

## **MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES**

### **BRIEFING NOTE FOR INFORMATION**

**I PREPARED FOR:** Honourable Michelle Mungall, Minister of Energy, Mines and Petroleum Resources

**II ISSUE:** Meeting with Shell regarding its Nature-Based Solutions Initiative

### **III BACKGROUND:**

Royal Dutch Shell plc (Shell), is a British-Dutch oil and gas company headquartered in the Netherlands and incorporated in the United Kingdom. It is the fifth-largest company in the world measured by 2018 revenues. Shell is active in every area of the oil and gas industry including exploration and production, refining, transport, distribution and marketing, petrochemicals, power generation, and trading. It also has renewable energy activities, including biofuels, wind and hydrogen.

Shell is the world's largest independent LNG producer and marketer. The company's LNG business grew substantially following its acquisition of fellow LNG aggregator BG in 2016. Shell's portfolio spans the value chain and contains an array of equity and third-party LNG supply points in 17 countries, a large shipping fleet, and regasification access. LNG sales in more than 25 markets enable the company to provide greater flexibility and to optimize deliveries. As of December 2018, Shell and its subsidiaries had a total of 35.6 trillion cubic feet of proven developed and undeveloped reserves of natural gas worldwide. It has an existing liquefaction portfolio of 39.9 million tonnes per annum.

#### **Groundbirch**

Within British Columbia, Shell has an 80 percent working interest in the Groundbirch play, with PetroChina owning the remaining 20 percent stake. It is located in the Montney formation in northeastern British Columbia. The venture produces approximately 500 million cubic feet per day of natural gas and has an expected field life of more than 35 years. Shell has an estimated 19.6 trillion cubic feet of commercially recoverable natural gas reserves remaining in the formation. Shell acquired the Groundbirch assets in 2008. Since then, the business has grown significantly in scale and developed into a successful asset for Shell. Today, Groundbirch has more than 500 producing wells and four gas plants along with the associated infrastructure. Shell's Groundbirch play also produces natural gas liquids including propane, butane, ethane and condensate.

#### **LNG Canada**

Since LNG Canada's Final Investment Decision announcement in October 2018, construction has commenced on the LNG Canada facility and associated Coastal Gas Link pipeline projects. Site clearing activities are underway and are expected to last until April 2019. Pre-construction activities for the Coastal Gas Link pipeline are underway and include surveying, road-clearing and camp preparation. The Ministry of Energy,

Mines and Petroleum Resources has established a dedicated team for the implementation of the LNG Canada and the Coastal GasLink projects. This team is working collaboratively with other Ministries and the BC Oil and Gas Commission to ensure permitting remains on schedule and any issues pertaining to the provincial government are identified and addressed.

#### **IV DISCUSSION:**

##### **Shell's Climate Commitment and Nature-based Solutions**

Shell wishes to be a world leader in clean energy and responsible development. Shell's Nature-based Solutions initiative includes projects that protect or redevelop natural ecosystems, such as forests or coastal habitats, allowing ecosystems to capture and store more carbon, thereby reducing emissions. Shell is planning to invest \$300 million in natural ecosystems over the next three years to reduce their net carbon footprint by 2-3 percent. As part of Shell's commitment to reducing its climate impact, it reviewed its membership in 19 industry associations and identified diverging positions on climate policies, specifically the Paris Agreement and carbon pricing. Consequently, Shell did not renew its membership with the American Fuel and Petrochemical Manufacturers.

##### **Shell's Sky Scenario and New Energies Division**

Shell's *Sky* scenario outlines what they believe to be a technically possible, but challenging pathway for society to achieve the goals of the Paris Agreement. It reveals the potential for a new energy system to emerge. Shell's New Energies Division, established in 2016, has two areas of focus: new fuels for transport (advanced biofuels and hydrogen) and power (including electricity generation, purchase and sale, and direct supply).

##### **Hydrogen**

Shell produces hydrogen at scale, mainly for use in oil refining. In California, Shell is looking at opportunities to supply hydrogen to the transportation sector. Shell's Hydrogen Motility Division in Martinez, California near San Francisco is interested in expanding the hydrogen infrastructure for the light- and heavy-duty transportation sector by building out a hydrogen refueling network. In British Columbia, Shell operates a hydrogen refueling station in Vancouver. Shell also has plans to install a network of 400 hydrogen fuelling stations in Germany by 2023.

Shell is also interested in the global hydrogen opportunity, including looking at options for production, blending into the natural gas grid, and further installations in the transport sector. In Germany, Shell owns the largest electrolyser in the world (10 MW). This is associated with their Rhineland refinery and the hydrogen will be used on-site as a clean feedstock to produce lower carbon fuels.

##### **Renewable Natural Gas in BC**

Shell is looking for renewable natural gas (RNG) opportunities in Canada. CleanBC commits to making residential and industrial natural gas cleaner with a minimum 15 percent to come from renewable gas. This commitment will drive the demand for renewable gas. Currently, RNG is sourced from biomass, landfill gas, and anaerobically digested wastes. **s.13** FortisBC issued a request for expression of interest for more RNG in 2018 and received responses

from across North America. s.13  
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## V CONCLUSION:

Shell is a global leader in the oil and gas industry and is committed to transitioning to a low carbon future through investment in clean energy and innovative technology. British Columbians can benefit from Shell's interest and initiatives on nature-based solutions, hydrogen and renewable gas, which provide reductions in greenhouse gas emissions and aligned with the CleanBC plan.

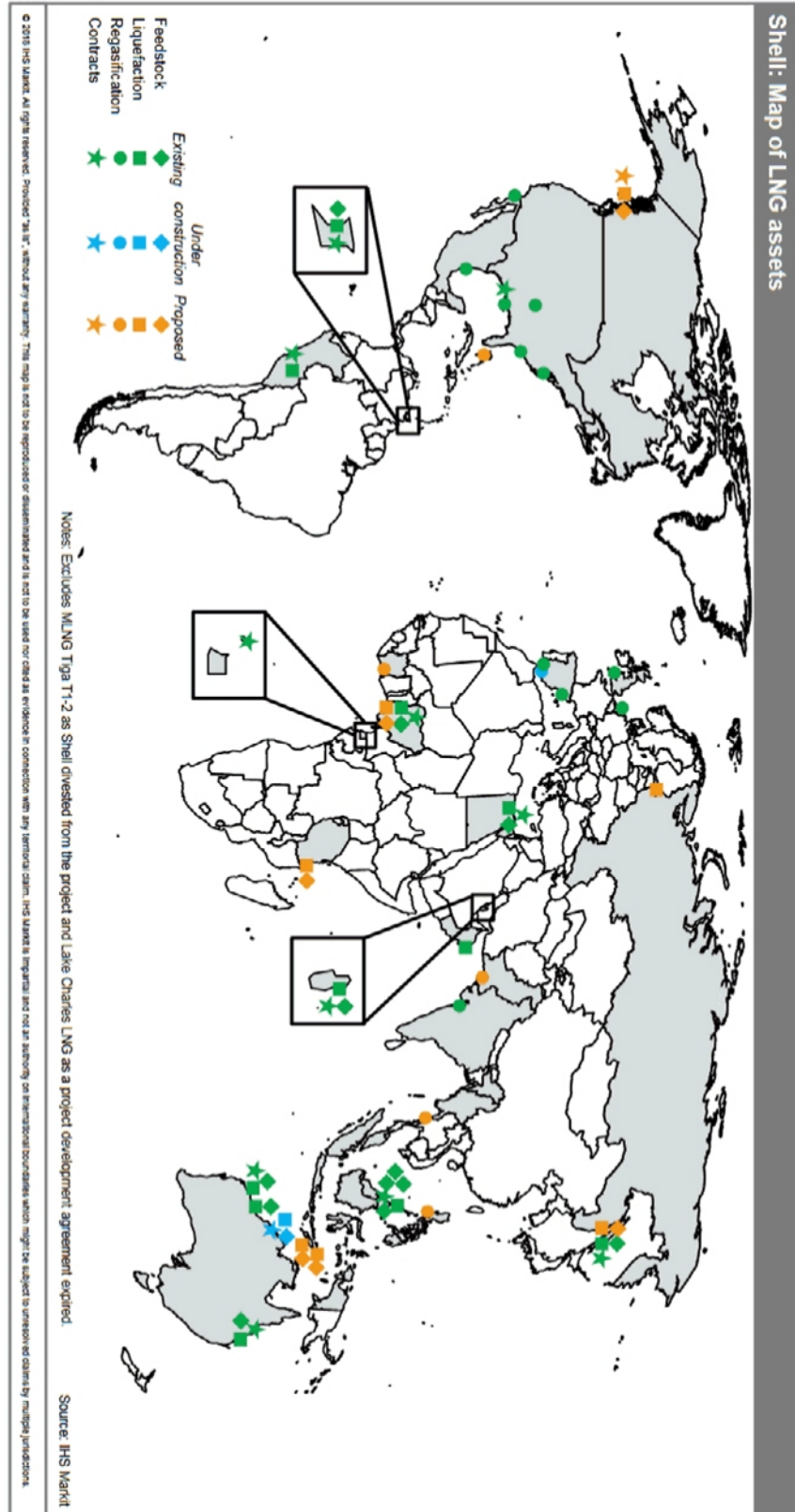
**Appendix:** Appendix A – Map of Shell's LNG Assets  
Appendix B – Map of Shell's Western Canada operated production

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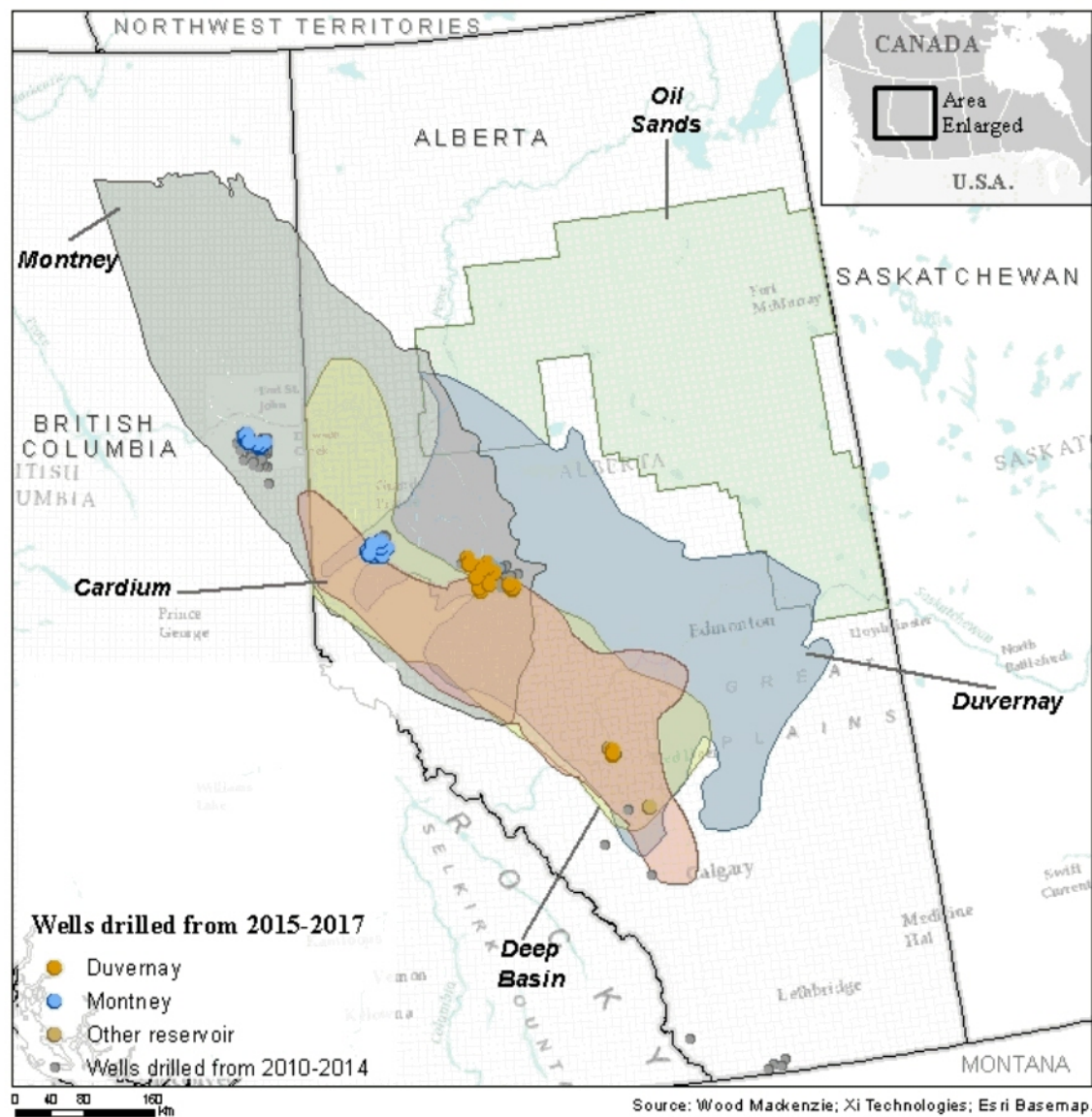
## Appendix B: Map of Shell's LNG assets



**\*NOTE: LNG Canada is currently under construction**



## Appendix B: Map of Shell's Western Canada operated production



## **MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES**

### **BRIEFING NOTE FOR DECISION**

**I PREPARED FOR:** Honourable Michelle Mungall, Minister of Energy, Mines and Petroleum Resources

**II ISSUE:** Pan-Canadian Energy Information System Charter for Ministers' endorsement at the 2019 Energy and Mines Ministers' Conference

### **III BACKGROUND:**

At Energy and Mines Ministers' Conference (EMMC) 2018, Ministers committed to explore additional opportunities for federal, provincial and territorial collaboration. One opportunity was articulated through the EMMC joint paper "Building Canada's Energy Future Together" with a long-term vision to:

"Develop a modern, pan-Canadian energy information system that provides credible, impartial and comprehensive information that the public can trust and that stakeholders can use to make decisions that support Canada's transition to a low-carbon energy system."

Under the EMMC Energy Steering Group, a Federal/Provincial/Territorial (FPT) Energy Information working group (working group) was formed to develop a path forward on energy information collaboration. The working group developed a Pan-Canadian Energy Information Charter (Charter) for Ministers to sign and endorse at EMMC 2019 (draft attached).

There are four key commitments in the Charter for implementation:

- sharing of energy information among governments;
- work collaboratively to address deficiencies in energy information;
- contribute to the ongoing development of the Canadian Energy Information Hub; and
- update EMMC annually on progress made and identify further areas of cooperation.

The endorsement of the Charter would allow the working group to implement agreed-to commitments.

### **IV DISCUSSION:**

Ministry of Energy, Mines and Petroleum Resources (EMPR) staff have participated in the working group and have reviewed and provided input for the draft Charter. The Charter captures a wide variety of measures taken to advance the collaborative actions for jurisdictional participation and cooperation. Included is the opportunity to build on existing Data Sharing Agreements (DSAs) among FPT governments. This is guided by the joint aim to collect, analyze and disseminate accurate and timely energy information. Benefits of expanding DSAs include the reduction of duplicative efforts and expansion of the amount of information that can be shared.

Jurisdictions will also collaborate to identify areas of improvement that will have a high-impact with minimal cost and implement solutions to address data gaps in energy information. The work will help in the development of a framework for energy data in Canada. Jurisdictions will similarly look to increase the number of datasets and information products available on the Canadian Centre for Energy Information website, which the Government of Canada has launched. The website will host an inventory of energy information that will link to FPT's energy information. The contribution and ongoing work to the Centre for Energy Information will help to provide a harmonized approach to energy information dissemination and help users find extensive energy information. The federal government has committed to funding through the federal Budget 2019 of \$15.2 million over five years, starting in 2019/20, and \$3.4 million in ongoing funding to support energy data and dissemination via a virtual Canadian Centre for Energy Information.

The committed actions that are achieved throughout this year will be provided to Ministers in an annual update that will include recommendations for additional areas of collaboration, starting at EMMC 2020.

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## **V RECOMMENDATION:**

It is recommended that Minister Mungall endorse the Pan-Canadian Energy Information Charter System at EMMC 2019.

Approved / Not Approved

June 12, 2019

\_\_\_\_\_  
Honourable Michelle Mungall, Minister  
Ministry of Energy, Mines and Petroleum Resources

\_\_\_\_\_  
Date

## **ATTACHMENT:**

1. Draft Pan-Canadian Energy Information System Charter

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Withheld pursuant to/removed as

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## **MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES**

### **BRIEFING NOTE FOR DECISION**

**I PREPARED FOR:** Honourable Michelle Mungall, Minister of Energy, Mines and Petroleum Resources

**II ISSUE:** Administration of Remote Community Clean Energy Strategy project funding

### **III BACKGROUND:**

The Ministry of Energy, Mines and Petroleum Resources (EMPR) has received direction and Budget 2019 funding under the CleanBC plan to support the Remote Community Clean Energy Strategy (RCCES). RCCES aims to reduce total, province-wide diesel based electricity generation in remote communities by 80 per cent by 2030.

RCCES is a multi-stakeholder effort focused on communities that are not connected to the provincial electricity grid, commonly referred to as “remote communities.” RCCES targets remote communities who rely on the province’s 22 largest diesel generating stations – 12 BC Hydro stations and 10 stations supported by Indigenous Services Canada. RCCES aims to displace diesel generation through four pillars of action:

1. support communities to develop expertise and experience in energy efficiency and clean energy;
2. retrofit existing homes and buildings to make them highly energy efficient;
3. develop renewable heating systems, including heat pump technology and district energy systems; and
4. implement renewable energy projects to offset all or most of remaining diesel generation, including rooftop solar photovoltaic and community-scale renewable systems.

\$15 million to support renewable energy project implementation was included in Budget 2019 as part of CleanBC. In addition, \$4 million has been made available through a reprofiling of unallocated Remote Community Implementation (RCI) Program funds, currently held by the Fraser Basin Council. In the RCCES 2018 Treasury Board (TB) Submission, the Ministry proposed that external delivery agents be used to administer the program to leverage expertise with remote community clean energy projects, build on established funding application processes and provide flexibility to disburse funds across fiscal years. The ability to disburse funds over multiple fiscal years is critical to achieving program outcomes given longer development timelines for large capital remote community renewable energy projects. The approval of the TB submission confirmed this approach.

The Ministry has demonstrated success working with external delivery agents to administer clean energy related funding programs for First Nations and Local Governments, while ensuring that Government’s communications needs are met. A carefully structured agreement

with clear roles and responsibilities will enable the Ministry to direct program activities and communications, while achieving outcomes beyond the Ministry's currently resourced capacity. Appendix A is an example of a Shared Cost Arrangement between the Ministry and Fraser Basin Council to administer two funding intakes of the Community Energy Leadership Program. Through a similar agreement, the Ministry would be able to emphasize critical CleanBC messaging and obtain a strong public focus.

#### **IV DISCUSSION:**

The RCCES TB submission initially identified two delivery agents to administer the renewable energy project implementation funding: Coast Funds; and Northern Development Initiative Trust (NDIT). Each delivery agent would administer approximately \$9.5 million of funding depending on final program design.

Coast Funds have since been confirmed as the delivery agent for renewable energy project implementation funding in its service area after significant discussions with Ministry staff and acceptance by the Coast Funds Board of Directors. Of the 22 largest diesel generating stations identified in the RCCES TB submission, 11 are within the Coast Funds service area. Due to limitations of the Coast Funds mandate, it cannot work with communities outside its service area, nor can it fund non-Indigenous communities.

The advantage of partnering with Coast Funds is that it offers other funds that may be leveraged and project consulting and proposal writing support to all its participating communities. EMPR staff are currently working with Coast Funds on program design with a target of finalizing an agreement in July 2019 and proceeding with calls for proposals in October 2019 and February 2020. This schedule matches the current Coast Funds granting cycle.

Although at first promising, an in-depth evaluation of NDIT as a delivery agent revealed shortcomings. NDIT is unable to administer the program in all of the targeted communities outside the Coast Funds service area and has limited Indigenous profile. NDIT is also unable to offer a parallel level of service to Coast Funds. While NDIT is no longer considered a suitable delivery agent option, NDIT clean energy funding for communities may still be leveraged by projects funded through RCCES.

Four alternative organizations have been evaluated to be a second delivery agent for RCCES renewable energy project implementation funding: Fraser Basin Council; New Relationship Trust; BC First Nations Energy and Mining Council; and the First Nations Major Projects Coalition.

Selection criteria for the second delivery agent included:

- ability to deliver to target non-Coast Funds communities, including non-Indigenous communities;
- fit with Indigenous goals under CleanBC;
- experience with energy project pathfinding and consulting;
- capital grants administration experience;
- remote community energy projects experience;
- current funding program administration capacity;



- ability to leverage other funds under their purview; and
- good fit for the planned multiple years of RCCES.

### **Fraser Basin Council**

The Fraser Basin Council (FBC) is a charitable non-profit organization that advances sustainability initiatives in the Fraser River Basin and throughout British Columbia (BC).

FBC is the current delivery agent for the EMPR's Community Energy Leadership Program and holds the legacy RCI funds in an interest-bearing trust fund. EMPR has a good working relationship with FBC and they have a proven track record of delivering programs. They have strong experience with energy planning and clean energy projects, and have worked extensively with Indigenous communities and remote communities. FBC has reported that they are currently operating close to capacity but would be able to bring on additional administrative resources to administer the RCCES clean energy project implementation funding.

### **New Relationship Trust**

The New Relationship Trust (NRT) is an independent non-profit organization dedicated to strengthening First Nations in BC through capacity building. The NRT invests in BC First Nations by supporting them in five capacity development areas: governance; education; language; youth and elders; and economic development.

A partnership with NRT would build on existing EMPR relationships with this province-wide Indigenous-led granting organization. Although most of their work is in areas other than energy, they do administer the British Columbia Indigenous Clean Energy Initiative (BCICEI) currently funded by the province under CleanBC and the federal government. NRT has stated they have the administrative capacity to support the RCCES clean energy project implementation funding. Based on previous experience with BCICEI, NRT may need support from EMPR staff on the governance and management of an advisory committee. An outstanding question is whether NRT can support non-Indigenous communities.

### **BC First Nations Energy and Mining Council**

BC First Nations Energy and Mining Council (FNEMC) is a provincial First Nations non-profit organization mandated by the BC First Nations Leadership Council and the Chiefs of BC. FNEMC supports and facilitates First Nation efforts to sustainably manage and develop energy and mineral resources, while enhancing the social, cultural, economic and political well-being of First Nations in BC.

Partnering with FNEMC would give EMPR an opportunity to build a new relationship with a province-wide Indigenous-led organization that has a strong track record of being an advocate for project safety and Indigenous participation in energy and mining projects. That said, EMPR staff research indicates that FNEMC does not have experience managing capital project funding programs, nor does it appear to have the administrative capacity to do so. The FNEMC may also have difficulty reaching out to non-Indigenous communities targeted by RCCES.

## **First Nations Major Projects Coalition**

The First Nations Major Projects Coalition (FNMPC) is a national non-profit society that works collaboratively on economic development projects with its coalition members. FNMPC focuses on capacity building and providing environmental, technical and economic expert advice to its First Nation members. FNMPC does not manage projects, rather they provide tools and research for First Nations members to advance projects.

Choosing FNMPC as a RCCES delivery agent would start a positive working relationship with an energetic new player in the BC clean energy projects space. One limitation is the coalition only works with its members currently. To support the remote communities identified in RCCES, non-member communities would need to join the coalition. It is unclear whether they would be able to support non-Indigenous communities. FNMPC has significant administrative capacity but have confirmed they have no experience administering energy project funding programs, nor are they able to provide the consulting, pathfinding and application support that is required.

## **V OPTIONS:**

**Option 1:** Conclude a program delivery agreement with Coast Funds as specified in the RCCES TB submission and pursue a program delivery agreement with FBC to administer the remaining portion of the RCCES funding, and unallocated RCI funding, to support clean energy project implementation in remote communities outside of Coast Fund's service area.

### **Pros**

- Coast Funds and FBC have extensive experience with clean energy programs and project funding and understand the subtleties of the remote community context.
- Both organizations have demonstrated experience with management consulting and pathfinding services.
- Simplifies administration as FBC holds provincial RCI funds in trust and an additional agreement to move funds would not be required.
- FBC can accommodate the need to support both Indigenous and non-Indigenous remote communities.
- Allows for disbursement of funds beyond the fiscal year-end.

### **Cons**

- Although FBC has led and delivered a number of projects for Indigenous peoples, it is not an Indigenous-led organization.
- FBC currently administers several programs for EMPR and are operating close to capacity. They will need to hire new staff.

**Option 2:** Conclude a program delivery agreement with Coast Funds as specified in the RCCES TB submission and pursue a program delivery agreement with the New Relationship Trust to administer a portion of the RCCES funding, and unallocated RCI funding, to support clean energy project implementation in non-Coast Funds service areas communities.

**Pros**

- In addition to Coast Funds, provides RCCES with an experienced delivery agent with a strong connection to and acceptance by Indigenous Nations.
- NRT has an experienced advisory council that is very interested in supporting solutions to decarbonize remote communities.
- Could directly build off of the BCICEI program.

**Cons**

- Although the NRT administers the BCICEI program, it does so with considerable administrative support from Western Economic Development Canada. EMPR would likely need to provide increased administrative support to the NRT on RCCES.
- It is not confirmed if NRT is able to support non-Indigenous communities.
- An additional agreement between FBC and NRT would be required to utilize the unallocated RCI funding for RCCES.

**Option 3:** Administer the RCCES renewable energy project implementation funding from within government.

**Pros**

- Increased Ministry control on execution of the program.
- Increased ability to manage and direct communications, key messages and announcements around CleanBC related to RCCES.

**Cons**

- Due to the nature of implementation timelines for large capital remote community renewable energy projects, it would be impossible to spend \$15 million by March 31, 2020. As such, the funding allocation would be stranded, and remote community renewable energy projects would not be constructed.
- The remote community renewable energy projects to be funded under RCCES have dependencies on other funding sources (i.e. Clean Energy for Rural and Remote Communities; Investing in Canada Infrastructure Program - CleanBC Communities Fund; and Investing in Canada Infrastructure Program - Rural and Northern Communities) that have approval timelines beyond 2019/20 and which would not be compatible with a RCCES spending deadline of March 31, 2020.
- Withdrawing from the commitment to move forward with Coast Funds as a delivery agent would result in a reputational impact for the Ministry. Confirming Coast Funds as one of the RCCES delivery agents has involved eight months of work and collaboration including preliminary approval at the Coast Funds board level.



**VI RECOMMENDATION: Option 1** - Pursue an agreement with Coast Funds and FBC to administer the RCCES funding, and unallocated RCI funding, to support clean energy project implementation in remote communities.

Approved / Not Approved

June 6, 2019

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Honourable Michelle Mungall, Minister  
of Energy, Mines and Petroleum  
Resources

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Date

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**MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES**

**BRIEFING NOTE FOR INFORMATION**

**I PREPARED FOR:** Honourable Michelle Mungall, Minister of Energy, Mines and Petroleum Resources

**II ISSUE:** Tourmaline Oil Corporation Request to Meet

**III BACKGROUND:**

Tourmaline Oil Corporation (Tourmaline) is a Canadian oil and gas exploration and production company. It commenced operations in 2008 and has experienced rapid growth through development of resources on its tenures, and through the acquisition of existing producers and/or tenures in British Columbia and Alberta. In British Columbia Tourmaline is primarily a natural gas and natural gas liquids producer.

According to the company's latest investor guidance package, Tourmaline expects to overtake both Encana and Canadian Natural Resources to become the largest natural gas producer in Canada in 2019. It is also a significant liquids producer in Canada. Tourmaline has doubled liquids production over the past 1.5 years and its 2019 liquid production growth rate of 35 to 40 percent is amongst the highest in the Canadian oil and gas sector.

**IV DISCUSSION:**

In 2018 Tourmaline ranked fifth in British Columbia as a natural gas and liquids producer, with 358 million cubic feet per day (MMcf/d) in gas and approximately 12,500 barrels per day (bpd) in condensate production. It also has significant production in Alberta.

In 2018 Tourmaline drilled 57 new Montney wells in Northeast British Columbia. Tourmaline was operating 331 wells in British Columbia as of February 2019.

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Tourmaline is a registered title holder or payor on 184 tenures in British Columbia covering 102,575 hectares. It currently has in excess of 3,565 potential horizontal drilling locations in the Montney with 1.2 billion barrels of oil equivalent reserves.

In October 2016 Tourmaline purchased 24,700 hectares of British Columbia oil and gas tenure in the Gundy area along with some Alberta assets from Shell. The purchase was priced at \$1.37 billion for assets representing 24,850 bpd production. The deal also included three natural gas processing plants, 719 kilometres of pipeline, and thousands of future drilling targets.

In 2017, Tourmaline started acceleration of Montney Turbidite development with incremental condensate production from the new Doe 2-11 gas plant.

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## V CONCLUSION:

Tourmaline Oil Corp. is a major natural gas and liquids producer in British Columbia that contributed to s.17 of the Province's marketable natural gas production in 2018. Based on the Company's estimate, Tourmaline expects to be the largest natural gas producer in Canada and will be the third largest Montney producer in British Columbia by the end of 2019.

Tourmaline has a large-scale, long-term capital exploration and development plan in Northeast British Columbia Montney play with 20 years of drilling inventory in the Gundy and Sundown areas. s.21  
s.21

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✓

✓

✓

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## MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

### BRIEFING NOTE FOR INFORMATION

- I PREPARED FOR:** Minister Michelle Mungall, Ministry of Energy, Mines and Petroleum Resources
- II ISSUE:** Meeting with Dave Porter, CEO of First Nations Energy and Mining Council and Robert Philips, First Nations Summit Task Group (political executive)

### III BACKGROUND:

The First Nations Leadership Council (FNLC) aims to represent the interests of Indigenous Nations in British Columbia by informing government policy development. The Province is engaged with the FNLC as part of efforts to advance reconciliation. The FNLC has delegated engagement on natural resource initiatives to its respective sub-councils, including the First Nations Energy and Mining Council (FNEMC).

The Ministry of Energy, Mines and Petroleum Resources (EMPR) entered into Contribution Agreements with FNEMC for the 2017/18 (\$150,000) and 2018/19 (\$300,000) fiscal years, and the Contribution Agreement for 2019/20 (\$300,000) will soon be finalized.

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This letter was sent in reference to the *Mineral Tenure Act* (MTA), which governs the process for acquiring and maintaining mineral rights (attached).

### IV DISCUSSION:

To date, EMPR's engagement with FNEMC has broadly focused on placer mining, the MTA and minerals on reserve. As part of the 2018/2019 Contribution Agreement, the following key initiatives have been undertaken in conjunction with FNEMC:

- A jurisdictional scan was jointly prepared and finalized through 2018, as was the collaborative drafting of a Concept Paper identifying key concepts for discussion with Indigenous Nations to inform a legislative proposal;
- Engagement has been launched on the MTA, including forums where Indigenous Nations can openly and honestly discuss a series of topics that were identified collaboratively by EMPR and FNEMC;
- EMPR staff are working with the Taku River Tlingit First Nation to collaboratively address concerns related to placer mining, including working with the Ministry of Environment and Climate Change Strategy to remove the exemption in the Placer Mining Waste Control Regulation;

- At the request of Indigenous Nations impacted by placer mining, a number of placer mining forums have been held to gather further information and inform the Ministry's approach to addressing concerns that have been raised; and,
- There has been collaboration on a path forward with respect to minerals on reserve with the federal government.

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s.16 Indigenous Nations have been clear that they want to be engaged directly on matters pertaining to mineral development and potential reforms to the tenure system.

EMPR has hosted three Indigenous Engagement Forums on the MTA since February 2019 in order to facilitate direct engagement and relationship-building between EMPR staff and Indigenous representatives. FNEMC representatives have attended all three forums and have had input into the design of these sessions. FNEMC has also participated in a tripartite meeting with industry representatives in April 2019.

EMPR and FNEMC are currently finalizing a workplan for the 2019/20 fiscal year that would continue to have FNEMC collaborate on evaluating potential changes to the MTA, including: development of engagement sessions; development of an intentions paper; participation with industry on evaluating options; and input into the legislative drafting process.

## V KEY MESSAGES:

EMPR is committed to continuing to engage and collaborating with FNEMC on their identified strategic priorities. EMPR is balancing this engagement with requests from Indigenous Nations for direct engagement on these issues.

I believe we are making progress on these issues and I would encourage FNEMC to continue to engage directly with EMPR staff.

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### Attachments:

1. January 29, 2019 incoming letter from Robert Phillips
2. Draft response to January 29, 2019 incoming

## **MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES**

### **BRIEFING NOTE FOR DECISION**

**I PREPARED FOR:** Honourable Michelle Mungall, Minister of Energy, Mines and Petroleum Resources

**II ISSUE:** Renewal of Geothermal Permit #63730

### **III BACKGROUND:**

Geothermal permit #63730 is 3,114 hectares in area and is located on the northeastern flank of Mount Meager near Pemberton, British Columbia (BC). The permit area was explored by BC Hydro under the Federal Geothermal Energy Program in the early 1980's. BC Hydro drilled several test holes on the prospect, which suggested a significant heat resource. The area has been of interest to geothermal developers since that time. A geothermal resource permit ("the permit") was awarded to Tecto Energy Inc. (Tecto) following a competitive auction in July 2011. Tecto bid \$202,410 or \$65 per hectare, the highest bonus bid paid for a geothermal permit in BC. The proponents have maintained the permit, conducting exploration and building a relationship with the Lil'wat First Nation (LFN) in the process.

Geotec Energy Ltd. (Geotec), as an authorized representative of Tecto, has requested in a letter dated March 8, 2019, the renewal of geothermal permit #63299 be considered by the Minister. Tecto has applied annually for renewal since 2012, paying the required rent and fees, meeting exploration work commitments, and submitting exploration work reports. However, they have not satisfied the requirement of drilling a geothermal well capable of production to convert the permit to a lease. Therefore, continued renewal of the permit requires the written authorization of the Minister under section 5(9) of the *Geothermal Resources Act* (GRA) for a period of up to one year. If the permit is not renewed at this time, it will expire permanently on July 27, 2019. A new permit, issued through a competitive auction or direct award, would be required to continue geothermal exploration/development work in this location in this case.

Section 5 of the GRA specifies that geothermal permits expire yearly but may be renewed seven times through an administrative process. Renewals for additional periods of one year require Ministerial approval under section 5(9) of the GRA.

### **IV DISCUSSION:**

Exploration and development of geothermal energy resources takes significant time and capital. When developed, geothermal energy is a valuable firm renewable capacity resource, but the drilling geothermal wells can cost millions of dollars and even in areas of high potential there is substantial risk that a suitable reservoir will not be discovered. In BC abundant lower cost/risk hydro and wind-electricity has precluded serious interest in geothermal energy development to date. BC Hydro currently has a surplus of electricity but is forecasting a deficit in firm generation capacity by the mid-2020's, due in part to projections of increased demand arising from electrification initiatives under the CleanBC plan. The goal of geothermal permits and the GRA is to enable



exploration, allowing a company who carries the risk of exploration the ability to develop the resource if they are successful.

Electricity procurement opportunities have changed significantly since this area was first permitted in 2011, and the proponent has modified their plans in response to attract/hold investor interest. Now, Tecto is proposing to develop a heat and power plant that would supply a greenhouse operation, assuming a geothermal resource is confirmed within the permit area. This proposal should be considered an interim step towards a lease and electricity production. When, and if, a successful well is drilled, and the proponent applies to convert the permit to a lease a more fulsome development plan will be required. Even with successful drilling and conversion of the permit to a lease, development of the site may be delayed until an energy purchase agreement for electricity is possible. Activity at the adjacent Meager Creek geothermal lease provides an analogue; that lease was mostly dormant for approximately twenty years until the mid-2000's when several wells were drilled in response to the 2002 BC Energy Plan. Those wells were ultimately unsuccessful, and the current owner is maintaining the lease and plans to pursue development again when market conditions allow.

Tecto's authorized representative, Geotec, is working with the BC Oil and Gas Commission to prepare a well application, with a goal of drilling this summer. Renewing the permit at this time will allow Tecto to continue their exploration efforts and would signal that the Province remains committed to geothermal resource development to meet BC's mid to long-term capacity and energy needs. When a well is successfully drilled, Tecto is expected to submit a development plan and application to convert the permit to a lease. If drilling is delayed or unsuccessful, further requests for renewal of the permit, requiring Ministerial approval, are expected.

Tecto has proactively engaged with the LFN and has signed a consultation agreement with the nation. They have indicated they are preparing a benefit sharing agreement with the LFN and intend to have full participation of the First Nation in an eventual development. In 2017, the Province consulted with First Nations regarding an application to convert the geothermal permit to a lease. LFN responded in support of the request at that time; no response was received from other groups consulted. A successful geothermal development could provide economic benefits to the LFN.

Under GRA section 5(9) terms and conditions may be imposed on the permit renewal. The conditions are limited to the scope of a permit, such as work commitments or conditions for future renewal. It is recommended to not impose any additional conditions at this time.

If the permit is not renewed at this time:

- the proponent may realize financial harm from the loss of the tenure. This is not without precedent, an earlier permit at this location expired in February 2010 when a renewal request was denied. At that time, there was interest from companies wanting to acquire geothermal permits around the province and at this location. However, there is currently no interest from other companies wanting to acquire geothermal permits at this location, and Tecto could request a new permit through a competitive process or direct award;
- this high value prospect will not be fully evaluated and may not be available for development when increasing capacity demand in BC exceeds supply in the late 2020s.

## V OPTIONS

**Option 1: (Recommended): Renew geothermal permit #63730 for the term of one year as requested by Geotec on Tecto's behalf.**

Implications:

- Allows the proponent to explore the permit area and continue their drilling plans for this summer.
- Acknowledges that exploration of geothermal energy takes additional time and resources.
- If exploration is successful, this resulting geothermal project could support British Columbia's future capacity needs.

**Option 2: Allow geothermal permit #63730 to expire on July 27, 2019.**

Implications:

- This is a high value prospect. The proponent may request a new permit in the area.
- The permit area would be available for future geothermal auctions.
- Tecto has proactively engaged and are preparing a benefit sharing agreement with the LFN. Potential benefits to the First Nation may be lost.
- s.13
- This prospect will likely not be fully evaluated when capacity resources are needed by BC Hydro in the mid-2020's.

## VI RECOMMENDATION:

**Option 1:** Renew the permit for a period of one year less a day. A draft letter approving the renewal is attached. Ministry of Attorney General legal counsel has reviewed the draft letter and concurs with its content. If Option 1 is approved, a final letter for the Minister's signature will be provided.

## APPROVED / NOT APPROVED

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Honourable Michelle Mungall  
Minister of Energy, Mines  
and Petroleum Resources

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Date

**DRAFTED BY:**  
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**APPROVED BY:**  
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## **MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES**

### **BRIEFING NOTE FOR DECISION**

**I PREPARED FOR:** Honourable Michelle Mungall, Minister of Energy, Mines and Petroleum Resources

**I ISSUE:** Ministerial Order to approve an exemption request from the British Columbia Utilities Commission for NorthRiver Midstream Operations LP and NorthRiver Midstream Operations GP Inc.

### **II BACKGROUND:**

The British Columbia Utilities Commission (BCUC), under the jurisdiction of the *Utilities Commission Act* (UCA), regulates public utilities. On January 7, 2019, the BCUC received an application from NorthRiver Midstream Operations LP and NorthRiver Midstream Operations GP Inc. (collectively NRMI) for an exemption under section 88(3) from Part 3 of the UCA with respect to their pending ownership and operation of six natural gas processing plants and associated raw gas pipelines (collectively the assets). NRMI is indirectly managed and controlled (through affiliates) by Brookfield Asset Management Inc.

NRMI has agreed to purchase these assets from Enbridge Inc.'s subsidiary Westcoast Energy Inc. Completion of this transaction is subject to a number of regulatory approvals being obtained, including an order that will be sought from the National Energy Board (NEB) giving Westcoast leave to sell and transfer the facilities.

NRMI intends to acquire the assets provided that certain closing conditions are satisfied or waived prior to a closing of the transaction anticipated in mid-2019. The assets are currently subject to federal jurisdiction, under the regulatory jurisdiction of the NEB. The change in ownership that will occur at closing will result in the facilities becoming subject to provincial jurisdiction, and NRMI will fall within the definition of "public utility" under the UCA.

### **III DISCUSSION:**

Federal regulatory jurisdiction over the assets was contested by, among others, the Province of British Columbia, up until 1998 when the Supreme Court of Canada confirmed the federal character of Westcoast's gas gathering and processing facilities on the basis that those facilities and Westcoast's interprovincial pipeline were functionally integrated, subject to common control, direction and management by Westcoast, and operated as one enterprise. Since 1998, regulation of the assets has been under a light-handed regulatory framework approved by the NEB.

Owners and operators of gas gathering and processing facilities in British Columbia, whether the facilities are under federal or provincial jurisdiction, are free to negotiate service contracts with customers because these facilities operate in a competitive environment and their customers have ample viable alternatives available to them.



This model of light-handed regulation addressed increasing competition in the market and the requirements of customers for flexible arrangements which could be negotiated quickly as circumstances required without the burden of any unnecessary regulatory process. This model includes a complaints-based process and the principles for use in adjudicating complaints.

NRMI requested, in its application to the BCUC, that the post-closing regulatory regime will continue to employ the processes and principles that are compatible with those currently in effect under the NEB. The BCUC recognized the value of the light-handed framework under which NRMI has been operating and that, because of the nature of the proposed transaction and the competitive market that currently exists, there is benefit in keeping with the form of regulation employed by the NEB. On May 14, 2019, the BCUC found that an exemption from Part 3 of the UCA, with respect to the assets and the transmission and processing of natural gas for others, was warranted and that regulation on a complaint basis is the appropriate method of regulation by the BCUC at this time.

When the assets are transferred to provincial jurisdiction, existing provincial regulation of the facilities will continue and the authority exercised by the NEB will be replaced with regulatory authority by the BC Oil and Gas Commission (OGC) and the BCUC. Regulatory jurisdiction over matters such as construction, operation, safety and integrity, and decommissioning of facilities, land acquisition, and potential impacts to the environment and communities would move from the NEB to the OGC. Economic regulatory jurisdiction would move from the NEB to the BCUC.

The BCUC now seeks the advance approval of the Minister pursuant to section 88(3) of the UCA. Under section 88(3) of the UCA, the BCUC may, with the advance approval of the Minister responsible for the administration of the *Hydro and Power Authority Act*, exempt a person from any or all provisions of the UCA. In circumstances where there is no need for close BCUC supervision, section 88(3) of the UCA permits the BCUC to exempt a person, or class of persons, from the application of all or any of the provisions of the UCA. Amendments to section 88(3), completed in 2015, streamlined this approval process.

Westcoast has advised that only a limited number of its existing service contracts originally contained provisions that incorporated the light-handed framework. All other Westcoast service contracts were the subject of separately negotiated agreements. Westcoast advised that all customers have been advised that, in anticipation of the facilities being transferred to provincial jurisdiction, NRMI would be applying to the BCUC for an exemption and seeking a complaint-based regulatory regime that maintains the ability for customers to freely negotiate their service contracts. No customer has indicated to Westcoast, NRMI or the BCUC that it takes any exception to the application.



#### **IV RECOMMENDATION:**

Staff have no concerns with the BCUC's request and recommend that the Minister approve the requested exemption. If the Minister approves, a Ministerial Order for signature will follow.

Approved / Not Approved

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Honourable Michelle Mungall  
Minister of Energy, Mines and Petroleum Resources

**DRAFTED BY:**

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**APPROVED BY:**

Paul Wieringa, ED, EPB ✓  
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## **MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES**

### **BRIEFING NOTE FOR INFORMATION**

- I PREPARED FOR:** Honourable Michelle Mungall, Minister of Energy, Mines and Petroleum Resources
- II ISSUE:** Contacting preferred expert advisors for Phase 2 of the Comprehensive Review of BC Hydro (Review)

### **III BACKGROUND:**

As part of the Review, the Ministry of Energy, Mines and Petroleum Resources (EMPR) is recommending a staff-led approach for the Review supported by expert advisors. Eleven preferred experts have been proposed to participate in the Review.

### **IV DISCUSSION:**

In anticipation of Cabinet deciding to proceed with the Review based on the recommended draft Terms of Reference and proposed approach, EMPR staff would like to contact experts as soon as possible following the decision. This will ensure that experts will be able to contribute advice early in the Review process.

To demonstrate the importance of assisting in the Review, having the Minister contact three of the preferred experts may increase the likelihood of their willingness to participate. Attached is a proposed invitation script that could be used when contacting experts to canvass their interest and availability (Appendix 1).

The biographies of the three suggested experts is included below, together with staffs' reasons for the Minister to make direct contact (the full list of preferred experts is attached as Appendix 2):

#### **1. Margaret Kenequanash - Chief Executive Officer – Wataynikaneyap Power (Ontario)**

Margaret Kenequanash oversees Wataynikaneyap Power, which is owned by 22 First Nation communities. Margaret devotes her energy to connecting remote First Nation communities to the provincial power grid, and promoting the success of Wataynikaneyap Power's unprecedented partnership between First Nations and Fortis Ontario Inc. With more than 25 years of experience, Margaret has worked with First Nation Tribal Councils in senior positions, was Chief of North Caribou Lake First Nation, and has significant experience in the fields of financial, health and project management, as well as supporting community development initiatives.

Reasons for Minister to directly contact Ms. Kenequanash:

- Ms. Kenequanash would be the Review's sole expert on opportunities for Indigenous peoples arising from transformative changes to traditional utility models. It is important to secure her participation.
- The Government has made a commitment to true, lasting reconciliation with First Nations in British Columbia by fully adopting and implementing the United Nations Declaration on the Rights of Indigenous Peoples and the Calls to Action of the Truth and Reconciliation Commission. Direct contact by the Minister would demonstrate commitment to these principles and commitments.
- Ms. Kenequanash is based in Ontario, so she may not be aware of the Review. Also, she will have additional logistical considerations as compared to experts located within the Province.

**2. David Bibby – Head of Global Digital Services – Finning International**

David Bibby is a future-focused technology executive with over 25 years of experience in strategic technology leadership within growth-oriented global organizations. He has been the Head of Global Digital Service (Finning Digital) at Finning International since January 2016. Prior to this, he has worked as the Vice President, Information Technology, at VanCity, and the Senior Vice President of Information Technology at Canaccord Genuity Corporation.

Launched in 2016 as an internal tech start-up, Finning Digital operates on the edge of Finning International, the world's largest Caterpillar dealer. Like much of the Canadian economy, Finning International was grappling with declining sales amidst falling oil and gas prices and lower demand from the mining sector. Its customers were looking for ways to decrease costs and increase efficiencies. Finning Digital is leveraging digital technology to connect machines, people and sites, transact business and provide new solutions to transform their customers' performance. They support Finning International in connecting data and technology with the expertise of employees world-wide to deliver an enhanced customer experience and improve customer outcomes. Finning Digital's initiatives include IoT or machine-to-machine technology, which allows intelligent computer systems to transmit data and respond accordingly in real time without any human interaction.

Reasons for Minister to directly contact Mr. Bibby:

- Mr. Bibby is a compelling and inspiring speaker and as such, could help stimulate the transformative thinking needed to make the Review a success.
- Mr. Bibby is a highly sought-after expert in his field. A phone call from the Minister will highlight the Ministry's desire for him to participate in the Review and help in securing his availability for participation in the Review.
- Amongst the list of preferred experts, Mr. Bibby brings a unique perspective from his experience leveraging technological innovations to take advantage of industry disruption.

### **3. Gwenne Farrell – former Vice President of MoveUP**

Gwenne Farrell worked as a Vice-President of MoveUp from May 2005 until November 2018. Previous to that she worked as a Financial Analyst with BC Hydro. In the spring of 2007, Gwenne was also elected to the office of Secretary-Treasurer of Canadian Office and Professional Employees Union, Local 378's National Union. Gwenne chaired a number of MoveUP Committees, including the Health and Safety, Convention, and Arbitration Review and Education Committees. She sat on the New West District Labour Council Executive and the Canadian Labour Congress' Energy Task Force. Gwenne has a Bachelor's degree in Economics from Simon Fraser University.

#### Reasons for Minister to directly contact Ms. Farrell:

- Direct contact by the Minister would demonstrate the Government's commitment to the interests of workers as a component of the Review.

### **V CONCLUSION:**

If the Minister contacts the three suggested experts, Margaret Kenequanash, David Bibby and Gwenne Farrell, it would provide the highest chance of retaining these experts for the Review, assuming that they are available to participate. EMPR staff would contact the remaining eight preferred experts.

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#### **APPROVED BY:**

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#### Attachments:

Appendix 1: Proposed Expert Advisor Invitation Script  
Appendix 2: Biographies of Preferred Expert Advisors



## **MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES**

### **BRIEFING NOTE FOR INFORMATION**

**I PREPARED FOR:** Honourable Michelle Mungall, Minister of 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. In November 2016, Woodfibre announced the project received board approval to proceed.

Woodfibre has communicated its intentions to issue a Notice to Proceed (Final Investment Decision) early Q3 2019 and commence construction late Q3, early Q4.

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

- Received environmental approvals from the BC Environmental Assessment Office, Canadian Environmental Assessment Agency, and a Squamish Nation Environmental Assessment Agreement;
- Fully permitted on major Federal permits, permit plan in place for the issuance of supporting provincial and federal permits;

s.17

s.16

- Woodfibre commercial offtake agreements have the projects LNG capacity fully committed;
- Completed decommissioning, pre-construction work onsite.
- Facilities permit from the BC Oil and Gas Commission is expected June 2019.

### **IV DISCUSSION:**

#### **Investments and Benefits:**

The Woodfibre LNG projects expected capital investment is estimated between \$1.4 and 1.8B.

s.13,s.17,s.21

**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. s.13

## **V ISSUES:**

### **Fabricated Industrial Steel Components (FISC)**

s.13,s.16

FISC will impact Woodfibre LNG's project economics and may influence their decision to proceed.

s.12,s.13

## **VI CONCLUSION:**

With a Notice to Proceed anticipated early Q3, 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.

s.13,s.16

#### **Drafted by:**

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Woodfibre Implementation Team  
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#### **Approved by:**

Suzanne Manahan✓  
Dave Nikolejsin, DM✓

## MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

### BRIEFING NOTE FOR INFORMATION

- I PREPARED FOR:** Honourable Michelle Mungall, Minister of Energy, Mines and Petroleum Resources
- II ISSUE:** Background information for meeting with the Honourable Dr. Megan Woods, New Zealand Minister responsible for Energy and Resources

### III BACKGROUND:

- The British Columbia (BC) Ministry of Environment and Climate Change Strategy presented an Overview of Climate Action in BC to a New Zealand (NZ) delegation in April 2019.
- The current government in NZ was elected in 2017 and has made tackling climate change one of its cornerstone policies. This includes committing to 100% of its electricity generation coming from renewable sources by 2035 and making the economy carbon neutral by 2050.
- NZ Electricity profile: 20% fossil / 80% renewables, most of which is hydropower and geothermal (NZ has active volcanos).
- Hydraulic fracturing is currently regulated in NZ and was first introduced in 1989. The Petroleum Exploration and Production Association of New Zealand (industry association) is promoting the opportunity to export LNG.
- NZ is proposing a new *Zero Carbon Act* which includes proposals to:
  - set a new 2050 GHG target, potentially for a form of carbon neutrality;
  - set up an independent Climate Commission to provide advice and hold government to account;
  - plant a billion trees;
  - establish a Green Investment Fund to stimulate investment in low carbon industries; and,
  - introduce adaptation measures including a national risk assessment and adaptation plan.

### IV DISCUSSION:

BC's efforts and strategies to reach emissions reduction targets (40% reduction by 2030 of 2007 levels), especially in the face of a new LNG export industry, include:

#### Carbon Pricing

In 2008, BC implemented North America's first broad-based carbon tax, proving that it is possible to reduce emissions while growing the economy. Between 2007 and 2016, provincial real gross domestic product grew more than 19%, while net emissions declined by 3.7%. On April 1, 2019, BC's carbon tax rate rose from \$35 to \$40 per tonne of carbon dioxide equivalent emissions (tCO<sub>2</sub>e). The tax rate will increase each year by \$5 per tonne until it



reaches \$50 per tonne in 2021. Revenues generated from the carbon tax are used to maintain industry competitiveness and encourage new green initiatives.

### CleanBC

CleanBC is a plan that integrates the vision for clean economic development, clean energy production and use, and GHG reductions. The plan was launched December 5, 2018, and outlines Phase I actions that will achieve 75% of the 2030 target of reducing carbon pollution by 40% below 2007 levels. New Phase II initiatives are under development which will achieve the remaining 25% of GHG reductions for the 2030 target.

In Budget 2019, BC announced \$902 million in total funding to support CleanBC over the next three years. Of the total, \$679 million is funding for announced programs and initiatives in CleanBC, and \$299 million is for future programming and initiatives.

CleanBC includes actions to further electrify BC's natural gas operations in the province's northeast, helping to ensure that BC LNG remains the cleanest LNG in the world. The Climate Solutions and Clean Growth Advisory Council (reporting to the Minister of Environment and Climate Change Strategy) provides advice to government on CleanBC.

### Internationally Transferred Mitigation Outcomes (ITMOs)

BC is exploring ITMOs under Article 6 of the Paris Agreement as a way to offset the GHGs that are generated as a result of exporting LNG to international markets. In the leadup to finalization of Article 6 rules under the Paris Agreement, BC welcomes discussion from international partners interested trading under Article 6.

## **V CONCLUSION:**

BC is committed to reaching the emissions reduction targets outlined in CleanBC, including those resulting from the LNG export industry. This is already happening through the first phase of CleanBC, our carbon pricing policies, and our ongoing investments in industry and clean technologies.

Attachment 1: BC and New Zealand's Climate Plans Comparison Table

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## **MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES**

### **BRIEFING NOTE FOR INFORMATION**

**I PREPARED FOR:** Honourable Michelle Mungall, Minister of Energy, Mines and Petroleum Resources

**II ISSUE:** Meeting with Honourable Dr. Megan Woods, New Zealand Minister responsible for Energy and Resources; Government Digital Services; Greater Christchurch Regeneration; Research, Science and Innovation; and Earthquake Commission

### **III BACKGROUND:**

The Honourable Dr. Megan Woods has requested a meeting with the Minister of Energy, Mines and Petroleum Resources. Two mining related topics have been proposed for discussion.

- Efforts/strategies to increase investment in strategic minerals (those that can be used in emissions reduction technologies);
- Views on sustainable approaches to mining – especially with regards to managing native title/Indigenous rights issues.

The mineral and petroleum industries are an important part of New Zealand's economy, contributing billions of dollars to GDP and contributing hundreds of millions of dollars in royalties. New Zealand has committed to a climate change target designed to reduce greenhouse gas emissions to 30 per cent below 2005 levels by 2030.

### **IV DISCUSSION:**

#### **Efforts/strategies to increase investment in strategic minerals**

British Columbia (BC) is Canada's largest producer of copper, used in electric cars, the largest exporter of the steelmaking coal needed to build wind turbines and light rail transport systems and is Canada's the only producer of molybdenum, used in the steelmaking process. BC smelters are among the lowest carbon footprint producers in the world.

BC is a major producer of many of the strategic minerals needed for renewable energy systems. As the demand for clean energy continues to grow, the need for the metals and minerals used to manufacture those technologies will grow as well. The Mining Jobs Task Force (MJTF) has identified key initiatives to enhance the attractiveness of BC produced minerals for responsible mining markets. These include:

- Increasing BC's fiscal and regulatory competitiveness through improved regulatory transparency and exploring fiscal incentives for developers, operators and mineral explorers.
- Fostering innovation and building awareness of mining's role in a prosperous BC, through hosting a forum to build understanding, awareness and support for

responsible market standards and systems that would advance responsible metals market objectives in BC, and through coordinated mine sector branding.

### **Sustainable approaches to mining**

Government is committed to working towards reconciliation with First Nations and adopting the United Nations Declaration on the Rights of Indigenous Peoples. Mining is the largest private-sector employer of Indigenous people in Canada and BC shares mineral tax revenue with First Nations. The Ministry of Energy, Mines and Petroleum Resources continues to grow our Indigenous engagement team to ensure we have strong relationships with key mining First Nations where much of our exploration and mine development takes place.

The MJTF highlighted the importance of ensuring communities share in the benefits of mining, and specifically benefits to First Nations communities. Recommended Task Force actions accepted by government include:

- Reviewing BC's revenue sharing policy to find ways to reduce revenue stream volatility to Indigenous communities.
- Exploring opportunities to support Indigenous groups in gaining equity ownership related to major projects.
- Amend or develop existing legislation to support the development of community trusts with participation of multiple Indigenous groups.
- Support government's plan to fund Indigenous Stewardship and Mentoring Initiatives.
- Expanding support for the BC Regional Mining Alliance, which promotes BC's mining opportunities internationally through partnerships between First Nations, industry and government.

## **V KEY MESSAGES:**

- BC is a major producer of key minerals needed to support a global shift to low carbon economies.
- BC is committed to building strong relationships with key mining First Nations where much of our exploration and mine development takes place.
- The MJTF report contains several recommendations that we are actioning to increase investment in strategic minerals and support sustainable approaches to mining in BC.

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## **MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES**

### **BRIEFING NOTE FOR INFORMATION**

**I PREPARED FOR:** Honourable Michelle Mungall, Minister of Energy, Mines and Petroleum Resources

**II ISSUE:** The Global Commercial Vehicle Drive to Zero Pledge

### **III BACKGROUND:**

The Global Commercial Vehicle Drive to Zero Pledge (the Pledge) is a global effort focused on zero- and near-zero emission commercial vehicles with a goal for full market penetration by 2040. The Pledge is non-binding and can be joined by cities, governments (national and sub-national), vehicle manufacturers, fleets, and fuel suppliers. The Pledge commits the signatories to work together to accelerate the early first-success markets for zero- and near-zero commercial vehicles. The Pledge's strategy is to focus on key vehicle types in succession for transition to cleaner options. The Pledge starts with transit buses; then shuttle vans, delivery vans and trucks, terminal tractors, port equipment, and then finally freight trucks. For the purposes of the Pledge, the term zero-emissions includes vehicles that operate with ultra-low emissions (90% lower emissions than the current U.S. medium- and heavy-duty vehicle standards) and run on 100% renewable fuels.

Currently, the Pledge has over 40 members and is holding a workshop in Vancouver during the Clean Energy Ministerial (CEM) where other parties will commit to the Pledge. The Pledge is managed by a secretariat operated by CALSTART, a California based non-profit focused on accelerating clean transportation. The City of Vancouver, the Federal government, and Translink are expected to sign the Pledge at CEM.

### **IV DISCUSSION:**

The Pledge takes a realistic approach to the market transformation to zero- and near-zero technologies in the transportation sector as it supports different types of cleaner fuels and vehicle technologies. The Pledge includes technology available now and expected to be available in the future. Further, the Pledge uses a focused approach which addresses areas that have the best opportunity to implement cleaner fuels and technologies and is based on research adopted by California and its Air Resources Board to meet its 2030 emission reduction strategy. Due to the competitive nature of the commercial vehicle sector, and because of the impact of vehicle operating costs, it is expected that this market segment may transition rapidly to the use of zero-emission technologies, depending on total operating costs compared to conventional vehicles and fuels.

The Pledge supports the CleanBC plan and objectives of the Clean Energy Vehicle Program which is already supporting the adoption of commercial zero-emission vehicles in BC. The Pledge also supports other commercial clean transportation actions in BC; for example, Port Metro Vancouver's Clean Trucking Initiative (the Ministry is a partner and providing \$1.5 million in funding), Translink's Low Carbon Fleet Strategy, and BC Transit's Emission Reduction Strategy.



Several companies in BC are also poised to benefit from the increased global adoption of both zero- and near-zero transportation fuels and technologies. They include Westport Innovations, Ballard Power, Hydrogen Technology & Energy Corporation, Carbon Engineering, and the Parkland Fuel refinery in Burnaby, which is producing low carbon diesel and gasoline from renewable feedstocks.

## **V CONCLUSION:**

The objectives of the Pledge are realistic. Adding BC as a signatory to the Pledge is aligned with the CleanBC plan and the actions under the Clean Energy Vehicle Program.

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**MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES  
BRIEFING NOTE FOR DECISION**

**I PREPARED FOR:** Honourable Michelle Mungall, Minister of Energy, Mines and Petroleum Resources

**II ISSUE:** Clean Energy Vehicle Program – Design and Delivery for Fiscal Year 2019

**III BACKGROUND:**

There are six main barriers to increased zero-emission vehicle (ZEV) adoption: lack of vehicle supply (both availability and variety); higher up-front costs for consumers; lack of charging / refuelling infrastructure; lack of public awareness; and technological advancement and specialized skills training. The Ministry is applying a market transformation approach to transition the transportation sector to ZEVs, starting first with measures and investments to address market barriers and develop a solid consumer base, and following with regulatory standards to manage fiscal impacts and prevent a return to lower-quality technologies.

British Columbia (BC) currently has the highest rate of CEV adoption in Canada, at over 4 per cent (%) of new light-duty vehicle sales, and one of the largest charging and hydrogen fuelling infrastructure networks, despite making much lower incentive investments than Quebec's and Ontario's (now ended) similar programs. Consumer awareness of ZEVs in BC is higher than the rest of Canada, and customer uptake in both the vehicle and infrastructure incentive programs regularly exceeds projections.

**Budget 2019 Direction**

Table 1 in Appendix A summarizes the CleanBC ZEV program offerings to be delivered by the Ministry, and approved funding allocations in Budget 2019. Funds are frozen pending a report-back to Treasury Board on the key parameters and delivery partners for each sub-program, interactions with any Federal programs, and the breakdown of funding towards new staff resources.

The CleanBC Transportation Budget 2019 submission committed to centralize ZEV program offerings, along with information on measures and quarterly reporting on progress, onto one central online hub and under one CleanBC brand for the public and stakeholders. This would make the ZEV offerings easier to access for consumers, and streamline and coordinate program information across delivery partners and funders.

Budget 2019 only approved one year of vehicle incentives, and deferred funding decisions for 2020 – 2022 to Budget 2020 based on a better understanding of program uptake, performance, and other funding sources such as the federal government. The Budget 2020 submission will need to include options for the continuation of the vehicle incentives, including a reduction of incentives, and a transition to either a PST exemption or incentive delivery by utilities.

**Federal Budget 2019**

The 2019 Federal Budget committed to a two-year, cross-Canada, point-of-sale vehicle incentive program. Program details announced April 17, 2019 indicate vehicles with battery

capacities over 15 kWh will receive a \$5,000 incentive, while vehicles with a battery capacity below 15 kWh will receive a \$2,500 incentive. This aligns with BC's current incentive design. The Manufacturer Suggested Retail Price (MSRP) Federal vehicle eligibility thresholds will be set as follows: for vehicles with six seats or less, base level MSRP limits of \$45,000 up to a maximum trim-level MSRP of \$55,000; and for vehicles with more than six seats, base level MSRP limits of \$55,000 up to a maximum trim-level MSRP of \$60,000.

Purchases made after May 1, 2019 will be eligible for incentives. Federal staff anticipate that they will only have their third-party program infrastructure in place by July or August. Until the third-party system is established, customers will still have access to the incentive at the point-of-sale, but dealers will be required to submit applications for the incentive to the federal government directly for reimbursement.

The federal government is also proposing to deliver a public Level 2 charging station program. It intends to consult with provinces and stakeholders in spring 2019 on the program design. At this time, it is anticipated that the program will only support publicly-accessible charging stations as opposed to privately-owned charging stations. Although Ministry staff do not currently foresee significant overlap with the CleanBC home and workplace charging incentives, they will continue to coordinate with the federal government, and may propose program modifications in the future to better leverage federal funding and reduce any program overlap.

#### **IV DISCUSSION:**

The new ZEV targets set by the Province in legislation, along with the expanded ZEV program commitments in CleanBC, require taking the program and outreach efforts to the next level. There is a significant need to streamline the customer experience, while ensuring all relevant stakeholders (automakers, dealers, utilities, infrastructure providers, local governments, and ZEV interest groups) are working together to achieve the ambitious targets. There is also a need to consider the level and scope of provincial vehicle incentives in the context of the new federal vehicle incentives.

There are five key decisions required to finalize the CleanBC ZEV program design for fiscal year 2019/2020:

1. Delivery model;
2. Marketing funds;
3. Vehicle price eligibility for provincial incentives;
4. Base vehicle incentive levels; and
5. Affordability incentive mechanism.

The design of the current CEV Program is detailed below in the context of the above-noted five decision areas.

#### **Current CEV Program (Status Quo)**

##### **1. Delivery Model**

The CEV Program offerings are delivered on behalf of the Province by numerous delivery agents to reduce internal administration costs and extend program reach, by leveraging their administration systems, existing public and business relationships, and in-kind contributions.



However, the CEV Program currently suffers from lack of a coordinated communications strategy and mixed branding across the suite of program offerings.

Customer experience for receiving the light-duty vehicle incentives is streamlined at the point-of-sale by working directly with the BC New Car Dealers Association (NCDA). These are marketed as Government of BC CEVforBC incentives. Home and workplace infrastructure incentives are delivered through a separate application process post-installation, resulting in a less streamlined experience for consumers than the vehicle incentives. These are marketed as Government of BC incentives delivered by Plug-In BC.

Public fast charging and hydrogen fuelling investments are marketed as Government of BC investments, but delivered by Natural Resources Canada and the Canadian Hydrogen Fuel Cell Association, respectively, to allow for a streamlined process for proponents accessing provincial and federal funding. The medium- and heavy-duty vehicle incentives are offered as mail-in rebates for consumers and marketed as Government of BC Specialty Use Vehicle incentives delivered by Plug-In BC.

While the [www.gov.bc.ca/cleanenergyvehicleprogram](http://www.gov.bc.ca/cleanenergyvehicleprogram) site provides one online platform for consumers to find information on all CEV Program offerings, it is not a marketing site, and largely re-directs customers to a variety of other sub-program websites, namely: CEVforBC; Plug-In BC; the Advanced Research and Commercialization Program of BC; and the Canadian Hydrogen and Fuel Cell Association. The result is a disjointed experience for consumers on ZEVs and what programs might be available in BC.

## 2. Marketing funds

Overall marketing funding from the Province to-date for the suite of CEV Program offerings has been quite limited at approximately \$300,000 per year across all sub-programs, and not well coordinated across the various sub-programs in terms of look and feel. Approximately \$100,000 per year is allocated to marketing of the CEVforBC vehicle incentives and delivering consumer ride-and-drive events around the province. Approximately \$200,000 per year is allocated to the development and dissemination via partners of public awareness information and materials on ZEVs, and to support public outreach activities and ride-and-drives led by local governments and community organizations.

For targeted public education and outreach, the Province has an existing agreement with the Fraser Basin Council, with funds already allocated, that runs until March 31, 2021, for the Emotive outreach program. Emotive is a partnership program, borne out of a need to help grass-roots-level ZEV outreach activities have consistent messaging and strategies without being tied to one organization. Through Emotive, the Province develops consistent ZEV outreach materials on behalf of local governments and community organizations to support their public outreach on ZEVs including events and ride-and-drives. The Emotive program also provides financial support and guidance to community-run ZEV events. Because of the existing agreement and funds with the Fraser Basin Council and community organizations, the Province is not in a position to cancel the Emotive program.

## 3. Vehicle price eligibility threshold

Vehicle incentives are only available on ZEVs with a base model Manufacturer Suggested Retail Price (MSRP) below \$77,000. The CleanBC Transportation Budget 2019 submission committed to reduce the vehicle MSRP eligibility threshold from \$77,000 to \$65,000.



4. Base vehicle incentive levels

Hydrogen fuel cell vehicles receive a \$6,000 incentive, battery-electric and plug-in hybrid electric vehicles with batteries over 15 kWh receive a \$5,000 incentive, while those with batteries below 15 kWh receive a \$2,500 incentive.

5. Affordability incentives

The current program does not offer affordability incentives. The CleanBC Transportation Budget 2019 submission proposed an affordability incentive of \$2,000/ZEV on top of the base ZEV incentives if the Province was not pursuing a used ZEV PST exemption.

**V OPTIONS:**

Options for the CleanBC ZEV program design for fiscal year 2019/2020 are detailed below.

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## Appendix A

**Table 1: Budget 2019 – ZEV Program**

<b>CleanBC Transportation Budget 2019</b>		<b>2019/20</b>	
<b>\$ thousands</b>	<b>Base</b>	<b>Contingency</b>	<b>Total</b>
<b>EMPR - CEV Program expansion: Light-Duty Vehicles</b>			
Basic vehicle incentives	\$ 41,506	\$ 10,000	\$ 51,506
Affordability top-up vehicle incentives	\$ -	\$ 9,460	\$ 9,460
Home & workplace charging incentives	\$ 4,807	\$ -	\$ 4,807
Public fast charging & hydrogen stations	\$ 20,000	\$ -	\$ 20,000
Fleet challenge	\$ 6,000	\$ -	\$ 6,000
Public outreach	\$ 300	\$ -	\$ 300
New EMPR Staff (2 FTEs)	\$ 315	\$ -	\$ 315
<b>EMPR Subtotal</b>	<b>\$ 72,927</b>	<b>\$ 19,460</b>	<b>\$ 92,388</b>
<b>EMPR - CEV Program expansion: Medium/Heavy-Duty, Port/Airport ground equipment, Bus, Marine, Rail, etc.</b>			
Pilot projects	\$ 5,000	\$ -	\$ 5,000
Vehicle incentives	\$ 2,500	\$ -	\$ 2,500
Infrastructure & Fuels investments	\$ 2,500	\$ -	\$ 2,500
New EMPR Staff (2 FTEs)	\$ 315	\$ -	\$ 315
<b>EMPR Subtotal</b>	<b>\$ 10,315</b>	<b>\$ -</b>	<b>\$ 10,315</b>
<b>EMPR - CEV Program expansion: General</b>			
CEV Jobs Training	\$ 1,000	\$ -	\$ 1,000
CEV Advanced Research & Commercialization	\$ 5,000	\$ 10,000	\$ 15,000
Research, Analysis, Reporting	\$ 300	\$ -	\$ 300
<b>EMPR Subtotal</b>	<b>\$ 6,300</b>	<b>\$ 10,000</b>	<b>\$ 16,300</b>
<b>CleanBC Transportation Programs TOTAL</b>	<b>\$ 89,542</b>	<b>\$ 29,460</b>	<b>\$ 119,002</b>
<b>EMPR - Zero-Emissions Vehicle Act (ZEVA)</b>			
Studies, Enhancement to online reporting tool	\$ 500	\$ -	\$ 500
New EMPR Staff (5 FTEs)	\$ 805	\$ -	\$ 805
<b>CleanBC Transportation - ZEVA TOTAL</b>	<b>\$ 1,305</b>	<b>\$ -</b>	<b>\$ 1,305</b>

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Drafted by: Warren Walsh, GRB, EAED  
Input:  
Approved by: Paul Wieringa, ED, Electricity, EAED ✓  
Les MacLaren, ADM, EAED ✓  
DMO  
MO

Ref: 106353

Dr. Mory Ghomshei  
Tecto Energy Inc.  
4623 Byrne Road  
Burnaby, BC V5J 3H6

Via Email: [mory.ghomshei@tectoenergy.com](mailto:mory.ghomshei@tectoenergy.com)

Dear Dr. Ghomshei:

RE: Renewal of Geothermal Permit #63730

I am writing in response to the March 8, 2019 letter from Roger Wang, an authorized representative of Tecto Energy, requesting an extension to Geothermal Permit #63730 originally issued on July 27, 2011. The permit has been renewed seven times and therefore requires approval of the Minister under s.5(9) of the *Geothermal Resources Act*.

I have considered your request and approve the renewal of the permit for one year with no further terms and conditions.

By this letter, in accordance with s.5(9) of the *Geothermal Resources Act*, Geothermal Permit #63730 is renewed for one year upon the Ministry's receipt from you of the permit renewal fee of \$500 and annual rent of \$500, a total sum of \$1,000, made payable to the Minister of Finance.

Following receipt of the above-mentioned funds, the term of Geothermal Permit #63730 will be extended to expire on July 27, 2020.

Sincerely,

Michelle Mungall  
Minster

CC: Roger Wang  
Geotec Renewable Energy Ltd.  
via Email: [roger.wang@geotecenergy.ca](mailto:roger.wang@geotecenergy.ca)

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