

NAME OF ORGANIZATION: MOECC-ENERGY Joint DM-CoS Meeting
DATE/TIME OF MEETING: 2-3PM on Wednesday, April 12, 2017
LOCATION OF MEETING: Ferguson Block, Floor 11, MO/DMO Boardroom

PURPOSE: Discuss items of mutual interest

ATTENDEES: **Ministry of Energy**
Andrew Teliszewsky, Chief of Staff
Serge Imbrogno, Deputy Minister
Matt Whittington, Director of Policy, Minister's Office

Ministry of the Environment and Climate Change
Mandy Maghera, Chief of Staff
Paul Evans, Deputy Minister
Kaj Thiru, Senior Policy Advisor, Minister's Office
Alex Wood, Executive Director, Climate Change Directorate

FORMALIZED AGENDA ITEMS:

1. Green Ontario Fund
2. Cap and Trade in First Nation Communities
3. Long-Term Energy Plan
4. Renewable Natural Gas

OTHER POSSIBLE AGENDA ITEMS:

5. Free Overnight EV Charging
6. Geothermal
7. Microgrid Funding

NOTES ON FORMALIZED AGENDA ITEMS:

1. Green Ontario Fund (Ontario Climate Change Solutions Deployment Corporation or OCCSDC)

- Update on creating the Green Ontario Fund

Suggested Response:

- **With a commitment to having the GreenON website launched by May 2017 and new program offerings in place by Fall 2017, I am supportive of the ongoing collaboration among ENERGY, the IESO, and MOECC.**
- **It is critical that ENERGY continue to be informed and engaged throughout on IESO's services to MOECC/Green Ontario Fund to understand potential impacts to IESO's existing planned activities, and to ensure a coordinated approach.**

Background

- As per the May 2016 CCAP Cabinet Minute, ENERGY is working with MOECC to help establish the Ontario Climate Change Solutions Deployment Corporation (OCCSDC) (public-facing name now "Green Ontario Fund").
- On February 22, 2017, Ontario Regulation 46/17 – OCCSDC was posted to eLaws.
- As outlined in the regulation, the object of the corporation is to "stimulate the development of industry, trades and business undertakings in Ontario that further the deployment in Ontario of commercially available technology that reduces greenhouse gas emissions from buildings or from the production of goods."
- The Green Ontario Fund is required to develop programs which target residential (including low-income) buildings, new residential buildings and the production of goods (industrial customers).
- The Minister of Energy sent a letter to the IESO on February 13, 2017 requesting that the IESO support the implementation and early adoption of Green Ontario Fund services.
 - It was noted that the IESO, ENERGY, and MOECC would need to determine what mechanisms might be necessary in order for the IESO to provide services to the Green Ontario Fund.

- As of April 10, 2017, MOECC and IESO have agreed in principle to the terms of a Service Level Agreement (with contract execution expected the week of April 10, 2017) for the IESO to:
 1. Design, establish and maintain a website that will provide a clear and consistent message to website visitors and provide information and resources to the Green Ontario Fund audiences.
 2. Provide client relations management services to all clients aiming to reach out to the Green Ontario Fund for assistance and information.
 3. Provide early advice to the MOECC to inform the development of new programs to meet the requirements of the Green Ontario Fund mandate.
 4. Conduct any agreed upon follow-up assignments related to the above.
 5. Work together to be in a position to transfer control and operation of the website, call centre data and toll free number to Green Ontario Fund.
- Green Ontario Fund (GreenON.ca) with an anticipated launch of May 26, 2017 Green Ontario Fund
- ENERGY reviewed four draft version of the Agreement and shared the following general feedback with MOECC and IESO:
 - IESO must consider its authority to enter into the agreement (which contemplates multi-fuel programs, flow of GGRA funding to IESO).
 - ENERGY should be informed and engaged throughout to understand impact on IESO core business activities (including Conservation First Framework).
 - IESO/MOECC will need to take into account relevant existing programs offered under the Conservation First Framework and Demand Side Management Framework, to avoid program duplication.
- ENERGY also sits on the Green Ontario Fund website working group, which includes PO, CO Communications, MOECC (MO, Comms and policy staff), IESO, and Q3 (IESO's website vendor). Through this working group, ENERGY has provided advice, including on the following:
 - Existing conservation and renewable energy programs to be included on the website; and
 - The need to incorporate electric and gas utility feedback on website content and to engage them on the content management plan.

Climate Change Agency Alignment with Existing Energy Efficiency Frameworks

- Through the 2015 to 2020 Conservation First Framework, the Industrial Accelerator Program and the Demand Side Management Framework, customers in all sectors are already accessing energy efficiency and low-carbon technology rebate programs through the IESO, and electricity and natural gas utilities.
- If the Green Ontario Fund is uncoordinated with the frameworks, it may duplicate existing energy efficiency and low-carbon technology initiatives, which could cause confusion and inconvenience for customers.
- Ontario can build on the success of existing utility and IESO energy efficiency and low-carbon technology programs by leveraging existing IESO expertise and delivery infrastructure to launch GreenON programs.
- The IESO, electricity utilities and natural gas utilities have built up significant expertise, resources and program delivery capacity, as well as stakeholder relationships; standards and processes for governance, accountability, measurement and reporting; and IT and settlement systems. This represents 500 to 760 highly skilled staff across these organizations.

2. Cap and Trade in First Nation Communities

- MOECC has been directed to consider exempting certain fuels delivered to reserves for use by First Nations from the program.
- This was proposed later in 2016 to compliment the *Climate Change Mitigation and Low-carbon Economy Act, 2016*, but is not a minuted CCAP action.

Suggested Response:

- **ENERGY is interested in keeping informed of MOECC's progress on this initiative.**
- **Given the number of rate mitigation and Indigenous energy programs that the Ministry of Energy is responsible for, it will be good for us to stay informed to ensure that our ministries are aligned in our approaches.**

- **ENERGY is happy to continue to share our knowledge and experience of legal and / or implementation issues with MOECC to assist with issues that may arise as you develop a plan for providing relief to remote communities in the face of increasing costs as a result of Cap and Trade.**

Background:

- The Environmental Bill of Rights Registry for the final greenhouse gas cap and trade regulation proposed a complementary regulation under the *Climate Change Mitigation and Low-carbon Economy Act, 2016*. The proposed regulation would provide for First Nations impact mitigation, by excluding certain fuels delivered to reserves for use by First Nations from the cap and trade program. MOECC is currently working on recommendations for how to fulfil this direction, with a focus on the remote diesel-reliant First Nations.
 - In the long term, ENERGY's work to reduce diesel use in remote communities (both through grid connection and through a microgrid program for un-connectable communities) will serve to offset the impact of cap and trade; however, in the interim, MOECC would like to MOECC establish an alternative way of assisting First Nations with the impacts of elevated diesel prices due to cap and trade.
- ENERGY is not responsible for establishing the interim plan to protect remote First Nations from the impacts of cap and trade, but staff have been offering support and recommendations to support MOECC's work, including:
 - Helping MOECC to understand how fuels are distributed to the communities;
 - Explaining the funding structures for energy costs in remote communities (in both IPAs and RemoteCo-serviced communities), and helping them to understand how remote customers might or might not experience the impacts of higher cost for diesel under the different models;
 - Explaining ENERGY's approach to applying the 8% rebate in IPA communities; and
 - Explaining ENERGY's current approach to mitigating rates in First Nations, including explaining the recommendations from the OEB regarding First Nation rates.

- ENERGY has encouraged MOECC to pursue an exemption; however, MOECC feels that there are significant complexities associated with applying such a policy.
- MOECC has indicated that they may instead wish to provide a reimbursement to RemoteCo and IPAs at a value in line with the anticipated impact on diesel costs (approximately \$.05/L), which could be refunded to LDCs on the basis of fuel receipts remitted.
- ENERGY has indicated to MOECC that our current suite of programs is not suitable for meeting the objectives of this initiative (including options such as relying on RRRP, or expanding the Ontario Rebate for Electricity Consumers program)
- There may be a role for ENERGY to support MOECC in developing a new program given our experience with the 8% rebate and our overarching mandate around energy and energy prices in Ontario.

3. Long-Term Energy Plan (LTEP)

Suggested Response:

- **The Long-Term Energy Plan (LTEP) presents an opportunity for the government to further elaborate on Ontario's new climate change mitigation and adaptation policies as they relate to the energy sector.**
- **The 2017 LTEP and future energy plans will need to apply the lens of climate change targets and carbon pricing to energy policy development.**
- **The LTEP and CCAP are both iterative processes. Each plan will inform the other to ensure alignment of government priorities.**
- **Ontario is in a strong electricity supply situation and well-positioned to meet demand at this time.**
- **The next LTEP will provide framework for a renewed and reformed market, with enhanced competitive procurements when new electricity supply is needed.**
- **Pending Cabinet approval, the Ministry of Energy expects to release the LTEP and Implementation Directives in mid-2017.**

Background:

- The consultation and engagement phase of LTEP development was preceded by the release of technical reports on the electricity and fuels sectors.
 - Each of these reports contained a ten-year review and twenty-year outlooks to 2035 that were affected by CCAP initiatives and assumptions.
- The LTEP engagement process officially began on October 13, 2016 with the release of the LTEP discussion guide, an in-person engagement schedule, and the Environmental Registry Notice. The Environmental Registry notice closed on December 16, 2016.
 - The Ministry received over 1,500 submissions through the Environmental Registry, emails and other channels.
- Some stakeholders (e.g., ECO) noted that the energy supply outlooks in LTEP technical reports do not align with Ontario's 2030 emissions reduction target.
 - The Ministry will continue to work with partner ministries to help develop policies and incentives for areas of the energy sector that reach beyond the mandate of the Ministry of Energy (e.g., transportation, housing).
- The Ministry is considering making necessary changes to implement capacity auctions once IESO's Market Renewal stakeholder initiative is complete.
- Capacity auctions can inject greater competition into Ontario's electricity market helping to ensure that capacity is secured at the lowest cost, leading to lower bills for consumers.
- As part of this approach, the government will need to consider how best to achieve climate change (e.g. setting carbon neutrality as an auction principle, having generators with emissions pay for allowances through the cap and trade system etc.)

4. Renewable Natural Gas (RNG)

- MOECC had originally planned to bring a RNG regulatory proposal to MTCC in April 2017, followed by public comment on the Environmental Registry and final approval in July 2017. The regulation would take effect in January 2020.
- However, subsequent discussions between ENERGY and MOECC determined that further coordination is required on a preferred approach.

Suggested Response:

- **The natural gas sector is regulated by the Ontario Energy Board (OEB). Have you considered a greater role for the OEB to assist with the advancement, adoption and staged implementation of RNG in Ontario?**
 - **The OEB has over 50 years of experience and well established processes to regulate the natural gas sector in the public interest.**
- **Recognizing the uncertainty around RNG supply and potential costs, there is a potential role for the OEB to establish requirements for the level and timing of introducing RNG to the natural gas system. Government expectations could be established through the Long-Term Energy Plan (LTEP) process and directives.**
- **The OEB's implementation for "system gas" customers would provide a foundation to further inform the government and stakeholders on the potential roll-out of RNG requirements to other natural gas consumers who are not regulated by the OEB.**

Background

- In May 2016, MOECC issued a press release outlining that the province will invest up to \$100 million in cap and trade proceeds over four years to support the introduction of renewable natural gas.
- In June 2016, the Climate Change Action Plan (CCAP) outlined an initiative to establish a low carbon requirement for natural gas: "Ontario intends to introduce a renewable content requirement for natural gas and provide supports to encourage the use of cleaner, renewable natural gas in the industrial, transportation and buildings sectors".

- The CCAP commitment did not specify a level of RNG content. However, the accompanying modelling assumed 2% of total natural gas demand was to be met by RNG by 2020. The natural gas utilities have suggested RNG supplies of "up to" 2% of the system gas customers by 2020 (Note: System gas customers are those who buy the natural gas commodity from their utility and they account for about 50% of total demand).
- In December 2016, the Minister of Energy wrote the OEB asking the OEB to move forward expeditiously to include RNG as a potential fuel in the utilities' supply portfolios.
- In March 2017, the OEB announced it is launching an initiative to develop a "Framework for the Assessment of Distributor Gas Supply Plans" (Framework). The Framework developed will set out the OEB's expectations and approach to issues related to including RNG within the distributors' gas supply portfolios. It is anticipated the Framework will be completed by the end of 2017.
- The Fuels Technical Report noted a 2015 ICF International study undertaken for Enbridge Gas and Union Gas forecasting Ontario's potential RNG supply reaching 155 PJ (nearly 4.3 million cubic meters) per year by 2035 (i.e. about 16% of current natural gas demand).

OTHER POSSIBLE AGENDA ITEMS:

5. Free Overnight EV Charging

- The Climate Change Action Plan committed to a four-year, free overnight EV charging program for residential and multi-unit residential customers to start in 2017. MOECC received Treasury Board approval to allocate only \$8.7 million for this program, down from the \$15 million provisionally allocated in the CCAP.

Suggested Response:

- **The program contemplated in the CCAP has two general objectives. The first is to incent the purchase of EVs with the promise of free electricity. The second is to encourage overnight charging instead of during peak times when natural gas plants are in use.**
- **With the original \$15 million allocation – and now \$8.7 million – a free overnight charging program will fall short of achieving either of these objectives. However, the Ministry is still scoping program options, which will lead to a program design submission to MOECC by April 30, 2017.**

Background:

- Discussions between ENERGY and MOECC have been held at senior levels to discuss the challenges related to delivering on CCAP objectives for overnight charging. Ministry staff are continuing this discussion with MOECC staff.
 - At the first meeting on April 5 – ENERGY provided an overview of its technical analysis and associated costs as they relate to “free” and “overnight” concepts. MOECC provided feedback on expectations and will test some ideas / concepts with senior management (e.g. option 2 – targeted deployment that achieves both objectives).
 - More discussions are needed to address the gap between a program that fully meets the CCAP commitment and the program that can be delivered within the available funds.

- Staff will arrange further meetings to continue discussion. May include additional ministries doing EV CCAP projects to help scope the full spectrum of incentives – this will help frame how overnight charging lines up against other activities.
- The average cost of charging an EV overnight is \$15 per month after the Fair Hydro Plan is considered. The Ministry estimates that, using the \$8.7 million of allocated funding, credits to the expected 55,000 EV owners will be no more than \$5 per month. If administration and program operating costs are added in order to incentivise EV owners to charge overnight, the credits would be less than \$4 per month.
- Alternative options could include:
 - Reducing the scope of the program to ensure actual free overnight charging. A first-come / first-serve program would limit the number of participants to under 11,000 EVs, and would likely be fully subscribed in the first 18 months.
- A targeted pilot project on a small scale could address all of the program objectives and generate valuable data on EV behaviour, which would be of value to all ministries and agencies developing policy on EVs. To remain within the \$8.7 million envelope the pilot would have to be restricted to fewer than 6000 EVs. However this option would be more complex to deliver.

6. Geothermal

- Stakeholders have contacted MOECC and ENERGY requesting a variety of programs/incentives to be funded by CCAP to support the deployment of geothermal technologies (e.g., Canadian GeoExchange Coalition, Ontario Geothermal Association, and Enbridge Gas Distribution).

Suggested Response:

- **We understand that a number of stakeholders have been in touch with both MOECC and ENERGY requesting incentives for deployment of geothermal technologies.**
- **ENERGY does not recommend proceeding with Enbridge's proposal to regulate the currently competitive geothermal market. ENERGY understands that the Ontario Geothermal Association's proposal for a rural geothermal pilot program could potentially align with the Green Ontario Fund objectives. Is this something that MOECC is considering?**
- **With respect to the Ontario Geothermal Association's proposed study of geothermal energy system impact on the electricity system, ENERGY believes that this proposal is premature, given that Green Ontario Fund programs are still under development. In addition, IESO already monitors the development and potential impact of renewable energy technologies on the electricity system.**
- **ENERGY also proposes to suggest that the Canadian GeoExchange Coalition discuss their geothermal energy system certification and installer training proposal with the MOECC, as it relates specifically to Green Ontario Fund implementation.**
- **ENERGY can engage further with MOECC regarding thermal energy applications like geothermal in order to ensure coordination with existing programs and policies and leverage ENERGY's prior experience with renewable energy programs.**

Background

- Geothermal systems have been identified in CCAP as a technology that can reduce greenhouse gas emissions of buildings.
- Ground source heat pump benefits to the Ontario electricity system can include:

- Air conditioning with ground source heat pumps uses significantly less electricity at summer peak than conventional air conditioning systems.
- When geothermal replaces conventional electric resistance heating, it reduces winter peak use of that home or building.
- Geothermal is an eligible custom measure under Conservation First Framework (CFF) High Performance New Construction and Retrofit programs, as well as Demand Side Management (DSM) Framework. There are no residential geothermal programs under the frameworks.
 - However, there are limited instances where customers have received incentives for these measures due to the high capital costs of the technologies relative to energy prices and available incentives, and difficulty passing the cost-effectiveness tests (which compare the expected energy savings to measure and program costs).

Enbridge Gas Distribution

- At the request of MOECC, on February 21, 2017, Enbridge agreed to work with the OGA on a deployment opportunity for geothermal in Ontario.
 - Enbridge is proposing to build and operate geothermal loops as a business similar to their regulated gas distribution. The geothermal industry would install and service in home equipment similar to what is done by HVAC (heating, ventilation and air conditioning) contractors for furnaces.
- Enbridge's proposal would:
 - Allow Enbridge to own and operate assets including geothermal heating, cooling and water heating systems within its regulated business; and
 - Require the Minister of Energy to direct the OEB to consider the costs associated with these assets and their operation when setting Enbridge's regulated rates (i.e. create a new Geothermal Rate Class).
- Enbridge's proposed directive would be aimed at providing the OEB with the ability to establish a Geothermal Rate Class for access to geothermal loop systems that would be installed, owned, and maintained by Enbridge, allowing the utility to earn a regulated rate of return on those assets.

- Enbridge has suggested that their proposal would increase adoption of geothermal, and reduce the per unit Green Ontario Fund incentives required.
- Enbridge can already invest in geothermal energy through an unregulated affiliate, though Enbridge expressed that the expected rate of return required to compensate for the increased risk inherent in the unregulated model would need to be significantly higher in order for Enbridge's board to approve such a venture.
- OEB staff do not support Enbridge's proposal, noting that it would result in the regulation of the currently competitive geothermal market.

Ontario Geothermal Association

- The Ontario Geothermal Association (OGA) represents geothermal energy system designers, drillers, installers, equipment manufacturers and distributors in Ontario's geothermal heating and cooling industry.
- Through its LTEP submission, OGA indicated a need to make geothermal systems affordable in Ontario by:
 - Leveraging private investment with government-supported capital grants;
 - Providing loan guarantees and/or low-interest long-term loans to private investors financing the balance of installation costs; and
 - Funding a targeted geothermal public awareness program.
- OGA has proposed to design a one-year test installation program for residential geothermal heat pump systems, prioritizing 10,000 rural households who need help with energy costs.
 - OGA did not provide a specific funding ask for this proposed program, but given geothermal energy system costs (~\$25,000) and the rural, low income program target, a significant per customer incentive would likely be required to enable participation.
 - This proposal appears to align with the proposed CCAP/GreenON support of residential geothermal energy systems.
 - In conversation with ENERGY staff, Enbridge indicated that the current annual geothermal energy system installation capacity of the industry is 2,500 systems at most, or 25% of the number proposed by the OGA for their one-year test program.

- PwC has suggested potential GreenON uptake of standard ground source heat pump residential systems of 2,878 to 28,497 in the first year of the program.
- ENERGY staff do not recommend proceeding with this proposal.
- OGA has also requested \$250-\$500K for a study on the electricity system impacts of geothermal adoption.
 - OGA proposes a six-month study (potentially in conjunction with IESO) which would evaluate the dollar value of geothermal systems to the electricity system, since they can reduce electricity demand.
 - ENERGY staff views this proposal as premature given that GreenON's proposed Renewable Heating & Cooling residential program is still in development.
 - The IESO already monitors the development and potential impact of renewable energy technologies on the electricity system.
 - Given the currently limited capacity of the industry for mass commercial deployments of geothermal energy systems, the growth in uptake is likely to happen more gradually, allowing time to undertake a study at a later date.
 - It is also important to note that geothermal systems can only reduce overall electricity demand if they replace or reduce reliance on electric heating. If geothermal systems replace natural gas or propane heating, electricity demand can increase since electricity is required to run the heat pump. Therefore, the electrical system impacts of geothermal will be based on not just the technology itself, but on who adopts it, where they live, and how they currently heat and cool their homes.
 - ENERGY staff do not recommend proceeding with this proposal.

Canadian GeoExchange Coalition

- The Canadian GeoExchange Coalition (CGC) is a national association for geothermal heat pump technology. CGC has developed training courses and quality assurance standards for design and installation of ground source heat pump systems, in order to promote consumer confidence in the technology.
- In a March 17, 2017 letter, CGC made recommendations to the Minister of the Environment and Climate Change regarding geothermal heat pump systems under Ontario's Climate Change Action Plan (CCAP):

- Offer incentives through GreenON for geothermal heat pump systems – both new build and retrofit markets.
- Require CGC System Certification for installations under an incentive program.
- Encourage the use of CGC’s “made in Canada” training program and adapting it to Ontario’s requirements, rather than importing standards from elsewhere.
- Funding for training and awareness-building regarding geothermal heat pump systems for professionals, communities and government.
- ENERGY staff recommend that the CGC discuss their geothermal energy system certification and installer training proposal with the MOECC, as it relates specifically to CCAP/GreenON implementation.

7. Microgrid Funding

- ENERGY was directed in the CCAP cabinet minute to work with MIRR and MOECC to develop a plan for using microgrids to reduce diesel use in remote communities.
- The microgrid initiative was not recommended for CCAP funding in 2017-18 fiscal year.

Suggested Response:

- **ENERGY continues to request that MOECC consider our initiative for funding in 2017/18, and we are happy to work with you to identify how this request can be put forward through the in-year reporting and adjustment process being developed.**
- **I would like to see progress made on this commitment in the near future, and ENERGY needs funding to support ongoing program development activities, including engagement with First Nations and others.**

- Based on the engagement that we did during our LTEP outreach, and from our ongoing communication with communities, we understand that microgrids are a topic of great interest to First Nation communities.
- The microgrid program that we are developing will be designed to complement existing initiatives, and enable diesel reduction projects to move forward in a timely manner. , Ideally, these projects will be supported (up to 100%) by both provincial and federal funding.
- Since \$2 million of allocated GIF funding is now going to be returned to the GGRA and has not been allocated to other initiatives, I would ask that you consider re-allocating this lapsed GIF funding to support ENERGY's ongoing work to develop a new microgrid program.
- Doing this will enable us to move forward with program development so that remote, diesel reliant communities where grid connection is not economically viable (such asin Weenusk First Nation) can pursue projects that integrate renewable generation and microgrid technology to meaningfully reduce their reliance on diesel fuel.

Background:

- The Climate Change Action Plan (CCAP) states that: *Where community support exists, Ontario would work with First Nation organizations to develop advanced microgrid solutions in First Nation communities...These projects would support economic growth by reducing reliance on diesel fuel and enabling stable, predictable sources of power. Projects would focus on renewable energy such as biomass, solar, and waterpower.*
- The CCAP cabinet minute tasked ENERGY and MIRR with working with MOECC to develop and report back to Cabinet with an implementation plan to work with First Nation governments and organizations to develop a program for low or no carbon energy powered microgrids and other alternative energy projects
- ENERGY has been leading the work on this minute over the past months, and has been engaging with MIRR and MOECC to ensure that they are in agreement on the recommended approach.
- ENERGY submitted a GGRA request to support our proposed path forward on this initiative, including a request for \$500,000 in 2017-18 to support our work engaging with communities to develop the requested program/implementation plan.