

CW-YEC-1.

Issue: City of Whitehorse Concerns

Reference: City of Whitehorse Letter of January 10, 2014 to the Yukon Environmental and Socio-economic Assessment Board (“YESAB”)

Preamble: In its letter of January 10, 2014 addressed to the YESAB, the City’s Development Review Committee (“DRC”) raised a number of concerns with the YEC proposal. A copy of the letter is attached to this request. The City requires an understanding of YEC’s response to the City’s concerns.

Request:

- (a) In paragraph 3 of page 1, the City expressed concern with proposed screening along Robert Service Way. Please fully discuss YEC’s response to the City’s concerns, and provide YEC’s proposed solution(s) to the concerns.
- (b) In paragraph 4 of page 1, the City advised that underground lines would be required. Please confirm that only underground lines will be used. If not confirmed, please fully explain how YEC will comply with the City’s requirements.
- (c) In paragraph 5 of page 1, the City expressed concern with the use of gravel roads. Please fully explain all actions that YEC will undertake to ensure that it is fully compliant with all City requirements.
- (d) In paragraph 6 of page 1, flowing onto the top of page 2, the City discusses formal access and utility easements. Please fully discuss all formal agreements and easements that YEC has, or will be securing prior to commencing the project.
- (e) In first full paragraph of page 2, the City discusses an active transportation and leisure path that may be disrupted during construction. Please confirm that development of an LNG facility, if approved, will not impact the continued use of this right of way. If not confirmed, please explain fully, including how YEC will mitigate any impacts and what plans, if any, YEC has to address this matter with the City.
- (f) In the second full paragraph of page 2, the City discusses a surface water exfiltration/evaporation pond that will be disrupted by the development. Please provide YEC’s plans for the reconfigured surface drainage area that will be required. Please also confirm that the drainage pond will be accessible by City crews for maintenance purposes. If not confirmed, please fully explain.

- (g) In the third full paragraph of page 2, the City discusses fire suppression services. Please provide YEC's plans to extend fire suppression services to the location of the proposed project.
- (h) In the fourth full paragraph of page 2, the City requested confirmation that the existing YEC heating demands will be sufficient to use all gas which may turn from liquid to gas. Please provide the requested confirmation. If confirmation is not provided, please fully explain.
- (i) In the fifth full paragraph of page 2, the City expressed concern about air quality. Please provide all analysis that compares the impact of the use of LNG turbines on the air quality of downtown Whitehorse to the air quality arising from the use of diesel turbines.
- (j) In the fifth paragraph, the City also discusses noise pollution. Please fully discuss all possible noise impacts, including the impact of each of trucking, unloading, vaporizers, running of turbines, and any other sources of noise of the new facility, compared the noise levels that are currently produced and impact the citizens of Whitehorse. Include in the response a confirmation that the noise produced by the existing diesel generators is more than the noise that will be produced by the new gas turbines.
- (k) In paragraph 1 of page 3, the City discusses the use of waste heat. Please fully explain how waste heat will be captured and used.
- (l) In paragraph 2 of page 3, the City indicated its understanding that the new turbines would only be used to meet peak demands and would not be used on a continual basis. Please provide confirmation of the City's understanding. If confirmation cannot be provided, please fully explain.
- (m) Please confirm that YEC does not see LNG as an alternative to or as replacing renewable energy generation in the Yukon. If not confirmed, please fully explain.

CW-YEC-2.

Issue: Odorant

Reference:

Preamble: The City sees no indication of whether the fuel stock will be odorized. The City requires an understanding of whether the LNG, or vaporized natural gas will be odorized prior to use.

Request:

- (a) Please fully explain whether LNG is odorized or not. If not, please fully explain why not.
- (b) Please fully explain whether the vaporized LNG will be odorized or not. If not, please fully explain why not and how leaks would be detected.
- (c) Please fully explain the potential impact of odorant on the citizens of Whitehorse. In the response, please fully discuss the transportation, storage, disposal and use of odorant, as well as the impacts of odorant leaks or spills.

CW-YEC-3.

Issue: Duel Fuel

Reference:

Preamble: The City notes that YEC has proposed a LNG only option, and does not appear to have considered a duel fuel alternative. If such an alternative were considered, if the price of LNG were to rise significantly above diesel fuel in the future, YEC could use the less expensive option. The City is aware that Yukon Electrical Company Limited (YECL) is considering an LNG facility, and to the City's knowledge, YECL is implementing a duel fuel option.

Request:

- (a) Please fully explain if the technology for a duel fuel (LNG and Diesel) is available. If not, please fully explain, including all research and studies YEC has conducted to demonstrate that such an alternative does not exist.

- (b) Please fully discuss the potential for a duel fuel alternative, with costs and benefits of such an option.

CW-YEC-4.

Issue: **Stranded Assets**

Reference: **Application Appendix A, PDF page 57**

Preamble: In Appendix A, YEC provides a map of the existing facility and the new facility. In the diagram, it appears that the Unit WD1 and WD2 are in a larger facility. The City requires an understanding of what will be done with the space currently occupied by the existing units.

Request:

- (a) Please fully explain what will be done with the space in the existing diesel plant that will be vacated when the existing diesel units are retired. Will the space be vacant, or will YEC use it for some other purpose?
- (b) If the space will be vacant, please fully explain the cost of maintaining vacant facilities.

CW-YEC-5.

Issue: Storage Capacity

Reference: Application, page 7, PDF page 11

Preamble: In its Application, YEC indicates:

Yukon Energy has secured an LNG supply of up to 250 m³ per day for a minimum of five years from Shell Canada's Jumping Pound LNG plant being developed near Calgary and scheduled to start operation before the end of 2014. Yukon Energy also retains the potential during the term of the Shell Canada contract to source LNG from the Fort Nelson area in northern British Columbia should additional liquefaction facilities come into service in this area, and/or Shell Canada arranges to make LNG supplies available in this area.

The City requires information to assess the total storage capacity of the LNG facility, should the fuel supply be disrupted.

Request:

- (a) Please provide the number of days the natural gas turbines will be able to operate at full capacity from storage, should the supply of LNG be disrupted for a period of time.
- (b) Please provide the last ten years history of road closures into Whitehorse.
- (c) Please provide an analysis that compares the daily delivery capability of LNG, the available storage capacity for LNG and the longest disruption of service through road closures over the last ten years to demonstrate that there is sufficient storage capacity to deal with any expected road closure.

CW-YEC-6. Issue: Potential Growth

Reference: Application Page 8, PDF page 12

Preamble: In the last paragraph of page 8, YEC indicates that an estimated cost of \$4.4 million is provided for the third unit. The City notes that the third unit is to be installed for “a few years after the first two are in service”. The City requires an understanding of the possibility for growth in the planned facility, should the first phase prove successful.

Request:

- (a) Please provide the cost of each of the first two units.
- (b) Please fully explain how many units could ultimately be supported by the vaporization and storage facility, should the first project be successful, and there be a desire to expand the project. In the response, please provide the cost of expanding the storage and vaporization facility to meet growth if needed.

CW-YEC-7.

Issue: **Transportation of Fuel**

Reference: **Application, page 10, PDF page 14**

Preamble: In the last paragraph of page 10, YEC discusses the use of A-Trains and the fact that they have not been approved in Alberta or British Columbia. The City requires an understanding of the requirements for approval of A-Trains in Alberta and British Columbia, the time and process for approval, the likelihood of approval, and the cost if approval is not received.

Request:

- (a) Please fully explain the process and requirements for approval of the use of A-Trains in Alberta and British Columbia. In the response, please outline all steps taken to date.
- (b) Please provide revised shipping and fuel cost estimates if approval of the use of A-Trains is not granted.
- (c) Please confirm that the use of A-Trains has been approved in the Yukon. If not confirmed, please fully explain, and provide the process and timelines for approval of A-Trains in the Yukon.
- (d) Please discuss what safety issues are presented by the use of A-Trains by YEC as contemplated in the Application. Include in the response a discussion of any plans YEC has in place or will have in place addressing safety issues presented by the use of A-Trains as contemplated in the Application.

CW-YEC-8.

Issue: **Anticipated Timeline**

Reference: **Application page 11, PDF page 15**

Preamble: In the last paragraph of page 11, YEC indicates that it has ordered certain equipment that has long lead times. The City requires an understanding of the impact on rate payers if approval is not granted, and the equipment is not needed.

Request:

- (a) Please provide copies of the purchase agreements, along with any termination options, or other buy out clauses that would be in force, should the equipment not be required. In the response, please clearly identify all costs that YEC would expect customers to pay.

CW-YEC-9.

Issue: **Project Timeline**

Reference: **Application page 12, PDF page 16**

Preamble: On page 12, YEC provides a series of steps for the proposed project. The City requires an understanding of the impact of project delays.

Request:

- (a) Please fully discuss all contingencies included in the project timeline.

CW-YEC-10.

Issue: **Hydro Generation**

Reference: **Application, page 18, PDF page 22**
 Application, page 19, PDF page 23

Preamble: On page 18 of its Application, YEC states “thermal generation is once again becoming the default option to meet current energy and capacity requirements on the Yukon grid until long-term loads are sufficient to support economic new renewable generation.”

In the last paragraph on the page, YEC discusses near term hydro enhancements.

On page 19 of the Application, YEC provides forecast base case diesel generation requirements.

The City requires information to assess the options available to YEC.

Request:

- (a) Please fully explain what long term loads would be sufficient to support new renewable generation. In the response, please fully explain the potential options that YEC envisions when it says “new renewable generation”. In the response, please address the forecast Diesel Generation Requirements as outlined in Appendix C, indicating at what level new renewable generation would become feasible.
- (b) Please fully discuss the costs and lead times for each new renewable generation option.
- (c) In Table 4-1, YEC provides a forecast of diesel generation, increasing from 11 GW.h in 2013 to 92 GW.h in 2030. If there is no incremental renewable generation implemented, please fully explain how many LNG units would be required to satisfy the increased load.
- (d) Please fully discuss the status of the near term enhancements discussed on page 18.

CW-YEC-11.

Issue: Retirement of Diesel Units

Reference: Application Page 23, PDF page 27

Preamble: On page 23, YEC indicates that the continued use of the existing WD1 and WD2 units is not advisable as it would expose the grid to unreliable generation. The City requires an understanding of the replacement times for the balance of the diesel fleet.

Request:

- (a) Please provide a table that identifies all remaining diesel generation for Whitehorse. In the response, please provide the age of each unit, the anticipated end of life for each unit, and the cost to maintain each unit at an adequate level of reliability beyond its recommended end of life.
- (b) Please fully discuss YEC's plans for replacement of the remaining diesel fleet. Include in this discussion whether YEC's plans are to replace the remaining diesel fleet with diesel generation, with LNG, or something else.

CW-YEC-12.

Issue: **Project Economics – Compared to New Diesel**

Reference: **Application Section 4.2.4, Table 4-3, PDF 36**

Preamble: In Table 4-3, YEC provides a table of costs for new diesel and LNG. In Table 3-1, YEC provides a detailed breakdown of the costs of the LNG option.

Request:

- (a) Please provide the detailed models in Excel format that were used to derive the analysis in Table 4-3. In the response, include the rate of return for the two options, the fuel price assumptions, asset life, and operation & maintenance cost assumptions.
- (b) Please provide a table, like Table 3-1, for the diesel option capital costs included in Table 4-3. In the response, please fully explain the differences in costs for each item in Table 3-1 comparing LNG to diesel.
- (c) The City is aware that Yukon Electrical Company Limited (YECL) is considering a LNG facility, and is considering leasing the facility. Please fully whether YEC has conducted any analysis comparing the cost of leasing to the cost of owning the facility. If not, please fully explain why not. If yes, please provide any business cases or assessments done by or on behalf of YEC comparing these options regarding LNG facilities.
- (d) Please provide the detailed working models in Excel format in support of the sensitivities provided in Tables 4-4 and 4-5.

CW-YEC-13. Issue: Load Scenarios

Reference: Application Appendix C

Preamble: YEC provides its load scenarios in PDF format. The City requires the information in Excel format to understand the calculations and assess the forecasts.

Request:

- (a) Please provide the load scenarios in Excel format. In the response, please provide the analysis included in the application, and supporting working papers.
- (b) Please provide and fully explain YEC's assessment of the probability of each of the forecasts included in Table C-2 and C-3 actually occurring.