

ATCO Electric Yukon (AEY),
formerly Yukon Electrical Company Limited (YECL)
General Rate Application 2016-2017

Heard before the Yukon Utilities Board
November 1-3, 2016

Final Argument
of the Yukon Conservation Society

submitted by
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November 24, 2016

The Yukon Conservation Society (YCS) is a grassroots environmental non-profit organization, established in 1968. Governed by a volunteer Board of Directors and supported by enthusiastic volunteers, our dedicated staff work on behalf of hundreds of members throughout the Yukon and beyond. YCS offers a broad program of conservation education, and provides input into public policy and project review processes. We strive to ensure that the Yukon's natural resources are managed wisely, and that development is informed by environmental considerations.

Executive Summary

YCS intervened in this 2016-2017 General Rate Application to question the economic and environmental prudence of constructing AEY's proposed Watson Lake LNG Bi-fuel project. This Final Argument builds on our submissions from the 2013-2015 General Rate Application when AEY (then known as Yukon Electrical Company Limited) first tried to add its proposed Watson Lake LNG Bi-Fuel Project to the rate base. At the end of this document, we copied relevant sections from our Final and Reply Arguments from the 2013-2015 GRA to reiterate the reasons for our opposition to this project.

YCS does not agree with AEY asking ratepayers to pay for this fossil fuel substitution investment, and urge the Yukon Utilities Board to prevent all costs associated with the Watson Lake Bi-Fuel Plant from entering the rate base.

Prudence means: Acting with or showing care and thought for the future. YCS argues that the project is not economically prudent because the business case is marginal and incomplete. The project would put ratepayers at high risk, because it will be underutilized when renewable energy aspirations are realized in the near future.

YCS argues that the project is not environmentally prudent: fossil fuel exploration, drilling, production, processing, transportation and combustion harm the water, land, air, climate and people. Because of collective inaction, our climate change crisis is near a breaking point. Therefore, YCS asserts that any investment in new oil and gas infrastructure is not prudent, by definition. YCS believes that AEY has not made a case for how this project would help Governments meet goals to eliminate or reduce the dependence on diesel in Indigenous, remote and northern communities with renewable, clean energy, as it suggests in its GRA filing.

Environmental Case Against the Watson Lake Bi-fuel Project

At the 2013-2015 General Rate Application AEY/YECL stated that the primary drivers and objectives of the project were to reduce emissions and for the community of Watson Lake to experience environmental benefits.

This time, AEY did not make these claims. In fact, when questioned about whether AEY believed this project had any environmental benefits, the consistent response was that AEY has an obligation to serve, and it is the position of AEY that this will be the cheapest way to do that.

When asked to confirm that the Watson Lake Bi-fuel project would have no environmental benefit, Doug Tenney, Vice President of Northern Development with ATCO, responded: “As we’ve said a number of times here today, we have an obligation to serve reliable power at a cost effective price. We see that we could move this project forward, and we think under all plausible scenarios of gas prices it looks like it’s a net present value positive for our customers. And that’s why we’re proposing to move forward on the project.” (GRA YUB Hearing Transcript Nov.2 2016 p 320 lines 5-12)

When asked to confirm that the Federal Government wants to replace diesel in off grid communities with renewable energy, Doug Tenney responded: “It’s our understanding that their goal was to reduce diesel dependency with utilizing renewable energy; but, again, I’ll come back to our reasoning for moving forward on the Watson Lake Bi-fuel project was it continues to provide us a reliable supply, our customers a reliable supply, and we think it will do it cheaper than the existing diesel facilities.” (GRA YUB Hearing Transcripts Nov 2 Page 321 lines 15-22)

From these answers, YCS concludes that AEY must agree with YCS in our assertion that this project has no environmental benefit. This is despite the claims that YECL/AEY made in the 2013-2015 GRA filing that this project would result in reduced air emissions, and in the 2016-17 GRA filing, in which AEY claimed the project would help achieve goals to replace diesel in remote communities with renewable energy.

Because this project won’t help Watson Lake integrate any new renewable energy, but would effectively act as a barrier to renewables, clearly this project does not help meet that goal whatsoever.

Please refer to sections of our Final and Reply Arguments from the last AEY GRA at the end of this document for a more detailed description of the environmental harms of this proposed project.

Economic Case Against the Watson Lake Bi-fuel Project

The remaining justification for the fossil fuel substitution project, as declared repeatedly by the panel members at the hearing on November 1-3, 2016, is based on project and operating costs, dependent on fossil fuel forecasts.

In the absence of any environmental benefit, AEY relied on its claim that the LNG Bi-Fuel project in Watson Lake would result in cost savings for ratepayers. But this dubious claim needs to be further explored.

About the Watson Lake Bi-Fuel project, Doug Tenney said: “Because obviously that is the heart of the matter on these economics, the price difference between LNG and diesel.” (YUB GRA Transcript. Nov. 1 page 67 lines 15-17)

During John Maissan’s cross examination, Doug Tenney expressed confidence in AEY’s price forecasts that predict LNG will remain cheaper than diesel throughout the project’s lifetime. This is despite historical data that show the current gap is a recent phenomenon. This gap between LNG and diesel is not supported by trends before 2008.

Besides the precariousness of hoping that favourable future fuel predictions are correct, the Watson Lake LNG Bi-fuel project is already marginal even with the current fossil fuel prices. Depending on the fuel source, the project is already uneconomic from one supplier. Any shift toward the historical trend (LNG and diesel closer in cost) will make this project uneconomic regardless of which supplier is liquefying and transporting the natural gas.

When asked by YCS “What role do you believe that utilization of this facility has on economics and the business case?” Mr. Tenney responded: “I think that is a fair point, that we for sure --- those number are --- that financial model hasn’t assumed that we have renewables coming in and at what penetration level. So it’s looking at the status quo.” (YUB GRA Transcript Nov2 page 328 lines 7-11)

ATCO Electric Yukon appears keen on helping the federal and territorial governments to achieve its goals to reduce diesel consumption for electricity generation by replacing fossil fuels with renewable energy – even trying to use that as justification for this fossil fuel project. YCS finds it curious that AEY did not envision or consider any renewable energy inputs onto the Watson Lake grid within the project lifetime, and did not calculate how that would reduce utilization of this project and, by extension, negatively affect the economics and business case.

Doug Tenney repeated that Watson Lake will always need fossil fuel baseload, but YCS argues that Watson Lake needs fossil fuel capacity – and those are different. The cost of capacity for diesel is likely lower than an LNG bi-fuel project. When renewable energy in various forms is added to the Watson Lake grid, the diesel plant will play a supporting or backup role. Diesel is better suited for that function – if the plant is designed and sized to be supportive of renewable energy.

There is overwhelming agreement among the public, the federal, territorial, First Nation and municipal governments – and even ATCO Electric Yukon – that renewables must replace fossil fuels (and not just diesel). It is likely that a

considerable portion of baseload energy requirements in the Town of Watson Lake will be met with renewable energy in the near future.

Recommendation: Because it is not environmentally or economically prudent, and the financial risk to the ratepayer from fuel price changes and the addition of renewable energy to the Watson Lake grid, YCS urges the YUB to not approve the Watson Lake Bi-Fuel Project.

Fossil Fuel Investments must support – not thwart – renewables and conservation

Sadly, it does not appear that in any of AEY's proposed or completed diesel plant upgrades, DSM effectiveness (as in, conservation and efficiency programs that result in less diesel being burned) or renewable energy integration (again, resulting in real reductions in diesel generation) were considered in the design and sizing of the units. This is not acceptable. The YUB should require fossil fuel investments (capacity requirements) to be forward thinking and prudent, and accommodate not frustrate universal efforts to reduce diesel use in electricity generation.

YCS recommends that unless it can be shown that any investment in fossil fuel infrastructure in AEY's off-grid/diesel communities will support conservation and efficiency efforts and renewable energy development (by being designed and sized for those actions to result in real diesel use reductions), these projects should not be added to rate base.

In addition to actively pursuing renewable energy (which, unfortunately, we have not seen any evidence of since its last GRA), AEY should be planning to upgrade all its diesel facilities, to be DSM and renewable energy ready. That could mean more units with smaller generating capacities so that reductions in energy consumption (from demand side and load management) and additions of renewable energy result in actual reductions of diesel combustion for electricity generation.

If the public is being asked to pay for AEY's renewable energy study, and if the YUB allows that, the study must be shared publicly so that entities that may be more motivated to act on developing renewable energy than AEY can do so.

Recommendation: If YUB allows the renewable and alternative energy study into the rate base, the study must be shared as soon as it is completed and not be withheld from the public until the next GRA.

Conclusion

YCS has been engaged in energy issues in the Yukon with an active energy committee for more than ten years. We bring important information and perspective to the table, to encourage the pursuit of energy projects that reduce our climate change impacts and fossil fuel dependence, and provide local economic development opportunities. We have participated in YESAB assessments, Water Board and Utilities Board hearings including GRAs, Yukon Energy's Mayo B hydro project and LNG facility. We submit comments for every government and utility energy-related public consultation, and participate in many committees planning for the Yukon's sustainable energy future.

From our experience, interactions and observations, it is clear that ratepayers would rather invest in energy technologies that don't compromise future generations' ability to survive on this planet. Yukon people recognize the importance and value of renewable energy and conservation. People are tired and frustrated with inaction in AEY's diesel communities, both due to AEY's corporate inertia and Yukon Government not taking seriously its commitments in its Climate Change Action Plan and Energy Strategy for Yukon, both of 2009.

We need to get off fossil fuels, not further invest in infrastructure that will keep us dependent on them. A more sensible alternative to this significant public and ratepayer investment in the Watson Lake Bi-Fuel project would be to build or at least support new renewable generation, and keep diesel for required thermal backup and capacity.

The Yukon is a unique jurisdiction. We need to view the fact that we are on an isolated grid, and have isolated off-grid communities, as a benefit with opportunities, not as a drawback or an excuse to continue our dangerous reliance on fossil fuels. The Yukon has vast wind, solar and other renewable energy potential that have not been realized. It is frustrating that although reducing emissions was claimed to be the primary driver for AEY/YECL to introduce LNG to Watson Lake, existing technologies that could reduce diesel emissions, as well as technologies that could reduce the overall consumption of diesel, have not been implemented or advanced whatsoever.

It displays a lack of imagination and concern for the future to default to burning finite fossil fuels to meet electrical demand when free sources of energy that do not harm the land, water and air abound.

YCS hopes that the YUB turns over a new leaf as well, and recognizes that it can and must consider other factors that are important to ratepayers such as environment and climate impacts of energy use, in this GRA and future matters it is asked to review.

From YCS's Final and Reply Arguments YECL GRA 2013-2015

The Yukon Conservation Society (YCS) intervened in the Yukon Electrical Company Limited 2013-2015 General Rate Application to ensure that YECL operations and future plans, for which it is asking electrical customers to pay, include reducing negative impacts to the environment from energy use by reducing our dependency on fossil fuels to generate electricity.

YCS is very concerned about the negative environmental and climate impacts of YECL's continued and growing fossil fuel dependency to generate electricity in the Yukon, and the direct effect this increased dependency through the introduction of Liquefied Natural Gas (LNG) will have on the ability to develop renewable energy in the Yukon.

YECL cannot guarantee that LNG prices will remain lower than diesel. YECL has not shown that natural gas is cleaner than diesel. The claim that the primary driver for the Watson Lake Bi-Fuel Project is to reduce emissions rings hollow. The ratepayer should not pay for YECL to experiment with another fossil type that will only continue our dependency on fossil fuels, not develop clean renewable energy to displace those fuels.

Fossil Fuels, Climate Change and Yukon Solutions

We are all aware of the climate impact of consuming fossil fuels. Scientists warn that we are headed for dangerous climate instability in the very near future if we continue with a business as usual approach to fossil fuel use. They agree that we must act now to reduce our fossil fuel consumption to avoid reaching dangerous thresholds that would trigger feedbacks – the impacts of which we may not be able to weather.

In the Yukon, we have an advantage with our small population base and relatively little dependency on the fossil-extraction industry to support our economy. We presently import fossil fuels for much of our energy needs, but also have vast untapped renewable energy resources in the forms of wind, solar, hydro, biomass, geo-exchange, etc.

There is a great opportunity to use renewable energy to replace oil and other fossil fuels not only for electricity, but also for space heating, and to use renewable energy to power local transportation. We also have a financial advantage as a northern jurisdiction that can attract funds to develop innovative renewable energy projects. First Nation governments are interested in developing a sustainable economy, which can only be fueled by local renewable energy sources.

The Yukon has an important knowledge sector we can nurture to develop a renewable energy industry. The Yukon Research Centre, Cold Climate Innovation [and the new NSERC Industrial Research Chair in Northern Energy Innovation] are focused on technology development and have access to important funding. The Energy Solutions Centre and Yukon Housing Corporation have set national trends in innovative ways to implement energy efficiency. Within our population base, we have experts in wind, solar, hydro, geothermal, building technologies, and communications, etc.

The Yukon has the potential to become a leader in developing a renewable energy industry and economy in Canada. ATCO Electric Yukon needs to position itself as a leader, an industry innovator and a partner with First Nations, communities and the knowledge sector to facilitate the development of a sustainable economy, and to ensure we don't cause further climate destabilization and environmental destruction associated with the extraction and combustion of fossil fuels for energy.

Watson Lake Bi-fuel project (Business Case #6)

Watson Lake Liquefied Natural Gas (LNG) Bi-Fuel project is a fossil fuel substitution plan to create a market for natural gas in the Yukon. It will present an obstacle to the development of renewable energy in Yukon's diesel communities.

What YCS learned during this process is that YECL plans to burn LNG at the Watson Lake generating facility to offset more expensive diesel fuel and supposedly to reduce local emissions. We also learned that technologies exist to make diesel generators less polluting, but YECL has not installed them in Watson Lake or in any other off-grid diesel community it services.

YECL is asking the ratepayers to pay for an investment in fossil fuels in order to save YECL roughly 13 per cent in 2020 – provided gas prices remain lower than diesel, which cannot be guaranteed.

YCS is concerned with LNG because its lifecycle emissions and impacts do not support LNG as a clean alternative to diesel fuel. The SENES report "Literature Review: Air Contaminant Emissions from Dual-Fuelled and Conventional Diesel Generator Operations" (November 2012) submitted by YECL in YCS-YECL-2-1 states that emissions of unburned hydrocarbons can be expected to increase by 2500 to 6000 times in dual-fuel operations as compared with diesel-only operations. These unburned hydrocarbons (HC) resulting from the combustion of natural gas and diesel together will be methane – a potent greenhouse gas with a significantly greater global warming potential than carbon dioxide. Other HCs include Volatile Organic Compounds, many of which can have detrimental environmental and human health impacts.

Habitat destruction, water contamination and methane emissions from extraction, processing, liquefaction, transportation and storage of LNG make it as bad as, if not worse than, other fossil fuels for the environment and for the climate. The current common method of hydraulic fracturing or fracking to extract shale gas consumes and contaminates vast quantities of fresh water and releases fugitive methane emissions that accelerate climate change.

Proceeding with the Watson Lake Bi-Fuel Project would defer the development of renewable energy and negatively affect the evaluation of renewable energy development in other diesel communities in the Yukon. Entrenching our system in LNG would present a false economic obstacle and barrier to the development of renewables because of the current natural gas prices setting the predicted benchmark cost per kilowatt hour at an unrealistic and unsustainable low.

As an example, the proposed price for LNG-produced electricity would be about \$0.21/kWh. Diesel at this moment is considered \$0.35/kWh. In the case of the Destruction Bay and Burwash Landing diesel grid, a wind farm developer would have to compete with the predicted lower, avoided cost of LNG rather than the present higher avoided cost of diesel. YCS questions this cost prediction for LNG, and sees it as merely a way to thwart the development of renewable energy.

Recommendation: Because the Watson Lake Bi-Fuel project is a pilot project, because it would further entrench the Yukon's off-grid communities to the consumption of another fossil fuel that will defer and obstruct the development of renewable energy solutions, and because YECL cannot commit to proving that the net emissions will be of a local or global benefit, the project should not be allowed into the rate base.

Thank you,

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On behalf of the Yukon Conservation Society