

December 09, 2023

Florian Boulais
Box 31289
Whitehorse, Yukon Y1A 5P7
florianboulais@gmail.com

to

Yukon Utilities Board
Box 31728
Whitehorse, Yukon Y1A 6L3 Attention: Mr. Richard Buchan, Chair

Re: ATCO Electric Yukon 2023-24 General Rates Application – Information Requests final argument to AEY

Dear Mr. Buchan,

I submit my information requests final argument to ATCO Electric Yukon (AEY).

If the Board or AEY requires any clarification with respect to the IR final argument, please direct all inquiries to me by email at florianboulais@gmail.com or by phone at 993-3831.

Regards,

Florian Boulais

Florian Boulais IRs of ATCO Electric Yukon (AEY) 2023 - 24 General Rate Application

Information Requests final argument of AEY
from
Florian Boulais

As a volunteer fire fighter, a volunteer emergency medical responder, a member of the Wildfire Awareness Society and the Jack Cable Citizen group, and a consultant in systemic resilience and organizational development I spend a lot of time looking at how responsibility and agency is distributed among the various agencies and organizations. It has become increasingly clear that there is a missing link in the organizational landscape of the Yukon when looking at emergency management.

I will restate here that the tool I use is not analysis but synthesis. Analysis is concerned with an increasingly specific study of the details and technical aspects of a matter while synthesis is driven by an effort to see the broad strokes and attempts to better understand how the provision of electrical distribution by Atco interacts with the broader context of the Yukon, Canada and beyond. More specifically, the goal of this exercise is to detect broad systemic issues within the rapidly changing context of the Yukon, Canada and the world.

Including the national and global context in this GRA is important because many of the tools and supplies required for the production, repair and expansion of the electric grid rely on supply chains that cover 6 continents. As we have seen with Covid, global supply chains are very fragile. Considering that Covid was, all things considered, a fairly benign emergency, one can only ponder what would happen if there was a really serious threat to global order.

Let us consider a few trends experts have identified as indicators of increased risk of large-scale societal disruptions:

- 1) Climate change and environmental degradation
- 2) Inequality and social strain
- 3) Political instability and conflict
- 4) Technological risks and disruptions

While it's challenging to predict the future with certainty, and discussions about large-scale societal issues can be complex and speculative, it is clear that all these trends have been dramatically worsening in the past 2 decades:

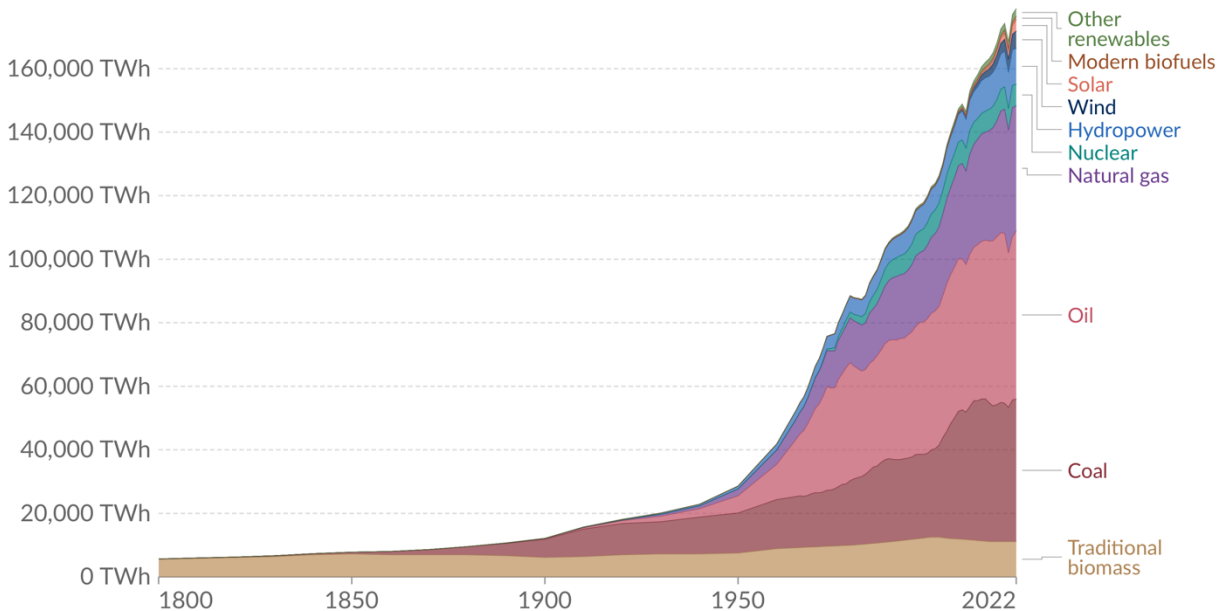
- 1) Carbon emissions are still growing exponentially and will be for the foreseeable future. COP 28 is a stark reminder that after 28 meetings - almost 30 years, no substantial progress has been achieved towards a sustainable future. Even though there is progress made on the front of green energies, energy use is still increasing exponentially and more renewable energy hasn't been able to curb the exponential growth of fossil fuel usage. Yes, energy use is becoming more effective but not nearly fast enough to curb the exponential use of carbon-based fuels. (See

figure below). The most daunting fact might be that GDP is tightly bound to energy usage and thus CO2 emissions (See figure below). This poses a problem as our Canadian currency - as well all the other fiat currencies in world - have a built-in growth obligation. This leads to the current predicament: if we address climate change, we need to force a dramatic reduction of fossil fuel usage, GDP will plummet and trigger the worse global debt default ever known to man - likely a complete breakdown of all fiat currencies in the world. The alternative would be to maintain the 3% GDP increase required for a healthy economy and trigger climate tipping points that will lead cascading catastrophes: food chain crisis, conflicts due to massive climate migrations, breakdown of supply chains, large-scale starvation due to food chain breakdowns, disease,...

Global primary energy consumption by source



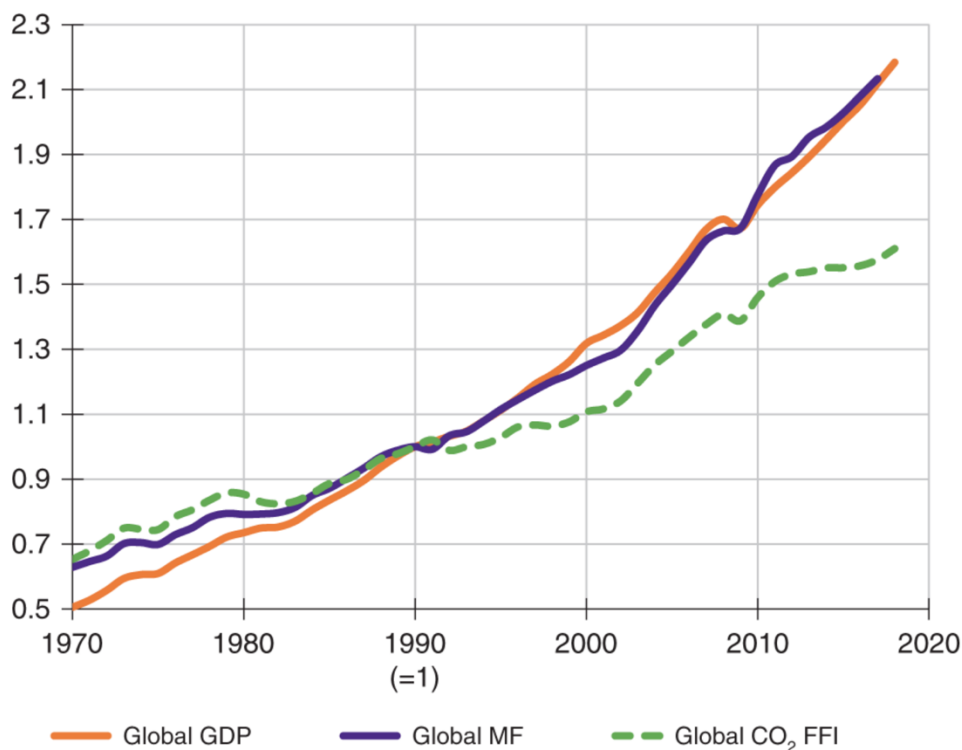
Primary energy is calculated based on the 'substitution method' which takes account of the inefficiencies in fossil fuel production by converting non-fossil energy into the energy inputs required if they had the same conversion losses as fossil fuels.



Data source: Energy Institute Statistical Review of World Energy (2023); Vaclav Smil (2017)
OurWorldInData.org/energy | CC BY

Fig. 1: Relative change in main global economic and environmental indicators from 1970 to 2017.

From: [Scientists' warning on affluence](#)



Shown is how the global material footprint (MF, equal to global raw material extraction) and global CO₂ emissions from fossil-fuel combustion and industrial processes (CO₂ FFI) changed compared with global GDP (constant 2010 USD). Indexed to 1 in 1990. Data sources: <https://www.resourcepanel.org/global-material-flows-database>, <http://www.globalcarbonatlas.org> and <https://data.worldbank.org>.

- 2) Inequality and social strain are becoming worse every year, inside and outside of Canada. Technology and climate change will only accentuate this tendency.
- 3) Political instability and conflict are getting worse due to climate change and the rising cost of energy triggered by depletion of oil.
- 4) Artificial Intelligence holds many promises but it will also accentuate every other risk. It will not only put more and more power and wealth in fewer and fewer hands. It will disrupt the employment sector in massive ways. Another daunting aspect is that it puts destructive power beyond nuclear weapons in a non-state actor's hands. Large language models make leading-edge research material in domains such as cyber hacking and genetic engineering available to anyone. CRISPR and Gene Drive genetic engineering is terrifying at best and can be done at a moderate cost in a basement. As the climate degrades, it becomes more likely that polarized and angry people unleash threats that are global in their reach.

The emergence of these trends, and more, has led to the endorsement of the term “polycrisis” by the World Economic Forum in 2023. The Columbia University historian Adam Tooze refers to polycrisis as not simply a situation where institutions and economies face multiple crises, but rather one “where the whole is even more dangerous than the sum of the parts.” Former

Treasury Secretary and Harvard President Larry Summers recently observed that “I can remember previous moments of equal or even greater gravity for the world economy, but I cannot remember moments when there were as many separate aspects and as many cross-currents as there are right now.” The World Economic Forum’s [Global Risk Report](#) for 2023 echoes this concern, suggesting that the cascading global crises will not fade from prominence in the near future, and calling for a collective leadership response on a global basis. And a [leading risk thought leader](#) is encouraging greater public-private collaboration on mitigating global risks: “It has to be governments, it has to be business, it has to be the finance sector to work together to really address these complex and systemic issues.”

My goal here is not to come to hyperbolic conclusions. My goal here is to build an argument supporting that the future will not nearly be as good as the past 30 years. It is hard to fathom how different the future might be as there is hardly any collective memory of how quickly political systems can change, what war can do, what cascading catastrophes can unleash, what social breakdown looks like and no human has any experience with what a climate tipping point looks like.

Within the frame of the GRA IR, it is clear in ATCO’s response to my IR that, even though ATCO would be affected by disruptions of global supply chains, will not do anything that is not required of them by the utilities act as they want to maximize their income in the next year. We cannot blame Atco for that as they have a fiduciary responsibility to maximize return on investment for their shareholders.

The informative material ATCO is releasing in the media pertains to informing the public about planned and unplanned disruptions to the provision of power. For information regarding readiness to emergent situations, ATCO refers to the federal program of 72-hour readiness. <https://www.atcoelectricityukon.com/en-ca/outages-emergencies.html>

The federal “Get Ready” website is difficult to navigate at best.

<https://www.getprepared.gc.ca/index-en.aspx>

The federal website doesn’t take into account our local Yukon context: it does get very cold for extended periods of time and people live in isolate places.

ATCO’s safety tips look much like an exercise in box checking: they have put the link to the information on their website; in our age of high attention dilution, their material is neither effective nor helpful. That is fair as ATCO does not legally have to do more according to the Utilities Act. (See [AEY Consolidated IR Responses, Sept. 28, 2023](#), p9 for some guidelines on effective communication.)

Carrying on with the reasoning, ATCO makes a case that it incurs higher business risks because it is operating in the Yukon which is isolated and further north. It is quite clear that Yukon residents incur higher risks because its population is increasing rapidly and the people live in remote northern areas. Considering the arguments laid out earlier in my IR, it is clear that it is in everyone’s best interest that Yukoners are informed and reminded how dependent on electricity

they have become. Internal memos from Yukon Energy already reveal a N-1 shortfall of more than 30 MW for 2023. One has to wonder what happens if power is out for a week? What happens if the LNG trucks no longer make it up and that no one can come up to help as there are disruptions down south? What happens if a large quantity of computers become dysfunctional because of large scale hacking? What happens if global supply chains break apart? What happens if a devastating large-scale pandemic spreads across the world?

Whose responsibility is it to ask and find answers to these questions? The City of Whitehorse is responsible for the safety of its citizens and the Emergency Management Organisation will step in to back the City if needed. That being stated, the City of Whitehorse is currently short on staff and money, struggles to keep up with the challenges posed by rapid growth and doesn't have any time to reflect on questions related to electric resiliency as the greater threat of Wild Fires has currently its full attention. This trend will only accentuate as climate degrades and climate migrations towards the north increase. EMO has the impossible task of planning for every possible emergency in the whole territory with very limited means. Yukon Energy could be a possible candidate to lead an effective educational campaign to help Yukoners effectively organize but strategically and financially, it would make much more sense for ATCO to take on this task as they are in touch with consumers every month. It would be easy for ATCO to slide a well-crafted flyer along with the bill every month. **Since there is no legal ground for this and that ATCO will not take it upon itself to do it, I suggest for the Utility Board to request a review of the Utilities Act in order to add a requirement such as: the utility that is in charge of collecting payment from customers also has the requirement to provide a well crafted and effective ongoing education campaign as to the benefits of electric energy, the dangers of electric energy being absent when not being ready, and what a customer can do about it.**

Using synthesis rather than analysis leads to insights that linear analysis has no access to as it gets lost in technicalities. Synthesis also helps avoid the bystander effect in which everyone sees a situation unfolding but no one acts as there is the possible deniability of "I thought the other one was going to do something".

Sound policy making seeks to limit complexification and externalization of risks. Complexification and externalization of risks are two of the most formidable enemies of every society. The following quotation helps us think clearly about the problem.

Quotations extracted from a literary work - for the exclusive purpose of contemplation and reflection

"Legally, a manufacturer has a duty to warn when it knows or should know of a product's hazards. Manufacturers that fail to meet this duty can be judged negligent. Thus, when considered from a legal perspective, manufacturers are held to a high standard - that of an expert in understanding and anticipating risks."

Handbook of Warnings, Michael S. Wogalter, 2006, p.620.

We are entering an era that is unprecedented. It requires measures that are unprecedented. In order to have resilient systems/communities we require resilient agents/citizens (Ref: [AEY](#))

December 09, 2023

[Consolidated IR Responses, Sept. 28, 2023](#), p12). For electric resiliency we need electrically resilient customers. In order to have resilient customers, we need informed customers.

Thank you for your attention.

Florian Boulais