

Prince George

May 11, 2017

1. Introductions

- a. Attendees are interested in the following topics:
 - i. Carbon accounting.
 - ii. Energy as a service, i.e. delivery of heat or space comfort rather than any specific fuel types.
 - iii. Renewable Natural Gas (RNG) and biomass.
 - iv. Energy efficiency deep building retrofits, such as pioneered by the Dutch EnergieSprong approach.

2. About FortisBC Energy Inc. (FEI)

- a. FEI currently does not have advanced meters for its residential natural gas customers:
 - i. Additional data delivered by advanced meters would support infrastructure planning and leak detection.
 - ii. However, the cost of manual natural gas meter reading is very low.
 - iii. FEI continues monitoring the business case for advanced natural gas meters.
- b. Few attendees were aware of the distinction between FEI's own infrastructure and the upstream regional infrastructure that FEI relies on for accessing natural gas supply.
- c. Few attendees were aware of the distinction between bundled and unbundled FEI customers, where unbundled customers are responsible for their own gas supply planning and procurement.
- d. FEI's natural gas compressor stations currently do not include cogeneration (waste heat recovery or electricity generation in addition to compression) but FEI is monitoring the business case for such an approach.
- e. FEI's pipeline assets have a measure life of approximately 50 years (compression equipment has a shorter measure life and requires parts replacement); FEI does consider the risk of stranding assets in its long term planning.

3. Planning Environment

- a. Natural gas price forecasts:
 - i. Typically, natural gas price forecasts are reasonably accurate when existing trends continue into the future; forecasts are less accurate when step changes occur (e.g. impact of natural gas extraction via hydraulic fracturing).
 - ii. School districts conduct their own natural gas price forecasts and see a similar trajectory as the information displayed in FEI's presentation slide deck; the BC Government has tried consolidating natural gas supply planning and procurement across school districts in order to achieve economics of scale.
 - iii. In Northern BC, the cost of gas is not much higher than the cost of hog fuel.
- b. Attendees are interested in how FEI will respond to calls for electrification:
 - i. They are concerned that many industrial sectors cannot be electrified as they inherently require liquid or gaseous fuels.
 - ii. Attendees note that some stakeholders do not consider hydroelectricity a clean source of energy.
 - iii. Attendees also note that, ideally, the provincial energy system should interconnect existing natural gas and electric infrastructure via district energy systems or Power to Gas (e.g. hydrogen injection); this provides an opportunity

for diversity, resilience and adaptability while helping to optimize use of the existing energy infrastructure.

- iv. Finally, attendees suggest that provincial policy should strike a balance between GHG emissions reduction and other societal goals.

4. Demand Forecasting

- a. Economic growth in various Northern BC communities is hampered by limited access to reliable and cost effective energy supply:
 - i. Some of these communities do not have access to a diverse energy mix and are subject to unintended market monopolies, such as propane delivery being available from one trucking company only.
 - ii. Many such communities rely on wood for their heating fuel which can negatively impact air quality.
 - iii. Expanding the natural gas system to such communities may not be cost effective under current system extension regulations; government could update the regulations or provide grants to alleviate this issue.
- b. Prince George is experiencing negative air quality impacts from diesel-fueled rail transportation:
 - i. Typically, locomotive fleets are return-to-base.
 - ii. As such, converting these fleets to natural gas may provide a good opportunity for operations cost savings, GHG emissions reduction, and air quality improvements.

5. Demand Side Management

- a. Planning and implementing energy efficiency projects in Public Sector Organizations (PSOs):
 - i. Old facilities typically see an efficiency gain of 30 percent; this rate increases with bigger facility sizes.
 - ii. PSOs receive offsets from the BC Government for projects that cause Greenhouse Gas (GHG) emissions reductions.
 - iii. Progressive PSOs try to place both cost savings from efficiency upgrades and proceeds from GHG offsets into a project fund which can support future projects (rather than accruing these items to their general revenue); FEI should consider supporting this practice in its conservation and energy management program design.
 - iv. Government grants require fully engineered tender-ready projects, so PSOs prepare these even if they are not certain whether they will actually receive grant funding.

6. Closing Observations and Workshop Feedback

- a. Attendees generally expressed strong satisfaction with the workshop and provided the following suggestions:
 - i. The location FEI selected for the workshop is more convenient than any alternative downtown Prince George location.
 - ii. FEI should consider hosting community engagement workshops across BC communities every two years and should consider including its Key Account Managers and Conservation and Energy Management representatives in these workshops.
 - iii. FEI should also consider presenting at the annual meeting of the Education Facility Managers Association.