

FortisBC Long Term Gas Resource Plan (LTGRP) Community Engagement Sessions – Vancouver Island

Session 1: Tuesday, November 9, 2021 – Southern Island

Session 2: Thursday, November 18, 2021 – Northern Island

Format: Virtual meeting via Teams

Note: These meeting notes represent FortisBC Energy Inc. (FEI's) combined discussions of the two LTGRP engagement sessions with representatives from Northern and Southern Vancouver Island, Sunshine Coast and Whistler. These notes should be reviewed in conjunction with the presentation slides that were provided to attendees. Attendee questions have been numbered for ease of reference in future communications.

FortisBC Presenters

- Ken Ross – Manager, Integrated Resource Planning and DSM Reporting
- Randy Sharpe – Community and Indigenous Initiatives Manager
- Diana Aguilar – Integrated Resource Planning Manager

Community Attendees

Individuals representing communities and organizations were invited to FortisBC's Vancouver Island Resource Planning (LTGRP) community engagement session including:

- Community planners and operations specialists
- Energy managers and professionals
- Municipal community leaders and elected representatives
- Chamber of Commerce / Board of Trade / Economic development organizations
- Community Associations
- Local business owners

Overview of the Agenda

1. Welcome and Introductions
2. Overview of the Resource Planning Process
3. Energy Planning Landscape in BC
4. Break
5. Demand Forecasting Methodology and critical uncertainties
6. Exploring Future Demand Scenarios
7. Ongoing Resource Planning Work
8. Wrap-up and Next Steps

1. Welcome and Introductions

Session discussions included the following topics that individual attendees noted in email responses to the invitation:

- The Hartland Landfill project demonstrates the benefits of local partnerships in reaching climate action goals
- FortisBC's long term overview of natural gas requirements
- The scale and magnitude of the renewable and low carbon gas supply that is being procured, the use of renewable gas in buildings, and recent supply updates
- System planning including updating resiliency and reliability
- The long term vision will need to be reviewed and approved through the BCUC regulatory process in the coming years

1.1 Attendee: In light of the recent findings of the Intergovernmental Panel on Climate Change (IPCC) and the urgent need for climate action to reduce fossil fuels by 55%, why is FortisBC only targeting 30% GHG emission reduction in their 30by30 strategy?

FortisBC: Our 30by30 strategy is an important step in the diversified energy future. We are sourcing us much renewable and low carbon gas as we can reasonably procure in response to CleanBC's Roadmap and customer demand. We recognize that the urgent response required for climate action will take collaboration and coordination with all stakeholders in British Columbia and across the globe. It is worthwhile to note that the Provincial Government sets provincial policy based on the inputs it receives from provincial, federal and international bodies. FEI's LTGRP addresses Provincial legislation and policy only.

2. Overview of the Resource Planning Process

FortisBC provided background on the Long Term Resource Planning process. This Resource Plan will consider demand-side management (energy efficiency and conservation), the displacement of higher carbon fuels with natural gas (for example in providing transportation energy for medium and heavy duty vehicles and marine transportation), the incorporation of renewable and low carbon gas supply as well as system upgrades for this transition including upgrades for system resiliency and sustainment. The regulated planning process is transparent and open to any person or interested party to participate in. Long term resource planning at FortisBC is an ongoing process, including ongoing consultation and engagement. The 2022 Resource Plan is due for submission to the BC Utilities Commission (BCUC) by March 31, 2022. LTGRPs have historically been submitted in a three to five year cycle. However, due to the dynamic shifts in BC's energy landscape, it is anticipated that the next resource plan will be underway soon after submission of the 2022 plan. Please see slides 18 to 26 in the presentation for additional topics of discussion.

2.1 Attendee: How granular will the reporting be to assist local governments when reporting FortisBC's decarbonization initiatives in community energy plans? The current consumption at the meter will not reflect the proportion of renewables. How can local governments support FortisBC in this journey to decarbonization?

FortisBC: *Note to attendees – additional information from FEI project team is included in response:* FortisBC provides gas and electricity consumption data by community to the Climate Action Secretariat (CAS) through the Community Energy and Emissions Inventories (CEEI). CAS acts as the primary distribution channel for this information to local governments for their community energy plans. FortisBC can also provide individual municipalities with their community-level consumption data. At this time, gas consumption is primarily fossil fuels, but FortisBC is determining the best way to designate the percentage of renewables and low carbon gas for future reporting needs. FortisBC will likely need a decarbonization registry in some form as part of the CleanBC Road Map to 2030. We are in discussions internally and with the province to determine how we can best represent decarbonization initiatives within CEEI reporting and then how this will cascade down to local governments. We have piloted an initiative with CAS to report on municipal-level RNG consumption data which on a move forward basis could also be distributed to local governments by CAS to support community energy planning.

2.2 Attendee: How can a local government apply for greater RG as a blend for their communities?

FortisBC: *Note to attendees – additional information from FEI project team included in response:* If local governments want more information about applying for renewable gas please call your [Key Account Manager](https://www.fortisbc.com/services/commercial-industrial-services/account-managers-for-commercial-industrial-and-business-customers) (<https://www.fortisbc.com/services/commercial-industrial-services/account-managers-for-commercial-industrial-and-business-customers>) or Community Relations representative to get more information.

In the short term FortisBC is working to allocate the current supply to address market demand. Our goal is that every customer that has requested renewable gas will be able to purchase some. We are already working with numerous municipalities and local governments on securing renewable gas to meet their emissions reduction targets for 2022 and beyond. In the longer term, we will have even more supply to meet a greater portion of demand. The renewable gas process has been a long journey that includes regulatory, customer demand, market considerations and technical implications. We have not yet been able to tell the full story of the importance of the Diversified Pathway where renewable gas provides a complementary energy system within BC. BC Hydro RRA filing indicates that with the increased electrical demand they may run out of power by 2030. FortisBC's investigations indicate that the Diversified Energy Pathway is less risky and less costly. Access to renewable and low carbon gas is a key priority in BC's decarbonization journey.

3. Energy Planning Landscape in BC

FortisBC provided background on BC's energy landscape. It is important to note that natural gas supplies more energy in BC than electricity. As such, it will be challenging to displace this magnitude of energy through electrification. Residential and commercial buildings are responsible for 10% of provincial GHG emissions. In 2018, FortisBC released their [Clean Growth Pathway to 2050](#) that charts a pathway for FortisBC to contribute to achieving the provincial climate action goal of 80 per cent GHG emissions reduction by 2050. On October 25, CleanBC released their [Roadmap to 2030](#). At this time, FortisBC is still determining how these new targets will impact long term energy planning. However, the goals of the CleanBC Roadmap are already supported by FortisBC's long term vision of renewables and low carbon gas, energy efficiency and other initiatives. FortisBC will continue to build upon the Diversified Energy Plan, keeping the gas infrastructure in place for affordability and resilience. Although FortisBC submits their Resource Plans on about a four-year cycle, it is likely that the next resource plan will be underway immediately upon submission of the 2022 plan in response to the dynamically evolving energy landscape and urgent demands of climate change. Please see slides 27 -50 in the presentation for additional topics of discussion.

3.1 Attendee: Why does FortisBC refer to “Natural” gas when the classic definition of “natural” is “existing in or caused by nature; not made or caused by humankind.”? In other industries, the definition of “natural” is regulated, whereas, it is well known fact that natural gas is highly processed.

FortisBC: Natural gas is the industry standard for methane and has been used historically to define natural gas. We have recorded the point you are making and will determine if a change in nomenclature would be a beneficial distinction for future communications.

3.2 Attendee: I understand and support the opportunity and idea of introducing a carbon neutral (renewable and low carbon gas) tariff on new construction. What is the possibility to extend FEI's service territory north of Campbell River on the Island and to other parts of Northern BC? The population of Vancouver Island is almost 1 million people. More people are immigrating to the Northern Island as it is still somewhat affordable. In ten years there will be a significant increase in population that will require additional services.

FortisBC: We are always looking at the economics of extending service territory and we will make note of these opportunities in our regional long term planning. We are still considering where renewable and low carbon gas production might be situated in BC. This could open up additional opportunities for connection to the gas grid in locations within the Province that are close to our system, but not currently served. This potential also provides the opportunity to work with Indigenous and other communities on locally sourced energy projects. We want to remind attendees to contact FortisBC representatives for information about regional expansion. In terms of further north on the mainland, this area is served by Pacific Northern Gas (“PNG”) which encompasses Kitimat and areas west of Prince George. The North was anchored on industries that

may no longer be in operation. We can connect you with our contacts at PNG if you would like information about their service territory.

3.3 Attendee: Does FortisBC provide GHG emissions information to homeowners on their utility bill to help educate residential customers about their carbon emissions?

FortisBC: There are many customers who take advantage of renewable gas and the bill also reflects carbon tax which provides an easy conversion.

Additional information provided to participants following the session: This item has been actioned. We sent this idea to the billing redesign team for consideration.

3.4 How does FortisBC account for fugitive emissions at the wellhead? What about the latest report using drones suggesting that methane emissions are higher than previously reported?

FortisBC: Our GHG emissions data is based on full lifecycle emissions for natural gas. We work with the province to ensure that our estimates use the latest approved methodology. We suggest contacting Ministry of Energy Mines and Low Carbon Innovation for more information on how the data you are highlighting would be integrated into the BC emissions inventory.

3.5 At what point does FortisBC take control of the gas? Does FortisBC have environmental requirements from suppliers?

FortisBC receives gas from Alberta and BC that connect to midstream infrastructure. All processing is done upstream. The only processing we do is to add trace amounts of the odorant, mercaptan, as a safety control in the rare event of a gas leak. FortisBC has minimal control over fugitive emissions as we are not the gas producer. However, as a large customer, and working with other gas utilities, we have influence, on gas suppliers. The CleanBC Road Map to 2030 highlights the introduction of programs and policies targeted at curbing emissions in the oil and gas sector. All producers must abide by regulatory conditions outlined by the BC Oil and Gas Commission.

4. Break

5. Demand forecast methodologies and critical uncertainties

Historically, we forecasted demand based on a “Business as Usual” time series scenario projected to be a gradual incline over time in response to customer growth. The methodology has now switched to a data intensive end use scenario where we build from the ground up forecasting what our customers will use over time. This provides an updated Reference Case scenario, similar to Business as Usual, but built from the ground up. We can still have growth on the system and decarbonize our supply through Demand Side Management’s energy efficiency initiatives, Renewable and Low Carbon gas,

transportation and Carbon Capture and Storage. The scenarios are built to project a variety of different outcomes twenty years into the future. This is a time of great change as our customers' energy needs evolve and FortisBC decarbonizes the gas supply. Please see slides 52 to 67 in the presentation for additional topics of discussion.

FortisBC: How do the attendees feel about the critical uncertainties we have described?

5.1 An attendee commented that there are broader environmental impacts associated with all energy transition scenarios that are sometimes missing in climate action discussions. GHG emission mitigation is obvious. However, for electrification, the mining of lithium for EVs is an example of broader impacts and tradeoffs that need to be considered through the energy transition. Water reserves must be considered in LNG and Hydrogen production while scaling these energy sources. No matter what choice is made there are implications. These broader implications are missing in our collective presentations on long term energy development. How can these externalities be added to the long term planning presentation? How can BC electrify everything if BC Hydro does not have the capacity to support the expansion in the electrification scenario?

FortisBC: Yes, the bigger picture does need to be addressed. We are finding that GHG reductions is the primary concern that our stakeholders have raised. We do understand there are other environmental impacts to be considered in any energy system, such as flooding for dams, lithium mining and many others. How do we bring a comprehensive review of risks to the forefront? This is why we stand behind our Diversified Energy Pathway that strengthens reliability and resiliency while mitigating risks through the transition to low carbon energy.

In terms of BC Hydro's capacity there are many considerations, foremost which may be peak demand during the coldest days of the year. When Site C comes onboard there will be additional capacity until about 2030, but additional large scale supply may not be readily available beyond that. More energy is delivered through natural gas than electricity in BC and therefore a collaborative approach is required in the energy transition (Refer to Slide 30). BC Hydro will be submitting their Integrated Resource Plan in December of this year. We encourage stakeholders to participate in both BC Hydro's submission and our March 2022 submission.

The scale of the energy transition requirement for BC will need contribution from all stakeholders and government leadership at all levels to address the full range of impacts.

5.2 An attendee added additional feedback on the impact of lithium mining challenges as highlighted in a UK study forecasting the mining impacts if all gasoline cars were to be replaced with EVs. In terms of a transition plan, communities need to invest in active transit and support lifestyles changes to get people out of their cars.

FortisBC: Acknowledged. At FortisBC, we are reviewing the company's transportation GHG emissions, including employee transportation. Although this is a small part of the provincial sector,

in terms of fleets and transportation of goods, FortisBC needs to fit into the overall vision of BC's energy transition.

5.3 An attendee supports the focus on renewable gas but has concerns about hydrogen until there is more knowledge about the full environmental impact of hydrogen production. What can society absorb in terms of transition? For example, every landfill needs to be converted for RG production. They suggest that BC's energy transition plan should focus on renewables and not just electrification.

FortisBC: We understand there is much to learn about the use of hydrogen as a fuel source, and note that it is the most abundant element on the planet. Water is, of course, a precious commodity. One of hydrogen's key limitations to date, has been the historical availability and relatively low cost of fossil fuels. The global research and speed of this research is beyond what anyone would have predicted ten years ago. There are still many unknowns, but we need to be part of this solution.

5.4 Attendee: How does FortisBC procure their renewable gas supply?

FortisBC: The potential producers of RG and H2 know we are actively pursuing procurement opportunities and we are reviewing all opportunities that come our way. Converting wood waste to renewable gas is a large opportunity. To meet our short term needs, we have acquired renewable gas from US and Ontario. Although, the molecules actually go to the nearby customers there is a displacement transfer for FortisBC. This process is auditable through the contract process.

In terms of hydrogen, we are looking at various opportunities to integrate, including hydrogen hubs that could be locally based. Although we are working with a lot of uncertainty, there is a practical pathway, and we are actively responding to these opportunities from a gas supply and system upgrade perspective.

We would like to remind attendees that there are community engagement representatives that can be contacted at any time to be the bridge to FortisBC. If you need information or if you have projects in mind please reach out to us.

5.5 Attendee: We have blown our carbon budget. Methane is causing extreme climate urgency. Why is FortisBC not going to 100% renewables within the next ten years to come to net zero as soon as possible?

FortisBC: We are looking at how we can transition as early as possible through decarbonization of the gas supply. We illustrate this in our long term planning. We have to consider the economic considerations, technology, affordability and infrastructure needs in order to safely and reliably deliver energy throughout the transition period.

5.6 Attendee: Total energy demand is increasing over time. There is a vacuum of leadership. I appreciate that FortisBC is working on this and for you presenting your plans. Other regions are moving more quickly than BC. The town of Ithaca plans to be off fossil fuels by 2030. We all need to work on reducing energy demand through high performance buildings – both new and retrofit scenarios.

FortisBC: We hear your frustration and realize we all need to work together on this challenge. Our Conservation and Energy Management team is looking at the opportunity for increased deep retrofits, energy efficiency, while the company transitions to renewables. The infrastructure needs to be built for every new idea and this requires investment, time and technology improvements. The resiliency of existing energy systems need to be maintained and we need to recognize that customers will have to bear the costs of the energy transition. With an increased population there will be increased consumption. FortisBC works collaboratively with government on codes and standards in support of equipment efficiency and building performance. FEI are leaders in installing commercial and residential gas fired heat pumps with greater than 100% efficiency. We are looking at all ways to optimize gas and electric systems in buildings and industry.

5.7 Attendee: It is important to note the risks associated with centralized production if there is ever an outage. For example, the Enbridge pipeline incident, and flooding in Abbotsford where the province relies on this center of dairy and poultry processing. It's very important to diversify the supply and processing into multiple regions across the seven to eight areas of the province. This model needs to be considered in energy supply and distribution. A good current example is Island Farms Dairy, which has ensured access to dairy goods while the rest of the province is reliant on Abbotsford and has thus been impacted by the recent weather and flooding.

FortisBC – Although the system was stable for many years, the Enbridge incident resulted in FortisBC having to rethink resiliency of the system and expansion of storage facilities. We believe that the resiliency offered by the Diversified Pathway with complementary gas and electricity systems will be most beneficial for BC's long term energy needs. An interesting development is the potential for hydrogen hubs to serve more localized markets as the system becomes more wholly converted to hydrogen transport. Conventional gas backup to support system emergencies can still be expected to play a role for some time to come. This is an example of how we can look to spread out the resources around local areas. A small percentage of fossil fuel gas may need to remain in place as it provides the most reliable storage and back-up fuel, based on what is known today.

5.8 Attendee: Try to imagine a new future with no fossil fuels and achieving a net zero world by 2030. FortisBC is a key player in making this transition. If we can do this in BC, we would be the envy of the world.

FortisBC: It is important to hold an aspirational vision to create change and we have made note of this to share with others in the organization. BC is showing leadership in the climate policy space. FortisBC is showing leadership in renewable gas development, energy efficiency initiatives, the

transportation sector, and more, as demonstrated by our initiatives in support of the Diversified Energy Future.

6. Exploring Future Demand Scenarios

We understand our customer consumption through End Use studies, the Conservation Potential Review and building our demand scenarios from the ground up to examine the next 20 years through a range of scenarios from both a demand and GHG reduction lens. The practicalities on the procurement of supply and impacts to the system for decarbonization is being actively evaluated at FortisBC. We are displacing gas through purchases outside BC however, we are working on BC-based supply opportunities wherever we reasonably can. The RNG can come on quite seamlessly and hydrogen can be blended at lower percentages. However, in time we will require hydrogen dedicated pipelines and hydrogen hubs. Although all details for this transition will not all be completely worked out for this resource plan in terms of precise timing and locations, we will explain how the gas infrastructure will be used to deliver renewable and low carbon gas along with natural gas and how this mix is expected to change over time as this transition is implemented. The next resource plan after this 2022 LTGRP will then be able to examine these details further. Please see slides 68 to 81 in the presentation for additional topics of discussion.

6.1 Attendee: It is important to bring together regionally based economic alliance associations as a voice in long term energy planning as they understand the needs of local residents, businesses and industry. Educating stakeholders on long range planning is critical.

The benefits of a Diversified Energy system Pathway needs to be emphasized. A single monopoly on supplying energy is not beneficial to end users as the safety and dependability of a diversified pathway is critically important. Vancouver Island is especially vulnerable if there was only one source of energy to rely on where the breakdown in a system has even greater impact. Energy must travel a long way, through systems connected to the mainland. A local energy source would be much more advantageous for the sense of security and would like to see a regional energy strategy as part of the Diversified strategy. If renewables can be locally sourced that would be especially beneficial for Vancouver Island residents.

It is also important to educate customers about the implications of daily peak demand in response to cold weather events and the need to guarantee energy supply. This critical role of peak demand needs to be highlighted in this presentation.

6.2 An attendee reinforced the point that the entire life cycle analysis of individual energy sources needs to be calculated and presented. In terms of fossil fuels, it is important to calculate GHG emissions from end users as well as those related to extraction. However, the life cycle analysis of all energy system scenarios needs to be clear, as the negative impacts of other energy systems are not always presented. There is no such thing as zero impacts when it comes to energy production.

FortisBC: We want to remind participants that FortisBC is also an electric utility and we do have a depth of understanding of electric systems and long term planning. One may want to express displacement of gas in terms of electric equivalents, however it is not that simple to make this conversion. We rather want to present the diversified energy future as a holistic plan that is less risky to British Columbians. We still have uncertainties and much to learn as we progress toward BC's low carbon energy future.

7. Ongoing Resource Planning Work and Wrap-up

Our LTGRP submission deadline is March 31, 2022. Our FortisBC Electric Long Term Resource Plan is now under regulatory review. BC Hydro's Integrated Resource Plan is to be submitted December 31, 2021. We encourage any attendees to be part of the regulatory process. This can be as simple as a letter of comment through to a more formal process to sign up as an intervener. This is a critical time for developing a coordinated and collaborative long term energy system for BC so we encourage everyone to be involved.