

FortisBC Energy Inc. (FEI) - Long Term Gas Resource Plan (LTGRP) Engagement Sessions – South Coast & Lower Mainland

DATES:

Session 1: Thursday, October 14, 2021

Session 2: Tuesday, October 26, 2021

FORMAT: Virtual meeting via Teams

Note: These notes represent FortisBC Energy Inc. (FEI's) combined discussions of the two LTGRP engagement sessions with representatives from the South Coast and Lower Mainland. The notes should be reviewed in conjunction with the presentation slides that were provided to attendees.

FortisBC Presenters:

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

These presenters or any FortisBC representative can be contacted by emailing irp@fortisbc.com.

Community Attendees:

Individuals representing communities and organizations were invited to FortisBC's South Coast and Lower Mainland Long Term Gas Resource Planning (LTGRP) 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; and
- Community Associations.

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

Welcoming remarks and introductions were provided at each of the sessions. Please refer to list of attendees above.

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 17 to 25 in the presentation for additional topics of discussion.

2.1 A number of attendees raised concerns about the urgent need for FEI to respond to climate change. The following individual comments are noted:

- **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, please describe FortisBC's 30by 30 strategy and other efforts to decarbonize the gas supply. British Columbians need to recognize the order of magnitude of externalized costs that account for human health, climate adaptation and risk mitigation, forest fires, and floods when assessing transition strategies.**
- **The health of Indigenous communities in communities living near fracking facilities must also be considered.**
- **Is FortisBC interested in climate action or revenue?**
- **Canadians have the highest GHG output per capita and we are large resource producers so we have a responsibility to be leaders. We are in a climate emergency.**
- **We would like to see FortisBC reduce their natural gas supply by 30% by 2030.**
- **Are we measuring where we are coming from or what we need to get to? It's really difficult but does that matter in the context of this emergency? Clarity on the end goal is what we need.**

FortisBC: FortisBC launched its 30by30 strategy as an important step in reducing our customers' greenhouse gas emissions by targeting 30% reductions from 2007 levels by 2030. These reductions will occur through renewable and low carbon gas, transportation, fuel switching to electricity, and energy efficiency initiatives (Demand Side Management). More information about FortisBC's

decarbonization strategy can be accessed through FortisBC's 2018 report, [Clean Growth Pathway to 2050](#).

We also need a reminder to have a balanced approach to the availability of electricity. Site C production may be used by 2030 and we need to understand where the next source of electricity will be obtained if high levels of electrification are undertaken. There is a need to look at BC's energy system holistically, to find the right balance of supply and demand while considering affordability.

Additional response to meeting notes: FortisBC recognizes that the recently announced CleanBC Roadmap to 2030 requires additional consideration for our decarbonization initiatives. FortisBC views these considerations as adjustments to the timing of its decarbonization approach, particularly the timing within which it will undertake this transition. At the time of preparing these notes, the details of the Roadmap and regulations that will enshrine remain under development.

2.2 Attendee: The IPCC is clear that new infrastructure cannot be built. What will FortisBC do about stranded assets in response to electrification mandate?

FortisBC: The transition to renewable and low carbon gas supplies means that the infrastructure will not be stranded. It is important to maintain a strong customer base in order to keep rates as low as possible to enable the transition.

2.3 Attendee: Clarification that the question with regards to new infrastructure was related more to growth in LNG facilities, and was not meaning to reference home / business domestic natural gas consumption.

FortisBC: New infrastructure is needed for many purposes: to improve resiliency and reliability of energy delivery, to enable the transition to renewable and low carbon gas, to improve energy efficiency and to provide service to sectors where natural and renewable gases can replace higher carbon fuels such as medium and heavy duty road vehicles and marine transportation. In accounting for the Woodfibre LNG export facility, FortisBC is planning for that demand as it is expected to arise, but is not including the emissions from that demand as it is a pass through on our system. This is the same way emissions are calculated in gas transported from BC to the US wherein end-use emissions are not tallied within BC but rather the jurisdiction where they occur. FortisBC is not including significant exports from its own facilities within its planning scenario as such potential demand is far from certain. In the case of FortisBC exports, emissions and emission reductions would be treated consistently.

2.4 Attendee: In forecasting demand, how does FortisBC reconcile that they continue to advertise and promote additional customers and product use? FortisBC also lobbies to maintain natural gas load in new construction with local governments. How do we mitigate these activities to reduce reliance on fossil fuels?

FortisBC: Maintaining and growing customers on the gas system is important for keeping customer rates and energy bills down as the costs of maintaining the system are shared across more customers, so yes, FortisBC seeks to grow its customer base and maintain load on its system. Maintaining and growing customers is going to be even more important as FortisBC decarbonizes

its energy delivery – increased energy efficiency and the transition to renewable and low-carbon gas is going to increase costs that need to be recovered from customers.

2.5 Attendee: Where does FortisBC source its conventional and renewable gas supply? What is the proportion of fracked gas as this information is important to local governments?

FortisBC: The FortisBC team committed to seeking more information about the amount of fracked gas in our supplies as the information was not readily available during the session and providing it in follow-up to the meeting. The following additional response to this question is thus provided:

The bulk of our natural gas comes from BC with smaller amounts from Alberta. FortisBC is unable to distinguish how much of our natural gas comes from hydraulic fracturing as we are a distributor and not a producer. We have confidence in the BC Oil and Gas Commission, to ensure that all natural gas extraction and collection is done in an environmentally safe manner, meeting all regulations.

FortisBC's renewable gas is a combination of BC production as well as purchases outside the province. Currently, renewable gas operates as if the benefits are in a "bank account" that is delivered to all of our customers. This is consistent with the way that electricity and gas is already traded throughout North America. The BCUC gave FortisBC approval to purchase outside the province, and therefore we can interconnect with supply across North America. This will provide access to larger quantities of renewables in the shorter term, until there is more local supply brought online. Much of the current supply of renewable gas is from the digestion of agricultural and landfill waste, however FortisBC is exploring wood waste and hydrogen.

2.6 A number of attendees requested additional information about the LTGRP regulatory process: Please provide information related to the regulatory process for the LTGRP. Is there still time to make changes?

FortisBC: The 2022 LTGRP will be filed to the BCUC in March 2022 and at that time it will be posted for public viewing on both the BCUC and FortisBC's website. [Previous LTGRP filings are available here](#). Once it is filed with the BCUC, members of the public and any interested parties will be invited to participate either by registering with the BCUC as an intervener to take an active role in the review or as an interested party to receive notifications and updates as the process moves forward. Details about the registration process will be available on the BCUC website or by contacting the BCUC or FortisBC for more information.

2.7 Attendee: How accurate was your forecast within your LTGRP of approximately 20 years ago?

FortisBC: The company was structured quite differently at that time (it was then a number of smaller utilities that did their resource planning individually) and it would be difficult to make comparisons. In terms of forecast accuracy, we know that forecasts 20 years into the future are going to be wrong since so many changes will occur between now and then that we cannot anticipate. The approach is to understand what we can expect as we can foresee it today, as well as understand as best we can the things that may make our demand deviate from what we expect and understand how best to adjust our activities if those alternative futures begin to unfold.

The following more general discussion about the Long Term Resource Planning process occurred:

The most recent Resource Plan filed in 2017, focused on natural gas planning and FEI's increasing activity in Conservation and Energy Management. At that time, the Renewable Gas and Natural Gas for Transportation strategies were under development from a logistics and regulatory perspective.

Although the FortisBC non-regulated subsidiary, FortisBC Alternative Energy Services, invests in a broad range of thermal energy projects, this LTGRP is focused only on gas supply and system planning. The LTGRP does incorporate considerations for district energy demand and renewable thermal energy supply within its demand forecast modelling for natural, renewable and low carbon gases.

FEI undertakes a number of activities to solicit stakeholder input during the resource planning process. This includes workshops with a dedicated Resource Planning Advisory Group, Community Engagement workshops, Indigenous communities and other stakeholders. The stakeholder groups include local and provincial government representatives, industry associations and environmental groups such as BC Sustainable Energy Association, Clean Energy Association of BC, and Pembina Institute.

In terms of making changes to the LTGRP, we do not have time at this point in the process to redo the demand forecast modelling, but the feedback we are gathering at these sessions is informing any additional analysis we may undertake as we complete the plan and since resource planning is really an ongoing process, feedback in these sessions can continue to be taken into consideration in completing the next iteration of the plan. Once the plan is submitted to the BCUC, any member of the public or any interested party, including local governments or private corporations are welcome to intervene into this regulatory process upon LTGRP Plan submission in March, 2022. The regulatory process also serves to inform the next iteration of the LTGRP.

2.8 Attendee: Is there any coordination between FortisBC's Gas Resource Plan and the FortisBC Electric Resource Plan? And BC Hydro?

FortisBC: FortisBC's electric and gas utilities work closely together as they develop their respective long term resource plans. BC Hydro and FortisBC develop their resource plans independently, but share information on scenario considerations. The utilities are members of one another's external advisory groups and will work together where possible to build out the long-term energy needs for British Columbians. The FortisBC electric utility filed their 2021 LTERP in June, 2021 and is currently under review in the regulatory process. BC Hydro will be submitting their Integrated Resource Plan in December of this year. We encourage anyone interested in participating in the LTGRP process to also participate in the LTERP process and the upcoming BC Hydro IRP process as it is important to consider all of the energy infrastructure available within the Province in meeting the future energy needs of the Province in a deeply decarbonized future.

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 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 Pathway, 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 26 to 49 in the presentation for additional topics of discussion.

- 3.1 Attendee: Agreement that the Diversified Pathway is a better approach for long term resiliency as BC Hydro may have electricity shortages beyond 2030 through fuel switching from natural gas and electric vehicles.**
- 3.2 Attendee shared their community's experience of high costs and vulnerability during the Enbridge Pipeline incident highlighting the need for resiliency. When you take out one of the prime infrastructures required for energy provision there can be significant costs. This demonstrated how fragile are the systems in BC - how dependent the community is on natural gas infrastructure and the inter-dependency of gas and electric systems.**
- 3.3 Attendee shared their success with wasting less and encouraging energy efficiency. They provided a reminder on the benefits of focusing on the following: 1. Waste less 2. Use less and 3. System Optimization. They see as much as 50% reduction in natural gas consumption through energy efficiency. In investment decisions, they focus on GHG emission reductions first, then affordability and then ecosystem impacts. Although all are critical in energy priorities, ecosystem improvement must be embedded in purchase decisions.**
- 3.4 Attendee shared an example of the need to review rules regarding energy conservation. The question was posed if hot water is indeed necessary for opening a building as it is primarily used for hand washing, although supplying this energy comes at a cost. However, in the event of a pandemic the need for hot water for sanitation was a necessity. There was a greater understanding of the importance of water heating during a pandemic and complexity of decision-making around energy.**

FortisBC: We are seeing these examples of the great discussions taking place at the community level. We have to find ways that we are not limited by policy if ecosystem advantages can be found. For example, there needs to be a greater understanding of embedded emissions and full lifecycle costs. This could lead to partnerships or new ideas on information exchange on renewable and low carbon gas projects. Question to attendee – if GHG and ecosystems are improved outside the municipal or provincial boundary, does your community acknowledge and recognize these?

Attendee response: Yes - embodied carbon applies to our own construction.

- 3.5 Attendee: Does FortisBC anticipate any supply issues and does the system have the capacity to distribute the anticipated demand forecast?**

FortisBC: *Please note, as a follow-up to the discussion, we have further clarified the response to this question in these notes.* Yes, the current understanding of natural gas supplies within BC is that supply is available to serve BC's needs well beyond the planning horizon as we undertake the shift to renewable and low carbon gases. FortisBC is procuring renewables, at an accelerated scale to meet the 30by30 targets and tackling the goals set out in CleanBC's Roadmap. In terms of the gas system, FortisBC is always assessing system needs as customers and demand grow to understand the need for infrastructure in advance of capacity constraints. This is one of the objectives of the LTGRP. In 2018, the Enbridge pipeline rupture highlighted the need for greater resiliency and storage capacity. As a result of lessons learned through this experience, FortisBC is expanding the Tilbury facility and the Mount Hayes storage facility was added on Vancouver Island a number of years ago. We are anticipating that the Woodfibre export facility near Squamish will go ahead and will drive some system expansion requirements on the Coastal and Vancouver Island transmission systems. Other new large industrial facilities such as this could also cause large step changes in demand that potentially drive expansions, though no other such proposals have advanced to the point that we would include them in the LTGRP planning scenario. Further, the Interior has some system constraints that need to be addressed as part of resiliency and expansion planning. FBC will also need to build out the system to become hydrogen capable.

3.6 Attendee: With increased natural gas demand, will the price go up? There will be increased demand for natural gas, and this is likely imminent. Although Canada is trying to get to net zero, other countries may not be -- so how can we balance all of these needs in determining energy supply for British Columbians?

FortisBC: There will be continued competition for BC's natural gas resources, yes - from the US and from other parts of the world through LNG exports. This could impact prices over time, however, as stated there are sufficient supplies available to serve needs well beyond the 20 year planning horizon. The federal/provincial price on carbon will likely have a larger impact on costs. The gas infrastructure serving the larger Pacific Northwest region, including the US, is becoming more constrained in meeting the demand across the region. This infrastructure will also be needed to enable the transition to renewables and low carbon gas. In trying to keep our costs lower for customers we want to increase the accessibility for gas to flow across BC. Building out our systems increases resiliency and affordability. There are indications that Alberta will become a large supplier of hydrogen in the coming years and evaluation of hydrogen blends and hydrogen infrastructure requirements are under way, as are considerations for hydrogen-ready infrastructure. Consideration of hydrogen hubs for more local energy production and distribution is also beginning.

3.7 Attendee: What will be the long term price of renewable gas, since currently we are paying twice the price?

FortisBC: Decarbonization of the gas supply will increase costs over current natural gas prices in terms of the need and speed with which we need to address emission reductions. We are still working through the long term assumptions related to cost and the logistics associated with transition to renewables. Over time, the differential in price between conventional and renewable gas will come closer together as renewable gas will not have a carbon tax. Electrification and electricity demand will be equally challenging in terms of costs, supply and distribution capacity. The gas infrastructure is in place to deliver the energy we need and having both energy systems in place adds resiliency and reduces the risk associated with extreme weather events and other

unforeseen energy demand scenarios. Energy efficiency will play a big role in reducing gas consumption over time. There is no solution that will be as affordable as the current natural gas system.

3.8 Attendee: How easy will it be to source renewable gas and hydrogen? Can FortisBC source outside of BC?

FortisBC: We have been able to secure a growing number of renewable projects in recent months and will be able to meet and potentially surpass the initial 30by30 targets of 15% renewables by 2030. Yes. Some of these projects will be sourced outside of BC.

3.9 A number of attendees requested additional information about hydrogen:

- **What does FortisBC need to do to enable hydrogen?**
- **How does FortisBC recognize the differences between blue and green hydrogen, is blue hydrogen actually renewable?**
- **Isn't blue hydrogen just a natural gas replacement?**

FortisBC: Our team is looking at the mix of blue and green hydrogen. Blue hydrogen uses methane as a feedstock in conjunction with carbon capture to reduce emissions. Recent announcements out of Alberta indicate this technology is advancing rapidly. In the short term, blue hydrogen may be more readily available and at a lower cost through partnership opportunities with Alberta. This access will allow FortisBC to develop the experience and system requirements for the longer term when more green hydrogen becomes available. BC has significant potential to scale green hydrogen and costs will likely come down over time. FortisBC will be prepared to access these markets when available. By the end of the planning period, the costs of green and blue will likely converge. The combination will be needed in the long-term. Another reason why the gas and electric system both need to be robust and work together.

There are a number of organizations working on new technologies to develop hydrogen. There is a lot of work going on with blends as the first step. Hydrogen may make the existing infrastructure brittle so we need to account for that in system planning as dedicated hydrogen lines may be required as we build for the future. There are twinned pipe in some locations so over time we may be able to dedicate some lines to hydrogen as we transition away from natural gas. As mentioned, developing hydrogen hubs for more local energy production and distribution is also part of the planning process.

3.10 A number of attendees requested additional information about LNG projects:

- **What is the current and future status of LNG projects and how are these incorporated into FortisBC's long term planning scenarios?**
- **The Woodfibre project is included in your demand graphs, but why isn't Tilbury?**
- **Isn't Tilbury 5X the size of Woodfibre?**

FortisBC: *Note to attendees – additional update from FEI project team included in response as committed to during the session:* Woodfibre represents an expended new step-change in demand and therefore is included in LTGRP planning scenario as the only large LNG export project on our system. FortisBC has exported small amounts of LNG from its Tilbury facility, but since potential for

growth in exports is uncertain, is not including such exports in its LTGRP planning scenario. FortisBC is not associated with the LNG Canada project in Kitimat. Tilbury is for resiliency and storage capacity, and as such does not represent new demand on the system, but rather the ability to store energy for use times when the transmission system becomes constrained. The planned Tilbury Phase 1B expansion is expected to meet growing demand for LNG as a marine fuel and is accounted for in the Natural Gas for Transportation demand graph. The proposed Tilbury Phase 2 Expansion is at an early stage of the environmental assessment process and there is not enough certainty about the project's gas supply forecast to account for it in our planning scenario in this LTGRP.

To clarify, Tilbury is not 5X the size of Woodfibre. It is our understanding that Woodfibre's liquefaction capacity would be about 2.1 million tonnes with storage capacity of about 250,000 cubic metres. The proposed Tilbury Phase 2 LNG Expansion project would provide up to 2.5 million tonnes per annum of LNG processing capacity with storage capacity of about up to 142,400 cubic metres.

3.11 A number of attendees requested additional information about LNG export:

- **Does FortisBC supply gas for BC customers or for international export as well?**
- **Will the priority be for keeping gas for BC customers?**
- **A few attendees noted their belief in the need to move away from LNG exports.**

FortisBC: Note to attendees – additional follow-up information from the FEI project team is provided in response

As noted earlier, there are likely sufficient supplies of gas in BC to meet BC's demand for energy well beyond the planning horizon, and FortisBC priority is to ensure reliable, cost effective energy supply for its customers in BC. FortisBC monitors energy production and transportation issues throughout the Pacific Northwest and North America to identify any threats to the supply of energy to its customers, and develops and implements strategies to ensure sufficient gas at reasonable cost for its customers and through seeking any necessary approvals from the BCUC.

The Tilbury LNG facility has been a part of the provincial energy system for 50 years providing backup supply to our customers on the coldest days of the year, when FortisBC provides up to half the province's energy. The primary purpose of the Tilbury Phase 2 LNG Expansion is to strengthen our system to meet the Lower Mainland's peak gas demand, even in the event of supply issues. This purpose will continue to be important to 2050 when most of the gas in our system will be renewable.

Tilbury's location on an international shipping route also makes it ideally located to produce LNG for marine customers, including local companies like BC Ferries. The proposed Tilbury Marine Jetty, if approved, would facilitate the fueling of larger trans-Pacific vessels with LNG, which aligns with the vision of industry and government to establish a cleaner marine fueling hub in the Port of Vancouver. If the Tilbury Phase 2 LNG Expansion is approved it would produce LNG to meet the needs of the market, which could lower emissions for marine transport customers, overseas customers or local customers.

3.12 A number of attendees requested information about gas consumption reporting:

- **How can FortisBC increase the transparency for gas consumption by local governments, including the percentage of renewables for GHG emissions tracking?**
- **How about the proportion of fracked gas?**

FortisBC: *Note to attendees – additional follow-up information from the FEI project team is also provided 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 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 Roadmap 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.

FEI understands that a large portion of natural gas produced in BC utilizes fracking procedures to supply energy needs throughout the Pacific Northwest but does not have specific data and trusts the BC Government to ensure that gas extraction is conducted to the highest standards.

3.13 Attendee: How does FortisBC account for GHG emissions?

FortisBC: We account for full lifecycle GHG emissions according to methods outlined by the Province.

3.14 Attendee: We need to educate people about the need to use energy more wisely as waste heat recovery and energy efficiency will always be the cheapest resource. How can we support FortisBC in exploring a broader range of DSM activities? Can FortisBC support partnerships between buildings that can share energy transfer through waste heat recovery? FortisBC's Conservation and Energy Management programs (Demand Side Management) provide opportunities for energy efficiency, although we have found that program rules may limit participation and the application process can be difficult.

FortisBC is currently developing their 2023 – 2027* Gas and Electric DSM Expenditure Plans submission. If you have ideas on areas where programs can be expanded or improved please contact us to share these ideas with the energy efficiency program teams. Such insights would be most welcomed and the LTGRP is happy to put you in touch with the right people on FortisBC's Conservation & Energy Management Team.

**Note – DSM Expenditure Plan end date still under discussion at time of writing*

3.15 Attendee: We may be nearing the end of the DSM constraints. Supporting costs including the non-incentive costs may make a project not cost-effective. Note that traditional approaches to cost effectiveness tests may not be serving the needs of the urgency of climate action to reduce

consumption. For example, opportunities like waste heat recovery that would displace natural gas offer an opportunity to reduce carbon emissions.

FortisBC: The BC Government is currently considering changes to the DSM regulation. FortisBC anticipates this will include examining potential changes to the cost effectiveness tests that must currently be used to evaluate DSM activities. Heat recovery is an opportunity and we are exploring other opportunities in the next expenditure plan.

3.16 Attendee: There are community economic and social development opportunities for decentralized energy systems. There needs to be more autonomy over energy production as now there are two major players. We need to consider democratization of the system ie “the Internet of Things” providing ways of trading and interacting with energy at the local level.

- **How can we enable infrastructure to become more autonomous and allow neighbourhoods to produce and store what they need?**
- **Can FortisBC assist with energy distribution at a neighbourhood level?**

FortisBC: There is now infrastructure developed on the electric side that allows connectivity and micro-grid types of projects. FortisBC is investing in the gas system that may allow for more opportunities for decentralized projects and greater interactivity of individuals and communities at the local level such as the Advanced Metering Infrastructure (AMI). Hydrogen hubs are one example of local distribution projects under development.

3.17 Attendee: Can we work with FortisBC on tidal or other renewables? Can we partner on electric utility and generation projects?

FortisBC: FEI, the gas utility would not be expected to invest in such projects, but Fortis Inc. does invest in electricity generation projects and could consider such proposals at a point where they are reasonably developed. FortisBC electric utility and FortisBC Alternative Energy Services (FAES) do have some experience in community solar projects.

3.18 Attendee: FortisBC follows the molecule of gas to the flame. We need to follow the flame to the release of energy, so we can reduce the waste outside of chimney. Heat recovery can be very successful within an organization. Think in terms of how waste heat can be transferred between facilities such as pool to the ice rink and take advantage of this waste heat.

3.19 Can FortisBC help tie two separate organizations together to share waste heat? Local governments may be looking for these types of opportunities and FortisBC does these transactions so well. How can we do this? The exhaust should be neutral temperature not waste heat. Can find 70-80% reductions through redistribution. Burn the heat once but redistribute for multiple uses. Can FortisBC consider that a molecule of gas that can be reused for multiple purposes as it is redistributed?

FortisBC: Our utility, FAES, plays in a competitive market – FEI works within a regulatory construct that has to adapt to new GHG reduction opportunities. We have to be conscious of our current constructs as we move forward through this energy transition. We agree that these examples offer excellent opportunities and we do want to capitalize on them where they exist. They are a true

representation of the integrated and diversified energy future we are envisioning. Support among our stakeholders to adjust / reduce / meet the regulatory requirements that will enable doing so will be helpful as we move forward.

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 50 to 63 in the presentation for additional topics of discussion.

5.1 Attendee: Regarding Slide 56 – Why is the slide titled “Renewable Natural Gas” when it includes blue hydrogen which is not renewable?

FortisBC: Thank you for pointing out the oversight. We have corrected the inaccuracy and the title has been updated for ongoing sessions to reflect “Renewable / Low Carbon Gas Supply”

5.2 Attendee: Does the Resource Plan account for gas that includes Customer Choice and transportation customers?

FortisBC: Yes – customer choice is a program that allows customers to purchase their volume of gas through commercial gas marketers and as we distribute that gas to these customers, their demand is included in our demand forecast and consequently GHG emission reporting.

5.3 Attendee: How does FortisBC incorporate weather uncertainties into their demand forecasts? For example, there seems to be colder, peakier days that need to be accounted for in energy management systems in buildings.

FortisBC: Yes. Determining the peak day forecasts and accounting for more extreme weather forecasts is an area we are investigating in this resource plan. However, our research has not provided evidence that the individual peaks have changed significantly and therefore weather is not identified as a critical uncertainty in our modeling as it does not impact demand too much on an annual basis. However, daily peak demand is one of the major benefits for which gas infrastructure is designed. Additional storage capacity of the gas system will provide resiliency to support extreme cold weather events.

5.4 A number of attendees asked for information related to FortisBC's promotional efforts:

- **Explain how FortisBC can do advertising or continue to promote customer attachments, and challenge Step Code GHGi improvements while meeting GHG emission reduction targets?**

FortisBC: We will continue to promote our services in order to meet the needs of our customers. Over time, conventional gas will be replaced with renewable and low carbon alternatives. Ensuring a diversified, cost-effective and resilient distribution system will serve British Columbians over the coming years. When you spread costs over more customers, rates can go down and be more affordable to all customers. Increasing customers on the system is important for keeping rates down and enabling the transition to renewable and low carbon gases just as it has always been important for keeping rates down. Providing energy services is our business. FortisBC seeks to clarify the understanding of unintended consequences of energy policy and related local bylaws and to ensure a transparent and unbiased and transparent representation of long term cost and resource availability considerations are taken into account as these decisions are made.

5.5 One attendee suggests FortisBC needs to release all their policy documents, on all gas sources as well as the health impacts of burning natural gas in homes. There should be particular reference to Indigenous communities regarding the health considerations of communities who are close to fracking extraction facilities.

FortisBC: Your comment is noted and will be discussed with the Environmental, Health and Safety team at FortisBC. FortisBC abides by all provincial and federal regulatory reporting requirements for utilities.

5.6 Attendee: Suggestion that FortisBC works with government on critical procurement of materials to enable energy distribution as well as the transformation to renewable energy systems. Other countries are also prioritizing these materials and it is critical that Canada has equal access to the supplies required for projects to ensure energy reliability and the low carbon transition.

FortisBC: FortisBC watches the gas commodities market and other commodities such as the steel, labour and other markets. We also subscribe to third party services for what is happening in the world of energy – including developments in hydrogen, for example. We will continue to monitor essential materials and appreciate the comment.

6. Exploring Future Demand Scenarios

We understand our customer consumption patterns through End Use studies, the Conservation Potential Review and build our demand scenarios from the ground up to build out the next 20 year scenarios for both the demand scenarios and impacts on GHG reduction. The practicalities on the procurement of supply and impacts to the system for the transition to renewables and low carbon gas is being actively evaluated at FortisBC. In the short term we may be 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 worked out for this resource plan, 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 66 to 81 in the presentation for additional topics of discussion.

6.1 Attendee: Local governments require greater certainty of renewable gas availability for new construction. Please provide an overview of FortisBC's BCUC submission regarding the proposed RNG tariff for new construction?

FortisBC: Note to attendees – response includes additional update from FEI project team

The proposal, which still requires submission to and approval by the BCUC, would have all new residential connections including homes, townhomes and strata's receiving 100 per cent of their gas as renewable gas. This will allow customers to choose renewable gas as an option while meeting municipal GHGi targets or other emission reducing policies. These new connections are permanently on the rate for the lifetime of the building to meet current and future municipal GHGi targets or other emission reduction policies. This rate will apply to all FortisBC new residential connections regardless of the individual municipality's GHGi targets. FEI will not be adding any new incremental greenhouse gas emissions via the residential building sector or via new connections.

6.2 Attendee: Can the current Resource Plan be updated prior to March submission to include opportunities for waste heat extraction or serving remote communities with renewables?

FortisBC: As a BCUC regulated proceeding, our LTGRP must focus on activities associated with gas supply and distribution. However, we can continue to add new opportunities and innovation to the narrative as we prepare the plan for submission. It is important to note that resource planning is an ongoing process and we are pulling together elements that need to be considered for the next submission. For example, the Enbridge pipeline incident occurred during the submission of the 2017 Long Term Resource Plan. This incident highlighted the need for FortisBC to improve resiliency options to support BC's energy needs. Although this incident occurred and was a topic of discussions during the 2017 LTGRP proceeding, FortisBC has been working on additional resiliency planning since the incident, including an application to expand the Tilbury LNG storage facility.

6.3 Attendee: Note that customers / end users are going to ultimately have to pay for this transition. It is important to keep in mind the needs of lower income groups. We need to meet climate action goals while being mindful of supporting community benefits.

7. Ongoing long term resource planning and session wrap-up

Notes will be distributed to participants for their feedback and revision and then posted to the LTGRP section on FortisBC.com.

Our LTGRP submission deadline is March 31, 2022. Our FortisBC Long Term Electric Resource Plan is now under regulatory review. BC Hydro's Integrated Resource Plan is to be submitted in December, 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.

Session adjourned.