics | |
| Rhenium | Lead-free gasoline and superalloys | |
| Rubidium | Research and development in electronics | 100% |
| Scandium (rare earth element) | Alloys and fuel cells | |
| Strontium | Pyrotechnics and ceramic magnets | |
| Tantalum | Electronic components (capacitors) | |
| Tellurium | Steelmaking and solar cells | 50% |
| Tin | Protective coatings and alloys for steel | |
| Titanium | White pigment or metal alloys | 10% |
| Tungsten | Wear-resistant metals | 5% |
| Uranium | Nuclear fuel | 30-35% |
| Vanadium | Titanium alloys | 20-25% |
| Zirconium | High-temperature ceramics | |

Source: <https://www.usgs.gov/news/interior-releases-2018-s-final-list-35-minerals-deemed-critical-us-national-security-and>

MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

BRIEFING NOTE FOR DECISION

PREPARED FOR: Honourable Bruce Ralston, Minister of Energy, Mines and Petroleum Resources

ISSUE: Decision on releasing and announcing the B.C. Hydrogen Roadmap

BACKGROUND:

BC Hydrogen Study

In December 2018, the government of British Columbia (B.C.) released CleanBC and committed to publishing a B.C. Hydrogen Roadmap (the Roadmap). In February 2019, as part of its trusted partnership with the Ministry of Energy Mines and Petroleum Resources (EMPR), the BC Bioenergy Network (BCBN) contracted with Vancouver-based consulting company Zen and the Art of Clean Energy Solutions Inc. (Zen) to undertake the BC Hydrogen Study (the Study). FortisBC contributed \$50,000 towards the \$125,000 contract. The contract was focused on exploring the economic and environmental role of hydrogen in B.C. and was completed in June 2019.

Zen delivered a 200-page study which explored the potential roles of hydrogen in the province and provided 38 policy recommendations that included an estimated investment level of \$176 million (M) over five years (\$32.5M/year) from the Province and partners. The Study exceeded the expectations of BCBN, EMPR and FortisBC. Consequently, BCBN provided a small amount of additional funding to Zen to deliver a public-facing version of the Study and an Executive Summary, both of which are now available on the EMPR website.¹ The Study has been used to inform the proposed B.C. Hydrogen Roadmap.

Stakeholder Engagement

A key component of the Study was completing comprehensive stakeholder engagement. Zen undertook three in-person workshops that were attended by private industry, utilities, academia, non-governmental organizations and different levels of government. Zen also completed 35 separate interviews. It should be noted that the Zen stakeholder engagement attracted only four local governments and no indigenous groups.

DISCUSSION:

B.C. Hydrogen Roadmap Development

Beginning in November 2019, EMPR staff began developing the Roadmap in consultation with key internal stakeholders. Sections of the Roadmap include production methods and storage, safety, water use and the opportunities across B.C. for transportation, conversion of natural gas, industry and community applications. The Roadmap highlights B.C.'s experience in the hydrogen and fuel cell sector but looks to the future with regards to what hydrogen can contribute to decarbonizing energy systems and create jobs across the province. A professional

¹ See: https://www2.gov.bc.ca/assets/gov/government/ministries-organizations/zen-bcbn-hydrogen-study-final-v6_executivesummary.pdf


Page 43 of 98 to/à Page 44 of 98

Withheld pursuant to/removed as

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Attachment 1: B.C. Hydrogen Roadmap Presentation

Approved / Not Approved



Honourable Bruce Ralston
Minister of Energy, Mines and Petroleum Resources

April 6, 2020

Date

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s.22

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Page 46 of 98 to/à Page 58 of 98

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MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

BRIEFING NOTE FOR INFORMATION

PREPARED FOR: Honourable Bruce Ralston, Minister of Energy, Mines, and Petroleum Resources.

ISSUE: Proposed meeting with BC Ferries to discuss electrification of BC Ferries marine fleet

BACKGROUND:

BC Ferries operates a fleet of 35 vessels of varying size, providing year-round vehicle and passenger service on 25 routes and with 47 terminals. During the past several years, BC Ferries has focused on natural gas as an emissions reduction pathway for their vessel operations. In recent meetings with the Ministry of Energy, Mines and Petroleum Resources (the Ministry), BC Ferries has indicated that it is open to all zero-or-low-emission fuel and technology options that fit its operational needs.

In 2018, BC Ferries released the Clean Technology Adoption Plan, that builds on its natural gas work to explore additional measures to reduce emissions from operations. This was followed in 2019 with the Clean Futures Plan which offered further details on its emissions reduction strategy and committed the corporation to developing an emissions inventory by 2021. In 2019 BC Ferries also released its strategic plan with a commitment to becoming a world leader in sustainable ferry operations.

BC Ferries has completed a procurement process that resulted in the delivery of two new Island Class ferries entering service in 2020, which will service a variety of Gulf Island and other minor routes. Four more of the Island Class ferries are under construction. The Island Class Ferries are currently designed and built as diesel-electric hybrid but have design flexibility to allow for a full electric conversion at a future date.

BC Ferries is also planning to replace four of its larger ferries through a global design-build procurement process. These replacements are known as New Major Vessels (NMV) and will be the flagships of the future fleet.

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These four vessels will operate between the Lower Mainland and Vancouver Island and will require refuelling system upgrades at five terminals. BC Ferries expects to award the NMV Contract in April 2021.

DISCUSSION:

Alongside the NMV procurement process, BC Ferries is undertaking a study to determine the charging system requirements, preliminary marine and electrical engineering design, BC Hydro

interconnection design, and emission analysis for the full electrification of both the Island Class and NMV within its operations.

BC Ferries has engaged with BC Hydro and the Ministry on the scope of the study. The study's intent is to work through the electrification of the Island Class and transfer important learnings to the electrification of the NMV. Preliminary estimates for charging power from BC Hydro are 2-5 MW's at terminals for the Island Class and s.13; s.17

Appendix 2

outlines BC Hydro's cost estimates.

The Ministry has been engaged with BC Ferries staff since Spring 2019 regarding the full electrification of the Island Class vessels. s.13
s.13; s.17

s.13; s.17

To date, informal discussions between the Ministry and BC Ferries have indicated that BC Ferries is exploring hydrogen as a zero-emission fuel source for their larger vessels, s.13
s.13

s.13; s.17

SUMMARY:

BC Ferries is pursuing an electrification strategy for its fleet, including strategy development and equipment procurement, starting with the Island Class vessels and followed by its New Major Vessels. The immediate opportunity is for the Ministry to continue to work with BC Ferries on the electrification of the Island Class vessels and in the longer term to strategize with BC Ferries on the options for decarbonizing the operation of the NMV.

Attachments:

Appendix 1: BC Ferries – Briefing Note on Vessel Electrification.

Appendix 2: BC Hydro - BC Ferries Electrification Briefing Note

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Page 62 of 98 to/à Page 64 of 98

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Page 65 of 98 to/à Page 72 of 98

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MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

BRIEFING NOTE FOR INFORMATION

PREPARED FOR: Honourable John Horgan, Premier of British Columbia

ISSUE: Meeting with Don Lindsay, CEO of Teck Resources

BACKGROUND:

Teck Resources (Teck) is the largest mining company operating in British Columbia (BC) and among the largest mining companies in Canada. Teck owns and operates four metallurgical coal mines in the Elk Valley and one copper mine near Kamloops. These mines employ approximately 4,900 people, representing over 50 percent of direct mining jobs in the province, and in 2018 had a production value of over US \$5.6 billion (65 percent of total BC value of production). Future potential Southeast coal projects have a total value of approximately \$50 billion in economic impact to the Province.

Teck CEO Don Lindsay was a signatory to an open letter from Canadian CEOs calling for action to combat the virus, and the company has implemented preventative measures across its operations.

DISCUSSION:

Fiscal Outlook

Commodity prices play a significant role in Teck's ability to continue to keep its mines operating. Coal prices have dropped 25 percent from March 2019 (US\$218/t) to March 2020 (US\$162/t), and the location of Teck's coal resources means the cost of production is higher in BC than in other jurisdictions.

Although unrelated to COVID-19, Teck has lowered its forecast for steelmaking coal sales after the company's BC coal mines were hit by extreme weather and rail blockades. Pre-COVID-19, Teck forecasted steelmaking coal sales of 4.8 million to 5.2 million tons in Q1, compared with previous forecasts of 5.1 to 5.4 million tons. For 2020, Teck forecasts steelmaking coal sales of between 23 million to 25 million tons, down from 25.7 million last year.

Teck's Q4 financial results were worse than anticipated. Gross profit in the Teck's coal mines was \$241 M, a significant decline from Q3 2019 (\$425 M) and from Q4 2018 (\$819 M). With the withdrawal of the application for the Frontier oil sands Project and subsequent write-downs this quarter, the current financial landscape for Teck continues to be challenging.

Demand for copper is lower due to COVID-19, which is significantly impacting the manufacturing industry, particularly in China. Teck's Highland Valley Copper Mine is the largest copper producer in BC. Copper prices have declined significantly in recent weeks, and are now at US\$220/lb, 25 percent lower than in March 2019.

Teck's COVID-19 Response

Teck has temporarily slowed down operations and reduced crew levels in response to the COVID-19 pandemic. While no Teck employees or contractors have confirmed COVID-19 cases to date, crew levels at BC operations have been reduced by 50 percent to reduce risk initially for 2 weeks and will be re-evaluated as the situation evolves. These measures will affect the following BC operations:

- Elkview (Met Coal)
- Fording River (Met Coal)
- Greenhills (Met Coal)
- Line Creek (Met Coal)
- Highland Valley Copper (Copper)

This is in addition to the preventative measures that have been implemented across all Teck operations and offices, including enhancing disinfection protocols, eliminating large group gatherings, implementing work from home where feasible and working with supply chain partners to ensure adequate amounts of critical safety supplies. Despite these precautions, Mayors in the Elk Valley have expressed concern about the potential for a Teck work camp servicing coal mines in the area to contribute to the spread of COVID-19.

Provincial Response to COVID-19

The BC government has announced a COVID-19 Action Plan as a first step to provide relief to people and businesses in BC. The \$5 billion plan includes \$2.2 billion to provide relief to businesses and help them recover after the outbreak. This is in addition to actions announced by the federal government. Measures announced include:

- Businesses can defer their employer health tax payments until September 30, 2020.
- Extending tax filing and payment deadlines for the provincial sales tax (PST), municipal and regional district tax, motor fuel tax and carbon tax until September 30, 2020.
- The scheduled April 1 increase to the provincial carbon tax will be delayed and its timing will be reviewed by September 30, 2020.
- Major-industry property classes will see their school tax cut in half.
- The Province is partnering with business and labour leaders to build an economic stimulus plan and has allocated \$1.5 billion for future economic recovery.

In addition to these broad programs, the Ministry of Energy, Mines and Petroleum Resources (EMPR) is currently working with other agencies and industry to develop targeted strategies to support the mining sector and its workers. To help guide operational decisions, the Chief Inspector of Mines has provided a guidance document to mining and smelting operations for use during the COVID-19 outbreak.

The BC government is currently working on an essential services designation list and mining is currently 'in' as essential but that has not been finalized. We also understand the important need that Teck has for cleaning supplies and we are trying to assist.

Government Support to Address Broader Existing Industry Challenges

Since the previous meeting with the Premier and Teck's CEO, EMPR has been leading a renewed approach to addressing regulatory complexity and concerns raised by Teck and the

broadier mining sector. The Province has created a Deputy Minister's Board to oversee the strategy to address these concerns; the Board is focused on enhancing regulatory performance by:

- Delivering more efficient and effective mine-related permitting to create quality economic growth opportunities;
- Enhancing environmental sustainability and outcomes; and
- Implementing the Province's reconciliation goals by partnering with Indigenous peoples on mining-related opportunities.

s.16

Teck has indicated that enhancing regulatory performance in the mining sector, as messaged in the Throne Speech, and the fiscal measures like those in Budget 2020 are critical to sustain their current operations and enable potential new investment in BC.

KEY MESSAGES:

- The Province recognizes the significant economic impact of Teck's operations and the seriousness of the challenges Teck is facing.
- The Province recognizes the leadership Teck has demonstrated in responding to the COVID-19 pandemic.
- The BC COVID-19 Action Plan is the first step in the Province's response to provide relief to businesses and workers and help them recover.
- The Province is committed to enhancing regulatory performance in the mining sector with a focus on challenges facing Teck.

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MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

BRIEFING NOTE FOR DECISION

PREPARED FOR: Honourable Bruce Ralston, Minister of Energy, Mines and Petroleum Resources.

ISSUE: Comprehensive Review of BC Hydro Phase 2 Timelines

BACKGROUND:

The Terms of Reference for Phase 2 of the Comprehensive Review of BC Hydro (Phase 2) were released in July 2019. BC Hydro and staff from the Ministry of Energy, Mines and Petroleum Resources (EMPR), with the guidance of expert advisors, developed recommendations for consideration by the Priorities and Accountability (P&A) Committee. s.12; s.13
s.12; s.13

The resulting Cabinet direction was to move forward with legislation that would: (a) eliminate BC Hydro's requirement to be self-sufficient; (b) create a framework for British Columbia (B.C.) to implement a 100% clean electricity standard; and (c) allow BC Hydro to sell, lease, or dispose of its interests in the Burrard Facility site by removing it from the list of heritage assets set out in the *Clean Energy Act*. s.12; s.13
s.12; s.13

The Phase 2 Interim Report, framed as a discussion paper, was released on March 6, 2020. The purpose of the Interim Report is to engage Indigenous communities and stakeholders to help refine the recommendations. Stakeholder sessions were held with industry, environmental, local government, and labour groups on March 11, 2020 to walk through the discussion paper, receive initial feedback and solicit written feedback. The Indigenous engagement plan began on January 30, 2020 and included regional workshops across the province, and face-to-face meetings with several Indigenous Nations and key Indigenous organizations.

The Phase 2 project plan was to allow stakeholders and Indigenous Nations until April 3, 2020 and April 14, 2020, respectively, to submit comments on the Interim Report. s.12; s.13
s.12; s.13

DISCUSSION:

Since February 2020, the Province has introduced escalating prescriptive measures to manage the spread of COVID-19 including a ban on all non-essential travel, and meetings of groups of 50 or more. At the same time, the pandemic has sent the markets and economy into crisis. Stakeholders are prioritizing actions to stem COVID-19 transmission and the BC Business Council, Canadian Association of Petroleum Producers, Council of Forest Industries,

Mining Association of BC and FortisBC have stated that an April 3 response date for comments on the Phase 2 Interim Report is not achievable and have requested a 2-4-week extension for their written submissions.

Indigenous regional workshops have been cancelled and have been retooled as conference calls. Indigenous Nations have provided feedback that calls are not a suitable substitute to in-person meetings. They have expressed the expectation that face-to-face meetings on Phase 2 will resume once COVID-19 restrictions are relaxed or that means other than conference calls will be used if the restrictions persist longer-term.

Also, as a result of the precautions around COVID-19, BC Hydro's timelines for stakeholder and Indigenous engagement for the Integrated Resource Plan (IRP) will be delayed. BC Hydro is seeking alternative ways of engaging with Indigenous Nations and anticipates that, once adequate consultation restarts, it will be more than a year before it can deliver its IRP to the BC Utilities Commission (BCUC).

The additional time required to complete the IRP is largely driven by BC Hydro's need to undertake a thorough engagement process to provide Indigenous Nations with sufficient opportunity to comment on and participate in the development of the IRP. The duration will be shorter if no changes to BC Hydro's load forecast are needed, and Indigenous communities' seasonal capacity to engage on consultation matches this window. Conversely, the duration will be longer if the Phase 2 Final Report contains different policy outcomes that originally anticipated, or ramping back up from COVID-19 impacts is slow.

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Page 78 of 98

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Approved / Not Approved



Honourable Bruce Ralston, Minister
Ministry of Energy, Mines and Petroleum Resources

March 24, 2020

Date

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MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

BRIEFING NOTE FOR INFORMATION

PREPARED FOR: Honourable Bruce Ralston, Minister of Energy, Mines and Petroleum Resources

ISSUE: The Association of Major Power Consumers has requested that BC Hydro and Government provide economic relief to BC Hydro's mining and other industrial customers during and following the current pandemic, in the form of measures to reduce or defer industrial electricity costs.

BACKGROUND:

The Association of Major Power Customers of BC (AMPC) represents major industrial electricity consumers in British Columbia (B.C.), with membership from the Pulp and Paper, Solid Wood, Mining, Electrochemical and Petrochemical sectors. AMPC exists for the primary purpose of representing its members' interests concerning electricity regulatory and policy issues arising with respect to electricity supply within B.C. and in particular reliability, security of supply and electricity rates and tariffs. AMPC members' electricity consumption represents about 20% of domestic electricity load in B.C.

On March 20, 2020, AMPC wrote to the Minister requesting four relief measures for industrial customers impacted by the COVID-19 pandemic to provide various forms of billing relief to support liquidity to maintain operations (Appendix 1):

1. **Reduce demand charges:** Generally, an industrial customer's demand charge is based on an operation's single highest energy use at time of system peak during a specified period, to fairly allocate costs of providing grid resources to the operation during BC Hydro's peak demand hours. AMPC's has requested that demand charges be calculated average use instead, which would significantly reduce demand charges, which can be in the \$ millions for each customer. Without the change, AMPC notes that their members will continue to face with high demand charges, calculated their pre-COVID operational levels, at a time when their revenues fall due the risk of plant shutdowns and/or curtailment due to staff unavailability, loss of feedstock and export supply chains.
2. **Place a moratorium on energy customer base line (CBL) resets:** AMPC's concern is that reduction in industrial customer's energy purchases during the month of March 2020 (the last month of Fiscal 2020) could trigger an energy baseline reset thus moving the customer into a higher cost tier under rate schedule 1823 (RS 1823¹).
3. **Modify to the existing Mining Customer Payment Plan ("Tariff Supplement 90 or TS 90"):** AMPC is seeking to support the March 19, 2020 Mining Association of BC (MABC) request to broaden the eligibility and bill deferral provisions of TS 90 to all

¹ Most transmission connected customers receive service under Rate Schedule 1823.

operating and non-operating mines in the Province to manage liquidity challenges due to COVID-19. MABC has asked that all mines be able to immediately defer 75% of bill payments for the next 6 months, and there be no interest on those deferred balances.

4. **Offer the same option to defer 75% of electricity payments for the next 6 months to other industrial customers:** AMPC requested that the MABC request also apply to the majority of industrial customers with a few exceptions².

DISCUSSION:

a) BC Hydro is addressing AMPC's first two requests:

- AMPC's first two requests (demand charges and energy customer baselines) are being addressed by BC Hydro under current tariff provisions (Appendix 2). No action by Government or the BCUC is required for implementation.
- s.13
- BC Hydro considers the risk of CBL annual reset for F2020 to be low for most industrial customers, despite the pandemic. Assessment of any prospective F2021 financial impact from CBL annual reset is premature, as it would require an accurate forecast of customer-specific operations and load, which is highly uncertain. If a CBL resets are triggered unduly, there is an existing provision under Tariff Supplement 74 for Non-recurring Downtime that will be used by BC Hydro to treat COVID-19 related impacts, once requested by a customer.
- BC Hydro is preparing a letter, in collaboration with AMPC, for all its industrial customers, acknowledging these two issues and advising customers of the options available to address them. BC Hydro is targeting to send this letter out the week of March 30, 2020.

b) The Ministry of Energy, Mines and Petroleum Resources (EMPR) and BC Hydro are working with industry on bill deferral options

EMPR and BC Hydro are collaborating with AMPC, MABC and the Canadian Association of Petroleum Producers (CAPP) to design bill relief options that support customer liquidity, where needed, while mitigating financial implications for BC Hydro ratepayers. Discussions to date have identified that it would be administratively efficient to have two relief programs:

² Industrial sector refers to all transmission voltage customers served under RS 1823 or RS 1828.

1. an amendment to the existing TS 90 to institute immediate bill deferrals for operating major copper mines; and
2. another to provide deferral relief program for almost all other industrial customers that want to participate³.

The draft highlights of each option are presented below. While many of the terms are similar between the two initiatives, operating major copper mines would have the additional opportunity to defer up to 75% of bill payments (versus 50% for other industrial customers) depending on copper price performance over the March – September 2020 billing period. In addition, repayment of deferred bill amounts, at the discretion of the eligible mining customer, may start later than for other customers (i.e. in March 2021, vs. October 2020).

| | Proposed COVID Response for the Copper Mining Sector | Proposed COVID Response for other Industrial Customers |
|----------------------------------|--|---|
| Eligibility (Appendix) | <ul style="list-style-type: none"> • Specific Operating Major Copper Mines • Must not be in care and maintenance • Must not have any overdue BC Hydro bills⁴ | <ul style="list-style-type: none"> • Operating RS 1823 and RS 1828 customers • Must not be in care and maintenance • Must not have overdue BC Hydro bills |
| Eligible Deferral Amount | <ul style="list-style-type: none"> • For March 2020 – Sept 2020 billing periods only: <ul style="list-style-type: none"> ◦ Fixed 50% deferral of 6 months' worth of bill payments; or ◦ Up to 75% deferral of bill payments according to the existing TS90 commodity-based criteria and formula; whichever offers greatest benefit to the customer. | <ul style="list-style-type: none"> • For March 2020 – Sept 2020 billing periods only: <ul style="list-style-type: none"> ◦ Fixed 50% deferral of 6 months' worth of bill payments; |
| Repayment | Repayment to occur according to a prescribed payment plan upon expiry of TS90 (or starting March 12, 2021, if TS90 is made permanent). Prescribed payment plan is under development. | Repayment to occur according to a prescribed payment plan upon expiry of the program, starting October 1, 2020. Prescribed payment plan is under development. |
| Interest | Prime + 2.5% | Same |

The bill deferrals programs would be monetarily significant, collectively resulting in up to \$200 million worth of deferrals over the 6-month period. BC Hydro anticipates its cash flow should be sufficient to handle the deferrals as proposed. Following the six-month term, the larger issue is potential default by customers who are unable to meet their re-payment obligations. Should this occur, BC Hydro's ratepayers may be required to make up the

³ This sector definition excludes FortisBC, exempt customers served under RS 1827 (*City of New West, UBC, SFU, YVR*), and IPP customers served under RS 1853.

⁴ Note: as of March 26, 2020, Copper Mountain has not paid its February 2020 bill.

millions of dollars in defaulted payments. To mitigate this risk, while not imposing time-consuming constraints on industrial customers, it is proposed that BC Hydro be authorized to require that the parent company of each participating industrial customer (where they exist) become a party to the bill deferral agreement, and/or provide a guarantee for the deferred amounts.

The above draft design has been reviewed with AMPC, MABC and CAPP, and the associations support the terms in principle.

c) Next Steps – Options for Involvement by the British Columbia Utilities Commission (BCUC)

To be effective, BC Hydro would need to implement the bill deferral options as soon as possible – preferably by the first week of April, to ensure the programs capture the higher, pre-COVID bill amounts incurred by industrial customers during the March billing period.

Under the *Utilities Commission Act* (UCA), BC Hydro is obligated to seek BCUC approval to implement this type of program (including the requirement to seek participation/guarantees from parent companies), use its regulatory accounts to manage costs, and recover defaulted payments (“impaired costs”) from ratepayers. Normally, this would trigger a lengthy regulatory process, and includes the risk that the BCUC may reject BC Hydro’s application.

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Staff are seeking the Minister's feedback on next steps with respect to BCUC involvement.

d) Other Considerations

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Attachments:

Appendix 1: March 20, 2020 Letter from the Association of Major Power Producers

Appendix 2: BC Hydro Information Note – AMPC requests

Appendix 3: Customers Eligible for the Proposed Emergency Mining and Industrial Customer
Bill Deferral Programs

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March 19, 2020

VIA EMAIL

Honourable Bruce Ralston
Ministry of Energy, Mines and Petroleum Resources
Room 301 Parliament Buildings
Victoria, BC V8V 1X4

Dear Minister,

The Association of Major Power Customers of BC (AMPC) writes to propose a set of **business continuity measures** during the COVID-19 pandemic to help keep businesses operating and the province working. These measures are intended to preserve the status quo by avoiding unintended electricity cost increases. AMPC suggests implementing these measures immediately and maintaining them until the end of FY2021:

1. Replace the Rate Schedule 1823 Demand Calculation with the "Billing Adjustment" calculation of Section 18(b) of Tariff Supplement 5.
2. Place a moratorium on any CBL resets, either directly, by providing the option to transition to Rate Schedule 1828, or through some other mechanism.
3. Modifying TS90 to accelerate support for the Mining Sector. The Sector is currently consulting with members and will provide TS90 recommendations shortly.

AMPC recognizes that agreements provide for Force Majeure treatment. However, Force Majeure is inconsistent, time-limited, subject to delay and administratively burdensome for all involved. Those factors make it impractical and risky for customers to rely on.

We appreciate your consideration of this matter, and welcome discussion of these or other options with Ministry and BC Hydro staff this week, to help keep BC businesses running during this time.

Sincerely,

A handwritten signature in black ink, appearing to read 'Carlo Dal Monte'.

Carlo Dal Monte,
Chairman, AMPC

Glossary of Terms

- **AMPC** is a long-standing industry association composed of BC Hydro industrial customers that take electricity service at the transmission level. AMPC members' electricity purchases reflect about 80% of BC Hydro's industrial load, and over 20% of BC Hydro's total load. Members operate in the forestry, pulp and paper, electrochemical, and mining sectors, in communities across the province, and are some of BC's largest employers.
- **Rate Schedule 1823** is the standard large industrial electricity rate. Customer energy bills include a "demand charge" that reflects the cost of the physical infrastructure required to provide service. "Peak" consumption patterns increase demand charges, sending a price signal to customers to use the infrastructure efficiently, reducing long-term system costs.
- **Customer Baselines, or "CBLs"**, are a central component of RS1823. RS1823 sends a conservation price signal by encouraging customers to modify behaviour and invest in energy efficiency measures to reduce their exposure to the much more expensive "Tier 2" price of electricity. The CBL determines when a customer shifts from purchasing electricity at the Tier 1 price to the Tier 2 price. If a customer's energy consumption decreases below a certain point the CBL is reset, increasing the subsequent unit cost of electricity.
- **Rate Schedule 1828** is the rate used for designated industrial customers with biomass generation. The "energy charge" component of RS 1828 is like RS1823 but based **on five-year averages** of Tier 1 and Tier 2 consumption under RS1823. The demand charge component is the same.
- **Tariff Supplement 5** is the standard Electricity Supply Agreement between an industrial customer and BC Hydro. The proposed "Billing Adjustment" would replace an escalated demand charge with an average based on customer history. This is what BC Hydro uses in Force Majeure circumstances. Similarly, customers should not face higher electricity rates because of consumption patterns that change in response to pandemic effects.
- **Tariff Supplement 90 is the Mining Customer Payment Plan.** It allows mining customers to defer payments to BC Hydro when the average daily settlement price of copper or coal falls below a reference settlement price.

Page 87 of 98 to/à Page 93 of 98

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Page 94 of 98

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MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

BRIEFING NOTE FOR INFORMATION

PREPARED FOR: Honourable Bruce Ralston, Minister Energy, Mines and Petroleum Resources; Geoff Meggs, Chief of Staff, Premier's Office

ISSUE: Woodfibre LNG: Project Updates

BACKGROUND:

Woodfibre LNG (Woodfibre) is proposing a 2.1 million tonnes per annum facility on privately owned land in Howe Sound that will utilize electrically driven liquefied natural gas (LNG) trains.

The Project is owned and operated by Woodfibre LNG Limited, a privately held Canadian company headquartered in Vancouver. The company is a subsidiary of Pacific Oil and Gas Limited, which is part of the Singapore-based Royal Golden Eagle group of companies.

Woodfibre had communicated its intentions to issue a Notice to Proceed (Final Investment Decision) Q2 or early Q3 2020 and commence construction late 2020, pending the conclusion of negotiations with McDermott, the Engineering, Procurement and Fabrication contractor (EPF).

Woodfibre has achieved significant milestones in working towards a Notice to Proceed:

- Received environmental approvals from the BC Environmental Assessment Office (EAO), Canadian Environmental Assessment Agency, and a Squamish Nation Environmental Assessment Agreement;
- Received its facilities permit from the BC Oil and Gas Commission;
- Fully permitted on major federal permits, permit plan in place for the issuance of supporting provincial, federal and municipal permits;
- Concluded commercial agreements with BC Hydro and substantially completed its commercial agreements with FortisBC;
- Concluded Impact Benefit Agreements with Squamish Nation and ^{s.16}
s.16
- ^{s.17}
s.17
- Underway with decommissioning, pre-construction work onsite.

DISCUSSION:

Investments and Benefits:

- Woodfibre LNG project capital investment is estimated between \$1.4 and 1.8B.
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- Pacific Oil and Gas announced the acquisition of Canbriam Energy.^{s.21}
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First Nations Benefit Agreements:

Significant agreements have concluded or are near conclusion with impacted Nations. The Squamish Nations agreements by Woodfibre, FortisBC and government were signed on February 22, 2019, in summary:

- s.16
-
-
-

With a mandate approved, a joint negotiating table has been established between Tsleil-Waututh Nation, Musqueam Indian Band and the Province and is currently in the final stages of term sheet approval.

Environmental Considerations:

In addition to site remediation, an ongoing Environmental Working Group with Squamish Nation has been in place since 2016. The Working Group includes Squamish Nation and Woodfibre LNG representatives supported by input from traditional and cultural knowledge holders and environmental specialists.

Woodfibre intends to use clean energy from the BC Hydro grid for compression resulting in a LNG project with the lowest global emissions profile. Emissions from Woodfibre LNG were taken into consideration and have been confirmed as aligning under the CleanBC plan.

ISSUES:

Environmental Assessment Certificate Extension and Amendment: The provincial environmental assessment (EA) certificate for Woodfibre was issued on October 26, 2015 with the requirement that the project be substantially started within five years. On March 24, 2020, pursuant to subsection 31(2) of the *Environmental Assessment Act* 2018, Woodfibre LNG applied for a one-time five year extension to the duration of the EA Certificate. EAO has now accepted the extension request for review and is currently seeking the advice from a technical advisory committee, including Indigenous nations, on whether to grant the extension.

EAO is also currently reviewing an amendment request (Amendment #3) to the EA Certificate that proposes workforce accommodation, including a floating camp, within the Certified Project Area.

McDermott - Engineering Procurement Fabrication Contract

In Q1 of 2020, McDermott voluntarily entered Chapter 11 bankruptcy protection. As a result, negotiations between McDermott and Woodfibre have slowed awaiting the results of that process. Woodfibre is anticipating a continued relationship with McDermott as the company reorganizes project debt and equity.

With McDermott under a Chapter 11 process, timelines for determining a final investment decision have been challenging. Woodfibre remains committed to starting construction and, s.21

COVID 19 Emergency

Woodfibre staff have communicated that the global COVID 19 crisis has put considerable strain on the international banking and finance system, negatively impacting Woodfibre's project financing timelines. In addition, the COVID 19 crisis has impacted China's fabrication yards putting additional pressures on Woodfibre's project timelines.

The COVID 19 emergency, coupled with ongoing challenges with McDermott has led Woodfibre to announce a delay in project timelines for one additional year – mid 2021.

CONCLUSION:

Woodfibre LNG remains committed to project development and is set to play an integral role in BC's energy system and would represent one of the single largest private sector investments in the greater Vancouver area.

Ministry staff will continue to work closely with Woodfibre LNG on the project's regulatory environment and issues resolution.

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