2022 Long Term Gas Resource Plan (LTGRP)

Resource Plan Advisory Group (RPAG) Session on Demand Forecast & Renewable Supply Scenarios

Session held on June 17, 2021

The following notes from the June 17 RPAG session should be reviewed in conjunction with the slides as the speaking points of the FortisBC presenters is not captured in the notes. The presentation slide deck was sent to attendees prior to the June session as well as included as an attachment with these notes.

Orange items represent suggestions from RPAG members related to the 2022 LTGRP
FortisBC responses *in italics* present instances where FortisBC responses were not captured by note-takers and therefore the responses are not a verbatim account.

1. Welcome, Introductions & Session Overview
    a. *RPAG Member*: Are we on video today?
        i. *FortisBC*: Good morning, thank you for the question. Unfortunately on Zoom Webinar, video is only enabled for panelists, not attendees.
    b. *RPAG Member*: It would be nice if we could see a list of all the attendees.
        i. *FortisBC*: Slide 8 of the presentation includes a list of RPAG members who indicated they would be joining this session. FortisBC apologizes in advance for anyone that we may have missed.
2. LTGRP Update & Business As Usual (BAU) Demand Forecast
    a. *RPAG Member*: When you say that the BAU is normalized for weather is that taking into account warming associated with climate change?
        i. *FortisBC*: *Future changes in weather are not part of the weather normalization process.*
        ii. *RPAG Member*: Thanks, seems like the BAU should take into account the (high certainty) projections for warmer winters in the coming decades. Will reduce demand.
        iii. *FortisBC*: To clarify, the impact of recent warmer winters is captured in the weather normalization process. Weather normalization removes the effect of weather. For example, 2008 was cold so demand was higher than "normal". Normalization brought the 2008 demand down so we could use it in time series forecasting. The BAU only considers things that are in the recorded data intentionally to keep the BAU distinct from the scenarios. Climate change sensitivity analysis is being conducted as part of the end-use forecasting.
    b. *RPAG Member*: Does the forecast include natural gas for transportation (NGT) or liquefied natural gas (LNG) exports?
        i. *FortisBC*: *In the BAU forecast, NGT demand trends that have occurred in the past few years will be captured, future changes to these trends by definition are not assumed in the BAU forecast.*

c. *RPAG Member*: Does BAU demand incorporate hydrogen (H2) as well as bio/fossil methane?
    i. *FortisBC*: *The BAU forecast by definition captures only those trends that are contained in actual demand from the recent past. It is for reference only and is not a forecast the FortisBC is planning to. The type of energy supply is not captured by the BAU forecast.*

3. FortisBC Outlook & Considerations for Renewable Gas (RG) Supply
    a. *RPAG Member*: Technically, does the hydrogen addition to pipe infrastructure affect the steel or other gas lines, "hydrogen embrittlement"?
        i. *FortisBC*: *There are concerns about embrittlement as well as a lot of investigative work into how much mixing of hydrogen and methane is safe. FortisBC is also developing a pathway for dedicated pipelines suitable for up to 100% hydrogen.*
    b. *RPAG Member*: Looking at Slide 20, what are the costs of each supply compared to natural gas?
        i. *FortisBC*: *With how low the cost of natural gas has been in recent years, there is no question that renewables in the shorter term will be more expensive. The cost cap for RNG under the GGRR is currently $31/GJ with an allowance for inflation. Overall, long term costs for these renewable and low-carbon gases are still somewhat uncertain, but FortisBC has already seen indications that cost expectations for hydrogen (for example) are coming down. There have been recent announcements that low carbon hydrogen production at scale could approach $15 per GJ or lower. FortisBC is continuing to explore renewable and low carbon gas supply costs and will provide an update in the LTGRP.*
    c. *RPAG Member*: Looking at Slide 26, what is the time-frame for this supply?
        i. *FortisBC*: *Slide 26 is not presenting a forecast of future renewable and low-carbon gas supplies, but rather presents existing potential renewable gas supply from resources estimated to exist within BC based on a number of source studies. The current portfolio energy identified on the slide shows the amount of RNG that exists within FortisBC's RNG portfolio as of the June 17 RPAG session.*
    d. *RPAG Member*: On Slide 26, is the syngas number based on wood waste primarily from the forestry sector that is already at a mill site (not slash)?
        i. *FortisBC*: *That is an accurate description, yes.*
    e. *RPAG Member*: Is the conversion of lignin to renewable natural gas (RNG) currently in commercial operation in British Columbia (BC) or elsewhere?
        i. *FortisBC*: *Lignin represents a replacement for natural gas rather than a feedstock for RNG. Lignin is currently used in BC and offers more potential within the province to be used as a low carbon energy source.*
    f. *RPAG Member*: Is there a discussion within FortisBC and potentially with BC Government and BC Hydro about how to manage the inevitability of rising energy prices as social and environmental costs are integrated into new prices, and how conservation can offset these price increases. This is very important for consumers and getting buy in?
        i. *FortisBC*: *FortisBC agrees with the need to educate energy customers in BC about the costs for decarbonizing and is continuing to work on this effort with other organizations in BC where possible.*
    g. *RPAG Member*: If you were to consider investing in new RNG/H2 at $30/GJ, would you also consider similar priced conservation investment?

i. *FortisBC*: *Yes, the DSM regulation currently allows FortisBC to use an avoided cost of approximately $33/GJ based largely on the long run marginal cost of clean electricity for up to 40 percent of its portfolio. The LTGRP DSM analysis will examine the impact of using the MTRC across the entire portfolio of incentives.*

h. *RPAG Member*: Can you speak to whether or not you are looking at the ammonia economy participation of FortisBC?
   i. *FortisBC*: *Ammonia may have some interesting potential. FortisBC has not looked closely at ammonia yet but are interested in exploring all technologies.*

i. *RPAG Member*: Thank you for taking so many questions. Interesting and excellent presentation.
   i. *FortisBC*: Thanks so much for the feedback, we're happy you could join us for this discussion.

4. Critical Uncertainties (CUs) & Renewable Supply Alternatives (RSAs) Modelling
   a. *RPAG Member*: I notice there are also "planning" settings for CUs and RSAs in the Pre-read Document. How does this setting fit onto the graph on Slide 32?
      i. *FortisBC*: The "high" and "low" settings are meant to represent boundaries for any one variable. The "planning" setting generally falls somewhere between those boundaries. The assumptions for the "planning" setting can vary for each variable.
   b. *RPAG Member*: Regarding the impact of increasing carbon price, did your model also see an increase in demand for renewable gases?
      i. *FortisBC*: *In the forecast modeling, the increase in carbon price does impact consumption impacts and in the Diversified Energy scenario coincides with increasing renewable and low carbon gas coming online.*
   c. *RPAG Member*: Can you please confirm whether the increase in the carbon price modelled is reflecting the new Federal benchmark of $170/tonne by 2030.
      i. *FortisBC*: The "planning" setting for carbon price (on pages 12-13 of the Pre-read Document) model the federal backstop announcement of $170/t by 2030 and holds that cost constant until 2042.
   d. *RPAG Member*: Of all the critical uncertainties, a significant one is customer growth driven by behavioral change (i.e. customers will apply their own "cost adjuster" on gas due to their perceptions about sustainability). Have you considered a "behaviour" cost component as a scenario you apply to gas price?
      i. *FortisBC*: Thanks for this question. The "non-price driven fuel switching" critical uncertainty seeks to capture people switching away from gas due to reasons other than price. Those reasons could be policies, incentives, or preferences for other fuels.
   e. *RPAG Member*: How much energy (PJs) is forecast for LNG for transportation? In the Pre-read Document, Table 13 described this as "Supply of LNG for the Natural Gas for Transportation (NGT) sector to be used by marine vessels, including LNG for export outside of the province." How much LNG is for natural gas for transportation as opposed to for export outside the province?
      i. *FortisBC*: This is different in each scenario. We will give a bit of insight into that as we go through the rest of the presentation and will be able to provide these assumptions for the scenarios in the LTGRP.
   f. *RPAG Member*: How much of that LNG for transportation is for domestic transportation as opposed to transpacific freight adopting LNG as a fuel? How much of that LNG for transportation is for marine vessels as opposed to mine and remote power (which is

listed in the "planning" and "high" setting options in Table 13 of the Pre-read Document)?

i. *FortisBC*: *Again it varies within the scenarios, in scenarios with higher amounts of LNG for transportation, more of the demand is forecasted from transpacific freight, while mining and remote power is one of a number of potential uses within BC.*

g. *RPAG Member*: What assumptions are you making about how the price of RG is accounted for – the current contracting of RG certificates to consumers makes sense now, but at higher % in the pipes, wouldn't it have to be rate based thus increasing overall commodity cost and impacting demand due to elasticity?

i. *FortisBC*: *The LTGRP is not making assumptions about what the specific nature of RG service to customers will be as that can be expected to change over time, but will look at how the estimate of future RG costs will impact aspects such as how much DSM potential exists. In terms of price elasticity, increase in price over time does have some effect on demand that is modelled, but the introduction of renewable gas and the energy policy environment complicates the application of price elasticity to the point where price response is too difficult to model on its own.*

h. *RPAG Member*: Do you assume that RNG/H2 supply will be sourced from within BC? If not, what are your assumptions about demand for these fuels in neighbouring jurisdictions?

i. *FortisBC*: *There is a lot of uncertainty around the competition for renewable gases, but consideration of the potential for increased prices is due to competition needs to be balanced with the consideration for decreasing prices due to economies of scale and technology improvements as a result of high demand for these resources. The LTGRP does not specifically model where the H2 comes from but recognizes that both on-system and off-system supplies will be important for the transition.*

i. *RPAG Member*: To build on the previous question of RNG cost - does the model incorporate effects of neighbouring jurisdictions decarbonizing (e.g. rest of Canada, US): thereby increasing end-use demand and limiting supply of RNG feedstock which would potentially increase price?

i. *FortisBC*: *Again, balancing the consideration of competition for resources needs to be balanced with the consideration of economies of scale and technology advancements as the transition to a decarbonized economy occurs.*

j. *RPAG Member*: Traditionally, FortisBC has been a distributor of natural gas – getting those natural gas molecules from gas producers. In the LTGRP FortisBC is forecasting switching out almost 50% of that natural gas by 2030 and replacing it with other "new" gases. Does FortisBC plan to get into the businesses of becoming a supplier of those new gases?

i. *FortisBC*: *The 2022 LTGRP will recognize that the transition to renewable gas opens up opportunities for more on-system supply and changes to upstream supply models. This has the notional impact of making the resource planning process more integrated from generation through to distribution of the resource, however, the nature of the planning environment is still unfolding and the remains a lot of uncertainty in how that will unfold. FortisBC will examine opportunities and how best to participate in them as they arise.*

k. *RPAG Member*: What GHG accounting standard is FortisBC using for setting the "fence" for GHG emissions attribution?

l. *RPAG Member*: Please explain how the carbon accounting approaches in the model are internally coherent given: 1. purchased environmental benefits from off system, 2. not including Woodfibre LNG GHG, and 3. assuming (non-contracted) environmental benefits from exports (and the analysis of foreign power markets that confirms the specific assumption of coal displacement as opposed to nuclear displacement).

   RPAG Member: For the GHG reductions from switching from coal to LNG, how does FortisBC avoid the issue of double-counting? For example, if the end-user (power plant) is claiming these reductions, then FortisBC wouldn't be allowed to claim these reductions. What GHG methodology protocol is FortisBC using and is there reporting that FortisBC does to the Province to validate the emission reductions from these projects?

m. *RPAG Member*: From the perspective of GHG accounting, there's a difference between BC GHG emissions and emissions elsewhere. I'm not at all saying that reducing emissions elsewhere isn't important – it is. But I think FortisBC has tended to combine BC GHG emissions reductions and emissions that are attributable to other jurisdictions or entities (such as in the case of LNG from FortisBC displacing bunker fuel for international shipping).

FortisBC (Addressing comments/questions l through n above): Thank you for your comment. At this time, for the LTGRP, we have taken an approach that encompasses FortisBC's role in reducing GHG emissions both within and outside of the province given the global concern around climate action. We appreciate your feedback and we'll take this away for further consideration.

   i. *RPAG Member*: Following up on this comment, is there a way that FortisBC could break down the GHG emission reduction for within and outside of the province, for clarity?
   ii. *FortisBC*: *Again, this is something that we will take back and work through to determine the best way to present this information in Plan. This is great input and we thank you for raising it.*

n. *RPAG Member*: Does FortisBC get GHG credits for exports to Hawaii which replace oil-based electricity generation?
   i. *FortisBC*: In the model, we currently have LNG exports displacing coal to calculate GHG emission reductions. Thank you for your question, we'll take this away for further consideration.

o. *RPAG Member*: If Woodfibre LNG is a pass through, how can CCS not be considered a pass through as well? Is this a consistent application of accounting given that the CCS firm would want to own the GHG credits (including the bio methane/hydrogen part of the mix)? Is the CCS being supplied a 100% Blue Nat Gas via a unique tariff, and therefore FBC is claiming the mix differential?
   i. *FortisBC*: *FortisBC will take this consideration back and ensure that we are treating emission reductions consistently across decarbonization initiatives.*

p. *RPAG Member*: There is a real need to advance policy and planning in FortisBC and provincially about how RG can be strategically allocated to stubborn, difficult to decarbonize sectors (e.g. heavy duty marine and long haul road, some industry and some complex, old, inefficient, high demand buildings such as those in health sector).

GHG reduction potential is additionally much greater when allocated to displace diesel vs. natural gas in new buildings.

q. *RPAG Member*: What does the LTGRP forecast for the price of BC hydroelectricity for the next 20 years? Does the LTGRP forecast simply assume an escalation at about the consumer price index (CPI)? If not why is this not included in the list of demand critical uncertainties?
    i. *FortisBC*: We use prices for various fuels (including electricity) to estimate costs to meet the demand forecasted in the scenarios based on the supply mix. We use the same forecast for electricity prices in all the scenarios. Our price-driven fuel switching is driven by the change in the delta between gas price and electricity price. We reasoned that changes in electricity price would affect this delta in the same way as changes in gas price (but perhaps in the opposite direction). We believe that as long as we open up the jaws wide enough on the gas price variation, the changes that would be caused by electricity price variation will fall within the jaws.

r. *RPAG Member*: Do the BC Hydro units along the coast, Haida Gwaii, etc., hold promise for diesel/heavy fuel replacement, and is this significant?
    i. *FortisBC*: *FortisBC cannot comment on BC Hydro's plans in this regard.*

s. *RPAG Member*: On FortisBC's website there is a pilot project of carbon capture that provides surplus heat and sodium carbonate. Is an expanded program included in either DSM and/or as supply alternative?
    i. *FortisBC*: FortisBC does not have a program in development for this yet. Next steps will be determined as we receive results from the current pilot.

t. RPAG Member: A comment on climate projections - I believe the model should be using the Canada/BC specific projections available here: https://climatedata.ca/ (based on IPCC, but downscaled to Canada).

u. *Guest*: Just wondering whether those conservation investments mentioned ($368 million) include installation of high efficiency natural gas furnaces that could be classed as stranded assets in either the electrification or diversified pathways? Or whether that whole amount ($368 million) is focused on conservation measures such as building envelope improvements or efficiency increases in industry that ensure no installation of new natural gas systems where this should not be occurring?
    i. *FortisBC*: *All cost-effective DSM measures are considered in the analysis. The transition to renewable gases means that such investments will not become stranded.*
    ii. *RPAG Member*: Agree with comment that the reference pricing (long run marginal cost for conservation and efficiency for FortisBC needs to move to the higher costs of displacing GHG reduction energy source costs. We support added demand-side management (DSM) for customer bill reductions.

v. RPAG Member: The first line is 'appliance standards', but only for certain appliances?
    i. *FortisBC*: Thanks for the questions. We look at standards for the appliances that are applicable to the end uses in the project. So for example furnaces, water heaters, etc.

5. Reference Case Demand & Alternate Scenarios
    a. *RPAG Member*: Can FortisBC develop (or share) diverse scenarios that get at the demand dynamism? There is a need to disaggregate demand to appreciate this dynamism because policy to guide this transition requires incredible nuance and sophistication. Building demand will almost invariably drop. There is significant potential

and momentum to electrify buildings (I still see a critical role for renewable gas to decarbonize some complex, highly efficient buildings). Heavy duty transportation will grow.

i. *FortisBC*: The model we've constructed is quite disaggregated. Beyond the four sectors, it is divided by region, building type (or type of transportation), rate class, and energy end use. We do not assume that the critical drivers have the same effect across the board. In some scenarios, some energy end uses are being driven down and others are going up.
ii. *RPAG Member*: This is a great comment regarding the modelling of scenarios. It would be helpful to see this demand dynamism disaggregated by use (vs. fuel) over time with different assumptions. This is helpful in elevating policy making discourse by many players.
iii. *FortisBC*: Thanks for the comment. FortisBC can break out scenario results (demand and GHGs) by fuel (and by sector, region, rate class, segment, and end use), and will examine what level of breakout makes sense for the LTGRP.

b. *RPAG Member*: Could you speak about the reductions in GHGs in the Upper Bound scenario, with consideration about how out-of-Province GHG emissions (reductions) are counted? Is this likely to be impacted by revised assumptions about who "owns" those reductions?
   i. *FortisBC*: *Further to earlier discussions, FortisBC will examine the GHG accounting assumptions in its Plan and make sure that they are being treated consistently and transparently.*
c. *RPAG Member*: What assumptions were made on emissions from electricity system that you mentioned on Slide 52?
   i. *FortisBC*: Any electricity emissions have been excluded from the chart on slide 52. We have also held electricity GHG emissions factors constant throughout the study period.
   ii. *RPAG Member*: Can you clarify, that's not what I heard the presenter say? They indicated that increased emissions would come from the use of electricity. Perhaps I misunderstood.
   iii. *FortisBC*: The intention there was to say that with increased electricity use, there would be (small) increases in emissions via electricity use. Again, we haven't assumed that electricity GHG intensity changes through time, so electricity-related emissions remain small.
d. *RPAG Member*: On Slide 52 Woodfibre LNG causes a substantial drop in GHG reductions. However, on Slide 55, the Woodfibre LNG do not result in a drop? Why the difference, please?
   i. *FortisBC*: Thanks for the question. FortisBC does not account for the emissions reductions from the LNG created by Woodfibre. However the emissions from LNG provided by FortisBC to displace marine bunker fuel, CNG to displace diesel, and LNG Exports to displace coal are included in the GHG emission reductions. Woodfibre LNG is a customer that purchases gas which passes through FortisBC's pipes, whereas LNG Export (and LNG and CNG used domestically) are provided by FortisBC to customers so those emission reductions are captured.
e. *RPAG Member*: For Woodfibre, how is FortisBC treating the system GHG emissions (e.g., compression, leaks) associated with FortisBC's transportation of natural gas to Woodfibre LNG facility?

i. *FortisBC*: *Operational emissions from serving Woodfibre as a customer on FortisBC's system are being accounted for.*

f. *RPAG Member*: Do you have a scenario where Woodfibre LNG has renewable gas from wood fibre?
   i. *FortisBC*: *FortisBC has not made any assumptions in its LTGRP about whether Woodfibre utilizes natural gas or renewable natural gas but assumes either would need to be transported on it system.*

g. *RPAG Member*: I may have missed it. Can you clarify the types of GHG emissions that are included in the Reference Case GHG emissions? Does it include combustion of natural gas by customers (setting aside Woodfibre LNG)?
   i. *FortisBC*: *Emissions shown for all scenarios include emissions from gas used by FortisBC end-use customers.*

h. *RPAG Member*: There could be a lot of pushback on the Upper Bound GHG emissions. May need an additional curve. For example, one that adjusts the assumptions on high carbon substitutions/credits.
   i. *FortisBC*: *FortisBC*: Thank you for your comment, we'll take your comment offline for additional consideration.

i. *RPAG Member*: Recognizing that this is an Upper Bound demand scenario without necessarily an associated "coherent" narrative, I am just concerned about how it would be perceived when the plot shows that the GHGs go to "net zero" when the demand is maximized.

j. *RPAG Member*: Comment/question along the lines of other comments. It may seem extraordinary, but we are in extraordinary times. It would be very insightful to have BC Government, BC Hydro, FortisBC and BCUC speak to the synergies, tensions, risks associated with "integrated" resource/energy planning either as part of this process or an independent forum. There is a real need to strengthen alignment, appreciating there will be competing perspectives. We need extraordinary policy and governance to navigate our challenge. Existing policy making and governance systems are inadequate. Can you explore this?
   i. *RPAG Member*: Perhaps this direction could come from BCUC?
   ii. *RPAG Member*: How much collaboration and consultation is there between you folks and BC Hydro's resource planning people when it comes to the assessments and assumptions you are projecting? Are your perspectives broadly harmonious? If not, will it be possible to articulate the areas of divergence and the reasons for divergence? Is there any reason for these analyses to be developed in relative isolation from each other, if that's the case?

k. *FortisBC*: *FortisBC*: FortisBC has had discussions with BC Hydro to see where we are broadly aligned and not. Don't necessarily need to align on everything but should understand where they do align and don't. FortisBC is aligned with the optimization of both the gas and electric systems in the province. Policy direction would need to come from the province. FortisBC is supportive of efforts to understand the assumptions and inputs into demand forecasting and in working with the Province and other entities on a diversified energy future. *RPAG Member*: For the GHG charts, does that include emission reductions from switching customers over to LNG from coal?
   i. *FortisBC*: Yes, the GHG reductions include LNG Export which displace coal.

l. *RPAG Member*: If FortisBC is going to take credit for GHG emissions reductions claimed from displacing coal (or oil) abroad, it also needs to take due responsibility for GHG emissions that are not reduced, i.e. reductions from displacing coal, bunker fuel, etc. are

only marginal, in the range of ~ 10%, but the GHG emissions needed overall are in the range of 80% or more.

   i. *FortisBC*: *As above, FortisBC will examine this issue more closely and ensure that it is treating GHG emission reductions consistently and transparently when presenting them in the LTGRP.*

m. *RPAG Member*: If we do not count emissions for oil and coal exports, how can we take credit for any reductions?

n. *RPAG Member*: If you included the EMMC aspirational goal of revising heating appliance standards to have a CoP>1 by 2035ish, would that further lower the Lower Bound scenario?
   i. *FortisBC*: To clarify, these draft results do not yet include the effect of efficiency programming. These estimates will flow from the recently completed Conservation Potential Review (CPR). The CPR does include analysis of the potential for equipment with a COP>1 (i.e. NG heat pumps).

o. *RPAG Member*: Could you provide some clarity on the graph on page 56? How are steady reductions in GHG happening with an increasing use of conventional natural gas?
   i. FortisBC: Recall that Woodfibre LNG is a flow through. FortisBC needs to have the capacity to transport it on our system but the GHGs are not included as this load is considered a flow through.

p. *RPAG Member*: FortisBC's supply of RNG from outside BC is entirely within the applicable GHG accounting framework for BC. Those GHG emissions reductions belong to FortisBC and not to anyone else. The emissions reductions then get purchased with the RNG sold to FortisBC customers. This is fundamentally different from FortisBC taking public relations credit for displacing non-BC fossil fuels.

q. *RPAG Member*: Once again, it would be very enlightening to see the end uses? Are you able to share these?
   i. *FortisBC*: Unfortunately we don't have time to do that in this presentation, but we will consider the extent to which it makes sense to provide this level of detail in the LTGRP.
   ii. *RPAG Member*: Good comment.

r. *RPAG Member*: When does the Carbon Price addition to Natural Gas Pricing cross over the RNG Cost curve in the future?
   i. *FortisBC*: *This is an interesting consideration and one to which there remains some uncertainty. To some degree, the policy environment can have more influence on the transition to renewable gases and increases in energy efficiency, but the LTGRP will consider the role of both to the extent is can.*

s. *RPAG Member*: Have you considered cost effects $/GJ of the various scenarios, not just demand and GHG reductions, and have a unit cost of GHG reduction?
   i. *FortisBC*: *There are many influences at play in decarbonizing the energy systems in BC and FortisBC in addition to costs and FortisBC is supportive of developing a complete picture of all of these influencing factors given the principles it has put forward with respect to CleanBC.*

t. *RPAG Member*: For the Price Based Regulation Scenario, could you explain why the demand curve slopes up steeply to 2030 then becomes flat?
   i. *FortisBC*: *The price based regulation scenario uses price signals rather than policy to allow the market to identify and select decarbonization activities. It is likely that in the early years with the portfolio price of renewable, low carbon*

and natural gases combined the market is choosing gas supply. Remember that this is before DSM which analysis is still to come. FortisBC and Posterity will look into this further and confirm that the modelling on this scenario is working correctly and confirm the cause of this trend.

u. *RPAG Member*: The natural gas demand forecast has to do both: 1) infrastructure planning (e.g. including Woodfibre LNG), and 2) GHG planning (not including Woodfibre LNG). They are separate (but related) issues and the accounting is necessarily different.

v. *RPAG Member*: The Scenario approach for understanding the different elements of future possibilities is a very good approach as opposed to trying to define a specific future.
    i. *FortisBC*: Thank you for your comment, we appreciate your feedback.

w. *RPAG Member*: Great work on significantly advancing the sophistication of analysis compared to the last LTGRP!
    i. *FortisBC*: Thank you for your comment, we appreciate your feedback.

6. Crowd Forecast Activity Using the Slider Tool
    a. *RPAG Member*: Are we the only ones who should complete the forecast, or are we able to share with colleagues?
        i. *FortisBC*: *It is not intended that the slider tool be distributed broadly, at this point we are really interested in the members' feedback. Future development of the slider tool may open it up for more broad feedback.*
    b. *RPAG Member*: For the slider exercise can we ask for additional information around each of the uncertainties being used? How would we make these asks if they are possible?
        i. *FortisBC*: The Pre-read Document shared in advance of this meeting includes a lot more detail about each variable you will see in the Slider Tool. If you have additional questions or would like more information, we ask that you contact us at irp@fortisbc.com and we'll respond accordingly.
    c. *RPAG Member*: Love the Slider Tool. Can we submit more than one scenario?
        i. *FortisBC*: *Interesting question. If you would like to you can, though the end result will be a summation of all the results received.*
    d. *RPAG Member*: Is there a way to include cost factors, e.g. RNG vs. Hydrogen, etc.? This way we could choose DSM vs. electrification, etc.
        i. *FortisBC*: Unfortunately not at this time, however, this is something we will take into consideration for the future. When developing this tool, we tried to simplify elements, where possible, to ensure the tool was easy to use and understand. The challenge with adding additional auxiliary functions is that it becomes very difficult to determine the result of each independent action.
    e. *RPAG Member*: Can you create a unique code for this group? You have created a great tool for elevating discourse. It would be a shame to waste it on this small group — as important as we are. It would be useful to have other constituencies explore it — lots in BC Government, BC Hydro, BCUC, etc. The tool's greatest value is building literacy.
        i. *FortisBC*: *FortisBC has thought about this and it does complicate the use of the tool. Perhaps it could be advanced in this way in the future.*
    f. *RPAG Member*: Really impressive model and interface. Per my earlier questions/comments, I don't agree that the amount of warming is a question for this group of experts to adjust on a slider. It should be set at the level projected by the experts for BC (which is higher than the global average).

   i. *RPAG Member***:** It would be useful to select the temperature based on accepted, evidence-based climate scenarios.
   ii. *RPAG Member:* Exactly. https://climatedata.ca/learn/

g. *RPAG Member*: Can one of the RPAG Members give more detail about where to find the BC climate forecast on the climate data website?
   i. *RPAG Member*: Suggest reaching out to PCIC to get plausible input range for the warming slider. https://www.pacificclimate.org/

h. *RPAG Member*: While there are limitations to the demand and supply policy options, this is an excellent tool for helping understand these variables.
i. *RPAG Member*: These figures are really helpful. A lot of the questions arising with the figures in the presentation are addressed with the stacked bars showing contributions in the Slider Tool.
j. *RPAG Member*: Thank you. Very interesting tool!

Session closed.