

Meeting	Technical Advisory Committee – Meeting #4 Electrification
Date	July 22, 2020 – 9:00 a.m. to 11:30 a.m.
Location	WEBEX Virtual Meeting
Committee attendees (participants and alternates)	BC Hydro – Committee Chair & Presenter – Kathy Lee BC Hydro – Committee Moderator & Presenter – Basil Stumborg Association of Major Power Consumers (AMPC) – Melissa Davies BC First Nations Energy & Mining Council (BCFNEMC) – Cam Osler BC Public Interest Advisory Council (BCPIAC) – Irina Mis BC Sustainable Energy Association (BCSEA) – Thomas Hackney BC Utilities Commission (BCUC)* – Nicola Simon Canadian Association of Petroleum Producers (CAPP) – Geoff Morrison City of Vancouver – Matt Horne Clean Energy Association of BC (CEABC) – Nuno Louzeiro Climate Action Secretariat (CAS) – Christopher Gilmore Commercial Energy Consumers (CEC) – David Craig FortisBC (Electric) – Mike Hopkins FortisBC (Electric) – Ken Ross Ministry of Energy, Mines and Petroleum Resources (MEMPR)* – Paul Wieringa Movement of United Professionals (MoveUP) – Jim Quail Pembina Institute – Tom Pierre Frappé-Sénéclauze University of Victoria (UVIC) – Andrew Rowe <i>* MEMPR and BCUC members attend as observers</i>
BC Hydro attendees	Sanjaya De Zoysa – Presenter Arsia Assadipour Warren Bell Bill Clendinning Dale Flood Hootan Jarollahi Margo Sadler Anne Wilson Jeff Christian (Lawson Lundell)

Meeting materials	British Columbia Electrification Impacts Study – Forecasting the Impact of Achieving British Columbia’s Greenhouse Gas Emissions Targets on Provincial Electricity Consumption (NAVIUS Research, June 2020). <i>Note these results are being revised to reflect up to date information related to the load forecast and other parameters. The final report will be posted publicly once it has been revised.</i> Presentation slides
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Welcome & Introduction

Presented by Basil Stumborg (Slides 1-4)

Summary of Comments

The session began with Technical Advisory Group (TAC) participants summarizing their interests and objectives in the session after pre-reading both the slide package and the NAVIUS Research report on BC Electrification Impacts (June 2020). The principal topic of interest was the future potential of electrification in the province and how BC Hydro will model this potential in the Integrated Resource Plan (IRP). Secondary topics of interest included (i) modeling electrification to reduce Greenhouse Gas (GHG) emissions, (ii) regional impacts of electrification on system capacity, and (iii) how electrification costs will be borne by BC Hydro’s customers.

Electrification

Presented by Kathy Lee, Sanjaya De Zoysa (Slides 5-21)

Summary of Comments

TAC participants had multiple questions about BC Hydro’s electrification modelling versus modelling done by NAVIUS, with TAC members requesting additional details to fully understand the information. Electrification capacity issues were also discussed, particularly related to transmission service in the North to support potential electrification of the LNG sector. TAC members expressed concern about the proportion of forecast GHG reductions that were tied to LNG/Mining electrification, and the risks of not achieving the desired level of electrification with those sectors. Finally, there were comments and questions about alignment of BC Hydro’s electrification forecast with government policy, and in particular the Government of B.C.’s CleanBC Plan. Connected to these questions was discussion of BC Hydro’s role in proactively promoting electrification versus being a strict implementer of government policy.

Q&A Notes

Q: What are the differences between the NAVIUS work and BC Hydro's results? The NAVIUS draft modeling shows possible doubling (100 per cent increase) of electricity demand (see Table 1, in the report). However, slide 15 (Incremental Load Impacts of Electrification Scenarios) shows approximately 50 per cent possible increase?

A: BC Hydro will get back with a written response in terms of comparing the respective outputs of the models.

Q: Important point emerging from the NAVIUS report is how much natural gas electrification feeds into achieving the GHG targets

A: Confirmed, a large part GHG reductions does come from electrification of the natural gas sector. Meeting the province's GHG targets is going to be challenging. Collectively, as a province, we are going to have to find potential for GHG reductions in all areas, and we will have to see some change in the natural gas extraction industry to meet these targets.

Q: If high biofuel costs are created by higher natural gas commodity costs and this would marginally reduce the economic advantage of gas as a fuel source, would this therefore increase electricity demand?

A: Confirmed, the lower price of gas is seen as a barrier to electrification. This barrier would be reduced if natural gas was more expensive, which could be achieved in part through a higher carbon tax.

Q: BC Hydro does not have a proactive mandate to do more electrification, but it is laying out possibilities and options. Is the company doing anything proactive to embrace electrification?

A: BC Hydro is pursuing electrification initiatives independently (and separate from this IRP process), however, some of the potential electrification opportunities do depend on external policies. The long-term planning process is focused on ensuring have strategies to make sure we meet whatever load that arises. BC Hydro has outlined three strategic frameworks for electrification in the IRP: (i) build in advance, (ii) react to need, (iii) wait and react when need arises.

Q: With expanding electrification, there is a trade off in meeting with conservation and efficiency.

A: The IRP team is in communication with BC Hydro's Conservation and Energy Management group and Rates group regarding electrification scenarios and assessing opportunities for demand-side options to encourage both energy conservation and shifting the timing of electricity use. As part of the IRP, we are looking at conservation as a resource option, to compare against supply-side options. Since load acquired through low carbon electrification is expected to be efficient, there is likely little

extra conservation potential arising through electrification. However, the IRP team is working to ensure that we appropriately capture extra demand-side opportunities for shifting the timing of electricity use to off-peak hours.

Session Schedule & Next Steps Presented by Basil Stumborg (Slide 22)

To conclude the session, TAC participants were asked to summarize their feedback for BC Hydro.

Consideration of TAC Meeting Feedback

TAC Member Feedback	Consideration
Please provide some follow-up information showing how BC Hydro's electrification forecast and NAVIUS electrification forecasts are aligned, and provide some clarity on those differences.	BC Hydro will follow up with a description of the differences between the materials.
Given the level of impact and importance in electrification scenarios of enabling fuel switching of LNG/Mining loads in the North Coast (LNG/Mining), what is BC Hydro going to do to address the critical importance of capturing this load, given the uncertain nature of electrifying these customers?	BC Hydro will examine strategies as part of the IRP analysis.
Can BC Hydro show (like the Conservation Potential Review) what percent of existing GHG emissions are reduced across the different emission sources?	BC Hydro is looking into this request.
It is important to have flexibility in the IRP as there is so much uncertainty, so BC Hydro is not locked into options which require substantive capital investment.	Agreed. As part of the decision framework, BC Hydro will explore how the creation of options can be used to understand the value and cost of optionality (i.e. flexibility) for some IRP decisions.
Please show when under different load scenarios the surplus will be used up.	BC Hydro will show the load resource balance under various load scenarios at an upcoming TAC meeting.

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