BC Hydro Integrated Resource Plan

Technical Advisory Committee Meeting #1 Summary Notes March 9, 2020

Date	March 9, 2020 – 9:00 a.m. to 4:00 p.m.
Location	Allwest Reporting Hearing Room, 12th floor, 1125 Howe Street, Vancouver
Committee attendees (members and alternates)	BC Hydro – Committee Chair & Presenter – Kathy Lee BC Hydro – Committee Moderator & Presenter – Basil Stumborg Academic Representative – Andrew Rowe Association of Major Power Consumers (AMPC) – Carlo Dal Monte BC First Nations Energy & Mining Council – Cam Osler BC Public Interest Advocacy Centre (BCPIAC) – Irina Mis BC Sustainable Energy Association (BCSEA) – Tom Hackney British Columbia Utilities Commission (BCUC) – Nicola Simon Canadian Association of Petroleum Producers (CAPP) – Geoff Morrison Canadian Association of Petroleum Producers (CAPP) – Richard Wong City of Vancouver – Matt Horne Clean Energy BC (CEBC) – Stephen Cheeseman Clean Energy BC (CEBC) – Nuno Louzeiro Climate Action Secretariat – Chris Gilmore Commercial Energy Consumers Association of BC – David Craig Commercial Energy Consumers Association of BC – Janet Rhodes FortisBC (Electric) – Mike Hopkins FortisBC (Gas) – Rob Schuster Ministry of Energy, Mines & Petroleum Resources (MEMPR) – Warren Walsh Movement of United Professionals (MoveUP) – Jim Quail Pembina Institute – Tom-Pierre Frappé-Sénéclauze via phone Pembina Institute – Tahra Jutt
Non-committee attendees	BC Hydro – Bill Clendinning BC Hydro – Sanjaya De Zoysa BC Hydro – Dale Flood BC Hydro – Amanda Ward BC Hydro – Anne Wilson BC Hydro – Arsia Assadipour BC Hydro – Fred James British Columbia Utilities Commission (BCUC) – Kristine Bienert British Columbia Utilities Commission (BCUC) – Yolanda Domingo Ministry of Energy, Mines & Petroleum Resources (MEMPR) – Paul Wieringa
Meeting materials	Presentation slides Draft Committee Terms of Reference

Introduction to the IRP
Presented by Kathy Lee (Slides 1 – 30)

Summary of Comments

Technical Advisory Committee (TAC) members queried BC Hydro on a range of topics, including: range of load uncertainty, scenarios being considered to capture uncertainty (including electrification), BC Hydro's role in electrification, e.g., as an active vs. passive participant, resource options characterization (both supply and demand side), future technology trends and the multiple objectives that matter when comparing options.

More detailed comments included the advice that BC Hydro should be planning under the assumption that the self-sufficiency mandate is retired and is not coming back. This will require deeper thinking about how to account for clean generation, imports, and how these align with provincial clean objectives and how this does or does not consider non-integrated areas over the long term. Participants noted that the scope of the document needs to consider very conservative assumptions for load growth, including the possibility of flat or negative load growth in the near and mid future, and to try to have a more community-by-community breakdown of where that growth or reductions are occurring.

TAC members wanted specific attention paid to technical advancements, which could lead to massive reductions in load as conservation is applied to building envelopes. In that framework, net metering could also assist BC Hydro in being a dependable resource, although the company needs to determine how net metering does not lead to ratepayer subsidization.

Finally, participants challenged BC Hydro to be more proactive in growing our load and customer base, and not be a passive player in growing the province. Policies and strategies in the integrated resource plan (IRP) can help that. Examples include electrification of liquified natural gas (LNG) customers in the north of the province.

Q&A Notes

Q: How does the group plan to deal with the changing scope of the self-sufficiency option?

A: BC Hydro will look at the impacts of how removing the self-sufficiency requirement changes our planning criteria. Self-sufficiency is not a binary criteria, and so the different definitions and options will need to be considered.

Q: How will non-clean imports be counted in the 100% green energy objective?

A: BC Hydro has not landed on a solution. Other jurisdictions like Washington state define this over a longer time period, which allows some netting out of imports to cover short-term deficits. This would mean that, if BC Hydro is importing emitting energy during a low inflow period, we need to export a similar amount of clean energy at a later time to cover this off. Such possible solutions will need to be considered.

Q: Should BC Hydro be contemplating scenarios that includes negative load growth?

A: BC Hydro will be developing various load scenarios, including a lower band scenario, which will have little to no load growth. In planning, we will look at scenarios where load will not be growing at all, additional resource needs will only be examined to the extent they are needed.

Q: Where is the examination of how BC Hydro is covering its fixed costs with net metering? The IRP may call for fundamentally different approaches to rate design.

A: Fixed cost recovery for net metering is best discussed in a Rate Design Application.

Q: BC Hydro should take a broader view of technology trends, beyond generation. This has been a problem with IRPs in general.

A: The Conversation Potential Review will be used as a support mechanism for this document. How we can influence end use consumption will be considered in this IRP. Including technologies such as direct control for technologies like water heating. The role of changing end-uses and how this can influence the load forecast can be brought back to the TAC when the load forecast is discussed in the next meeting.

Q: We know that LNG is moving forward. Is there a desire to follow policy to expand electrification? Is BC Hydro going to be proactive?

A: The current load forecast has some LNG load included in it. Additional load and the potential electrification of that load will be covered at a high level later in the meeting. More detail, and options for being more proactive and their risks can be discussed with the TAC in later meetings.

Decision Framework
Presented by Basil Stumborg (Slides 31 – 49)

Summary of Comments

Participants had a high degree of engagement on the technical details of what and how uncertainties are being considered, the load scenarios and modelling which will support BC Hydro's decision framework. There is a strong desire to make the outputs of the IRP real, practical and executable by linking the long-term outlooks to short to medium range actions. Participants cautioned about the current regulatory framework, and that recommendations such as new rate designs would require external regulatory approvals.

There was a discussion regarding social gain and/or licensing from the IRP, and that BC Hydro should consider external parties, particularly Indigenous Nations, early and often to best guarantee positive outcomes of new policies. In addition, the TAC members were interested in seeing how non-financial impacts would be tracked when comparing possible options.

Finally, continuing the theme of engagement, there are requests to share feedback and our direction with stakeholders early in the process, so that we can consider their feedback and potentially course correct should BC Hydro see fit.

Q&A Notes

Q: Will BC Hydro state its outcomes earlier in the process to take feedback and course correct if we agree with it?

A: Our goal is to show early outcomes from the IRP and course correct after considering feedback.

Q: Overall in dealing with resource planning, given the level of uncertainty – can we have more focus on the next five years rather than long-term risks?

A: The outlook in the IRP is long term, but this then generates short term actions. Most actions in the IRP will be focused on short-term spending or short-term requirements.

Q: The intention is trying to quantify various options in terms of scenarios. Very interested in how this gets done.

A: There will be model runs for each scenario, we will look at metrics that matter as we evaluate the outputs of the scenarios.

Q: Would we consider a social cost component in options or scenarios in the IRP?

A: In the past, we have spent a lot of time on social or environmental impacts in the IRP. These interests are not going away, so we need to think how we can continue to address those concerns. BC Hydro is working on an approach that identifies needs in a certain region, to have early discussions about the potential implications. However, the ability to link modelled results to future impacts on the ground is limited, and so some caution is warranted regarding the potential depth of this analysis.

Electrification Scenarios
Presented by Sanjay De Zoysa (Slides 50 – 57)

Summary of Comments

TAC members were interested in the details of the scenario modelling, and the interplay between fossil fuel and electricity uses as policies and incentives changed their relative attractiveness for different end uses. The TAC also queried the modelling details that linked these changes to load increases.

TAC members pointed out that there needs to be more collaboration and interaction between natural gas suppliers and BC Hydro in our resource planning. The siloing of these two planning activities no longer makes sense, particularly in the guise of meeting the provincial government's greenhouse gas reduction targets.

There was also caution to BC Hydro displaying an abundance of caution in developing scenarios. Specifically, BC Hydro may see a large spike in demand for electrification faster than we are expecting, and the IRP needs to be considerate of higher than expected forecasts. Examples include electrifying LNG, electric vehicles, water heaters may "tip" sooner rather than later. Further recommendation about comparing our IRP against other plans recently posted from other utilities.

Q&A Notes

Q: There needs to be a degree of integration between natural gas and energy planning activity. The silo of these no longer makes sense.

A: We agree, the connection is important for BC Hydro to understand. Currently, BC Hydro is coordinating with Fortis on aligning assumptions in their respective load forecasts.

Q: Outlining what parts will be immediate versus out to 2050. Incremental electricity demand is not moving very much in the next five to ten years.

A: There are some things that could happen quite quickly that will have a big impact. Some will take some time, and we would like to have some advanced warning of a trend to a certain technology. We will be looking for sign posts, while a balancing act to ensure no stranded infrastructure. Also, we do a load forecast every year, and we track trends in that.

Q: The technology neutral scenario may have the highest load for BC Hydro because natural gas may not be available in the highest quantities. It should have sensitivities for electric vehicles.

A: As we structure the scenarios, we will consider where to put the sensitivities with emerging sectors of the economy.

Session Schedule & Next Steps
Presented by Basil Stumborg (Slides 58 – 63)

The final slides (58 – 63) addressed procedural issues, topics, and meeting. The TAC members expressed a willingness to invest the time to dig into the topics raised, but left it to BC Hydro to take their feedback in setting meeting dates and agenda.

Feedback and consideration

There was interest expressed in knowing how BC Hydro might take into account TAC member comments and suggestions. The following table is meant to highlight some specific, short-term actions BC Hydro will take to address TAC comments. Please note that this list is not comprehensive – other changes might be more nuanced or slower to evolve. BC Hydro will produce a consideration document towards the end of the process that will be more comprehensive in nature.

Consideration of TAC Meeting Feedback

TAC Member Feedback	Consideration
TAC members requested more information regarding BC Hydro's electrification efforts so that efforts both to 'react to demand' and to 'create more demand' are clearly articulated.	BC Hydro will address its approach to electrification and will allocate more time to exploring topics beyond transmission and generation responses. As well, BC Hydro will explore ways in which transmission and generation strategies a can better support electrification.
TAC members requested BC Hydro to compare its work on electrification to the Trottier analysis.	BC Hydro will do comparisons to relevant studies and report back to TAC on its findings.
TAC members wanted BC Hydro to show appropriate emphasis on the downside uncertainty to load. In particular, for a temporary dip in demand, e.g., as might arise from a COVID-19 induced recession, as well as how technological changes such as self-supply through solar might lead to demand destruction.	BC Hydro will explore with TAC its approach to assessing low, no, and negative growth rate trajectories.
TAC members were very interested in how BC Hydro will be using scenarios of future load growth in its planning process.	BC Hydro will set aside TAC meeting time to explore the load growth scenarios it is using in its planning.

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