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July 18, 2013

YCS Information Requests for YECL 2013-2015 General Rate Application

1 Street Lighting

Preamble: Table 1 (Yukon Electrical Sales by Customer Class) on page 2-2 of the GRA document shows MWh for streetlights increasing from 3,598 in 2011 (actual) to 3,854 (predicted) in 2015. On GRA page 2-6, it explains that: "the energy forecast for street and private lighting is based on wattage and customer additions."
A total of $4,519,000 has been and will be spent on streetlights from 2009 to 2015 (2009: $354,000; 2010: $486,000; 2011: $1,045,000; 2012: $456,000; 2013: $420,000; 2014: $945,000; 2015: $813,000).

YCS-YECL 1-1

Please explain whether LED street lights were used for the completed new lighting installations. Why or why not?

YCS-YECL 1-2

Please explain whether LED street lights will be used for the upcoming lighting installations. Why or why not?

YCS-YECL 1-3

Please explain why there are no predicted reductions in energy use for street lighting when technology exists to significantly reduce electricity consumption in street lighting.

YCS-YECL 1-4

Please provide any reporting or results from any LED streetlight pilot programs undertaken by the utility (as in, results showing the cost difference in LED street lights versus HPS lights, how much electricity is saved, what is the payback time, what is the lighting effectiveness, what are potential issues, do LEDs meet highway lighting standards, etc).

YCS-YECL 1-5

Please explain how street lighting fits or doesn't fit into the DSM Plan and its overall goal for reducing energy consumption and increasing efficiency for lighting.

2 Watson Lake Bi-Fuel Project

Preamble: "Phase 1 of the project (2013) involves the modification of Watson Lake power plant generation unit #5 to a bi-fuel system, which allows the unit to run on a combination of diesel and natural gas. The purpose of this phase is to verify that NG injection into the engine provides reliable electricity generation for a utility power system along with the environmental benefit to reduce emissions."

YCS-YECL 2-1

Please provide peer-reviewed reference documentation and describe the basis of YECL's assumption and claims that burning LNG with diesel rather NG injection into the engine will result in an environmental benefit.

YCS-YECL 2-2

Please explain in detail how YECL plans to measure and report on the changes in various emissions in this bi-fuel project compared to the diesel plants in Phase 1.

Preamble: "The availability of LNG allows for reduced emissions in existing generating units through the displacement of diesel fuels." In terms of greenhouse gas emissions, it is understood that methane has a far greater global warming potential (GWP) than Carbon Dioxide CO2. Unburned methane from incomplete combustion will result in more methane-based GHG emissions. This is significant especially when considering methane's potency over a 20-year time frame (GWP = 72 CO2e) or even over a 100-year time frame (GWP = 25 CO2e). It is accepted by the scientific community that we don't, in fact, have anywhere near 100 years to meet the challenge of the climate crisis. We need to break our dependency on fossil fuels immediately and not release methane into the atmosphere.

YCS-YECL 2-3

Please provide peer-reviewed reference documentation and describe the basis of your assumption that burning LNG with diesel rather than exclusively diesel will result in reduced emissions.

Preamble: "In addition to the environmental benefits of this project to reduce emissions of particulate matter, sulfur oxides, nitrogen oxides and carbon dioxide, this initiative will assist in determining the operational and financial benefits of the use of LNG as an alternate fuel for electricity generation."

YCS-YECL 2-4

Please describe any potential negative environmental impacts or increased emissions from burning an LNG/diesel mix in terms of emissions (i.e., Carbon Monoxide, Volatile Organic Compounds, such as carcinogenic benzene) and provide the source of this information.

Preamble: "Phase II will be undertaken if phase 1 is successful."

YCS-YECL 2-5

Please describe in detail how YECL defines success of Phase 1.

Preamble: "Business Drivers" states that a primary objective of this project is to reduce emissions from the production of electricity, particularly in light of increased reliance on diesel. And "Deliver an environmental benefit to the community of Watson Lake through the reduction of emissions of particulate matter, Sox, NOx, and CO2."

YCS-YECL 2-6

Please explain why YECL is claiming an environmental benefit to the community of Watson Lake when it is predicted that Carbon Monoxide (CO) emissions and unburned hydrocarbons/Volatile Organic Compounds will significantly increase from burning LNG with diesel.

YCS-YECL 2-7

If a primary driver of this project is reducing emissions from the production of electricity, please describe your understanding of the life cycle emissions and pollution from the extraction, processing, liquefaction and transportation of LNG and diesel. Please provide references.

YCS-YECL 2-8

If a primary driver is reducing emissions from the production of electricity, please describe any efforts YECL has made in Watson Lake and its other diesel-powered communities to reduce the overall consumption of fossil fuel generated electricity.

Preamble: Section 4 – fuel costs pages 4-1 and 4-2 states that: "Beginning in 2013, a supply of Liquid Natural Gas (LNG) for the Watson Lake power plant will be sourced from Fortis B.C. Page 4-3 states: For the usage of LNG in Watson Lake, fuel costs will be converted to equivalent Diesel litres using the following industry standard conversion factors for LNG for the calculation of the fuel price flow through deferral balance: LNG Energy Content of Diesel 58%. Page 5-5 states: Beginning in the fall of 2013, Yukon Electrical will be leasing liquid natural gas (LNG) storage and vapourization equipment from an affiliate company, ATCO Gas, related to the Watson Lake Bi-Fuel project."

YCS-YECL 2-9

Please explain why this project is necessary and why now.

YCS-YECL 2-10

Please describe in detail the anticipated cost savings (including all assumptions and calculations) from burning a combination of LNG/diesel as opposed to exclusively diesel.

YCS-YECL 2-11

Please describe the methodology and assumptions used in projecting future costs of LNG, especially in light of planned export LNG facilities in BC enabling

currently landlocked fossil fuel resources to reach and compete in the global market, where natural gas prices are significantly higher. Please provide financial scenarios for LNG costs doubling, tripling or quadrupling due to LNG exports. How will those future cost scenarios affect the predicted cost effectiveness of LNG bi-fuel?

3 Automated Meter Reading

Preamble: "Capital meter additions include new meters that are required to replace obsolete or end of life meters as identified by measurement Canada. For 2010 and forward, this also includes the installation of new meters required to accommodate load growth associated with customer requests for service. Prior to 2010, these meters were grouped with new extensions. These expenditures allow Yukon Electrical to meet its obligation to provide metered service connections. The capital meter additions are forecasted based on known areas of development and expected connection requests."

YCS-YECL 3-1

Please explain how these new meters will or will not have the technological capability to accommodate load management (peak shaving and load shifting) programs such as time-of-use pricing and utility- or customer-controlled appliances (such as hot water heaters).

YCS-YECL 3-2

Please explain how these new meters will or will not have the technological capability to accommodate net-metering programs (customer generated energy for consumption and surplus sales back to the grid).

YCS-YECL 3-3

If the proposed new meters will not accommodate DSM, load management and net metering programs, please explain why.

4 Old Crow Plant Expansion and Unit #3 Replacement

YCS-YECL 4-1

Please describe any attempts or investments that YECL has made (i.e., partnerships and or discussions with Yukon Government and or Vuntut Gwitchin Government, studies, pilot projects, etc.) to supplement the exclusive fossil fuel-generated electricity in this community with solar, wind or any other renewable energy option to reduce greenhouse gas emissions and other pollution associated with burning fossil fuels.

YCS-YECL 4-2

Please describe any efforts made by YECL to help customers reduce consumption of electricity therefore reducing the combustion of fossil fuels to reduce costs and emissions, in all communities that YECL services exclusively with diesel.

5 Beaver Creek Unit #1 and #2 Replacement

YCS-YECL 5-1

Please describe any attempts or investments that YECL has made (i.e., partnerships and or discussions with Yukon Government and or White River First Nation, studies, pilot projects, etc.) to supplement the exclusive fossil fuel-generated electricity with solar, wind or any other renewable energy option to reduce greenhouse gas emissions and other pollution associated with burning fossil fuels.

6 Destruction Bay Unit #2 Replacement

YCS-YECL 6-1

Please describe any attempts or investments that YECL has made (i.e., partnerships and or discussions with Yukon Government and or Kluane First Nation Government, studies, pilot projects, etc.) to supplement the exclusive fossil fuel-generated electricity in this community with solar, wind or any other renewable energy option to reduce greenhouse gas emissions and other pollution associated with burning diesel fuel to generate electricity.

7 Demand Side Management Plan

YCS-YECL 7-1

Please describe all internal DSM projects that the utilities have undertaken or plan to undertake to reduce their overall consumption of electricity in their operations, or to shift their consumption away from peak times.

Preamble: Conservation Potential Review Technical Summary Customer-side Renewable and Alternative Energy Technologies, Page 37 states: "Solar PV could provide considerable generation under the upper scenario, even though the penetration of this technology is expected to start later than for the others." Also noted in exhibits 18 and 19 is that no achievable potential from solar PV is predicted until 2025.

YCS-YECL 7-2

Please explain the assumptions that went into this prediction that solar PV would have no penetration until 2025.

YCS-YECL 7-3

Please explain why considerable generation from solar PV could not happen now to supplement grid power and especially to displace fossil fuels in diesel communities, as opposed to waiting until 2025.

YCS-YECL 7-4

Please explain what incentive programs or technologies were assumed to be in place for that considerable generation by 2025-2030.

YCS-YECL 7-5

Please describe how the programs in the DSM Plan will be accessible to customers outside of Whitehorse, and particularly in diesel-powered communities.

YCS-YECL 7-6

Please describe what programs exist in the DSM Plan to manage the load, as in to shift the demand from the peaks to the valleys. If there are no programs designed with the intention to shift demand from peaks to valleys, why not?