

2021 Long Term Electric Resource Plan (LTERP) &
2022 Long Term Gas Resource Plan (LTGRP)
Shared Services Territory
February 4 & March 3, 2021

Green items represent follow-up questions for FortisBC

Black items represent FortisBC responses

1. Introduction

- a. Attendee: Interested in how home energy savings are calculated.
- b. Attendee: What are FortisBC's feelings about hydrogen in the transportation sector?
 - i. FortisBC: We're in the early stages of exploring hydrogen as a renewable gas and alternative energy fuel. FortisBC is exploring hydrogen opportunities and embarking on pilot projects to determine the potential.
 - ii. Attendee: The hydrogen projects being pursued by ATCO may be a good point of reference for FortisBC. Attendee would like to see hydrogen be a staple in the Okanagan by exploring partnerships with various other facilities.
- c. Attendee: Leery about the Progressive Aboriginal Relations (PAR) certification program. Especially around the fair treatment of community members working in specific industries.
 - i. FortisBC: FortisBC is demonstrating its commitment to mutually beneficial relationships with Indigenous communities, businesses and partners by pursuing this certification. This commitment ensures that we track the work that we're doing with Indigenous communities and set benchmarks for what we'd like to achieve. FortisBC has recently introduced the Indigenous Employee Circle which provides an opportunity for individuals from across the organization to come together to learn about and sharing experiences of Indigenous cultures. In addition, FortisBC provides Indigenous awareness training and resources to all employees.
 - ii. Attendee: What is involved with the PAR certification?
 - iii. FortisBC: During the PAR certification process, the Canadian Council of Aboriginal Businesses (CCAB) reviews and works with organizations to align in four performance areas: Leadership Actions, Employment, Business Development and Community Relations. This comprehensive vetting process assures communities that an organization with PAR certification is a good business partner, a great place to work and committed to prosperity in Indigenous communities.

FortisBC: We aim to complete the three phases in the Committed Level and achieve full certification in the 4th year. Right now, FortisBC is in Phase two of a three-phase process. We have established our commitment to the process of certification by submitting our first year report. In this next phase, we are developing an action plan, setting targets and implementing the plan.
 - iv. Attendee: **Would suggest that FortisBC work with Indigenous community members during this process.**

- v. FortisBC: **That is a great suggestion, we'll take this point for further discussion internally and follow-up as needed.**
 - d. Attendee: Concerned about past grievances related to the construction of dams in the province. Communities were never reimbursed for the lands that they lost or the culturally significant sites that were compromised. It's very difficult to talk about the future and moving ahead when these past grievances were never resolved. Thinks these grievances should be put forward and discussed when we look at future plans.
 - i. FortisBC: That is a very good point, we appreciate this being raised and brought out in the open. Although we cannot address this concern through this session, it certainly sets the context for our discussion and highlights the importance of having sessions like this to work with Indigenous communities and receive their feedback and input about future plans.
 - e. Attendee: Many communities have been trying to get access to the grid since 2011; this includes working with the provincial government and various Ministers. There are still barriers in place that is preventing this from happening. Hoping FortisBC can find a way to move this forward. Various communities are interested in solar energy and would much rather see this being developed instead of hydro generation projects.
 - i. FortisBC: That's a fair comment and we understand the frustration that may arise due to a lack of accessibility. With regards to solar projects, we are always open and willing to discuss prospective projects.
 - f. Attendee: Have all the 'local' FortisBC staff taken the [ICAT](#) (Indigenous Cultural Awareness Training)?
 - i. Attendee: Many have, but not all.
2. Energy planning landscape in BC
 - a. Attendee: Impressed and excited about the work FortisBC is doing on the climate action front. Thinks we need to help future generations by doing our part now. Lots of exciting opportunities ahead of us if we continue looking for solutions.
 - b. FortisBC: How does the energy landscape in BC impact you? What are the challenges and opportunities you face?
 - i. Attendee: Economic and social factors are top of mind, this includes affordability, access and employment. Affordability stands out as one of the most critical items given the high energy bills of community members. This is why energy efficiency and conservation programs are viewed as extremely important. When these programs reduce energy costs for the community, funds can be freed up and invested in other area such as economic and social development.
 - ii. Attendee: Agrees with previous comment around high energy bills and lack of affordability. Identified the construction of a new health center facility in Hedley. Would like to partner to ensure building is sustainable and energy costs are kept down.
 - c. Attendee: Are hydro and gas rates regulated in the BC? **Also has COVID-19 affected the bottom line of FortisBC?**
 - i. FortisBC: FortisBC along with other utilities in the province, such as BC Hydro, are regulated by the British Columbia Utilities Commission (BCUC). This includes the regulation of rates and projects. There are gas marketers operating within the province that can purchase natural gas on the open market and sell it to customers through the commodity portion of the bill, however, the distribution and delivery components are still provided by the utility. There are some

- commercial and industrial customers who purchase their commodity supply from marketers but it's less common for residential customers.
- ii. FortisBC: **The full extent of impact related to COVID is not known at this time. In terms of overall volume, we have not experienced significant changes in 2020 compared to previous years after weather normalization.**
 - d. Attendee: How much power is generated by the Kootenay River and used by FortisBC?
 - i. FortisBC: Slides 47 and 48 show the contribution, in terms of annual energy and winter peak capacity, from the four FBC-owned hydro dams on the Kootenay River. The annual energy contribution is about 1,500 GWh per year, which is about 43% of FBC's energy resources. The winter peak capacity contribution is about 200 MW, which is about 25% of FBC's winter capacity resources.
 - e. Attendee: Can FortisBC break down the annual average rates of hydro generation from the Kootenay River? **Are the costs comparable to BC Hydro?**
 - i. FortisBC: **We will not be providing a detailed cost comparison between BC Hydro and FortisBC rates during this presentation but can follow-up with some information on this after.** To confirm, FortisBC electric rates are higher than BC Hydro rates and there are a variety of reasons for this (including different resources, customer mix and BC Hydro use of deferral accounts).
 - f. Attendee: **Various communities are interested in accessing natural gas. Can we get these areas connected?**
 - i. FortisBC: **FortisBC is open to discussing these opportunities with communities. Unfortunately, there are various areas that are located too far outside our transmission network and are sparsely populated. This makes it challenging to connect from both an economic and technical point of view. As we look ahead at renewable gas opportunities, there may be more opportunities for extending the gas system and increasing accessibility to more remote areas.**
 - g. Attendee: **If 75% or greater communities are not serviced by FortisBC directly, would you commit to support energy efficiency initiatives at both the individual homes and our community/Nation building and infrastructures to help us reduce our energy consumption and/or GHG emissions? Since a fair amount of electric and gas transmission and distribution does go through our territories.**
 - i. Attendee: Good one - this should be given significant consideration.
 - ii. FortisBC: **Conservation and energy management programs are usually reserved for utility customers. FortisBC collects funds from all ratepayers and to provide incentives for ratepayers who wish to participate in these programs. FortisBC would like to follow-up and further dialogue about this suggestion. Perhaps there are other funding sources or partnerships we can explore together.**
 - iii. Attendee: I would like to ensure that the discussions at each community are communicated with the other communities. It's great that FortisBC appreciates the autonomy of each community but our conversations don't need to be isolated. I think some areas are community driven while others are done collaboratively.
 - iv. FortisBC: As it relates to energy efficiency programs we can absolutely do this so long as everyone is on board.
3. Electricity future demand scenarios
- a. FortisBC: What is driving your future electricity needs?

- i. Attendee: Sees fuel switching and electric vehicles as key drivers. Noted that rooftop solar is also relevant but not as much given the high initial investment required and the cost of de-commissioning. Does FortisBC know the environmental footprint of a rooftop solar set-up upon decommissioning? Does FortisBC know if there are any opportunities with solar shingles versus panels?
 1. FortisBC: **We know that the payback period for rooftop solar is quite high at around 20 years in BC. There is also an understanding that this system needs to be accompanied by battery capacity to enable energy storage that can be used during peak hours. FortisBC is aware that solar shingles may be an option in some jurisdictions, reducing the need for separate solar panels on a roof. FortisBC does not know the environmental footprint of a rooftop solar system upon decommissioning. For the purposes of our electric resource plan, we assume some solar energy but we do not delve into the specific technology utilized.**
- ii. Attendee: Has FortisBC done any studies about the lifecycle of electric vehicles and accompanying equipment? Are electric vehicles and charging stations really cost effective? What is the carbon footprint and total life of the charging equipment and what happens when it reaches the end of its useful life?
 1. FortisBC: **We have looked at studies and research to determine the lifecycle of charging stations being 10 years. However, we have less direct input regarding the lifecycle of electric vehicles. FortisBC relies on information from car manufacturers with regards to this information and responds to the demand for infrastructure to support electric vehicles.**
- iii. Attendee: How do people pay when using the EV chargers? Also how are the locations regulated?
 1. FortisBC: **FortisBC's EV chargers allow individuals to charge per minute and pay with a card. This set-up provides an incentive for individuals to only charge their vehicles for as long as they need and move on. FortisBC was required to submit and receive approval on an application for EV charging stations. We can provide information on the rates and payment options following this session.**
- iv. Attendee: When looking at how much electricity will be needed in the future, I would anticipate the amount to be much higher given the future of electric vehicles. Car manufacturers have hinted at the release of long large range vehicles and more medium/heavy duty electric vehicles.
 1. FortisBC: FortisBC is keeping a close eye on this load driver. We will adjust this as needed based on market shifts and developments.
- v. Attendee: As you know from working on solar projects, there is a lot of policy changes needed to get these types of projects off the ground and operational. How can FortisBC help and what needs to be done to lobby changes with BC Hydro and the BCUC?
 1. FortisBC: Right now, there is a period of uncertainty as we look at the horizon from 2030-2050. BC Hydro is currently updating their Integrated Resource Plan (IRP) and will be submitting it in before the end of 2021. This plan will identify when supply will be needed and where it will come from. Looking ahead, we would expect to see some changes and

policy shifts as de-carbonization and emissions reductions become focal points in the energy future discussion.

- vi. Attendee: When we looked at rooftop solar options, the ROI was not viable. Does FortisBC have any additional information on this?
 - 1. FortisBC: Although costs have come down recently, the payback period is still around 20-25 years for residential. Some are interested in this option for energy back-up or independence from the grid, however, those driven by ROI are less likely to pursue this option. In addition, this option may also make more sense in regions where there is more sunshine throughout the year like California or Arizona and if subsidies are also provided. As we look at resource options in this resource plan, we will discuss the economics.
 - vii. Attendee: I think it's important to continue discussing opportunities beneficial to communities and looking at pairing future benefits with past grievances. In ideal situations, utilities could offer projects and funding focused on housing improvements and energy efficiency while allowing communities to utilize their own trade labour and increase the knowledge within the community.
 - 1. FortisBC: We'll take this comment away and follow-up after the session to explore more opportunities to work together, especially in the energy efficiency and conservation area.
 - 2. Attendee: We appreciate that it's difficult to explain and provide simple answers to some of these complex questions.
 - viii. Attendee: **What is FortisBC's relationship with other partners such as Teck?** Have there been discussions about reclamations, GHG reductions or offsets?
 - 1. FortisBC: **FortisBC is looking at what we can do ourselves and for our customers in terms of reducing GHG emissions and de-carbonizing the natural gas system. We couldn't do this without the support of various partners, for example partnerships which enable pilot projects.**
 - 2. FortisBC: We have not looked at reclamations or buying offsets. BC Hydro's system is already de-carbonized so there is not a lot of incentive for them to purchase solar energy supply.
4. Electricity supply options
- a. FortisBC: What are your electricity priorities?
 - i. Attendee: Thinks that the environment is the number one priority followed by reliability and cost.
 - 1. Attendee: Agrees that environment is the top priority. This is followed closely by costs and energy efficiency. Diversity of supply is also important – would like to see more consideration given to small, local hydro generation in order to address reliability issues.
 - ii. Attendee: Ranking economic growth as top priority. Economic growth supports programs and community development. Thinks partnership are key.
 - iii. Attendee: Cost is the biggest issue. Following this, it would be energy efficiency and economic growth.
 - 1. Attendee: Agrees with this comment, cost is the largest concern. There are examples of people getting cut off from energy on a regular basis because they cannot afford bills, which is unacceptable.
5. Natural gas future demand scenarios
- a. FortisBC: What are your future natural gas or renewable gas needs and priorities?

- i. Attendee: Doesn't follow natural gas development as closely given that they only have one house with natural gas. When the community looked at expanding gas connections, many individuals didn't feel safe with furnaces. Recognizes that there may be some opportunities in the future with renewable natural gas and hydrogen.
- ii. Attendee: Agrees with previous attendee comment as their community is entirely electric. **Has FortisBC looked at the Thompson River University study around hydrocarbon technologies and the pilot projects taking place?**
 1. FortisBC: **We will flag this internally with the renewable gas team so they may look into it. On that note, FortisBC recently announced a partnership with the School of Engineering at the University of British Columbia's Okanagan campus (UBCO) which will help us research ways to implement hydrogen in our system. FortisBC is proud to be contributing \$500,000 to a study that will discover how we can safely deliver hydrogen through our existing distribution network.**
- iii. Attendee: Excited about future opportunities and looking forward to seeing work get started in several areas.
- iv. Attendee: **How is FortisBC going to get there in terms of decarbonizing the gas system? What are the steps and resources needed to achieve this?**
 1. FortisBC: **FortisBC has set an interim emissions reduction target through our 30BY30 commitment. Our goal is to reduce 30% of our customers' GHG emissions by 2030. Achieving our 30BY30 target would reduce almost 4 million tonnes of GHG emissions by 2030. This is an interim target as we look further ahead to 2050. FortisBC is developing roadmaps to identify how we're going to get there and a reporting frameworks to ensure we're on track. The gas resource plan will aim to answer some of the questions around how we will get there and what resources we will need. However, there are still a lot of unknowns and uncertainty we will have to contend with as we look ahead.**
- v. Attendee: **Are there plans to expand the gas line south of the valley (from Cawston onward)? There is new development underway in this area.**
 1. FortisBC: **FortisBC looked at this in the past and it was previously not viable due to costs. However, there may be merit in re-visiting this option to see if it is now cost effective.**
- vi. Attendee: What does your Business as Usual demand cover?
 1. FortisBC: The graph we looked at represented the demand specific to the natural gas utility. The Business as Usual forecast depicts what our customers have used in the past and extends that out to 2042. It is essentially looking at historical consumption trends to forecast what may happen in the future if nothing changes and all things stay the same.
- vii. Attendee: Has FortisBC given consideration to succession planning?
 1. FortisBC: Asked attendee to clarify question and then provided consideration on different future scenarios which cover a range of potential gas demand growth and reduction.