

**Reference:** Exhibit NCFS 1.01, New Clear Free Solutions Evidence, page 4. Lines 30-35

**Question:**

Please provide an MS-Excel version of the Carbon Tax and Investment Plan model referenced.

**Answer:**

Please see Attachment D Carbon Tax and Investment Plan 2016 Annual Energy Outlook Update

**Reference:** Exhibit NCFS 1.01 New Clear Free Solutions Evidence, Page 4, Lines 36-39 and Page 5, Lines 1-2.

**Question:**

In your meetings with NB Power, did they express any concerns with the modeling you presented to them? If yes, what were they?

**Answer:**

Most NB Power executives that we have met have mostly been concerned by the lack of nuclear in the mix. We were challenged by the President at our first meeting that nuclear was needed. We have also been asked at a presentation with a lot of NB Power management as to “where is the nuclear” in my mix.

We have more than adequately responded to any concerns NB Power has presented to us. We have presented this to many people and nobody has been able to point to something wrong with the idea of investing the carbon tax into renewable energy. We have had it reviewed by an economics professor even, and have presented it to many professionals and nobody has found anything wrong with our modeling, only questions regarding the data and assumptions in the model.

The largest complaint we have had so far is from Andrew Leach. He is the one that secretly met with the select committee on climate change and one of the main contributors to Alberta’s carbon tax and subsidize plan. His biggest complaint was opportunity cost. Essentially if we invested the money the same way into something else we could get a bigger return. Google or Microsoft might give a better return but do make very good environmental policies.

**Reference:** Exhibit NCFS 1.01 New Clear Free Solutions Evidence, Page 10, Lines 3-4

**Question:**

Please explain what you mean you when you say that NB Power has a history of underestimating the cost of the things they want to do and overestimating the cost of the things they don't want to do. Are you able to provide specific examples?

**Answer:**

Generally, NB Power has underestimated every one of the below metrics for nuclear power. There should be no reason for NB Power to be pro-nuclear, except for maybe the high O and M costs.

- Public Interest (PUB)
- Capacity Factor
- O and M Cost
- Cost Overruns
- Continued Capital Cost
- Lifespan
- Regulatory Risk (Fukushima and Earthquakes) Liability
- Construction Schedule
- Safety
- Risk
- Need for baseload generation
- Reliability
- Waste

Specifically, in recent history we continue to see a pattern of not being open and transparent about the costs and performance of Lepreau.

- NB Power did not include the O and M cost in our first IR regarding levelized cost and NCFS had to partake in a motions day to get it resolved. These costs are very high and take up a large part of NB Powers Operations and Maintenance budget.
- In this hearing, NB Power states the cost for Lepreau are 9.7¢ per kilowatt hour. During the same timeframe on Dec 13 2016 to the federal standing committee on

Natural resources, Mr. Plumber the VP of nuclear states the following “The cost of the life of the plant is still 8.3¢ per kilowatt, which is extremely competitive.”<sup>1</sup>.

- In our notice of motion 2 we requested that NB Power include the O and M cost displaced in our supply plan from Lepreau like we clearly asked for. NB Power stated at motions day that it was already included and they would break it out. In NB Powers response to the motion they did not include the costs displaced by the retirement of Lepreau, and then restate that it was not included in the second round of IR’s.
- NB Power would not disclose the work plan for Lepreau for safety reasons.
- Much of the public interveners evidence is based on the Lepreau capacity factor estimates.
- NB Power did not respond to EUB staffs first round of IR’s to include the cost of the VP of nuclear.
- When questioned about the VP in the second-round IR’s NB Power tried to file it confidentially and it took the EUB staff to take an objection to this in the name of public interest to get it disclosed.
- NB Power President and Chairman of the Board put debt reduction goals being missed at the feet of the EUB instead of blaming the poor performance at Lepreau to a committee of MLAs.<sup>2</sup>
- NB Power is using unrealistic O and M cost in its LCOE for nuclear power in its IRP. Actual values are more than twice what was used in the IRP.

Even though the refurbishment of Lepreau has already been amortized, the addition of more than 1.8 billion more in capital, very high O and M costs, lower than expected capacity factor and risk of its lifespan not performing as expected, all challenge the notion that Lepreau must stay running to pay for itself and provide significant financial risk to NB Power. Nuclear power is shutting down all over the same markets that NB Power participates in because of all these same cost pressures.

It is very bad business to keep pouring good money after bad. NB Power needs to be challenged on these costs and need to look at what shutting Lepreau down might look like and be prepared for it if it does happen. We are only asking NB Power to type a few different parameters into their models to be transparent. We included nuclear in our modeling to address their concerns and we found it to be expensive and underperforms on every aspect of owning and operating a generation facility, and we now expect NB Power to model without nuclear power in return.

We did not object to giving Mr. Plummer a raise in this matter on the premise that he be given a chance to see if he can get Lepreau performance up. We think he should be

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<http://www.parl.gc.ca/HousePublications/Publication.aspx?Pub=committeemeetingevidence&Acronym=RNNR&Mee=40&Language=e&Mode=1&Parl=42&Ses=1>

<sup>2</sup> <http://www.cbc.ca/news/canada/new-brunswick/nb-power-debt-reduction-target-update-1.3800231>

focused on the economics and safety of Lepreau 1 and not on any harebrained idea of a Lepreau 2. We object to any significant revenue being spent on exploring nuclear options for the next IRP.

We are also very concerned that NB Power is resisting the worldwide trend to transition to renewables and that their current approach is needlessly making renewable more expensive than it needs to be.

- Wind PPA's, Community Energy, LIREP, all add to the cost of renewables. If we want to make renewables expensive we can make the same mistakes everyone else has, or we can do it in a way that is in the public's best interest, while maintaining the requirement of low and stable rates.
- We disapprove of NB Power adding variable O and M cost to account for intermittency in its LCOE data. The current IRP even states that it isn't included but it is:  
"The LCOE analysis does not include the extra costs for backup for the intermittent options; the costs presented here are simply the cost of the stand-alone option, or the "sticker price" of that option."
- NB Power assumes 100% debt financing for its IRP even though the legislation is calling for 20% equity.
- NB Power was the only major stakeholder not looking to get a portion of the Carbon Tax revenue during the select committee meetings but instead has been focused on making it appear to cost ratepayers more. The concept of NB Power getting the carbon tax revenue to invest into renewables is not a new idea to NB Power, yet they are still rejecting it as an investment and still only considering it a cost.
- NB Power President told the select committee on climate change that shutting down Belledune would cost the ratepayers a 30% increase. This was later taken back by NB Power. In these proceedings, we found a significant portion of Belledune power could be replaced at very little additional cost.
- We are not happy with the Mactaquac decision process. A significant amount of time and money was spent., and in the end the option that was chosen was not even on the list of options considered. The high cost of some of these other options have been a significant driver for rate increases, instead of the poor performance on Lepreau. In the end the option that was chosen is the option that should have been pursued from the beginning. Option 4 should have at the very least always been on the table, and should have been explored before any effort was put into the other options. If the option to shut Mactaquac was on the table as an economic exercise, so should Lepreau.
- NB Power keeps using the variability of renewables as a huge concern and a reason to do practically nothing but have yet to model it and quantify it. NB Power focuses on the cost of backup of renewables while our current goals are not being met because of the reliability and variability of Lepreau. Much of NB

Powers current spinning reserve requirements are because we must be prepared for Lepreau to shut down at any moment.