Dear [Name]:

Re: Your request for access to information under Part II of the Access to Information and Protection of Privacy Act (File # NR-220-2018)

On October 15, 2018, the Department of Natural Resources received your request for access to the following records/information:

Any reports or studies or briefing notes related to zero emission vehicles (zev), clean energy vehicles (cev) or electric vehicles (ev) in the past 24 months.

On November 2, 2018, after our telephone conversation, the search was limited to one year previous to the request.

I am pleased to inform you that a decision has been made by the Department of Natural Resources, confirmed by the Deputy Minister, to provide access to the requested records. The records are attached.

We are providing access to the most information possible but have made redactions in accordance with Sections 22(1)(a), 29(1)(a), 34(1)(a)(i), 35(1)(d), 35(1)(f), 35(1)(g) and 40(1) of ATIPPA, 2015 as follows:

22. (1)(a) The head of a public body may refuse to disclose a record or part of a record that is published and is available to the public whether without cost or for purchase;

29. (1)(a) The head of a public body may refuse to disclose to an applicant information that would reveal advice, proposals, recommendations, analyses or policy options developed by or for a public body or minister;
34. (1)(a)(i) The head of a public body may refuse to disclose information to an applicant if the disclosure could reasonably be expected to harm the conduct by the government of the province of relations between that government and the following or their agencies: the government of Canada or a province;

35. (1)(d) The head of a public body may refuse to disclose to an applicant information which could reasonably be expected to disclose information, the disclosure of which could reasonably be expected to result in the premature disclosure of a proposal or project or in significant loss or gain to a third party;

35. (1)(f) The head of a public body may refuse to disclose to an applicant information which could reasonably be expected to disclose positions, plans, procedures, criteria or instructions developed for the purpose of contractual or other negotiations by or on behalf of the government of the province or a public body, or considerations which relate to those negotiations;

35. (1)(g) The head of a public body may refuse to disclose to an applicant information which could reasonably be expected to disclose information, the disclosure of which could reasonably be expected to prejudice the financial or economic interest of the government of the province or a public body;

40. (1) The head of a public body shall refuse to disclose personal information to an applicant where the disclosure would be an unreasonable invasion of a third party’s personal privacy.

We have made full page redactions to the following based on the sections previously listed: pages 34, 39 and 40.

Please note that the following documents have been removed from the package as they are publically available and can be found through the links below. Therefore in accordance with S.22(1)(a) of ATIPPA, 2015 we are not including this record in our responsive record package.

Energy and Mines Ministers’ Conference:
https://www.nrcan.gc.ca/publications/11102

As set out in section 42 of the Act you may ask the Information and Privacy Commissioner to review the department’s decision to provide access to the requested information. A request to the Commissioner must be made in writing within 15 business days of the date of this letter or within a longer period that may be allowed by the Commissioner. Your request should identify your concerns with the department’s response and why you are requesting a review.
The request for review may be addressed to the Information and Privacy Commissioner is as follows:

Office of the Information and Privacy Commissioner  
2 Canada Drive  
P.O. Box 13004, Stn. A  
St. John’s, NL. A1B 3V8  

Telephone: (709) 729-6309  
Toll-Free: 1-877-729-6309  
Facsimile: (709) 729-6500

Pursuant to section 52 of the Act, you may also appeal directly to the Supreme Court Trial Division within 15 business days after receiving the department’s decision.

Please be advised that responsive records will be published following a 72 hour period after the response is sent electronically to you or five business days in the case where records are mailed to you. It is the goal to have the responsive records posted to the Completed Access to Information Requests website within one business day following the applicable period of time. Please note that requests for personal information will not be posted online.

For further details about how an access to information request is processed, please refer to the Access to Information Policy and Procedures Manual at http://www.atipp.gov.nl.ca/info/index.html.

If you have any questions, please feel free to contact me at 709-729-0463 or rhynes@gov.nl.ca.

Sincerely,

Rod Hynes

Rod Hynes  
ATIPP Coordinator
Title: Hydrogen

Issue: To provide information regarding hydrogen technology.

Background and Current Status:
- Hydrogen is a versatile energy carrier that can be used for a wide range of applications, including as fuel for vehicles, low carbon heat and power applications, and energy storage.

- The interest in hydrogen as an alternative transportation fuel is based on hydrogen's ability to power fuel cells in zero-emission electric vehicles, its potential for domestic production, and the fuel cell vehicle's potential for high efficiency. In the United States, about 500 hydrogen-fueled vehicles are in use. Most hydrogen-fueled vehicles are automobiles and transit buses that have an electric motor powered by a fuel cell. However, fuel cells are expensive and there is limited availability of hydrogen fueling stations which limit the use of hydrogen powered vehicles more broadly.

- The Canadian Hydrogen and Fuel Cell Association (CHFCA) was formed in 2009. It is a national, non-profit association providing services and support to Canadian corporations, governments, and educational institutions in promoting development, demonstrating and deploying hydrogen and fuel cell products and services in Canada.

- According to the CHFCA, in 2015, hydrogen and fuel cell activities took place in most provinces within Canada. The majority of facilities and activities were in BC (31%) and ON (18%), followed by QC (14%) and AB (5%). The rest of Canada (4%) included facilities in MB, Newfoundland and Labrador, NS, and SK.

- There have been a number of recent hydrogen-related initiatives in Canada. On January 19, 2018, QC announced it would be purchasing a fleet of 50 hydrogen fuel cell vehicles, the first such vehicles in Canada, by the end of the year. On June 15, 2018, the first retail hydrogen fueling stations in Canada were opened in Vancouver. AB-based companies ATCO and Enbridge are also both spearheading separate projects aimed at using hydrogen to store electricity.

- Newfoundland and Labrador currently has only one hydrogen-related initiative, the Wind-Hydrogen-Diesel Energy Project in Ramea. The project is a research and development project that uses renewable energy to supplement the diesel requirements of an electrically isolated island community. It consists of 390 kW of wind integrated into the existing diesel system. In 2010 a hybrid system was added: including 3 100kW wind turbines, storage provided by a hydrogen electrolyser and a hydrogen fueled generator set, and an energy management system. Phase II of the Project will see the addition of a fuel cell.

- Scotland and Japan have embraced hydrogen. On December 20, 2017, Scotland released a renewable energy strategy, Scottish Energy Strategy: The Future of Energy in Scotland, which proposes using hydrogen for transport, low carbon heat and power applications,
energy storage and grid balancing. On December 26, 2017, Japan released a strategy for promoting hydrogen use and becoming a world-leading hydrogen-based society.

Prepared/Reviewed by:  S. Brewer / L. MacDonald/
Ministerial Approval:

August 30, 2018
Title: Update on Select Canadian Energy Issues

Issue: To provide information on some select energy issues including Site C, Kinder Morgan Pipeline, and Cryptocurrency mining

Background and Current Status:

Site C
- BC Hydro's Site C Clean Energy Project will provide 1,100 megawatts (MW) of capacity, and produce approximately 5,100 gigawatt hours (GWh) of electricity each year.
- Some key components of the Site C project include two 500 kilovolt AC transmission lines, a generating station with six 183 MW generating units, and an 83-kilometre-long reservoir.
- The project was originally budgeted at $8.3 billion, however a report by the BC Utilities Commission issued on November 1, 2017, suggested that the project would actually cost from $10-12 billion, and was not on schedule for 2024 completion. The project has also generated intense criticism from environmental and indigenous groups.
- In December, 2017, Government announced it would continue with the project and noted that cost estimates had increased by $1.657 billion. In January, 2018, two First Nations have subsequently filed court challenges claiming that the project violates treaty rights and the Canadian Constitution.

BC/AB Pipeline Dispute (Kinder Morgan Trans Mountain Pipeline Expansion)
- In November, 2016, the Government of Canada granted approval for the Trans Mountain Expansion Project, which would essentially twin an existing 1,150 km pipeline between Alberta (AB) and British Columbia (BC). The $7.4 billion project will increase the nominal capacity of the system from 300,000 barrels per day to 890,000 barrels per day.
- BC wishes to restrict the expansion as it would see three times more bitumen moved to the BC coast each day and a seven-fold increase in tanker traffic. To this end, in late January, 2018, BC proposed rules to limit increased shipments of bitumen off its coast until it can better understand the ability to mitigate spills. AB argued that BC's move was illegal and unconstitutional and in retaliation, AB banned the import of BC wines.
- In February, 2018, BC withdrew its threat to block AB's bitumen shipments and announced it would ask the courts whether BC has the jurisdiction to regulate shipments through a federally-approved pipeline. In response, AB dropped its ban on BC wines.

Resignation of Manitoba Hydro Board
- On March 21, 2018, every member of the Manitoba Hydro board except one (MLA Cliff Graydon) resigned. Everyone who resigned was appointed to the board shortly after Premier Pallister was elected in May, 2016.
- The outgoing chair of the board, Sandy Riley, has said the resignation is due to an unwillingness of Premier Pallister to meet with the board for over a year to resolve issues related to the finances and governance of Manitoba Hydro.
- Premier Pallister disputes this and has said that the board resigned because the Province won't agree to a $70 million "persuasion money" payment to the Manitoba Metis Federation (MMF) to smooth the approval process on a transmission line.
- Both the board and the MMF have taken exception this suggestion and the MMF president, David Chartrand, accused Premier Pallister of using "race card tactics."
Cryptocurrency Mining
- Cryptocurrency or digital currency mining involves the use of dedicated computer hardware to solve complicated mathematical algorithms that when complete entitle the user to units of cryptocurrency such as Bitcoin or Ethereum. The computer hardware is energy intensive so as data mining continues to grow; it will have an impact on electricity demand.
- Hydro Quebec has reported that it has been inundated with digital currency miners hoping to take advantage of cheap electricity rates with dozens of requests arriving in January. Hydro Quebec has stated that it will not have the long-term capacity to meet all the anticipated demand arising from digital currency mining.
- Quebec Premier Philippe Couillard prefers to see companies set up in Quebec which add value to Quebec society, saying that "...we're really not interested," in digital currency miners.

Electric Vehicle Charging Stations
- New Brunswick Power has developed a charging network for electric vehicles made up of standard level 2 (240 Volt) chargers throughout the Province and a corridor of 10 fast-charge stations (400 Volt) along the TransCanada Highway. The utility, in conjunction with the federal and provincial government will spend another $3 million this year to add additional capability.
- There has been criticism of the plan, however, as the charging stations are doing so little business that they are budgeted to lose money until at least 2028. One new level-2 station in Bathurst showed that only three vehicles were charged there in December, 2017, for a total of 41 minutes. Other centres did even less business.
- At the same time, Nova Scotia Power has announced that it plans to install 24 electric vehicle chargers in early 2018 consisting of 12 level-3 chargers and 12 level-2 chargers in a network from Yarmouth to Sydney. The project will cost about $1 million with $420,000 from Nova Scotia Power, $420,000 from the federal government, and $120,000 from the provincial government.

Federal Bill C-69
- On February 8, 2018, the federal government tabled Bill C-69, An Act to enact the Impact Assessment Act and the Canadian Energy Regulator Act, to amend the Navigation Protection Act and to make consequential amendments to other Acts.
- Bill C-69’s Canadian Energy Regulator Act (CERA) Part 5 outlines how the federal government proposes to regulate offshore renewable energy projects and offshore power lines in federal waters.
- The CERA also proposes replacing the National Energy Board with the Canadian Energy Regulator (CER). The CER is to be made up of a seven-person Commission. The Commission will regulate offshore renewable energy activities under the CERA by issuing Authorizations for projects in the federal offshore and for projects proposed to be carried out to construct, operate or abandon any part of an offshore power line that is in a Province.

Analysis:
- Note is for information purposes only.

Action Being Taken: No action being taken. For information purposes only.

Prepared/Approved by: R. Bates/ C. Snook / J. Cowan
Ministerial Approval: Received from Hon. Siobhan Coady

March 26, 2018
Decision/Direction Note  
Department of Natural Resources (NR)

Title: Journey authorization for one NR official to travel to Fredericton to attend a regional workshop on opportunities to promote electric vehicle (EV) uptake in Atlantic Canada.

Decision/Direction Required:
- Whether to approve travel for the Senior Policy, Planning and Research Analyst with the Electricity and Alternative Energy Division to travel to Fredericton, New Brunswick between January 22-24, 2018 to attend a workshop on barriers and opportunities related to EV uptake in Atlantic Canada.

Background and Current Status:
- EV sales have grown significantly in Canada, the United States and abroad in recent years. Globally, there were 665,000 EVs on the road at the end of 2014, up from 180,000 in 2012. The most recent available figures show EVs currently account for 0.28 per cent of the light-duty automobile market in Canada.

- Regional uptake across Canada varies, with certain regions, such as Ontario and Quebec seeing higher rates of uptake. Atlantic Canada overall has a low rate of uptake for EVs.

- Natural Resources Canada has engaged the private companies, Pollution Probe and The Delphi Group to support the development of a cross-Canada initiative titled *Accelerating the Deployment of ZEVs: Opportunities for the Atlantic and Prairie Provinces*.

- To inform the initiative, Pollution Probe and The Delphi Group are hosting regional workshops in late January 2018. Outcomes from the workshop will inform a report that is expected to be released in March 2018.

- Natural Resources Canada has invited the province to participate in a workshop in Fredericton on January 23, 2018. Participants have been asked to confirm attendance by January 8, 2018.

Analysis:
- As part of the Pan-Canadian Framework on Clean Growth and Climate Change (PCF), NR and MAE are participating in the development of a national Zero Emissions Vehicle Strategy, which is scheduled for release in 2018.

- At present there is no comprehensive strategy to accelerate the growth of EV adoption by consumers in Newfoundland and Labrador (NL). EVs are of interest to NR as increasing their prevalence provides an opportunity to increase off-peak electricity usage on the province’s interconnected systems and manage the electricity rates associated with Muskrat Falls.

- As the majority of the province’s electricity is generated from renewable resources, increasing the use electric vehicles also provides an opportunity to reduce the province’s greenhouse gas emissions, which is under the mandate of MAE’s Climate Change Branch.
• To further explore these opportunities, the Electric Vehicles Working Group (EVWG) has been established, consisting of NR, MAE, Newfoundland Power, Newfoundland and Labrador Hydro, Newfoundland and Labrador Environmental Industry Association, the City of Mount Pearl and the City of St. John’s.

• To inform NR’s work in the above initiatives, the Senior Policy, Planning and Research Analyst with NR’s Electricity and Alternative Energy Division would travel to Fredericton to attend the Pollution Probe and The Delphi Group regional workshop on January 23, 2018. NR’s approximate cost for this travel will be $960 and funds are available in the branch’s budget. (See Annex A for project overview and Annex B for journey authorization.)

Alternatives:
1. Approve travel for the Senior Policy, Planning and Research Analyst with the Electricity and Alternative Energy Division to travel to Fredericton, New Brunswick between January 22-24, 2018 to attend a workshop on barriers and opportunities related to EV uptake in Atlantic Canada. (Recommended)

Advantages:
- Support NR’s pursuit of opportunities related to EVs and Muskrat Falls rate management.
- Ensures provincial concerns regarding EV uptake are noted in the analysis for Natural Resources Canada.
- Strengthen connections with Atlantic Canadian counterparts and provides a forum for information exchange between the provinces.

Disadvantages:
- Cost approximately $960, plus two days out of office for one NR electricity staff.

2. Do not approve travel. (Not Recommended)

Advantages:
- Use the $960 from NR’s budget for other initiatives.

Disadvantages:
- Miss an opportunity to provide feedback that will inform the federal EV report.
- Miss an opportunity to engage with federal counterparts on issues and opportunities with respect to EV adoption in the region.
- Miss an opportunity to strengthen the information exchange and contact with Atlantic Canadian counterparts.

Prepared by/Approved by: R. Brennan/C. Boland /C. Snook
Ministerial Approval:

January 8, 2018
Annex A: Project Overview

Accelerating the Deployment of Zero Emission Vehicles: Opportunities for the Atlantic and Prairie Provinces

ZEV Workshop Series and Report

PROJECT OVERVIEW

Objectives

- Identify global and domestic best practices in light duty vehicle electrification, and examine feasibility for implementation within different regions of Canada
- Work with electricity and transportation stakeholders in regions of Canada with low zero-emission vehicle (ZEV) uptake levels to articulate and address barriers and opportunities
- Preliminary examination of opportunities for the decarbonization of heavy-duty vehicles
- Enhance public and private sector awareness of ZEVs and best practices

Approach

- Conduct one regional workshop in Atlantic Canada and one in the Prairie Provinces involving representatives from academia, government, industry and the not-for-profit sector
- Workshops will be opportunity to identify regional barriers and opportunities to accelerate ZEV adoption, and showcase global and domestic practices
- Workshop participants to include representatives from electricity and transportation sectors, industry and government
- Use feedback gathered during and following workshops to inform the project report
- Announce report at a GLOBE Forum 2018 event in Vancouver in March 2018, which will engage senior government policy-makers, industry representatives and other key stakeholders
- Project to be delivered by Pollution Probe and The Delphi Group in partnership with Natural Resources Canada, Bruce Power, Global Automakers of Canada, and the Canadian Vehicle Manufacturers’ Association. Additional partnerships are being explored.

Timeline

- ZEV discussion document to be developed for review and comment at regional workshops
- Regional workshops to be conducted in Fredericton, NB, on January 23, and in Calgary, AB, on January 25, 2018
- Final report to be released at GLOBE Forum 2018 event in Vancouver, March 14-16

Kiyoshi Robson
Consultant
The Delphi Group
587-880-3373 x 427 krobson@delphi.ca

Steve McCauley
Senior Director, Policy
Pollution Probe
647-965-3985
smccauley@pollution
probe.org
### Annex B: Journey Authorization

#### Section 1: Claimant Information

<table>
<thead>
<tr>
<th>Employee Name:</th>
<th>Rhonda Brennan</th>
</tr>
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<tbody>
<tr>
<td>Address:</td>
<td>[Redacted]</td>
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<tr>
<td>Postal Code:</td>
<td>[Redacted]</td>
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<tr>
<td>Departmenet:</td>
<td>Natural Resources</td>
</tr>
<tr>
<td>Position Title:</td>
<td>Senior Policy, Planning</td>
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</table>

#### Section 2: Travel Details

- **From:** St. John's  
  **To:** Fredericton

- **From Date:** January 22, 2018  
  **To Date:** January 24, 2018

**Purpose of Trip:** To attend a regional workshop on barriers and opportunities related to EV uptake in Atlantic Canada.

#### Payment Method

- [ ] Personal Credit Card
- [ ] Government Credit Card
- [ ] Travel Order

**Travel Agency** and **Order Number**:

#### Mode of Travel

- [ ] Air
- [ ] Government Vehicle
- [ ] Personal Vehicle

**Company:** [ ]

**Order Number:** [ ]

**Other:**

#### The Estimated Total Trip Cost Must Be Encumbered Regardless of Imprint

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<th>Amount</th>
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<td>$959.46</td>
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**Employee Signature:** [ ]

**Date:** January 23, 2018

#### Section 3: Certification

*I certify that the above information accurately reflects travel on government business as described and sufficient funds are available.*

**Director/Assistant Deputy Minister:**

<table>
<thead>
<tr>
<th>Divisional Director / Assistant Deputy Minister</th>
<th>[ ]</th>
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<tbody>
<tr>
<td>C [Redacted]</td>
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#### Section 4: To Be Completed If a Travel Advance is Required

**Summary of All Anticipated Expenses Equal to the Amount of the Advance Requested (Travel Advance Only)**

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<td>[ ] Meals for [ ] days at [ ] per diem</td>
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**Total Anticipated Expenses:** $959.46

**Cash Advance Required:**

- [ ] Yes
- [ ] No

### Summary Table

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| 02     | [ ] 0000                 | [ ] 0000 |
Title: Natural Resources Canada (NRCan) - Greening Government Fleets

Issue: To provide summary overview of Natural Resources Canada’s (NRCan’s) Greening Government Fleets guidelines which outlines practices that can be implemented by fleet managers as they green their transportation fleets and operations.

Background and Current Status:

- In November 2016, Canada, China, France, Japan, Norway, Sweden, the United Kingdom and the United States of America signed the Government Fleet Declaration under the auspices of the Clean Energy Ministerial – Electric Vehicle Initiative, committing to deploy greater numbers of electric vehicles in government fleets.

- In December, 2016 First Ministers endorsed the Pan-Canadian Framework on Clean Growth and Climate Change (PCF) – a plan to enable clean economic growth, reduce Green House Gas (GHG) emissions, and build resilience to a changing climate.

- Canada’s Greening Government Strategy, released in December 2017, includes clear commitments to reduce emissions from government fleets, with clear targets for electrification.

- The PCF framework includes a comprehensive strategy to reduce emissions from the transportation sector, through improved efficiency, greater electrification, fuel switching, and the development of a clean fuel standard.

- The Newfoundland and Labrador government maintains a diverse fleet that includes passenger vehicles, trucks, ferries, heavy equipment, air ambulances and water bombers. These are part of service delivery in the Province. Additionally, government employees often travel within and outside of the Province on business.

- Given the environmental benefits, such as reduced GHG emissions and economic benefits as consuming less fuel lowering operating costs, the Government of Newfoundland and Labrador began to integrate green considerations into fleet management, and travel practices in 2015.

- The guide, Greening Government Fleets - A Useful Guide to Understanding Best Practices, provides a comprehensive overview of current global Electric Vehicle (EV) deployment, challenges fleet managers encounter, national and international government(s) procurement practices and provincial and territorial policies and fleet targets.

- The guide provides a four-step plan and implementation approach to help decision makers reach administrative and executive on-road vehicle targets. These are:
  o Evaluation of fleet models and assess transportation choices and forecast how transportation needs will change over time.
  o Conduct a fleet analysis and determine their options for optimization.
o Research the development of charging or refueling infrastructure, which includes identifying a suitable location, addressing employee access.

o The final step in the process is the installation of charging and refueling infrastructure.

- The guide outlines a series of best practices which can be implemented by fleet managers as they green their fleets and operations. These are:

  o **Know Your Fleet**
    - Critically Evaluate Transportation Choices
    - Forecast How Departmental Needs May Change Over Time
    - Consider Initiating A Study
    - Install Data Loggers

  o **Build Internal Support**
    - Consider Supporting Policy Requirements
    - Set Internal GHG Reduction Targets
    - Select the Optimal Lowest Carbon Vehicle Technology
    - Practice green procurement

  o **Match Options to Fleet Needs**
    - Complete Suitability Assessments
    - Select Optimal Lowest Carbon Vehicle Technologies

  o **Strategy Planning to Meet Targets:**
    - Establish Vehicle Replacement Schedule
    - Install Charging & Re-Fueling Infrastructure
    - Locate Existing Charging/ Refueling Infrastructure
    - Consider An Access & Pricing Approach for Employees
    - Initiate the Installation Process

  o **Maximize Online Tools**
    - Encourage better driving habits
    - Increase on-road fuel efficiency during daily operations

  o **Procure and Implement**
    - Make a business case for using low-carbon technology
    - Secure funding to green the fleet
    - Implement the chosen strategy

- The guide contends that these practices will help fleet managers implement simple and cost-effective processes for reducing their environmental impacts while lowering their operating costs.

**Analysis:**

S. 29 (1) (a)
Action Being Taken:
- The Department of Natural Resources (NR) officials will discuss with appropriate government departments to help ensure best practices are adopted in Newfoundland and Labrador.

Prepared/Approved by: W. Skinner, R. Bates/ C. Snook / J. Cowan
Ministerial Approval: Received from Hon. Siobhan Coady

July 25, 2018
Information Note
Department of Natural Resources

Title: Status of Federal Funding Opportunities to Support Alternative Energy

Issue: To provide a status update on federal funding opportunities and NL’s work to leverage funding to support strategic priorities, including alternative energy.

Background and Current Status:
- Budgets 2016 and 2017 announced significant multi-year investments in the clean growth economy, including the Low Carbon Economy Fund (LCEF). Budget 2018 focuses on the evolution of previously announced funding. For more information on federal funding opportunities to support the clean growth economy, see Annex B. Other relevant opportunities for NR are outlined below.

- The LCEF provides $2 billion over five years to support provinces and territories (PTs) in reducing greenhouse gas (GHG) emissions. The LCEF is composed of the $1.4 billion Low Carbon Economy Leadership Fund (LCELF) and the $3.6 billion Low Carbon Economy Challenge Fund (LCEC). NL has been allocated $44.7 million under the LCELF (matching provincial funds required). See the analysis section for a list of NL’s approved project proposals under the LCELF and Annex A for a list of all current provincial proposals for federal funding to support the clean growth economy.

- The LCEC, launched on March 14th 2018, provides $500 million to projects that will leverage ingenuity to maximize GHG reductions by 2030 and generate clean growth. It is open to all PTs, municipalities, Indigenous governments and organizations, businesses and non-for-profit organizations. The LCEC is split into two streams:
  - The Champions Stream ($450 million): Began accepting Expressions of Interests on March 14. By invitation, formal proposals will be accepted in early Summer 2018. Final funding decisions will be made between Fall 2018 and Winter 2019.

- Clean Energy for Rural and Remote Communities (CERRC) provides up to $220 million over six years to reduce diesel use in rural and remote communities through clean energy solutions. See the analysis section for a list of potential NL applications under the CERRC. Applications are due on May 17th 2018; however, the program will have a continuous intake process until all funding has been allocated.

- Impact Canada’s Clean Tech Stream provides $75 million over five years to support Challenges in three areas: the Sustainable Community Challenge, Technology Adaptation Challenge, and the Off-Diesel Challenge. The forthcoming Off-Diesel Challenge (estimated at $20-$30 million) will focus on reducing diesel reliance in remote communities.

Analysis:
On March 28, 2018, officials from NR attended the Challenge Roadshow in St. John’s. Hosted by the federal government, the Roadshow is going across Canada to assist applicants in answering questions about federal funding opportunities, including the LCEC. NR invited its stakeholders interested in federal funding opportunities to attend the event.

The following are potential applications being put forth under the CERRC, including:

- [ ]
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]

**Action Being Taken:**

- NR will continue work to leverage federal funding opportunities to support its priorities.

**Prepared/Approved by:**

S. Brewer/L. MacDonald

**Ministerial Approval:**

April 2, 2018
# Annex A: Progress on Leveraging Federal Funding (March 2018)

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<tr>
<td>MAE</td>
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<td>Low Carbon Economy Leadership Fund</td>
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<td>To be delivered by NP and NLH through its takeCHARGE, in partnership with MAE.</td>
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<tr>
<td>High Efficiency Wood Stoves in Off-Grid Diesel Communities</td>
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<td>Hydrogen Fuel Cells</td>
<td>NR</td>
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<tr>
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<td>MAE/NR</td>
<td>Green Infrastructure</td>
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|                   | NR     | (1) Clean Energy in Rural and Remote Communities  
|                   |        | (2) Clean Growth in the Natural Resources Program  
|                   |        | (3) Emerging Renewables Program  
|                   |        | (4) Sustainable Development Technology Canada Fund  
|                   |        | (5) Impact Canada Initiative – Clean Technology Stream |
|                   | NR     | Clean Energy in Rural and Remote Communities |
|                   | NR     | Clean Energy in Rural and Remote Communities  
|                   |        | Northern Responsible Energy Approach for Community Heat and Electricity (REACHE) |
| Ramea             | Nalcor | Clean Energy in Rural and Remote Communities |
## Annex B

### Federal Funding to Support the Pan-Canadian Framework

#### Low Carbon Economy Fund (LCEF)

<table>
<thead>
<tr>
<th>Key Details</th>
<th>Overview</th>
<th>Timelines/ Important Dates</th>
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</thead>
<tbody>
<tr>
<td>Funding: $2 billion over five years</td>
<td><strong>Low Carbon Economy Fund (LCEF):</strong> The Fund will support PT actions that materially reduce GHGs and are incremental to current plans, and achieve significant reductions within the period of Canada’s nationally determined target. Resources will be allocated towards those projects that yield the greatest absolute GHG reductions for the lower cost per tonne.</td>
<td>Low Carbon Economy Fund: Announced in Budget 2017.</td>
</tr>
</tbody>
</table>
| Low Carbon Economy Fund is split into two funds: | **The Low Carbon Economy Leadership Fund (LCEF):** will provide $1.4 billion to PTs that have adopted the PCF to help them deliver on leadership commitments to reduce GHGs emissions. Allocations for the Low Carbon Economy Leadership Fund have been determined using a base-level plus per capita funding formula. **Newfoundland and Labrador was allocated $44,656,000.** Through fall 2017, provinces and territories put forward ideas and worked with the federal government to agree on which projects to fund. **The Low Carbon Economy Challenge (LCEC):** will provide the remainder of funds to the implementation of the PCF and for projects submitted by PTs, municipalities, Indigenous governments and organizations, businesses and both not-for-profit and for-profit organizations. Projects that best reduce GHG emissions and generate clean growth will be considered for funding. The LCEC is split into two streams. | Low Carbon Economy Leadership Fund:  
- June 27, 2017 – launched  
- December 16, 2017 – First round of funding agreements.  
Low Carbon Economy Challenge:  
- March 14, 2018 – launched  
- March 19 – April 12th – Challenge Roadshow  
- March 28th – Challenge Roadshow in St. John’s |
| 1. Low Carbon Economy Leadership Fund ($1.4 billion)  
2. Low Carbon Economy Challenge ($0.6 billion) | 1. **The Champions Stream** will provide $450 million in funding to all eligible applicants (PTs, municipalities, Indigenous communities and organizations, businesses and not-for-profit organizations.)  
2. **The Partnership Stream** will provide $50 million in funding to support projects undertaken by targeted recipients, including: regional, local and municipal governments with populations of 99,999 or below; Indigenous communities and organization; not-for-profit organizations; and private sector for-profit small and medium businesses with 1 to 499 employees. For each stream, there is a two-step funding process:  
1. Applicants need to submit an initial Expression of Interest (EOI). The EOI will be used to screen projects for eligibility based on the program parameters. Projects may also be screened out due to concerns around cost-effectiveness (e.g., high costs per tonne of GHG emissions reductions achieved) and/or significant concerns about project feasibility and risk. | The Champions Stream:  
- March 14, 2018: Open for Expression of Interest  
- May 14, 2018: Deadline for Expression of Interest  
- Early summer 2018: Invitation to submit formal proposal  
- Late summer 2018: deadline for formal proposal  
- Fall 2018 to winter 2019: final funding decisions  
- Later in 2018: launch of Partnerships stream  
- March 31, 2022: deadline for spending federal funding |
| The Challenge is split into two streams:  
1. The Champions Stream ($450 million)  
2. The Partnerships Stream ($50 million) | | The Partnership Stream:  
- Late 2018 – Launch of Partnership Stream |
### Clean Energy for Rural and Remote Communities (CERC)

#### Funding: $220 million over six years

Clean Energy for Rural and Remote Communities consists of two tracks. Track one consists of three streams and Track two consists of one stream.

**Track 1:**
1. **BioHeat:** Maximum of $5 million per project and will cover up to 100 per cent of total project costs.
2. **Demonstration:** Maximum of $10 million per project and will cover up to 100 per cent of total project costs.
3. **Deployment of Renewable Energy Technologies:** NRCan will contribute a maximum of $40 million per project and will cover up to 40 per cent of total project costs.

**Track 2:**
1. **Capacity Building Stream:** Average project funding will be $100,000-$400,000.

#### Overviews

**Clean Energy for Rural and Remote Communities (CERC)**

**Track One (Call for proposals now open):**
- BioHeat to Reduce Fossil Use (BioHeat): Projects will install, retrofit, or investigate the feasibility of biomass heating or combined heat and power systems for community and/or industrial applications in rural and remote locations.
- Innovative Demonstrations to Reduce Diesel Use (Demonstration): Projects will demonstrate innovative renewable energy, energy efficiency, energy stores, and smart grid technologies in remote communities and industrial sites.
- Deployment of Renewable Energy Technologies (Deployment): Projects will deploy commercially available renewable energy technologies for electricity (heat may also be produced, but the primary purpose must be electricity), including hydro, wind, solar, geothermal, and bioenergy in remote communities and industrial sites. Partial or full repayment of NRCan’s contribution is required if after five years the project generates a profit. Repayment requirements will be detailed in contribution agreements.

The CERC application process will include the following stages:
- Project proposal submission;
- An initial mandatory screening;
- Proposals that pass the mandatory screening will be reviewed by a panel of experts;
- Applicants whose proposal score highly will undergo a due diligence review (financial and technical); and,
- For those that pass due diligence, the offer to negotiate a contribution agreement with NRCan will occur.

**Track Two (Call for preliminary proposals now open):**
- **Capacity Building Stream:** Projects will outline knowledge and skill-building initiatives to reduce dependency on diesel in rural and remote communities in one or more of:

---

**Green Infrastructure**

**Track One:**
- February 19th – May 17th 2018 accepting applications.

Proposals received by:
- April 12 – May request 30 minute call to ask questions
- May 3 – Submissions will be reviewed for completeness and applicants will be notified of missing documentation.
- After May 3 – Submissions will be reviewed as is.

*Following the deadline for first year funding (May 17, 2018) the program will have a continuous intake process until all funding has been allocated.*

**Track Two:**
- **Phase One: (Three Step Process)**
  - Complete the registration form and submit to the call for preliminary proposals.
  - April 10, 2018: Deadline for Preliminary Proposals
  - April – May: Successful preliminary proposals will be invited to submit funding eligible proposals to Phase 2.

**Phase Two:**
- Late summer/early fall - Successful Phase 2 project funding will be available and finalized.
<table>
<thead>
<tr>
<th>Emerging Renewable Power Program</th>
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<tbody>
<tr>
<td><strong>$200 million</strong> (From April 1, 2018 to March 31, 2023)</td>
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<tr>
<td><strong>April 20, 2018</strong> – Project Application deadline</td>
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<tr>
<th>Electric Vehicle and Alternative Fuel Infrastructure Deployment Initiative</th>
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<tbody>
<tr>
<td>NRCan’s repayable contribution will be limited to a maximum of <strong>$5 million</strong> per project.</td>
</tr>
<tr>
<td>For EV fast chargers, the Program will pay up to 50% of the total project costs to a maximum of <strong>$50,000</strong> per charging unit.</td>
</tr>
<tr>
<td>For natural gas and hydrogen refueling station, the Program will pay up to 50% of the total project costs to a maximum of <strong>$1 million</strong> per fueling station.</td>
</tr>
<tr>
<td>The Electric Vehicle and Alternative Fuel Infrastructure Deployment Initiative (the Program) offers repayable contributions to support the construction of an electric vehicle (EV) fast charging, coast-to-coast, network. The funding also supports natural gas infrastructure along key freight corridors and hydrogen infrastructure in metropolitan centres.</td>
</tr>
<tr>
<td><strong>The first Request for Proposal under Phase 2 of the Initiative is now closed.</strong></td>
</tr>
<tr>
<td><strong>Spring 2018</strong> - Applicants of successful projects will be notified by email.</td>
</tr>
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<thead>
<tr>
<th>Electric Vehicle Infrastructure Demonstrations (EVID) - CLOSED</th>
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<tbody>
<tr>
<td><strong>Up to $30 million</strong> over four years starting April 1, 2018</td>
</tr>
<tr>
<td><strong>February 8, 2018</strong>: Call for Expressions of Interest deadline.</td>
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<tr>
<th>Smart Grid Program - CLOSED</th>
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<tbody>
<tr>
<td><strong>Up to $100 million</strong></td>
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<tr>
<td><strong>March 4, 2018</strong>: Submission deadline for call for proposals.</td>
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<table>
<thead>
<tr>
<th>Energy Efficient Buildings Research, Development and Demonstration - CLOSED</th>
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<tbody>
<tr>
<td><strong>$182 million</strong> to increase energy efficiency and address climate change. <strong>$48.4 million</strong> is going to support the development and</td>
</tr>
<tr>
<td><strong>February 21, 2018</strong>: Submission deadline for call for Expression of Interest.</td>
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<tr>
<td><strong>Spring of 2018</strong>: Successful applicants will be invited to</td>
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</table>
The implementation of building codes for existing buildings and new net-zero energy-ready buildings. The conditionally repayable contribution is expected to range from $250,000 to $5 million per project.

<table>
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<tr>
<td><strong>Impact Canada Initiative – Clean Tech Stream - Off-Diesel Challenge</strong></td>
<td><strong>Estimated at $20-$30 million</strong> Impact Canada's Clean Tech Stream provides $75 million over five years to support Challenges in three areas: the Sustainable Community Challenge, Technology Adaptation Challenge, and the Off-Diesel Challenge. The forthcoming Off-Diesel Challenge (estimated at $20-$30 million) will focus on reducing diesel reliance in remote communities.</td>
<td>Details to come.</td>
</tr>
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</table>

**Clean Growth Program - Closed**

Funding: $155 million Providing funding for clean technology research and development (R&D) and demonstration projects in Canada’s energy, mining and forestry sectors. It covers five areas focused on pressing environmental challenges and economic opportunities facing Canada's natural resource operations:
- Reducing greenhouse gas and air-polluting emissions
- Minimizing landscape disturbances and improving waste management
- The production and use of advanced materials and bioproducts
- Efficient energy use and productivity
- Reducing water use and impacts on aquatic ecosystems

**Energy Innovation Program**

Received $49 million over 3 years from April 1, 2016 to March 31, 2019 Clean Energy Innovation key priority areas are: renewable, smart grid and storage systems; reducing diesel use by industrial operators in northern and remote communities; methane and VOC emission reduction; reducing greenhouse gas emissions in the building sector; carbon capture, use and storage; improving industrial efficiency.

**Other Federal Funding Opportunities**

The Northern Responsible Energy Approach for Community Heat and Electricity (REACHE) program
| Funding: | The REACHE program provides funding for reducing Northern communities' reliance on diesel for heating and electricity, and well as for planning and construction of renewable energy and energy efficiency projects, and related capacity building and planning in the Yukon, Northwest Territories, Nunavut, Nunavik, and Nunatsiavut. Priority is given to projects that include strong Indigenous and/ or community leadership, engagement, or partnerships. | There is **no deadline** to apply or call for proposals process. Applications are reviewed on an ongoing basis. |
| $10.7 million over two years (starting in 2016-2017) | $53.5 million over ten years (starting in 2018-2019) |

**Canadian Forest Service – Bioheat Program (Under development)**

**Bioheat Program (under development)**

**Business Development Program - ACOA**

Loans are interest-free, and can cover up to 75% of eligible costs up to a maximum of **$500,000**.

ACCOA is federally mandated to support the development and adoption of clean technology. BDP programming can be used to: Start-up; expand and modernize; develop and commercialize products or services; or improve competitiveness.

Contact location ACOA office.

**The National Research Council of Canada**

The National Research Council of Canada is Canada's premier applied research organization dedicated to supporting Canada's fuel cell and hydrogen industry. NRC works closely with Canadian universities, government agencies and companies on projects focused on the research, development, demonstration and testing of hydrogen and fuel cell systems.

**Atlantic Innovation Fund - ACOA**

The fund can cover up to 75% of eligible costs, and is applicable for projects in the **$500,000 - $3 million** range.

The AIF helps Atlantic Canadians develop and bring to market new products and services that lead to market success, help grow strategic sectors, or lead to the creation of research and commercialization partnerships.

Streamlined application approach with **year-round intake**.
Overview: To provide background information on electric vehicles in NL to support NEG-ECP’s session on *The Role of Policy to Drive EV Innovation*, a panel discussion on how to push the region into the next stage of EV adoption.

Background and Current Status:

- At the 2017 NEG-ECP conference, Premiers and Governors approved *Resolution 41-4 Concerning Transportation*. This Resolution seeks to build on *Resolution 37-3* of achieving a five per cent market penetration rate of alternative fuel vehicles by 2020 and to facilitate the availability of alternative fuel and EV charging stations to support EVs. *Resolution 41-4* also committed to:
  - Acknowledge the importance of cross-border collaboration and coordination in identifying EV travel corridors and in supporting the development of an interoperable EV charging network along those corridors that will enable travel throughout the region.
  - Governors and Premiers collaboratively take the required steps to establish a regional network of electric charging corridors to reach 2020 horizon.

- NEG-ECP data states that the region currently has over 51,600 EVs and over 4,000 charging stations.

- Recent data from NL’s Motor Registration Division (MRD) indicates there are approximately 60 EVs and 364 plug-in hybrids registered in NL. There are approximately 70 level II charging stations in the province (slower charging stations requiring up to several hours to re-charge a battery EV or plug-in hybrid EV). There are no known Level III (fast charge, less than 30 minutes) stations in the province.

- The Government of Newfoundland and Labrador has taken a number of actions to enhance the up-take of EVs in the province, including:
  - Providing $52,000 to Green Rock E.V.S. (now closed), through the Province’s former Green Fund. Funding was used to supply and install five residential and 14 commercial EV charging stations.
  - Releasing a report on electric vehicle technology, infrastructure requirements and market developments in 2015.
  - In 2017, launching a Vehicle Efficiency and Cost Calculator to inform consumers about the costs and benefits associated with purchasing fuel efficient and alternatively powered vehicles such as EVs.

- In November 2017, the Province formed an Electric Vehicle Working Group (EVWG), consisting of members from NR, MAE, Newfoundland Power, Newfoundland and Labrador Hydro, Newfoundland and Labrador Environmental Industry Association, the City of Mount Pearl and the City of St. John’s. The EVWG is researching the following topics: EV policy options, GHG reduction potential, lifecycle cost considerations, charging infrastructure, grid impacts and leveraging federal funding to support EV uptake in the Province. A forthcoming document from the EVWG is expected to outline recommendations on how to move forward.

- Provincial officials are also participating in the development of a national Zero-Emission Vehicle (ZEV) Strategy and are active on a Canada-wide government-industry-utility working group on EV infrastructure and grid readiness.
In addition to the actions identified above, NR committed in The Way Forward to work with industry and stakeholders to develop a renewable energy plan in 2018-19. The role of EVs in the province will be examined as part of this process.

Analysis:

- As the majority of the province’s electricity is generated from renewable resources, increasing the use of EVs provides an opportunity to:
  - Reduce the province’s GHG emissions; and,
  - Increase off-peak electricity usage on the province’s interconnected systems which could help manage the electricity rates associated with Muskrat Falls.

- Increasing off-peak electricity usage can be done if owners of EVs charge their vehicles overnight and when demand on the electricity system is lower. This has many potential benefits, including NLH selling electricity to recharge EVs at domestic retail rates rather than selling to export markets at lower export rates.

- In a NL context, the effects of EVs on the local electricity grid and their impacts on generation, transmission and distribution infrastructure A more detailed review of electricity distribution infrastructure may be required by the utilities at higher levels of penetration.

- NR continues to seek opportunities to leverage federal funding for EVs and related infrastructure, including

- While NL has limited

Prepared/Approved by: W. Skinner/L. MacDonald/J. Cowan

Ministerial Approval:

August 3, 2018
Information Note
Department of Natural Resources

Title: Potential to Use Hydrogen in NL

Issue: To provide information regarding hydrogen technology and how Newfoundland and Labrador may incorporate it in its energy system.

Background and Current Status:

- Hydrogen is a versatile energy carrier that can be used for a wide range of applications, including as fuel for vehicles, low carbon heat and power applications, and energy storage.

- The interest in hydrogen as an alternative transportation fuel is based on hydrogen’s ability to power fuel cells in zero-emission electric vehicles, its potential for domestic production, and the fuel cell vehicle’s potential for high efficiency. In the United States, about 500 hydrogen-fueled vehicles are in use. Most hydrogen-fueled vehicles are automobiles and transit buses that have an electric motor powered by a fuel cell. However, fuel cells are expensive and there is limited availability of hydrogen fueling stations which limit the use of hydrogen powered vehicles more broadly.

- Countries like Scotland and Japan have also embraced hydrogen. On December 20, 2017, Scotland released a renewable energy strategy, Scottish Energy Strategy: The Future of Energy in Scotland, which proposes using hydrogen for transport, low carbon heat and power applications, energy storage and grid balancing. On December 26, 2017, Japan released a strategy for promoting hydrogen use and becoming a world-leading hydrogen-based society. The strategy seeks to reduce the cost of carbon-free hydrogen to that of conventional fuels, establish a commercial-scale hydrogen supply chain that will see about 300,000 tons of hydrogen purchased annually for less than one-third its current cost by 2030, and also aims to put hydrogen-generated electricity into commercial use at a cost of 17 yen/kWh (about US 15 cents) by 2030.

- The Canadian Hydrogen and Fuel Cell Association (CHFCA) was formed in 2009. It is a national, non-profit association providing services and support to Canadian corporations, governments, and educational institutions in promoting development, demonstrating and deploying hydrogen and fuel cell products and services in Canada.

- According to the CHFCA, in 2015, hydrogen and fuel cell activities took place in most provinces within Canada. The majority of facilities and activities were in BC (31%) and ON (18%), followed by QC (14%) and AB (5%). The rest of Canada (4%) included facilities in MB, Newfoundland and Labrador, NS, and SK.

- Newfoundland and Labrador’s Wind-Hydrogen-Diesel Energy Project in Ramea is a research and development project that uses renewable energy to supplement the diesel requirements of an electrically isolated island community. It is currently the only project using hydrogen in the province. It consists of 390 kW of wind integrated into the existing diesel system. In 2010 a hybrid system was added: including 3 100kW wind turbines, storage provided by a hydrogen electrolyser and a hydrogen fueled generator set, and an energy management system. Phase II of the Project will see the addition of a fuel cell.
Analysis:

- There are three federal funding programs which could be applicable to funding a Newfoundland and Labrador hydrogen project: National Research Council’s Energy Storage Program, Vehicle Propulsion Technologies Program, and the Marine Vehicles Program. Other federal funding programs that focus on eliminating the use of diesel in rural and remote communities are also possible options for hydrogen project funding.

- Some potential disadvantages to using hydrogen include the high cost associated with electrolysis; difficulties storing (hydrogen has to be compressed to liquid state and stored the same way); safety concerns (hydrogen is highly flammable); and difficulties transporting (due to how light it is, hydrogen has to be transported in small batches).

- Newfoundland and Labrador’s abundant wind and hydro resources provide a natural advantage for the clean production of hydrogen powered by renewable energy. Hydrogen could be used for public/sea transport and to offset diesel in off-grid systems. Financial considerations would be a key factor in deciding the potential of hydrogen in NL.

- As part of the Way Forward III: Building our Future, NR will develop a renewable energy plan in 2018-19. NR is currently considering how to incorporate hydrogen into such a plan.

Action Being Taken:
- Further considerations will need to be taken regarding how hydrogen could be used in Newfoundland and Labrador, as well as the cost associated.

Prepared/Reviewed by: S. Brewer / L. MacDonald
Ministerial Approval:

May 1, 2018
Information Note
Department of Natural Resources

Title: Update on Select Canadian Energy Issues

Issue: To provide information on some select energy issues including Site C, BC Hydro Review, Kinder Morgan Pipeline, and Cryptocurrency Mining

Background and Current Status:

Site C
- BC Hydro's Site C Clean Energy Project will provide 1,100 megawatts (MW) of capacity, and produce approximately 5,100 gigawatt hours (GWh) of electricity each year.
- Some key components of the Site C project include two 500 kilovolt AC transmission lines, a generating station with six 183 MW generating units, and an 83-kilometre-long reservoir.
- The project was originally budgeted at $8.3 billion, however a report by the BC Utilities Commission issued on November 1, 2017 suggested that the project would actually cost from $10-12 billion, and was not on schedule for 2024 completion. The project has also generated intense criticism from environmental and indigenous groups.
- In December, 2017, Government announced it would continue with the project and noted that cost estimates had increased by $1.657 billion. In January, 2018 two First Nations have subsequently filed court challenges claiming that the project violates treaty rights and the Canadian Constitution.

BC Hydro Review
- BC Hydro is a provincial Crown corporation and regulated utility generating and delivering electricity to 95 per cent of the British Columbia (BC) population.
- In June, 2018 the BC Government launched a comprehensive review of BC Hydro that will occur in two phases.
- Phase I of the review focuses on BC Hydro’s costs and rates including creating a refreshed plan for rates and assisting the utility in preparing a Revenue Requirement Application to be filed with the BCUC in February, 2019.
- Phase II of the review will start in late 2018. The BC government will establish an expert panel to provide recommendations to ensure BC Hydro is well positioned to maximize energy market opportunities.

BC/AB Pipeline Dispute (Kinder Morgan Trans Mountain Pipeline Expansion)
- In November, 2016 the Government of Canada granted approval for the Kinder Morgan Trans Mountain Expansion Project, which would essentially twin an existing 1,150 km pipeline between Alberta (AB) and BC. The $7.4 billion project will increase the nominal capacity of the system from 300,000 barrels per day to 890,000 barrels per day.
- BC wishes to restrict the expansion as it would see three times more bitumen moved to the BC coast each day and a seven-fold increase in tanker traffic. To this end, in late January, 2018 BC proposed rules to limit increased shipments of bitumen off its coast until it can better understand the ability to mitigate spills. AB argued that BC’s move was illegal and unconstitutional and in retaliation, AB banned the import of BC wines.
• In February, 2018 BC withdrew its threat to block AB’s bitumen shipments and announced it would ask the Courts whether BC has the jurisdiction to regulate shipments through a federally-approved pipeline. In response, AB dropped its ban on BC wines.

• In April, 2018 Kinder Morgan announced it would suspend all non-essential spending on the project. The federal government had publicly offered to indemnify the company if the expansion project was delayed as a result of BC’s opposition to the project and after negotiation with the company; the federal government ultimately purchased the pipeline for $4.5 billion. Work on the pipeline is expected to begin in AB in August and BC in September.

Resignation of Manitoba Hydro Board

• On March 21, 2018 every member of the Manitoba Hydro board except one (MLA Cliff Graydon) resigned. Everyone who resigned was appointed to the Board shortly after Premier Pallister was elected in May, 2016.

• The outgoing chair of the board, Sandy Riley, has said the resignation is due to an unwillingness of Premier Pallister to meet with the board for over a year to resolve issues related to the finances and governance of Manitoba Hydro.

• Premier Pallister disputes this and has said that the board resigned because the province won’t agree to a $70 million ‘persuasion money’ payment to the Manitoba Metis Federation (MMF) to smooth the approval process on a transmission line.

• Both the Board and the MMF have taken exception to this suggestion and the MMF president, David Chartrand, accused Premier Pallister of using “race card tactics.”

Cryptocurrency Mining

• Cryptocurrency or digital currency mining involves the use of dedicated computer hardware to solve complicated mathematical algorithms that when complete entitle the user to units of cryptocurrency such as Bitcoin or Ethereum. The computer hardware is energy intensive so as data mining continues to grow; it will have an impact on electricity demand.

• Cryptocurrency mining data centres’ high demand for electricity and business volatility can potentially cause utilities to upgrade generation or transmission at a cost to all ratepayers to service a data centre load requirement that could disappear as quickly as it materialized. Furthermore, these sorts of data centres are highly mobile, and able to migrate within short periods to any jurisdiction that can offer sufficient electricity at the lowest rate. This high mobility creates a significant risk of new data centres shutting down operations, leaving pre-existing customers to pay for the expensive system upgrades caused by data centres who leave.

• These concerns have been faced by many low-cost electricity jurisdictions across North America who have responded by imposing moratoriums on data centres and/or significantly increasing electricity rates for data centres.

• On June 7, 2018 the province of Quebec (QC) announced a “new framework for the category of electricity consumers relating to the cryptographic use applied to block chains” noting it was required because of unprecedented demand and requests from cryptocurrency companies that “go beyond the short and medium-term capabilities of [HQ], hence the urgency and importance of action.”
• QC’s framework comprises three elements: A ministerial order temporarily suspending data centre applications; Direction to the QC regulator (the Régie de l'énergie) from the Government of QC on the factors that should be considered when serving data centres; and, an application to the Régie de l'énergie, proposing a selection process for data centres projects in light of the concerns expressed by the Government of QC in its direction.

**Electric Vehicle Charging Stations**

• New Brunswick Power has developed a charging network for electric vehicles made up of standard level 2 (240 Volt) chargers throughout the province and a corridor of 10 fast-charge stations (400 Volt) along the TransCanada Highway. The utility, in conjunction with the federal and provincial government, will spend another $3 million this year to add additional capability.

• There has been criticism of the plan, however, as the charging stations are doing so little business that they are budgeted to lose money until at least 2028. One new level-2 station in Bathurst showed that only three vehicles were charged there in December, 2017 for a total of 41 minutes. Other centres did even less business.

• At the same time, Nova Scotia Power has announced that it plans to install 24 electric vehicle chargers in early 2018 consisting of 12 level-3 chargers and 12 level-2 chargers in a network from Yarmouth to Sydney. The project will cost about $1 million with $420,000 from Nova Scotia Power, $420,000 from the federal government, and $120,000 from the provincial government.

**Analysis:**

• Note is for information purposes only.

**Action Being Taken:** No action being taken. For information purposes only.

**Prepared/Approved by:** R. Bates, M. Janes / J. Cowan

**Ministerial Approval:** Received from Hon. Siobhan Coady

**August 5, 2018**
Information Note
Department of Natural Resources

Title: Electric Vehicles in Newfoundland and Labrador

Issue: To provide information on the current status of electric vehicles (EVs) in Newfoundland and Labrador.

Background and Current Status:

- Broadly defined, an electric vehicle is an automobile that is fully or primarily propelled by electricity. This class of light-duty automobile uses electric motors, powered by electrical energy stored in a rechargeable battery as opposed to gasoline or diesel.

- The Government of Newfoundland and Labrador has taken a number of actions to enhance the up-take of EVs. These include:
  - Through the Province’s now closed Green Fund, $52,000 was provided to Green Rock E.V.S. to supply and install five residential and 14 commercial EV charging stations.
  - Government released a report on electric vehicle technology, infrastructure requirements and market developments in November 2015.
  - In September 2017, Government launched the Vehicle Efficiency and Cost Calculator to inform consumers about the costs and benefits associated with purchasing fuel efficient and alternatively powered vehicles such as EVs.
  - November 2017 the Electric Vehicle Working Group (EVWG) was formed, consisting of members from NR, MAE, Newfoundland Power, Newfoundland and Labrador Hydro, Newfoundland and Labrador Environmental Industry Association, the City of Mount Pearl and the City of St. John’s. Research topics include: EV policy options, GHG reduction potential, lifecycle cost considerations, charging infrastructure, grid impacts and leveraging access to federal funding to support EV uptake in the Province. A document containing recommendations is expected to be the final product of the EVWG.

- On November 9, 2016, the Government of Newfoundland Labrador released The Way Forward: A vision for sustainability and growth in Newfoundland and Labrador. One of the action identified is reducing provincial greenhouse gas (GHG) emissions to ten per cent below 1990 levels by 2020. Actions to support this target are to be outlined in a forthcoming Climate Change Action Plan currently being developed by Department of Municipal Affairs and Environment (MAE).

- Phase 3 of the Way Forward: Building for Our Future, released April 24, 2018, commits to the development of a renewable energy plan in 2018-19 given the province’s abundance of wind, hydro and tidal energy resources that have not been fully developed.

- The Department of Natural Resources (NR) 2017-20 Strategic Plan outlines goals and objectives for the period April 1, 2017 to March 31, 2020. Amongst these are ensuring the people of the province have stable, secure and reliable electricity, while balancing electricity rate impacts. Increasing usage of EVs is seen as a channel to assist with rate management.

- Current up-front cost of EVs are noted to be a deterrent for consumers. The conventional automobile has a total cost of $44,038 after 5 years as opposed to $49,581 for a Battery Electrical Vehicle (BEV) over the same period.
• Government is participating in the development of a national Zero-Emissions Vehicle Strategy; a commitment of the Pan-Canadian Framework on Clean Growth and Climate Change. The Strategy is scheduled to be released in 2018.

• The most common benefits of EVs are as follows:
  o Improve energy security: EV deployment provides an opportunity to reduce reliance on gasoline and increasing demand for electricity.
  o Tackle climate change: EVs fueled by electricity generated from clean sources of energy such as hydro, solar, or wind, do not emit harmful GHGs
  o Improve local air quality: EVs do not produce emissions
  o Simplicity to maintain: Unlike conventional automobiles, electric vehicles contain few moving parts and require less regular maintenance.
  o EVs are suggested to perform better than Internal Combustible Engines (ICEs) as they emit less sound and provide for instant torque, allowing for a more comfortable drive.
  o Reduced operating cost: EVs provide significantly improved fuel economy over ICE automobiles.

• Recent data from Motor Registration Division (MRD) indicates there are 61 registered battery EVs and 364 registered plug-in hybrids in Newfoundland and Labrador.

• Currently there is no data base tracking publicly available charging stations. It is indicated from industry that there are approximately 70 level II charging stations operating in the Province.
As noted by the Minister of Natural Resources, in an interview with CBC radio’s, “On the Go” (April 19, 2018) the uptake of EVs will be best recognized when the price of EVs decrease, more electrical charging stations are in place and there is access to federal program funding to support EV existence. These actions will better equip Newfoundland and Labrador for EVs.

EVs do not produce any GHG emissions. This helps to tackle climate change and improve local air quality. This is of relevance to Newfoundland and Labrador given that light-duty on-road transportation accounts for 7.5 per cent of GHG emissions.

Upon completion of Muskrat Falls, 98 per cent of the electricity consumed in the province will be renewable and therefore free of GHG emissions. As well, with a higher EV penetration, an increased in off-peak electricity usage (EVs charging nightly) could help manage the electricity rates associated with Muskrat Falls.

Action to be taken:
- NR will continue to work with the EVWG, to assess opportunities and challenges for EVs in Newfoundland and Labrador.

Prepared/Approved by: W. Skinner/

Ministerial Approval:

June, 2018
Information Note
Department of Natural Resources

Title: Status of NL’s Renewable Energy Proposals to the Federal Government

Issue: To provide the Director of Electricity and Alternative Energy with an update on NL’s initial renewable energy submissions and action being taken.

Background and Current Status:
- Budgets 2016 and 2017 announced significant multi-year investments in the clean growth economy including $9.2 billion for green infrastructure, $2.6 billion to support the PCF and over $1 billion for clean technology. Budget 2018 commits to extending tax support to encourage investment in clean energy generation and to promote the use of energy efficient equipment with an investment of $123 million over the 2017-18 to 2022-23 period. Budget 2018 focuses more on the evolution of previously announced funding rather than on any new funding in this area.

- Budget 2018 also provides an update on Budget 2016-17’s $1.4 billion Low Carbon Economy Leadership Fund (LCELF), including a listing of PTs that have signed funding agreements under the LCELF. Six PTs have done so as of December 2017, including New Brunswick (NB) ($51 million for energy efficiency projects), and Nova Scotia (NS) ($56 million for home retrofits).

- In Budget 2017, the Federal Government committed $21.9 billion over 11 years to support green infrastructure. This includes funding to lower greenhouse gas (GHG) emissions through: alternative fuel, technology demonstration projects, energy efficiency, renewable energy demonstrations, smart grids, and reduced diesel use in remote communities.

- Budget 2018 notes that further details on the $600 million Low Carbon Economy Challenge Fund (LCECF) will be announced in the near future. The LCECF seeks to maximize greenhouse gas reductions in 2030 and is open to all PTs, municipalities, Indigenous governments and organizations, businesses and non-for-profit organizations.

- Federal Budget 2017 also announced $2 billion over 5 years, starting in 2017-18, to support provinces and territories (PTs) that have adopted the Pan-Canadian Framework (PCF) on Clean Growth and Climate Change in reducing their greenhouse gas (GHG) emissions. Of the $2 billion, $1.4 billion is earmarked for the Low Carbon Economy leadership Fund (LCELF) and $0.6 billion for a Low Carbon Economy Challenge Fund ("Challenge Fund"). MAE’s Climate Change Branch (CCB) is coordinating NL’s submission for these funds.

- The federal Green Infrastructure Program has a number of funding programs relevant to NR:
  - **Smart Grid Deployment and Demonstration:** Up to $100 million over four years starting April 1, 2018 to support larger sale demonstrations of promising near-commercial smart grid technologies, and deployment of proven smart grid integrated systems. NRCan’s request for proposals closes March 4, 2018.
  - **Electric Vehicle (EV) Infrastructure Demonstrations (Phase II):** Up to $30 million over four years starting April 1, 2018 to continue to support demonstrations of next-generation and innovative EV charging infrastructure projects. NRCan’s call for letters of expression of interest closed September 25, 2017.
Promoting Clean Energy for Rural and Remote Communities: up to $220 million over six years starting April 1, 2018 to reduce diesel use in remote, Northern and Indigenous communities and industrial sites through clean energy solutions. NRCan's call for project concept questionnaires closed October 2, 2017.

Emerging Renewable Power Program: $200 million in funding from April 1, 2018 to March 31, 2023 to support renewable energy projects that have been widely deployed abroad but have yet to gain a foothold in Canada, or that have been successfully demonstrated in Canada but not yet commercially deployed. Eligible technologies include: offshore wind; geothermal (both hot fractured rock and sedimentary rock resources); tidal; concentrated solar; or other (e.g. wave, river current, next generation biomass). Expressions of interest (EOI) due February 11, 2018.

- Federal Budget 2017 also announced $155 million over four years under the Clean Growth in Natural Resource Sectors Program to support clean technology research, development, and demonstrations in the energy, mining and forestry. TCII is coordinating NL’s submission.

- Through the federal Investing in Canada Plan, MAE is negotiating an integrated bilateral agreement for approximately $555 million over 11 years to include: $302 million for green infrastructure, $104 million for rural and northern communities infrastructure, $109 million for public transit, and $39 million for community, culture and recreation infrastructure.

Analysis:
- NR is aware of a number of potential applications being put forth under the CERRC, including:

- Since the Federal Budget 2017 announcement, NR has been flooded with federal requests for calls, meetings and written information on the province’s electricity sector, priorities and proposals. As a result, NR has used a great deal of staff resources to work respond to these requests and work with other departments and utilities to identify and develop project proposals.

- For example, NL has advanced 16 proposals for informal consideration under the LCELF, 12 of which were NR/Climate Change (CC) proposals (see Annex A). Federal officials
indicate only five fit the LCELF (two are NR/CC proposals). As such, NL is presently only projected to avail of $21 million of the full $44.7 million allocation (matching required).

- On November 6, 2017, NR met with IGA staff to discuss the challenges in meeting federal requests, the challenges in obtaining funding, and whether IGA may be able to assist.

**Action Being Taken:**

- NR pursuing contact with staff from MAE, T&W, IGA and TCII to obtain information on all relevant federal and provincial funding pots, provincial proposals being considered, and how departments may work together to effectively and efficiently maximize federal funding.

Prepare/Approved by: C. Boland
Ministerial Approval:

February 2, 2018
Title: Update on Funding Opportunities

Issue: To provide an update on funding opportunities and the Electricity and Alternative Energy Division's work to leverage these opportunities to support strategic priorities.

Background and Current Status:
- Federal budgets 2016 and 2017 announced significant investments in the clean growth economy. Budget 2018 focused on the evolution of previously announced funding. See below for a high-level breakdown of relevant federal funding opportunities, including funding programs under the Green Infrastructure Program and the Low Carbon Economy Fund. See Annex I for an update on federal funding applications.

Federal Funding Opportunities
Green Infrastructure Program
- The federal Green Infrastructure Program has a number of funding programs relevant to Natural Resources (NR), including:
  - **Clean Energy for Rural and Remote Communities (CERRC):** up to $220 million over six years starting April 1, 2018 to reduce diesel use in rural and remote communities through clean energy solutions. Applications were due on May 17, 2018; however, the program will have a continuous intake process until all funding has been allocated.
  - **Electric Vehicle (EV) Infrastructure Demonstrations (Phase II):** Up to $30 million over four years starting April 1, 2018 to support demonstrations of next-generation and EV charging infrastructure projects. Applications closed on September 25, 2017.
  - **Emerging Renewable Power Program:** $200 million in funding from April 1, 2018 to March 31, 2023 to support renewable energy projects that have been deployed abroad but have yet to gain a foothold in Canada, or that have been successfully demonstrated in Canada but not yet commercially deployed. Eligible technologies include offshore wind, geothermal, tidal, solar, or other (e.g. wave, river current, next generation biomass). Applications closed on February 11, 2018.
    - It appears results are starting to be released under the ERRP. On September 20, 2018, the Federal Government announced a $29.8 million grant for a tidal energy project in the Bay of Fundy. According to CBC the funding was drawn from a larger pool of funds NRCan has set aside for its emerging renewable power program.
    - NR provided a letter of support to ACOD for their application under the ERRP.
  - **Smart Grid Deployment and Demonstration:** Up to $100 million over four years starting April 1, 2018 to support larger scale demonstrations of promising near-commercial smart grid technologies, and deployment of proven smart grid integrated systems. Applications closed on March 4, 2018.

- In addition, the 2017 federal budget also invested $9.2 billion over 11 years through the Green Infrastructure stream of the infrastructure Integrated Bilateral Agreements (IBA). On September 10, 2018, NL signed its IBA with the federal government with NL receiving a total of $555,842,846 through this agreement for public transit; green infrastructure; community, culture and recreation infrastructure; and rural and northern communities.

- NL's green infrastructure allocation is $302,364,807 and is to be used to support GHG reductions, enable greater adaptation and resilience to the impacts of climate change and
climate-related disaster mitigation, and ensure that communities can provide clean air and safe drinking water. NR will be working with MAE and TW to leverage IBA green infrastructure funding to support strategic priorities (e.g. electrification).

**Low Carbon Economy Fund**

- The Low Carbon Economy Fund (LCEF) provides $2 billion over five years to support provinces and territories (PTs) in reducing GHG emissions. The LCEF is composed of the $1.4 billion Low Carbon Economy Leadership Fund (LCELF) and the $0.6 billion Low Carbon Economy Challenge Fund (LCEC).

- NL’s federal LCELF allocation is $44.7 million (provincial matching funds are required and have been allocated in the fiscal framework). The LCELF agreement between NL and the federal government was signed in September 2018. Five programs have received approval by NL (Ministers responsible for MAE, FIN and IAS) and the federal government. See Annex I for more information on these programs. Subsequent programs can be identified to draw down remaining funding.

- The LCEC, launched in March 2018, provides $500 million to projects that seek to maximize GHG reductions by 2030 and generate clean growth. It is open to PTs, municipalities, Indigenous governments and organizations, businesses and non-for-profit organizations. The LCEC is split into two streams:
  - The Champions Stream ($450 million): Began accepting Expressions of Interests in March 2018. By invitation, formal proposals were accepted until early summer 2018. Final funding decisions will be made between fall 2018 and winter 2019.

**Other**

- Another potential source of federal funding to support the division’s strategic priorities is Impact Canada’s Clean Tech Stream, which provides $75 million over five years to support Challenges in three areas: the Sustainable Community Challenge, Technology Adaptation Challenge, and the Off-Diesel Challenge. The forthcoming Off-Diesel Challenge (estimated at $20-$30 million) will focus on reducing diesel reliance in remote communities.

**Analysis:**
**CERRC**

- On September 19, 2018, the following three Newfoundland and Labrador proponents were informed they were successful in the first round of assessment for CERRC funding. The second round of assessment is now taking place. NR has been informed NRCan will be in touch to collaborate regarding due diligence and leveraging provincial funding.

**Focus Areas:**
The priorities are consistent with the Province's plan to create a renewable energy plan and with the Minister's mandate to encourage diverse distributed energy generation by seeking opportunities to develop wind farms and small scale hydro, and prioritizing communities isolated from the primary power grid, such as coastal regions of Labrador.

Next Steps

Given the closure of a number of funding programs, NR will seek to leverage remaining LCELF funding (over half of NL’s federal $44.7 million allocation remains and just under half of NL’s provincial matching funds) and the over $300 million available under the IBA’s green infrastructure envelope. NR will work closely with relevant government departments, including MAE and TW, to draft proposals for funding that meet strategic priorities.

Prepared/Approved by: S. Brewer/L. MacDonald/ C. Snook
Ministerial Approval: September 26, 2018
## Annex I: Update on Federal Funding Applications

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<tr>
<th>Proposal</th>
<th>Funding Pot(s)</th>
<th>Status</th>
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<tr>
<td><strong>Green Infrastructure Program</strong></td>
<td>Clean Growth in Natural Resources</td>
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<td>Nalcor - Ramea</td>
<td>Clean Energy in Rural and Remote Communities</td>
<td>NR is not assisting.</td>
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<td>Clean Energy in Rural and Remote Communities</td>
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<td>Emerging Renewables Power Program</td>
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