# UNCLE GNARLEY

Opinions On Newfoundland Politics That Bite

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# MORE PRE-SANCTION FRAUD OR INCOMPETENCE?

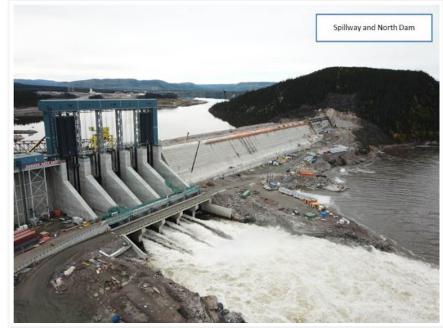
# PlanetNL23: Backup Power Risks Reveal More Pre-Sanction Shenanigans

Two new reports on the Public Utilities Board (PUB) website shatter the illusion that the Muskrat Falls project will avoid the need for oil-fired generation in the province. Upon decommissioning of the 490MW steam generation capacity at the Holyrood Thermal Generating Station, there is a critical reliability scenario arising in the all too likely event the Labrador Island Link (LIL) experiences an outage that will lead to a 500MW capacity deficit on the Avalon Peninsula. Another report identifies that even when Muskrat runs optimally, there is insufficient capacity reserve without the addition of two new 58.5MW Combustion Turbines (CTs).

This new information gives further evidence of how Nalcor distorted the comparison of the Isolated vs Interconnected pre-sanction scenarios to favour Muskrat. As reality sets in, Nalcor finds itself left with only one viable solution: the installation of several new diesel CTs, likely on the very same Holyrood site. The irony of building the colossal Muskrat Falls megaproject for the purpose of closing Holyrood, only to find that a direct replacement must be constructed, is an astonishingly shameful exposure of Nalcor's deceit.

# **Report: Reliability and Resource Adequacy Study**

This 620-page study includes a section explaining how the complexity and scale of the LIL poses considerable certainty of outage events that may last from just a few hours to potentially weeks or even months. Unacceptable reliability is bad enough, but an extra plot twist comes as Nalcor provides just enough information to read between the lines that the off-Avalon regions of the Island ought to be adequately served by Island generation at all times. The Avalon region, however, will be considerably shortchanged and condemned to suffer rotating outages.



Further, Nalcor admits in this report they cannot assure any firm energy could be imported over the Maritime Link during winter and even if it could, they further admit transmission constraints won't get the extra power to the Avalon anyway. The choice Nalcor deliberately leaves unanswered, perhaps because the saga before the PUB has been

# ATLANTIC ACCORD: DEAL OF A

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THE ATLANTIC ACCORD: BE AFRAID, BE VERY AFRAID

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BIRD FEEDERS AND THE ATLANTIC ACCORD

PUB REJECTS ROLE FOR COALITION IN RATE MITIGATION ISSUE

BARD'S QUESTION FOR THE AGING MASSES

#### About Des Sullivan



St. John's, Newfoundland and Labrador, Canada

Uncle Gnarley is written by Des Sullivan, of St. John's. He is a businessman engaged in real estate, retail and development companies. A Director of Sullivan Capital Corporation, he is a former Executive Assistant to Premier's Frank D. Moores (1975-1979)and Brian Peckford (1979-1985). He also served as a Part-Time Board Member on the Canada-Newfoundland Labrador Offshore Petroleum Board (C-NLOPB). Uncle Gnarley permitted the use of his highly regarded name

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# UNCLE GNARLEY READS

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  April (4)
- March (8)
   BIRD FEEDERS AND THE

#### 4/12/2019

provided he could have full access to state his own rather unequivocable opinions. (A more detailed Profile of Uncle Gnarley is described in the very first Post entitled "Uncle Gnarley is alive and well" found on this site. Sullivan is a firm advocate of sound fiscal management by the provincial government and intends to use this Site as a forum for commentary on the major issues of the day. Says Sullivan "Newfoundland and Labrador inspires debate on a variety of issues, a veritable Muskrat Falls of opinion". Readers are invited to leave their opinions, too. Uncle Gnarley will post every Monday, and more often as events warrant.

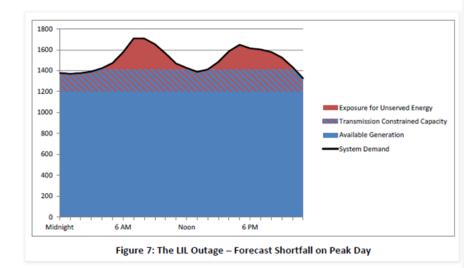
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mandated to last all year, is whether to endure many repeats of DarkNL-like rotating outages, or to meet best practice reliability criteria and build a substantial new fuel-fired backup system.

# Number Crunching an LIL Outage

The Nalcor report includes the graphic below illustrating the energy shortfall across the Island on a cold winter day without the Labrador Island Link in service. The chart clearly shows a minimum power shortfall of near 200MW rising to 500MW during the daily peaks. Nearly one-third of the Island load would be unserved during daytime hours. As the chart shows a pattern of normal power delivery though, it doesn't accurately convey the magnitude of the problem: the required cold load pickup after an outage would feature much larger and broader peaks. The bottom line is a lot of customers won't get power without the LIL functioning at a high level.



By showing the entire Island demand, Nalcor deliberately veils the fact that the problem is not evenly distributed. As all of the Island's firm generation is off the Avalon, virtually all of those areas have the potential for adequate power supply. Notwithstanding possible violation of reserve margins, the lights are likely to be on everywhere but the Avalon. Nalcor executives are surely a bit shy to show the public a similar chart for the Avalon Peninsula sub-system only. If they did, it would show nearly half the required demand cannot be served in the best case. With cold load issues, the problem will only be worse.

The crux of the issue is the Avalon Peninsula is connected to Island generation only by the Bay D'Espoir East transmission system having a limit of 650MW. Avalon demand exceeds 1100MW on cold days thanks to the prolific use of electric heating. Perhaps it's no secret but it bears repeating: Holyrood runs every winter primarily, if not solely, to serve the Avalon region.

# Does Nalcor think We're Stunned?

At this time Nalcor is merely acknowledging the risk that will develop after closing the Holyrood power station. They appear to sheepishly suggest that an Avalon backup system would be a good idea without admitting it is an essential solution. Despite the absurdity, does Nalcor wish us to believe this was unforeseen? This had to be completely foreseeable and it should have been included in the Muskrat Interconnected pre-sanction cost estimates as a direct project cost. Why wasn't it included? Perhaps because the significant costs would have hurt their financial analysis and especially because a sacred objective sold to the public was to eliminate oil burning at Holyrood. Had they said Holyrood would be replaced with another fuel burning power station of matching capacity even after building Muskrat, their project would've been tough, perhaps impossible, to get the public's buy-in.

# Quantifying the CT Requirements

NL Hydro installed a 123MW combustion turbine in 2014 principally to mitigate the frequent loss of a unit at Holyrood (which performed exceptionally well this winter, by the way). This CT would be maintained post-Holyrood, however, the new Nalcor report fails to provide an overall operating strategy. The report simply presents the cost of 1, 2, or 4 new CTs of 66MW each. It also provides an option for a 170MW Combined Combustion Turbine plant.

Of those options, the correct solution to consider is a set of  $4 \times 66$  MW CTs. The CCCT is only advantageous for long-term steady baseload usage; it is entirely unsuited to act as an emergency standby unit. It's unclear of course whether the inclusion of the CCCT option means Nalcor may be implying we need a new baseload diesel-fired CT as part of the backup strategy – this would be an outrageous travesty if it is so.

# Page 2

#### ATLANTIC ACCORD

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WERE SNC LAVALIN TROUBLES OPPORTUNIS TIC FOR NALCOR...

WHEN POLITICIANS DON'T EVEN KNOW WHAT THEY DON'T K...

February (9)January (5)

- 2018 (113)
- 2017 (113)
- 2016 (98)
- 2015 (88)
- 2014 (90)
- 2013 (106)
- 2012 (64)

Presuming this is an emergency backup system only, the question arises whether the addition of 4 x 66MW units would suffice. Adding that to the existing 123MW unit totals 387MW. Why not meet the full 500MW deficit Nalcor describes?

Nalcor does not acknowledge how they developed these alternatives. Do they absurdly think LIL outage events won't coincide with peak winter demand? Logic suggests that winter peak demands will be the stressful event that breaks the system. It therefore seems 6 units of 66MW each are needed to assure power reliability on the Avalon.

Perhaps Nalcor is leaving room for Demand Side Management to reduce peak loads. Nalcor does acknowledge they and Newfoundland Power have just started a new DSM study. Let's hope they "see the light" this time and not just the LED-type. Their previous joint studies appeared to be pre-determined from the outset to support the development of Muskrat and resembled nothing like that completed in other provinces. We always hope the next time is different, but no one should hold their breath. We are not that stunned.

# The Cost of New Backup CTs

Nalcor estimates a capital cost of \$665M for the 4 new CTs. If we expand this to 6 units, the total becomes \$1.0B. To most of us, this is a clear Muskrat project cost (again Nalcor, we're not stunned) but Nalcor is almost certain to say it's an unrelated capital cost and that it will be a part of NL Hydro operations and rate base. The 123MW unit should also be categorized as a post-Holyrood Muskrat requirement and part of the project cost.

The report also identifies significant O&M costs (other than fuel) that when extrapolated for 6 new units plus the existing 123MW unit will come very close to the O&M cost at the old Holyrood power station.

Perhaps later this year, as PUB hearing participants push for an answer, Nalcor will explain their backup strategy better and a revised cost and rate impact estimate will be prepared. For 6 new units, that rate impact will be in the ballpark of 1.5 c/kWh. This of course is a new increase on top of the Muskrat rate increases the public is already anticipating.

If Muskrat generation and the LIL both run really well, there might be \$100-150M/yr in fuel savings achieved. Unfortunately, most of that savings will be absorbed by the financing costs of the new CTs. As a result, there may be only about \$50M/yr in net cost reduction achieved at Holyrood. If Muskrat infeed via the LIL has a bad year, that will quickly go up in smoke.

# Another Report: Marginal Cost Study Update

This consultant report is a tough read and based on plenty of tenuous and arguably creative assumptions to be considered in rate design, potential time-of-use rates and other measures. Buried among this were a few key surprise details that intersect with the backup power CT issue.

Firstly, the report, covering the period 2019-2029, acknowledges there is virtually zero capacity and energy load growth across that time. Later comes a statement, "Hydro's planned capacity additions for years 2019-2029 include two 58.5MW single cycle combustion turbines." This is the first direct reference found in any Nalcor document that the revised load growth scenario requires such new capacity additions. Further the consultant clarifies, "the Island Interconnected System is expected to be just capacity sufficient (14% reserves) in generation for years 2021-2029" which indicates the CT additions are vitally important to meet winter peak capacity needs.

This new finding that under no load growth, Muskrat is insufficient to replace Holyrood seemed markedly at odds with Nalcor's pre-sanction plans. Indeed, doublechecking the DG3 capacity plan validated by Manitoba Hydro International in 2012, confirms that 50MW of new CT capacity was needed in 2015 and then another 50MW in 2032 was the first post-Muskrat addition. These additions were driven by the DG3 fantasy load growth scenario that predicted about 25% load growth by 2032.

# Pre-Sanction Muskrat Estimates for CT Requirements Woefully Underestimated

Most people would think that if 100MW of new CTs met high-load conditions after Holyrood decommissioning, then none would be needed under today's flat load requirements. Apparently, this is not so. In fact, we need quite a bit more than 100MW despite the substantial decrease in the load forecast. Not only is 117MW of new CT capacity going to be required but this is on top of the 123MW unit installed in 2014 that was never included in the DG3 growth forecast. These add up to 240MW necessary to satisfy no load growth conditions.

Assuming today's Nalcor is correct, then the old Nalcor crowd (which includes some of the same analysts) had their pre-sanction modelling severely wrong. For a start they needed 240MW of CTs just to keep zero load growth reliability. Then to meet their load forecast, they should have increased this to about 600MW. An additional 400MW of emergency backup would also be needed (mostly if not entirely on the Avalon) to mitigate LIL outage risks as Avalon load growth continued to 2029. It seems the DG3 plan was missing a

massive \$2B series of CT installations prior to 2029. O&M and fuel costs through that period would also be substantial.

The DG3 estimates upon which final sanction in December 2012 relied had indicated a \$2.4B Cumulative Present Worth advantage for the Muskrat Interconnected Option. That analysis, shown to be wrong in many areas, now appears to be exposed as having another major flaw. Had the pre-sanction estimates included the required 1000MW armada of CTs – and more still in later decades – this one change alone would likely have reduced the CPW advantage to zero or worse.

Links to Reports: Reliability and Resource Adequacy Study 2018 Marginal Cost Study MHI DG3 report

Posted by Des Sullivan at <u>Monday, March 25, 2019</u> Reactions: funny (1) interesting (0) informative (2)

Labels: Electric power reliability and adequacy NL, Malcor, PlanetNL, PUB NL

# 162 comments:

#### Anonymous 25 March 2019 at 08:54

No new surprises here PlanetNL, just regurgitating vomit. But nice to remind us, or should I say not nice to remind us or nalcor and govt. Yes people were clamouring, especially in Holyrood to shut down the spewing facility as it was literally killing them, and I don't disbelieve them. But a God send had arrived, Danny was going to save them all, with muskrat. So why not vote for and support a sauvior, and muskrat. That was another farce to sell and get people to vote for muskrat. But I remember a few voices crying in the wilderness the same cry that PlanetNL has presented here, and nalcor and govt. continues to ignor. They did then and they still do. Yet, people like peng2 continue to quote the 80 percent that supported muskrat, as they say this info was well known by the people before sanction, that was, that Holyrood would not close or a new Holyrood would be needed in the even that LIL went down. Yep, they tried to drown us in our own vomit and still doing it. The buggers says Joe blow.

Reply

# Replies

#### Anonymous 25 March 2019 at 10:06

#### AJ @ 08:54:

I wont agree that the voters are not liable in this - if we are to advance in NL we have to acknowledge our failings and mistakes.

NL voters 'wanted' to believe the DW B\$, we can see just how naive NL voters are today - HVGB has a mayor who was convicted of fraud against the government. Another example will be later this year when we re-elect some the PCs that gave us MF - several already have the district nomination.

Have you bothered to have a quick look at 14-MC-2012-02-27 (or even read the summary of ya vs nay) I posted last week - just to familiarize yourself with just what 'average joes' were saying about MF pre-sanction, pre-2011 election?

PENG2

#### Anonymous 25 March 2019 at 21:27

How can you blame the voters when the voters only have power to make change one day every four years? (when their is no difference in the parties is this really democracy or only an illusion of democracy?) The rest of the time we have no power. The politicians main goal outside Election Day is to ensure that their friends and acquaintances raid the treasury and leave only crumbs for everyone else. Muskrat Falls is a fine example, how many connected people have become rich because of this orchestrated boondoggle? The land that Canopy growth is leasing from a numbered company is another fine example of our politicians making sure that their friends are getting rich. I as a voter refuse to take responsibility for Muskrat Falls, I had no more chance of stopping an

avalanche than stopping this money siphoning preordained fiasco.

The blame for Muskrat Falls belongs to the unscrupulous, slippery, slimy, sleazy politicians that were involved in it, full stop. Terry

# Wayne 26 March 2019 at 07:18

There has to be a vigorous pursuit over whose names are associated with the "numbered accounts". This is where we'll find those involved with the gathering and rape of the people of this province. They MUST be held accountable!!!

#### Anonymous 26 March 2019 at 09:45

I agree that they must be held accountable but the question is will they? Like Muskrat Falls will we have another toothless inquiry for these unscrupulous snake oil salesman?

Terry

#### Anonymous 26 March 2019 at 10:05

#### Terry @ 21:27:

The test to whether voters need to accept some liability is that knowing what has since transpired would they have voted differently in 2011 and would have voting differently in 2011 have changed the outcome.

The answer here is yes to both questions, thus voters need to accept liability for the politicians they elect, otherwise we will continue our poor mouth 'it was always them' attitude that is he root cause of NL's problems.

NL has a governance issue for sure - it is up to the people to fix governance by voting responsibility.

PENG2

#### Anonymous 26 March 2019 at 19:36

IWe the voters are not liable for the actions of our politicians if they withhold the truth and blatantly lie to us to further their agendas. I disagree with you PENG2 so we shall have to agree to disagree. Terry

Reply

#### Anonymous 25 March 2019 at 09:46

Haven't seen the new 620 page study, but the color chart shown here is informative.

Note that I have recently stated, in my occasional PEAK LOAD info, that our existing 1200 MW island renewable energy is essentially meeting our average day time winter loads. Note the solid blue area, this we have in island capacity, hydro and wind, without the DC infeed, and without any Holyrood thermal allowance.

Now if we look at the crossed hatched blue and brown, it shows another 200 MW, so likely included mostly Deer Lake Power feeding the Corner Brook Mill and with recall provision if needed. So about 200 MW is transmission restrained, existing power, more than 200 MW which can't yet get to the Eastern Avalon.

Now the brown area, adds about 300 MW peak, 2 peaks per day, and if flattened about 150MW. This 300 is cold snap requirements for baseboard heaters which can be much reduced by CDM. Again, mostly affecting the Avalon.

Note:to address this small brown area Nalcor committed the crime of the century here: this brown area is costing us 12.7 billion. Further, because their stupid project is unreliable for power, we need to spent 1 billion of more to now address reliability issues!

This has been known from day one, but not acknowledged by Nalcor, who claimed great reliability for Muskrat Power, Liberty took the shine off that claim, thought many here realised it originally.

Joe says nothing new here, but a picture is worth a thousand words,and look at that little bit of brown and realize that all these world class engineers and consultants could not find a cheaper way to make that brown turn blue, than by this massive boondoggle, and even then it is not blue without many gas turbines on the Avalon. Insanity supreme. LOCK'EM UP. Winston Adams

Reply

#### Replies

#### Anonymous 25 March 2019 at 09:59

#### WA @ 09:46:

Did you see the start of the Inquiry - there was an interesting interaction regarding ethics this AM, a decision is to follow.

Regarding the EV implementation, I am not sending any impression either positive or negative - just that I dont expect EVs to get a high uptake here in the near future. Agreed that the costs for charging stations are small, but we are also a group now determining if to ban 1x use shopping bags and complaining about that - when in actuality we should be working with manufacturers to reduce packaging and implementing better recycling and biodegradable options.

PENG2

#### Reply



# Bruno Marcocchio 25 March 2019 at 09:56

The EIS for the JRP included plans for an armada of CT as well as MF. It was this plan not the MHI plan (that was commissioned by Nalcor to justify MF) that was approved and sanctioned.

" Later comes a statement, "Hydro's planned capacity additions for years 2019-2029 include two 58.5MW single cycle combustion turbines." This is the first direct reference found in any Nalcor document that the revised load growth scenario requires such new capacity additions." This is incorrect as the EIS had plans referenced above.

That said it does not change your conclusions (only your facts and analysis) being correct. If you will, you took the wrong route but got to the correct destination.

I wonder why the absurdity of the MF plan and the CT needed did not compel you (and many others) to stand shoulder to shoulder with the few of us that claimed how crazy the plan to build MF (on shifting sands) since the economics looked so dismal even if the spur held?

What took until 2019 for the veil to finally be lifted from your eyes?

Reply

#### Replies

#### Anonymous 25 March 2019 at 11:02

I suggest, Bruno, the main point of this piece is the issue of acknowledgement now by Nalcor of impact (financial, rotating outages, impact of cost comparisons of alternatives) of the unreliability of MFs power, even if the Spur holds. The Power Act required lowest cost and reliable service(2.8 hrs outage per vear).

Those in power operations, engineers in and control and protections, and planning would be aware of this critical aspect that, for the most part, the general public would not. Reliability took a back seat as to costs.

Only now, as we approach commercial power dates, is reliability, or lack thereof, sinking in and being a public concern.

Who of the public would know that software changes on the Boeing jet engine control, could effect reliability? On technical issues (you call technobabble) are important, ....as this piece points out. Yes there are a few errors, but overall informative

Same for technical aspects for power restraint to the Avalon. It was not taken serious until recently. Winston



# Bruno Marcocchio 25 March 2019 at 12:39

I can babble if need be Winston. It as lack of redundancy on the Boeing (only 1 censor so when it malfunctions the plane nosedives) and pilots lack of training to shut the automatic system off)see https://www.youtube.com/watch?v=9Ts\_AjU89Qk.

Nalcor never planned to shut down Holyrood Winston as I think we have discussed and I wondered why there was not more of a fuss about this despite how poorly it was being run. Would not the line from the small dams into the Avalon that has been recommended for years now(and ignored by Nalcor, like the maintenance plan that they ignored despite repeated warnings from consultants).



#### Bruno Marcocchio 25 March 2019 at 12:48

Sorry I did not complete my sentence. Would the proposed line do the Avalon?

#### Anonymous 25 March 2019 at 13:40

Nalcor planned to shut down the old Holyrood units after a few years to test the reliability of MFs. Now there is acknowledgement that the DC line will not have the required reliability, that is the difference, and begs the question, who silenced the Hydro engineers that knew better....and why did they stay silent?

Yes, the third line to the Avalon should have been completed many yeas ago, but even now terminated to the west side of the Avalon, so restraining capacity to East Avalon. This piece does not clarify that issue.

I don't know the make up of PlanetNL, so can't address your point of why so late on this issue, but

hey, UG has been around a long time. None of these guys being paid for UG pieces, so I just welcome the input from them, even if late. The guts of this piece is again: arithmetic! Good you can babble. Or should it be Babel?

WA

#### Bruno Marcocchio 25 March 2019 at 15:18

It seems Nalcor tells whatever lie it needs today, sort of like Trump. They swore at the JRP that the plans to keep Holyrood as a synchronous condenser ?? was it? Two years later they were singing a different tune!

#### Reply

#### Maurice Adams 25 March 2019 at 10:36

Off topic ---- but what kind of inquiry is this, when the witness is allowed to get away with not answering the questions put to him, time and time again? Blatant avoidance is obvious, ridiculous, and beyond the pale.

To the point where it is a travesty, a blight on the legal profession, on the inquiry and on any sense of justice itself.

Surely there is a duty on either the counsel and/or commissioner to make every reasonable effort to have the witness answer the questions put him or her?

Reply

#### Replies



Bruno Marcocchio 25 March 2019 at 12:45

It is sad but true as I have repeated ad nauseum Here come da judge!

This "inquiry" is a sham!

Maurice Adams 25 March 2019 at 13:01

Page 7

I know you have Bruno, but I am still flabbergasted to see the reality, and how Leblanc's commitment to the "schedule" takes priority over what justice and the public interest demands.

Leblanc has a lot of leeway to request a time extension (so as to ensure that justice and the public interest is served), but seems content not to do so.



Bruno Marcocchio 25 March 2019 at 15:22

A cynic might say LeBlanc may be running out of available billable hours.

His pocketbook may take preference over justice:<(

# Anonymous 26 March 2019 at 10:16

MA @ 10:36:

I have several times said the timing and timeframe of the Inquiry was wrong - though most have claims it was all politics and responses to views were not very 'polite' to say the least.

Because of the timeframe and scope (we needed more comparable to Berger or Charbonneau - 4-6yrs) there is no time for LeBlanc to get caught up in manusha, he needs to assess and focus on the core issues.

Also, because of the time period, LeBlanc wont be able to examine the issues arising as the work is completed - this is unfortunate and likely to cause additional costs to MF (ie settling of REAs, terminating Astaldi etc)that wont be known until after the Inquiry.

I don't think most agree with your opinion on how the Inquiry is progressing – maybe even check with the MFCCC on their opinion of progress and findings to date.

PENG2

# Bruno Marcocchio 26 March 2019 at 10:48

PENG2, Since when is an anon troll, paid for by the proponent, the arbiter of public opinion? Have you no shame? I suggest you crawl back under the rock from whence you emanated!

Reply

#### Anonymous 25 March 2019 at 11:24

After reading this I am speechless!!!

Reply



# Paul Nolan 25 March 2019 at 13:05

Great blog Mr. Sullivan as usual. I always believed that The Musket falls Project was never needed. And we could not get rid of the Holyrood Generation Plant. Sadly we are in more need of an upgrade to Holyrood Generation plant more than ever. And Nelcor is still not being truthful to us. God help us all.

Reply

#### Anonymous 25 March 2019 at 14:03

How many more billions are required to take care of the extra generation facilities to ensure reliability? Nalcor obviously left out all these costs because it would have destroyed the justification for Muskrat Falls.

I wonder how many other costs have been left out. For example, should we maintain all the access roads and bridges for maintaining transmission towers or do we use helicopters for future maintenance (and ice storms)?

Do we need spares for the inverter station? If we don't have spares, how long is the lead time for replacement power electronics?

#### Reply

Replies

#### Bruno Marcocchio 25 March 2019 at 15:26

MHI advised Nalcor to get spare parts but that might cost a billion if memory serves me. Nalcor declined despite MHI warning that would result on months long delays. Cross your fingers is the Nalcor risk policy!

#### Robert G. Holmes 25 March 2019 at 16:14

Prudent management accounting; shift capital investment and call it operational expense. Remember the motto is the higher you crank annual costs the stronger the rate increase case becomes:-)

#### Robert G. Holmes 25 March 2019 at 16:16

This fellow Meaney knows all the bookkeeping tricks, I bet.

# Robert G. Holmes 25 March 2019 at 16:19

Remember, out here, BC Hydro used the "two books system", to hide deferred debt of around \$16B. Bet that all the Gov. departments and crown corps, learn from their peers.

#### Anonymous 25 March 2019 at 16:20

Don't know why the access road running the entire length of the transmission line was necessary in the first place. The transmission lines from BDE were built in the 60's with no access road.



Robert G. Holmes 25 March 2019 at 16:42

It was forever thus; Check back on the "unforeseen rock excavation", extra on Cat Arm project.

Reply

#### Wayne 25 March 2019 at 15:09

Keystone Cops and the Bowery Boys are alive and well.

If ever there was reason for a criminal investigation, this is it. This was MASSIVE fraud on a biblical scale and still there are those who are avoiding answers to questions that everyone else knows and not being taken to task to"answer the question or face consequences" J--us Ch--st this is my grandchildren'n future let alone my children's future in the balance here and all to satisfy the whims of an ego-maniacal little man

who with his connections ensured MF would proceed at all costs and I'd bet my bottom dollar he is still calling the shots to protect himself.

The RCMP fraud squad should be following this blog as well as the Inquiry(sham).

Because of incompetence in NALCOR and Government, we'll end up losing the benefits of the Atlantic Accord, CF and the Labrador border and we'll still be left with a debt we simply cannot afford to pay.

Reply

### Anonymous 25 March 2019 at 17:15

The section titled "Another Report: Marginal Cost Study Update" is missing the fact that the Hardwoods and Stephenville combustion turbines (50MW each) are to be retired sconer than expected and that the resource planning criteria for the IIS is being changed to match that of the utilities on the mainland (per the Resource Adequacy Study). This change in criteria from 0.2 to 0.1 LOLE (2.8 to 1.4 LOLH) requires an additional 56.5 MW of reserves and therefore drives earlier installation of new generation (or demand management).

So, remove Holyrood, Stephenville, and Hardwoods (590 MW total) and then you're left with only an extra 72 MW after Muskrat Falls is added and counting the Nova Scotia Block. Remove an extra 100 MW and double the reliability criteria, it's no wonder the need for new generation has moved up.

Reply

#### Anonymous 25 March 2019 at 17:31

Avalon peak load has never exceeded 1100MW. What's the source for this number?

Reply

#### Anonymous 25 March 2019 at 21:24

We have all just witnessed the largest "bait and switch" con job ever pulled in human history by our very own NALCOR!

13 Billion Dollars in on Muskrat Falls, and we need another 1 Billion to rebuild and refurbish Holyrood which was originally slated for closure!

All due to reliability factors of the Muskrat Falls project!

I don't know about anyone else?

But the people involved with this con job need to be charged, jailed and sued for damages!

Incredible!

Reply

#### Anonymous 25 March 2019 at 21:54

Nice to see SNC-Lavalin defend itself today through testimony from Messrs. Tramblay et Thon. Takeaways included oil/gas and hydro expertise, especially in leadership roles, are not inter-changeable. Nalcor accepted no SNC-L personnel for leadership roles. I will say there was no respect from Nalcor as far back as 2011 towards SNC-L. It took longer for Nalcor to execute its integrated project team into 2013 because they did not vision sanction taking until December, 2012. Nalcor never wanted an EPCM contractor and, once SNC-L signed on, they worked towards its integrated project team model, despite the fact Nalcor had no hydro-electric mega project experience on its side. A bad recipe concurrent with Nalcor's signature on budget, schedule, risk and personnel.

lamno Robo

Reply

#### Anonymous 26 March 2019 at 08:45

It may seem illogical to many, but I think Nalcor should be seeking proposals for about 350 MW of wind energy for the Avalon, with an option of up to another 200MW. This may require an agreement with permission and agreement with Emera, given Ed Martin gave away wind anchoring benefits to NS, using our island hydro's generators anchoring via the ML.

Wind energy now may come in at less than 4 cent per kwh cost.

Winston Adams

Reply

#### Replies

#### Robert G. Holmes 26 March 2019 at 09:00

Mines and Energy did an Alternate Energy Study (Provincial Consultants, 1980's), recommending wind. The Hydro bent Engineers saw it as a threat to their "livelihood". A combination of wind and solar/thermal today would extend today the Holyrood energy centre, while reducing dependency on fossil fuel. What better way to resolve Avalon peak load?

#### Anonymous 26 March 2019 at 09:15

350 MW of wind with a 30% capacity factor would only provide about 100MW worth of firm capacity. The capital cost would be close on \$700 million plus cost to build the transmission interconnection. Wind generation is great for fuel offsetting but not as potential baseload or emergency/peaking generation. Nor does it readily support voltage on the grid in anyway without the additional cost of a dynamic source of reactive power.

Given that there is still a number of years before the new generation is needed on the Avalon, Hydro has time to allow battery technology to mature further, or to evaluate other solutions.



# Robert G. Holmes 26 March 2019 at 10:08

Show us the independent cost benefit analysis.

#### Anonymous 26 March 2019 at 10:26

CBA for what? I'm just pointing out that using wind generation for emergency or peaking generation is not straightforward technically. I'm all for building wind generation if there is a need for the energy here or for sale through the Maritime Link.



#### Robert G. Holmes 26 March 2019 at 10:47

CBA on Avalon, for wind/solar thermal component to supplement Holyrood thermal.

#### Anonymous 26 March 2019 at 10:58

#### Anon@09:15

Not hard to know your biases:

1. our existing wind farm has a capacity factor of 43%. Newer and larger units likely can achieve capacity factors of 50%......we have one of the best wind resources in the world, as is common knowledge, and appropriate wind was not assessed for the Isolated option, intentionally so.

2. Capital cost is borne by the wind energy suppliers. Locations near existing grid lines can keep transmission interconnections costs low. Wind supplies may be able to benefit from federal assistance for wind under current Climate Change initiatives.

3. NS, I think uses 17% of wind rated capacity as base, for Nfld this could be higher.

4.Our wind is 2.5 % shameful of total, some jurisdiction now achieve 20 % and on rare occasions 40%.

5. Great fuel saving with wind means great GHG reductions. Also they work well with gas turbines, unlike with the old Holyrood units, and so wind keeps gas turbine fuel and maintenance costs low.

6. Show us the studies as to stability when working with our hydro and synchronous condensers, as to limitations.

7. New generation is NOW needed to replace the old Holyrood units. The 620 page report says the old units are to be decommissioned in 2021, so 1 year after MF commercial power. Future fuel use and costs depends on the reliability of MFs transmission and generation. Wind reduces that fuel use, and wind generation can also allow additional exports to NS from our island grid.

8. Nalcor evaluated wind/ battery at a cost of about 17 billion, most for battery costs. For more on battery cost effectiveness, see past discussions with Bruno.....your intention to throw Bruno a bone on batteries is intended to dismiss present wind benefits, I am not sure Bruno will go for your bone. Winston

#### Anon@10:26

Wind for energy here? Beside offsetting gas turbine fuel,and GHG reduction, consider Synapse electricification plan for EVs.

In winter it our peak electric heating load, plus EV charging load can occur together. CDM can offset heating to allow charging, but wind can add to that benefit. So, yes , local needs is real especially if we electrify more, which we should....we must to reduce transportation GHG. WA

# Anonymous 26 March 2019 at 15:56

Hi Winston, not biased (too much) just realistic.

1. Yes, the capacity factor for our existing farms is 43%. In the Resource Adequacy Study, Attachment 6, Hydro pegs the effective load carrying capability of the existing farms at 22%, I used 30% as a rough approximation of the two.

 Correct on all accounts. Sitting near populations (NIMBYism) would also play a factor in locating wind farms and may reduce the convenience of locating near the transmission system.
 See my first item.

4. Before now we really haven't needed additonal wind generation as we were never energy or capacity constrained. Nalcor then decided to go build Muskrat which has turned out to be a gong show of course. Other jurisdictions are also interconnected which enables more wind generation to be installed. We did not have that luxury until now. I've seen estimates of up to 400 MW of wind that can be installed now thanks to the Maritime Link, though no official studies.

5. I absolutely agree. The isolated grids in NL are prime candidates for this.

6. It's not a matter of needing studies. It's a matter of the design of the wind turbines. They are typically asycnhronous, induction machines that are not equipped with excitation systems and governors as would a synchronous generator. Without those the control of voltage and frequency cannot be maintained as readily and this is essential to the functioning of the AC grid. Wind generation also provides no spinning mass on the system like conventional generations so you need to add synchronous condensers to the grid in order to decrease the rate of frequency change (df/dt) on the grid in an event. See the final report on the South Australia blackout from a couple years ago. There the wind generation led to a faster decline in frequency and made the collapse worse.

7. The Resource Adequacy report does not say new generation is needed now. The study identifies that there is a limitation on the amount of power that can be transmitted to the Avalon thanks to angular and voltage stability issues associated with the configuration of the transmission grid in the east. The issue arises when there is a 3-phase fault on the 230 kV system between Bay D'Espoir and the Avalon. That fault results in an unstable system if the flow east is more than roughly 650 MW. Below that and it will eventually settle back down. This presents no problem when Muskrat is on line as more power can be imported from Labrador to reduce the flow east from BDE below 650MW. When Muskrat is down there's no generation on the Avalon to be able to offset the flow east. Now there's two issues. First, if Hydro flows more than 650 MW east to try and supply the Avalon and there is a 3 phase fault, the grid becomes unstable, collapses, and violates the planning criteria. Low risk scenario but must be considered. Second, there isn't enough power on the Avalon to supply the load if it can't be imported from the west and Nova Scotia. To solve this problem, the Stage 4 report of the TransGrid studies which feed into the Hydro Resource study puts forward three possible solutions: 1.New generation on the Avalon. 2. New AC transmission onto the Avalon. or 3. A dynamic supply of reactive supply at Sunnyside. There are additional studies being done to nail down this issue and determine what solutions are available. To me, the real issue here is, why was this work not done 6 years ago and the costs of beefing up the AC system not included in the MF project cost?

8. The attachments to the Resource Study include some preliminary work on batteries, solar, and wind. I'm not saying they are viable options now but may be in the near future. I'm also a big fan of converting to EVs and plan on buying one for my next vehicle purchase. I had also considered the idea that we could use the connected EV batteries and balancing for on grid wind generation but recent studies on this have shown it is hard on the car batteries and greatly reduces their lives.

#### Reply

#### Anonymous 26 March 2019 at 09:21

Shocking VOCM article http://vocm.com/news/nalcor-made-it-clear-snc-lavalin-report-needs-to-not-exist-saysdirector-of-risk-assessment/

If we take this at face value, that Nalcor demanded that a SNC-L risk report be suppressed / deleted / "go away", a report that might have saved us billions or lead to the cancellation of the project, then does that make Mr. Harrington a criminal that belongs behind bars along with those that directed him to proceed at all costs?

If this is not criminal, then we have a major problem with society and justice. The oligarchy and those connected with them can do billions in harm while at the other end of the scale, we can get jail time for protesting these very abuses. Our big time sociopaths (there are probably a dozen in this fiasco) need to spend the rest of the lives in prison.

Reply

#### Robert G. Holmes 26 March 2019 at 10:06

Cities like Toronto, around the world are suing Oil companies for the damage caused by climate change;

https://www.cbc.ca/news/canada/toronto/city-should-explore-taking-oil-companies-to-court-over-climate-change-costs-councillor-says-1.5070609

Maybe the whole corrupt Muskrat deal, dominated by petroleum interests could be similarly resolved.

Reply

Anonymous 26 March 2019 at 10:10

As best I can, I try to stay tuned to our energy system and planning, having worked as an engineer with Nfld Hydro in the 1970s, and a keen follower of UG, the MFCCC, and having made submissions to the PUB. This 620 page report I was not aware existed until yesterday, reported here by UG. It was filed with the PUB in NOV, about 4 months ago. Input from stakeholders occurred over 3 weeks in Aug-Sept 2018, about 7 months ago.

Stakeholders included customers, about 2000 contacted,with about 16 minute each, on questions of costs and reliability. The main stakeholders were Nfld Power, the CA, and the Industrial customers. About 500 expressed an interest to want to be on a feedback panel. Is this meaningful consultation with the public, given the fiasco inflicted by MFs? I wonder how many other UG readers were not aware of this VAST stakeholder consultation? I have just skimmed about 25 pages of this 620 page report. One of the things caught my eye: there is to be consideration of CDM going forward. But not conventional CDM. CDM means Conservation Demand Management, where energy efficiency is a main component to reduce customer costs, and reduce the power grid peak demand and allowing better management of our resource. Synapse has much to say about CDM, as practised in other jurisdictions.

Here, we now have the "Made in Nfld" version of CDM : Customer Demand Management!

CUSTOMER, not CONSERVATION and Energy Efficiency.

This wording and intent seems to be initiated by our Consumer Advocate Dennis Browne. To me this suggests a process of meaningless measures to save customers very little on yearly electricity costs. It means Straton's approach to ignore real CDM for the Isolated Option, as was his method for Muskrat, and is still the Way Forward. To mislead the public, they have just flip from "Conservation" to "Customer" for CDM...who will notice the difference? More of the same BS,... LED lights, plastic on you windows, 1 dollar rebate on outlet plugs, install an outdoor clothes line.

What suckers Nflders are to take this BS, after 12.7 billion waste,less than 1% of stakeholders, (residential and small business customers), have had any input into this process. And all businesses and contractors in the Energy Efficiency field, ignored. Just mail us the bill. Winston Adams

Reply

#### Replies

#### Anonymous 26 March 2019 at 10:23

For readers without access to TakeChargeNL, here are some recent energy saving challenges for electricity customers:

Don't hand wash dishes Occupancy sensors for lights Ceiling fan direction Close curtains at night USe a thermos to keep coffee warm

If it is any comfort, the tone of the comments on these challenges has been slowly shifting from "never thought of that" to "what foolishness".

Reply

#### Anonymous 26 March 2019 at 10:14

Interesting, when Meaney was pressed by the learmouth and the commissioner that if NL defaulted on completion then if the Feds would exercise their stepping rights and complete the project and we would be on the hook to pay for it. They stopped short of asking if it could be paused for re-evaluation??? As I think this might come up when ball is on the stand, and if anyone can answer that question. Because that's where we fault ball and SM, for not pausing for re-evaluation, but if it was not possible under the terms of the FLG, then they would have no option but to continuation to completion. Hope the commissioner can get an answer to that question says Joe blow.

Reply

#### Replies

Anonymous 26 March 2019 at 10:21

AJ @ 10:14:

Pausing wasn't an option.

PENG2

#### Anonymous 26 March 2019 at 10:45

Anything can be paused. Halting the project for re-evaluation would have been expensive, but less than the 12 billion dollars so far + 1 billion for Holyrood replacement + 1 billion for spare power electronics and heaven knows how much more.

#### Anonymous 26 March 2019 at 11:07

The language in the FLG regarding the COD is clear - delaying the COD by NLs action would trigger default unless the Canada and Emera were willing to give a gift to NL (very unlikely as Emera lived up to their obligation, so MF was NLs problem).

In May 2016 (when SM took over), the amounts of committed vs spent vs REA liabilities combined with costs associated with mothballing made pausing impractical and more expensive than continuing construction to complete.

The costs we will spend (and these are very real) with Holyrood replacement/rehab or spare power are independent of MF and will likely need to be spent anyway - the time to consider these costs was in 2011 or earlier.

#### PENG2

# Maurice Adams 26 March 2019 at 11:22

1. Post the excerpt from the FLG that says "delaying" would trigger a default.

2. Post the evidence that shows that either Nalcor, the PC or Liberal government EVER EVEN ATTEMPTED to or did discuss (to obtain consent from) either or both Canada/Emera.

# Anonymous 26 March 2019 at 12:01

MA @ 11:22:

Read and understand the FLG yourself - I post enough links and quotes that most don't bother to read. The clause you are looking for is 'Expected Costs to Complete' - effectively the costs and COD (and changes to) are approved at Canada's discretion, or default can occur. While you are reading the FLG, worthwhile reading the cross default provisions.

Sanction was 2013 and the election was 2015 - no way the PCs were going to consider changes then, too soon into the work.

After the election in 2015, the leadership was changed (6 months actually) and 18 months after a leadership change the Inquiry was struck and a real cost estimate was produced. This was very quick, probably quicker than a pause could have been negotiated and NL continued spending money.

I have justified my statements that cancelling or pausing were not options and provided cots and contract reasons - its to you to prove otherwise with some facts.

PENG2

#### Maurice Adams 26 March 2019 at 12:19

As I expected. NO EVIDENCE of either 1. or 2.

Just obfuscation and nonsense.

#### Anonymous 26 March 2019 at 12:31



And as I expected - you have not read any of the documents and have no understanding of the implications of what you are suggesting.

At least read the FLG (particularly the 2 clauses I mentioned above) - then you will know exactly why your #1 & #2 are impractical.

PENG2

#### Maurice Adams 26 March 2019 at 12:55

Are you saying that contractually Canada did not have the authority to even discuss/consider/evaluate the 'practicality' of pausing the project?

# Anonymous 26 March 2019 at 13:44

MA @ 12:55:

My statement from above is clear:

[start]

The language in the FLG regarding the COD is clear - delaying the COD by NLs action would trigger default unless the Canada and Emera were willing to give a gift to NL (very unlikely as Emera lived up to their obligation, so MF was NLs problem). [end]

iidj

The MF FLG is a 3 party contract (Canada and Emera/NS and NL) - 2 of these parties have lived upto their obligations (Canada and Emera/NL), and 1 party that didn't (ie NL). NL has no leverage, and there is nothing is past practice (think about the UC court cases) to suggest that both Canada and Emera/NS would send us a gift.

If these negotiation for a pause started in May/June 2016 (say when SM replaced EM), I am 100% confident that it would have taken 12-18 months and MF would be ~90% - in other words, impractical especially considering the costs/penalties associate with pausing/halting would have outweighed the finish costs.

The other thing I am not sure is how would the intent of the NL Gov calling an Inquiry have affected any negotiations around a 'waiving a default due to pause' – gut tells me this would have been an issue for the Feds not easily looked past.

PENG2

Maurice Adams 26 March 2019 at 13:53

PENG2, you remind of the saying ---'if you can't impress them with your intelligence, then baffle them with your bullshit'

#### Anonymous 26 March 2019 at 14:00

# MA @ 13:53:

If you have an alternate option that is viable, by all means post with a few facts from some type of documentation - my theory is supported by the documentation that anybody can read if they chose to.

PENG2

#### Maurice Adams 26 March 2019 at 14:05

By your own words ----- a "theory"

#### Anonymous 26 March 2019 at 14:17

MA @ 14:05:

A theory is supported by facts. Your opinion is just that - no factual support presented.

PENG2

# Maurice Adams 26 March 2019 at 14:40

Nevertheless, a theory is still just that --- a theory. It is not itself "a fact". Your conclusions therefore are NOT FACTUAL. Just a theory. Just a theory.

# Anonymous 26 March 2019 at 14:54

#### MA @ 14:40:

Have you bothered to read the FLG references I provided you after you requested them? Can you give any fact based reasoning that my theory is not the most probable outcome of 'pausing' MF?

PENG2

#### Maurice Adams 26 March 2019 at 15:00

I am not trying to pass off "a theory" as a fact.

Again ---- "A theory is a group of linked ideas intended to explain something. A theory provides a framework for explaining observations. The explanations are based on assumptions."

"BASED ON ASSUMPTIONS" (by your own admission).

Enough said.

## Anonymous 26 March 2019 at 15:18

#### MA @ 15:00:

I never tried to pass of my theory as fact - I responded to a question by AJ above(same as when I said 3yrs ago Mf couldn't be stopped, and GT has since confirmed that) with factual evidence from the FLG. Halting or pausing MF was not a viable option - period.

By all means, debate my theory if you can find any supporting fact of your opinion.

Again I ask did you bother to read the reference in the FLG you asked me for? Did you bother to consider the timeline I presented to see why 'pausing' MF was not practical?

# PENG2

#### Maurice Adams 26 March 2019 at 15:43

I have no intention of going down your rabbit hole PENG2.

Canada had the right, if it wanted to, to PAUSE MF, PERIOD. That WAS AN OPTION, if it chose to consider it.

NL had the right and likely the duty to discuss with Canada whether such an evaluation was an appropriate course of action.

Anonymous 26 March 2019 at 15:58 MA @ 15:43:

Page 14

As you say '...if it wanted to...' - this is exactly what I said was founded in my review of the FLG. Not sure why you dragged this out (I said exactly this at the start)?

As for NL having a duty or a right - sure and I have never said otherwise, but that still doesn't make it a practical option.

None of this changes the fact of the cost status of pausing (or halting) MF means that such action wasn't practical. If you think about the time frame to do a pause, if negotiation started in 2016 when SM took over meant it would have been a wasted effort.

Again, a good reread what I have said is in order.

PENG2

# Maurice Adams 26 March 2019 at 16:26

You said to AJ that "Pausing wasn't an option".

Period

The fact is however that ---- It was an option --- and Canada, in concert with NL, could have evaluated and exercised that option if in their considered judgements circumstances so warranted.

#### Anonymous 26 March 2019 at 16:39

Ma @ 16:26:

Re-read the FLG - it(the FLG) was a 3 party agreement - pausing in 2016 or later would also required agreement from Emera/NS. I posted this for you above at least 2x.

Have you bothered to read the FLG references you asked me for?

PENG2

#### Maurice Adams 26 March 2019 at 19:34

PENG2, you are governments' and Nalcor's Rudy Giuliani (and deserves the same level of credibility).

#### Anonymous 26 March 2019 at 20:30

MA @ 19:334:

Feel free to offer a differing opinion than mine, if you can find some facts to support your claims.

Otherwise, I am confident in my theory and others can judge based on what is presented.

PENG2

# E

#### Bruno Marcocchio 28 March 2019 at 10:52

Maurice, after giving the Nalcor troll a thrashing on the facts you elicited quite a chuckle with the Rudy Giuliani similarity.

Reply

#### Maurice Adams 26 March 2019 at 10:40

What evidence is there that Nalcor, or either the PC or Liberal governments, even 'considered' whether or not such an option existed, or that they discussed or should discuss such a pause with the enabler (Canada) and/or that such consideration was warranted?

Reply

#### Anonymous 26 March 2019 at 11:38

Andy Wells on VOCM this morning talking of the 1 billion now needed for gas turbines to replace Holyrood, and the complete waste of the 12.7 billion on MFs. So where we stand now:

1.Synapse makes much of CDM benefits.....totally ignored before. CDM costs NOTHING, as the savings well exceeds the costs, and is not a power supplier expense. CDM can reduce peak load by several hundred magawatts.....at no cost, but actual savings.

2. Gas turbines would have been needed for a proper Isolated option, as power backup......so say 1 billion would have been needed.

3. Wind is not yet part of the go forward plan, but is largely cost neutral, but some connections cost to the grid, and power costs about 4 cents, but contracted from wind suppliers.

4. Fix the restraints that hinders more island power getting to the Avalon.

5. Some cost effective add to island hydro capacity costing less than 500 million.

In all, this mix, which we are now moving toward, would cost less than 2 billion, instead of 14 billion we are now saddled with.

There should be some kind of award or prise for the main enablers of this fiasco. Andy says you can search the world and not find such another boondoggle as this. Surely this is WORLD CLASS. Guys with some oil mega

project expertise thinking that there were world class hydro mega project builders. WA

Reply

Replies

#### Robert G. Holmes 26 March 2019 at 12:21

Best move is a class action suit of the Gov/NALCOR entered by Cities and Towns to recover and prosecute those responsible. See how Toronto is suing the oil companies for climate action, in my comment above at 10:06. Get Andy and Geoff Budgell on the ticket as bulldog prosecutors:-)

# Anonymous 26 March 2019 at 12:35

Robert @ 12:21:

I know of no successful class action suit with enough similarities to the MF issue.

Do you know of any precedent for this?

PENG2



# Robert G. Holmes 26 March 2019 at 13:58

Simple, talk to a lawyer. I have suggested Geoff and Andy for starters.

#### Anonymous 26 March 2019 at 14:15

Robert @ 13:58:

Try again - Canada has what's called 'State Immunity', very difficult to proceed and only granted in restrictive circumstances. There is a case LaFlamme vs Canada of a dam in either Quebec of Ontairo - I wouldn't hold out hope of being successful.

Do you know of another precedent case where a citizen of group have successfully sued a Canadian Federal or provincial government?

PENG2

# Anonymous 26 March 2019 at 14:26

The French are exploring a solution. It is called #GiletsJaunes and in its 19th weekly incarnation.



# Bruno Marcocchio 26 March 2019 at 17:30

PENG2 Off the top of my head there is the Old Man Dam suit brought by my late friend and associate Martha Kostuch in the late 1980's.

# Anonymous 26 March 2019 at 20:26

#### Bruno @ 17:30:

I know of the case, but no more than that. The history of trying the 'sue' the Crown is very interesting though.

NL has a Crown Liability Act (very brief and mentions only FPI by name) and the Abitibi situation doesn't give me much hope for that kind of action here. Also, the NL Energy Corp act has a section saying liabilities from Nalcor pursuing MF isn't binding on the NL Crown.

This would be well beyond my abilities, but I think the government of the day might have closed those loops before sanction.

PENG2



#### Bruno Marcocchio 27 March 2019 at 18:51

She sued that the EARP guidelines were unfair to bureaucrats because they had to constantly look over their shoulders at politicos. It resulted in the 1992 EA Act.

The point is governments can and have been sued successfully by well organized citizens. This answers your cynical question....no?



I missed stating it was upheld at SCC. It is a powerful precedent.

Reply

Anonymous 26 March 2019 at 12:51

Interesting testimony by Normand Bechard. A very experienced hydro development man. And my take away is a man of great WISDOM. And of course expect great expertise in the hydro business too. Tells a story which

nalcor should not be proud of says Joe blow.

# Reply

#### Replies

#### Anonymous 26 March 2019 at 14:50

#### AJ @ 12:51:

I only met Norman a few time - very honorable man. Overall, I never had any real issues with any of the SNC guys - definitely worthy of their Engineering reputation, and have been in NL much longer than most realize.

Ironic now though, considering what many people here are now (and will over the coming days) sy about SNC vs what would have been said 2-3 wks ago.

#### PENG2

# Reply

# Anonymous 26 March 2019 at 13:55

The future of NL's electricity just went down the river. The following should be a must read for everyone at Nalcor:

https://renews.biz/52230/battery-and-offshore-wind-costs-tumble/

#### Reply

#### Replies

#### Bruno Marcocchio 26 March 2019 at 17:46

As I have been saying, Wind and batteries can serve he Avalon for a few tens of MILLIONS not a billion. NL must start making wise energy choices.

"The company's latest analysis shows the benchmark levelised cost of electricity (LCoE) for lithium ion batteries has fallen 35% to \$187 per megawatt-hour (MWh) since the first half of 2018.

Meanwhile the benchmark offshore wind LCoE has come down by 24%."

This is very impressive drop in Lilo Batteries and turbines in a year!

If only Nalcor did not have a monopoly and their hands unobstructed into the treasury!

#### Anonymous 26 March 2019 at 18:57

Yes Bruno,battery cost is dropping , but 187 dollars per MWh is 18.7 cents per kwh, while wind is about 4 cents and CDM with conservation and customer energy efficiency, is less than 3 cents per kwh. So if wind and CDM can do the job much cheaper, as for the Avalon......and we can't avoid thermal for backup,...,batteries only are economic for an hour or two. Winston



#### Bruno Marcocchio 27 March 2019 at 09:24

Not so Winston. Batteries use for load balancing in real time saving\$. I have demonstrated battery use in Hawaii and elsewhere. I have agreed that DSM is the first order of business, but that is useless in a blackout!

You keep denying batteries can solve the Avalon problems for hundreds of millions less than a phalanx of gas turbines.



#### Bruno Marcocchio 27 March 2019 at 13:00

PS Winston, I for one will be gone in ten years but that does not keep me from seeing the future!

Reply

#### TM 26 March 2019 at 14:27

Watching the inquiry as well.Big difference in Mr.Bechard's answers compared to the evasiveness of Jim Keating,who,at times,seemed to be smirking,and trying a feeble attempt to be funny. Problem is that these people like Keating are getting away with their evasiveness and curt remarks.

Reply

# Replies

- Anonymous 26 March 2019 at 15:48
  - I felt the same!

Jim Keating's actions and body language alone were suspect?

Reply

#### Anonymous 26 March 2019 at 15:17

#### ON WIND

I stated that NS uses 17 % ,I think , as firm wind capacity.

I now see that Nalcor has put a number on Nfld wind , from this report: I speculated 25% , not sure? The report says 22% based on existing units, but varies from winter to summer, so winter is most important, so I may find that data. So with larger better units, 25% is not far off I suggest, that my assumptions are reasonable. More so: that the average Joe who says our wind potential is not properly utilised, this is more evidence of its value......previously wind was considered zero firm capacity. Winston

Reply

#### Replies

#### Anonymous 26 March 2019 at 15:45

#### WA @ 15:17:

The nearest comparison to a stand alone NL grid is Hawaii - is there a better baseline for comparison?

PENG2

#### Anonymous 26 March 2019 at 16:48

Not sure where you are going on that one peng2 comparing us to Hawaii. Both island but think the similarity ends there. What is the population density, rural vs. Urban, climate. Etc, Think Hawaii uses mostly oil fired electricity, much greater percentage of solar, wind etc. Coming on line now. Plus they can't go just 100 miles and get electricity from another province, or even 1100 Kms to develop an hydro project. Must be other countries. Or islands to make a comparison. I would think there are many stand alone grids on many islands countries and contentients around the world. Hope ours is better than Puerto Ricos as many rural areas are still lacking power since its destruction with an hericain well over a year now. Just wondering what your point might be ask. Joe blow.

#### Anonymous 26 March 2019 at 16:48

Studies done by GE show that Hawaii can handle 500 MW of wind plus 100 Mw of solar. They have peak load of 1200MW, so wind at 500/1200 is just over 40% of peak load capacity from wind. The study is just over 200 pages and should make interesting reading. Did Nalcor considered wind studies there?

, indian

# Anonymous 26 March 2019 at 16:55

# WA @ 16:48:

I have seen those numbers before (the state and their utility has some good info online, more so than NL) - my comparison to Hawaii was based mostly on generation needs (Hawaii in neighborhood of 1800Mw) and being isolated. I think NL could have remained isolated and Hawaii might be a decent comparison?

#### PENG2

#### Anonymous 26 March 2019 at 16:55

Hawaii spends over 8 billion a yearon fossil fuel, so a great place to test the limits of renewable penetration, as an Isolated grid. Nfld using 2.5 % wind energy, and our wind energy, now low cost wind resource (wind likely 4 cent vs MFs 70cent?)... going to waste. Winston

#### Anonymous 26 March 2019 at 17:02

Agree, Hawaii is a good comparison, and their generation capacity close to ours. Indeed the Isolated option, with wind an important part, was by far the best and lowest cost option. I suggest the Hatch wind studies for here were tailed to Nalcor requests and editing......many instances of phrases"after discussion with Nalcor or Nfld Hydro". And was Hatch hoping to get the MHI or other consulting work?

Winston

#### Anonymous 26 March 2019 at 17:03

# WA @ 16:55:

Would bulk generation being fossil in Hawaii vs hydro in NL really affect the analysis on bringing on more wind or solar? My thought is no, but I am a civil guy.

#### AJ @ 16:48:

My thought with Hawaii was it was logistically similar to NL, maybe WA can clarify but I am not sure population density matters - just net demand with respect to wind/solar/battery etc was where my thought was going.

PENG2

Anonymous 26 March 2019 at 17:19

Alaska

#### Anonymous 26 March 2019 at 17:21

Joe, not aware of any serious problems here on our wind units, and huricanes don't hit here often.....and if so , we have the back up gas turbines and all our island hydro. Wind generator life is 20 years, and huricanes here maybe one in 50 years, no pretty safe.

You have no faith in wind here? Bruno on the other hand, would have a turbine on every hill.

With 600 MW of wind, at maybe 50% capacity factor is 300 MW on average (equal to 5- 60 MW gas turbines on average,10 with good winds) and at windy cold snaps, could deliver full 600 MW, so 1/3 of our 1800 MW peak. But even is less than that, we have only 54 MW of wind now, and no reasonable wind was assessed for the Isolated option, which distorted it for MFs. Ed gave away our wind anchoring to Emera.....he had that in his arse pocket, and valued it no more than his own stinky wind

Winston

#### Anonymous 26 March 2019 at 17:28

PENG2, with increased wind generation on the island you have the potential for increased spill at the dams. The Hatch study addressed this. The addition of the Maritime Link allows this extra energy to be generated and sold into neighboring jurisdictions.

#### Anonymous 26 March 2019 at 18:18

THe "potential" for more spill of water ..... can the contracts with winds suppliers put priority on water use, t at these rare times to curtail wind power

And too, at times of dry years, and a shortage of water, wind power can conserve the water resource

And too wind power generated here allows more export of hydro power

Did Hatch consider all this? Or that one of the tailored comments by hatch? Winston

#### Anonymous 26 March 2019 at 18:43

PENG2: hydro vs thermal operation with wind.

The GE study cites an instance where 300 of the 500 MW of wind is lost in 1 hour due to wind speed dropping , this over 1 hour, and not a problem.

So picking up this generation loss:

Hydro, I suspect, say 30 seconds (someone else might comment on this), to respond to open valves to get more water to the hydro turbines. So if wind is lost over 1 hr, hydro respond quick

Gas turbines can start and operate in 10 minutes, so that handles the Hawaii system, and can work good with Nfld as to gas turbines with wind.

Old Holyrood units, if up and running can pick up load good, but from cold start , can take a day or more to get up and running good. So the Hatch study with wind and those units is misleading, and undervalues wind.

For wind transient disturbances, hydro generators and synchronous condensers and help compensate in a fraction of a second.

Other engineers or operators can comment on this.

So, as I see it, our hydro with gas turbines would be better than Hawaii, which has little hydro power. NS coveted our hydro anchoring for their wind, and Ed gave it to them, for free, so like HQ has control over MFs water. NS now has control over our wind development. Did anyone from Nfld Hydro oppose this? Hydro engineers had to know it.

Winston

#### Anonymous 26 March 2019 at 20:12

You are reading me all wrong Winston, I am bigger on wind than you are, if that's possible. You must have heard me taking about the Trapessay Barrens for wind, and that was proposed and some studies done when muskrat and gull were first proposed. You must have also heard me making fun of the nalcor experts that were saying we had some wind but it was the wrong kind, we have vertical wind not horizontal etc. Yes, can see why you and peng2 were comparing our wind potential with Hawiaii, but as you said not much to worry here about herrucaines, maybe one or 2 in 50 years, and guess when they free wheel no problem then. I always said for the little bit of power we needed the solution was found right here on the island, wind, maybe small hydro, CDM and CT's when necessary. Tks, average Joe.

#### Anonymous 26 March 2019 at 20:32

Sigh, yes 'potential' spill. Dismiss all you want. It's an economic cost that must be considered. I didn't say it was an insurmountable obstacle that bars any wind generation from being added.

To answer your comment above, the larger hydro units on the island can ramp full load in about 15 seconds. Wind would pair very well with this

# Anonymous 27 March 2019 at 00:04

Thanks, yes I get your point, also I did not work at generating plants, and estimated 30 seconds, not wanting to suggest this a 2 or 5 second event, but 15 second is good, and as you say, pairs well with wind.

I am a bit google eyed, after 500 of the 620 pages of this report, see they are considering modest wind addition, solar, batteries, CDM , gas turbines, getting more island hydro to the Avalon, small hydro additions, new generator at two existing sites, etc. ....like a fed budget, something for every

one.....except no Efficiency NL. And AJ, yes recall your fondness of wind.

The reliability concerns from this report for the DC feed does not give me comfort, but it never did. Expect many have discomfort, Winston

#### Anonymous 27 March 2019 at 09:23

Hawaii (Oahau) is an interesting case. Hawaii relied on oil for 67.3% and on coal for 15.1% of its electricity generation in 2015. "The renewable portfolio standards (HRS 269-92) mandates 100 percent renewable energy in the electricity sector by 2045. In 2017, the renewable portfolio standards stood at 27.6 percent, more than 12 percent ahead of the interim statutory 2015 target of 15 percent." http://energy.hawaii.gov/wpc.content/uploads/2018/06/HSEO\_2018\_EnergyFactsFigures.pdf

Solar PV is now everywhere -- commercial buildings like Costco are covered with panels. PV installations on houses is much like minispits here -- three houses in a row might have then, then a few homes without. Most houses with PV have thenm on all roof faces, either about 20 panels or 40 panels. I have seen large warehouses with literally hundreds of panels. Every school I saw was covered with PV panels.

There is the occasional Tesla, but most cars are gasoline. I didn't see any charging stations, but they do exist. Maps show 14 of them in Honolulu (pop. 350,000).

You can get by without heat and cooling -- I suspect that the poor use ceiling fans. Locals complain about the cost of electricity. Food and gasoline prices are comparable to Newfoundland.

Everyone I asked about wind generation had negative comments - development slowed because the public feels it ruins the beauty, some neglected farms that made the news etc. However, they do have nice trade winds and it often blows consistently day and night.

The place is vastly more prosperous than Newfoundland - six lane raised highway, LED street lighting, well maintained everything. Coming back to St. John's is a dismal - potholes, broken curbs, minimal intersection lighting, disrepair in government buildings, lack of nice architecture etc.



#### Bruno Marcocchio 27 March 2019 at 09:34

Winston, battery backup can INSTANTANEOUSLY balance load. How often does wind drop to zero in NL coast or offshore? Not bloody often Winston!

You are going to make me agree with PENG2. Please smarten up!

#### Anonymous 27 March 2019 at 10:11

#### Bruno :Arithmetic?

Wind does not have to drop to zero, typical less than 3m/s is cut off, 8 is typical full performance, and winds in between is part capacity ...maybe someone will translate to mph. So for Nfld assume 100 MW is 22 MW firm and 43 MW on average.....these are good numbers actually, and generate partially all most all the time.

So do we disagree on wind? I do no think so, as to good capacity, low cost and was short changed by Nalcor.

Battery back up: if when the DC line goes down with 500MW shortage on the Avalon;can be up to 3 weeks.

1. Gas turbines; plan to have fuel storage for 5 days.

2. Wind can supply much of that load, and reduce gas turbine operation.

3. Battery 100MW/hr is 178 Million cost, about the same for 100 MW of wind, giving 43 MW average......for days and weeks and months.

If short 500MW, your battery is drained in 12 minutes; 12 MINUTES, Bruno, or 400MW short and battery is good for 1 hr.

If this is a 3 week time to get the DC line back, there will be an arrest warrant out for whoever proposed batteries for a serious outage.

So what has "instantaneous' got to do with it? Yes they can react fast for minor blips, but no staying power, so limited application for high cost.

What are you agreeing with PENG2 that is at odds with me?

PENG2 mentions meeting net demand with wind/ solar /batteries, for Hawaii, but does not promote solar and batteries for Nfld, that I see, but he can say more on this.

I am open to smarten up, but show me where....I thought you were beginning to see the limitations of batteries good for EVs and that too needs improvement, for utility energy storage, yet far to go....another 10 years and maybe it will be significant, you and I maybe 6 ft under. Winston



# Bruno Marcocchio 27 March 2019 at 12:57

It is here now. Meeting demand instantaneously as only batteries do saves money and actually is offered to utilities as a service now to save \$.

I thought the DC line did not go to the Avalon and THAT was the problem. When does wind fail the Avalon from good onshore or near offshore wind farms? When the system goes down on the Avalon the wind will likely be howling!

A competent utility would extend those AC lines from small dams into the Avalon for backup and use as much wind as you can with battery backup and LOAD BALANCING IN REAL TIME! See the future Winston

Bruno Marcocchio 27 March 2019 at 12:59

Bruno Marcocchio 27 March 2019 at 13:06

PS Winston, I for one will be gone in ten years but that does not keep me from seeing the future!

# Bruno Marcocchio 27 March 2019 at 13:15

You also forget Winston that wind or solar plus batteries is a NEW kind of grid. the grid becomes a thousand points of light. All those EV's plugged in at home (that your government has subsidized) will power the system too.

Your gov. must build out the infrastructure to facilitate EV like the rest of the world and get over the large remote supply and build out an unbreakable grid powered by wind, rooftop PV and battery backup.

You can become an example to the world if the emperor gets a kick in the balls and you get on with it!

#### Anonymous 27 March 2019 at 16:25

Bruno, I trust you realise that a battery is a storage devise, not an original generator of power. A solar panel or wind generator or hydro generator etc is needed to produce that which the battery just stores it, and runs down in a few minutes or a few hours.

What do you mean by Balancing in Real Time? You balance the load with supply. When the supply goes down, like 800 MW of DC infeed gone for up to 3 weeks, your batteries is largely useless to meet the load.

So the load should be met with renewables :island hydro, island onshore wind, and as little gas turbine as possible. Batteries may serve some niche applications,but not to meet the big heating loads for days or weeks. You must agree with that?

As to a thousand point of light (George Bush Sr), maybe a thousand point of wind generators, .....well tens of maybe hundreds of such points, as when the wind is light at one point, it is strong at another. But these points need interconnnection, so feeding to the power grid. You agree? We now lack sufficient interonnection to the Avalon via AC 230kw, you acknowledge?

If the large sites, 600 MW, like Bay de Espoir exist, do we not use them? They are already tied together with other hydro, and need upgrading to get more central and west coast power to the Avalon east, for when the DC line fails. You agree?

But we should not scrap existing island hydro infrastructure, do you agree? You say use the existing island hydro for backup......but this hydro should be primary, as the inertia of those generators give stability to the wind generators, which therefore must be secondary, for Nfld's case. I nstead of wind being 2.5 % it eventually go maybe to 40 %, incrementally.

Bay de Espoir has the setup to add another 150MW generator, that may be prudent, do you agree? Wind for Nfld is much more cost effective than solar, do you agree?

Is this the future you see, or no hydro power at all? Maybe way into the future that may be so, so TIME is the issue, how far do you see? Climate experts put 11 years as a critical point. Do you agree? The emperor may be dead by then, and no balls to kick. Winston

#### Bruno Marcocchio 27 March 2019 at 18:04

You have it backward Winston. The demand must be met in real time. Rather than taking minutes like at a hydro plant or half an hour or more at a thermal plant. Batteries meet demand automatically in real time and thus save the utility money. In constant use the batteries load balance in real time, you just don't get it.

You also don't get the paradigm shift from singe remote generation to widely distributed generation. "A thousand points of light" if you will. Instead of insulting comments that I don't understand how a battery works try understanding the new paradigm.



#### Bruno Marcocchio 27 March 2019 at 18:21

PS. wind is more efficient than solar in NL. That does not mean solar is not now cost effective. Did you read the story of the drop in price in just the last year. Cover domestic and commercial roofs with PV and pay a decent price for the energy, institute time of day pricing and pay more for energy when the peak is achieved. If NL subsidized consumer/producers to install, rather that subsidies to Nalcor your energy system will become unbreakable.

If you wait for the crank of an emperor to kick the bucket to begin, you miss the boat and the planet goes up in smoke, NL will experience 1 in 500 year storms every few years.



#### Robert G. Holmes 27 March 2019 at 19:19

My sincere hope is that Bruno and Winston continue to grow, study, inform, and move closer to consensus on how to save our life giving global hydrological cycle. They seem to be so close :-)

#### Anonymous 27 March 2019 at 21:00

The answer is blowing in the wind said Bob Dylan, maybe he was thinking of energy for Nfld, Bruno......so we agree wind is a valuable resource here, not properly used.

Solar, as stated before, is better for Arizona and Hawaii that Nfld, snow and fog for one reason, and off grid solar plus battery is running 50,000 per house cost and not enough power to run baseboard heaters of for hot water....

As to power in real time......is there such a thing as fake time? Electricity travels very fast, so yes, if the DC line goes down, and St John's wanting 500 MW of heat

load, to keep the grid from collapse, it system has say 1 second to react. That is now instantaneous, but fast, and so protective relays do their job to isolate, trip some loads, try to increase generation etc

So yes , batteries are fast.....does that make them better or cost effective?

Take for 3 week or 24 hr even loss of the DC infeed.

PreMF sanction batteries and wind for this was a 17 billion cost. If prices now reduced 50 % this is 8.5 billion..... a MFs boondoggle cost.

You imply that a battery has an infinite time of power supply, whereas the time for practical cost is very limited......minutes or a couple of hours.

So the hydro turbines ramp up in 10 or 15 second, and the water resource is for months. Wind is there most of the time 43 % average capacity. Spare wind capacity can even be used for pumped hydro storage. More interconnection capacity allows more existing generation west of the Avalon to satisfy that load. If these were insufficient....rarely for short duration , gas turbines would start in 10 minutes. 10 minutes is long compared to fast acting batteries, but costs say 1 billion instead of 6 billion.

So as a customer .......willyou pay double or triple the power rate, because on rare occassions you lose power for 10 minutes?

That is the trade of for REAL TIME solutions you suggest, vs practical time solutions.

Maybe, as you infer, and as Dave Vardy suggested about himself (compared to Wade Locke), I am past my best before date?

PENG3, who sometimes comments, may have some insights. What did I get backwards?

This is a long thread on wind potential ......but an important subject, swept under the carpet, and ignored by this Inquiry. Winston Adams

#### Bruno Marcocchio 28 March 2019 at 11:53

Now it is you Winston that does not understand batteries and how they react instantaneously to changes in demand. Does that help you understand what "in real time" means? It sounds like you have visited the pot store when you wonder what "fake time" is! Have a few more draws Winston and try to understand the change in paradiam from remote generation to local producers/consumers to make your supply "unbreakable" with a thousand points of light.

#### Anonymous 28 March 2019 at 14:28

Bruno: a play on words: real time vs fake time. I agreed on battery quick response , but you ignored the cost penalty. Example our grid Mar 18, check it out: 5;15 am, Holyrood Unit 2 goes from 170Mw to 50MW, a loss of 120MW, but no outages, but less reserve and we are approaching morning peak, with load increasing. At 5:28 (13 minutes) the GT, capable of 123 MW, is running, but low load for now At 7:05 the GT is loaded to capacity and runs to 12 noon. At noon, Unit 2 is back up to 170MW and the GT is shut down. So we see the delay of 13 minutes for the GT, not one second as battery could do.But no outage. BUT, at that load of the GT for 5 hrs, your 100 MWh Tesla would go dead in 1 hour.....ran out of juice The GT likely has 5 day fuel supply if needed. 200MW of wind at 50% capacity would have done it also, with no fuel burn. There is no such thing as an unbreakable power system. And Nfld has considerable generation points, more than 20 hydro sites, scattered, but constriction on transmission to the Avalon. The 1100 Km remote MFs, yes a blunder, so much depending one one line and low reliability.

As to others on island sites, not so remote, and much more practical than MFs. I am a non smoker......maybe why I get things backwards, what do you recommend to smoke? Imagine the size and cost of batteries needed when the DC line fails and we lose 800MW on the Avalon for 3 weeks! This is your recommendation, batteries for that? Cheers. Winstor

Reply

#### Anonymous 26 March 2019 at 19:53

After watching today's Inquiry, how on God's green earth is Paul Harrington still employed by NALCOR?

How much more needs to be heard about this guy?

He should be fired, immediately, with cause

Reply

#### Replies



Ex-Military Engr 27 March 2019 at 12:18

A more detailed CBC article of Bechard's testimony:

https://www.cbc.ca/news/canada/newfoundland-labrador/muskrat-normand-bechard-lavalin-1.5071980 (Bullied and treated like slaves...)

"Bechard, a civil engineer with four decades of experience in construction management - most of it in the hydro field - was hired by SNC as its project director, and said he came to Muskrat after

overseeing several Hydro-Québec projects that came in under budget and ahead of schedule

"Paul Harrington stood up and started bullying us, (saying) 'You're incompetent.... You will not be able to get the job done.' And he was yelling. Yelling. Disrespect. Full disrespect,"

"Bechard said he was reduced to the role of advisor, without the authority even to hire people for his team. Ron Power, his counterpart at Nalcor, had to sign off on every candidate, and this caused delays. They were using the (hiring) process to micromanage the way SNC was performing on the EPCM"

--> "Bechard said Nalcor project leaders were furious when SNC delivered its final project cost estimate in late 2011.

They were so frustrated; they were just blaming me. They even told me in a meeting if this exercise had been done by a student they would probably have a better result than the one I (gave) to them,"

"Bechard raised concerns about Nalcor's approach to setting cost estimates, its decision to award a billion-dollar-plus contract to Astaldi instead of dividing the work into smaller contracts with multiple companies, and the Crown corporation's ill-fated decision to not carry out any geotechnical work on the 1,100-kilometre Labrador-island link"

If the above is anywhere close to the reality, well, I'm just out of words to qualify this.



#### Robert G. Holmes 27 March 2019 at 12:31

Petroleum industry standard EPCM unfortunately, tramples professional expertise and humanity, in the name of the last drop of oil. Why wouldn't Muskrat, in the strong hands of such people, turn out badly?

Reply

#### Anonymous 26 March 2019 at 22:18

Just saw this on VOCM "Bechard recommended a contingency of \$550-million instead of their \$300-million ... Ron Power called him out for it. He says Power told him that an engineering student would've done a better job." - http://vocm.com/news/snc-lavalin-exec-testifies-nalcor-disregarded-advice-on-muskrat-falls-timeline/

Where do all these bad people come from? Ron Power, Paul Harrington, Ed Martin etc. Arrogant sociopaths all of them.

Nalcor needs to be terminated and if the government won't do it, the public needs to revolt.

Nothing would surprise me. I expect that if anyone gets fired, it will be for "no reason" and they all have golden parachutes.

Reply

#### Replies

# Bruno Marcocchio 27 March 2019 at 09:37

They are all faithful adherents of the emperor. Professional ethics be damned, they do what the emperor wants and they have the keys to the treasury, so fuck you is their attitude.

Reply

#### Anonymous 27 March 2019 at 10:20

Lawyers are so fickle....unless they have their questions nailed down and tons of papers surrounding them ...they are lost. Here was opportune tme to picke the brains of the most experienced hydro expert they will be on the stand, lots of time to spare... At least another hour before the next witness arrives on site. And they let it slip by...especially the naysayers of muskrat, CA, and even the co commissioner. General questions ...like..if you were advising the NL govt. 10 years ago, for our power requirements, would you advise them to go 1100kms to satisfy our power needs, with no markers, except NS and what they were willing to pay, market prices, and the NL rate payers on the hook for the entire cost. What would have been your advise to the NLgovt??? That would have been a good starter question...and go on from there. Just to get an expert opinion, rather than the baloney we got from our so called experts on hydro, especially Danny and company. Wold have been nice to get his expert opinion, he knows NL and Labrador and some of the history of CF etc. says Joe blow.

Reply

#### Replies

# Anonymous 27 March 2019 at 10:51

#### And what of Kate, Joe?

Half way through this Inquiry, and she is pulled from this, and promoted as a court judge! For what? For leading evidence of criminal activity ? For demonstrating her in depth knowledge of engineering, especially the power systems, to trip up the incompetence of Nalcor engineers, and as you say, here with this SNC expert who could have exposed the whole Muskrat Madness as an insane idea? This to be allowed to slip through......already too much being exposed by the sheer magnitude of the incompetence, that Kate's engineering skills were not even tested, deliberately so.

So, get her out of there.....shooooooo, we need someone with no engineering and technical knowledge. Who to replace her? Yes , someone from the same law firm as Nfld Power's legal counsel....no conflict there,says Leblanc, she will just avoid questions that might involve Nfld Power.

#### Problem solved.

#### What a farce this has become.

A 13 billion boondoggle that could sink this province, and half way through, Kate, perhaps the only lawyer with an engineering degree, pulled from this Inquiry, and rewarded,for what.... for her keeping the lid on the worse of the incompetence.

This is really funny, I can only smile, that they think no one will notice that this Inquiry itself is corrupt. Or that they do this and give us the finger, as the public don't matter. The power brokers and enablers can do what they like, the whole system is corrupt. PF

#### Anonymous 27 March 2019 at 11:08

Just saw the same thing. Perhaps I am just cynical, but first thoughts were:

1) Why not let her finish up the assignment? Surely this inquiry is important.

2) Why use a firm currently representing NLP?3) Is the judge position a way to get rid of her or

Is the judge position a reward for going easy on the fraudsters.

#### Bruno Marcocchio 27 March 2019 at 11:28

Can't find a link to a story of Kate having suddenly being elevated to the bench. Can you or anyone provide a link to the story PLEASE?

Why did she take the job now?? As one who has called this inquiry a farce from the get go, I am still stunned by how blatant the political interference and the impotence of the fourth estate to demand answers and accountability. Has Learmonth or anyone at the faux inquiry commented?? Unbelievable!!

#### Anonymous 27 March 2019 at 12:48

Just finished watching D.Sturge finagle his way through questioning. The same bullshit that Meaney used such as "no intent to mislead or deceive."At the same time no intent to provide updated information to the Minister of Finance when requested. At one point Sturge said when questioned on this said "our view at the time was to....." Truthfully he should have said " our view at the time was fuck Mr. Marshall." They were all under Ed Martin's thumb at the time and they still defend him and his way of doing things

#### Anonymous 27 March 2019 at 12:52

Why didn't they just use Dan Simmonds as co-counsel.Would have saved a few dollars.

#### Anonymous 27 March 2019 at 12:54

Ok PF, yes I heard of her appointment, so thought she would finish the inquiry, didn't know she had been pulled from the inquiry immediately. Missed that part, seems from what you say the judge mentioned it and thanked her for her services on the inquiry. They may need an extension now for the final report, as Kate would have played a big part in assisting the commissioner in writing the final report. So one step ahead and two back. Who decided that, the Chief Justice or Parsons. He has normally kept his nose clean thus far, but sure this will not please the people. I get a kick out of the detailed questioning of Sturge. Sur we all know Eddue was the Frankenstein created my govt. given free reign and no responsibility to his creator. So they were all scared shitless of Eddie, and wouldn't say boo to him. Just please the monster, don't worry about the shareholders, the people footing the bill and the NL govts. But make sure we jump for the Feds as they may baulk and not give us our money says Joe blow. Think co council knows that but just wants to make it as plain as

#### Anonymous 27 March 2019 at 13:29

I think they should have appointed Danny Williams to replace Kate.

#### Anonymous 27 March 2019 at 13:51

I second that.

#### Bruno Marcocchio 27 March 2019 at 21:01

The cynics abound! Danny could excuse himself whenever his decisions as premier came up! That would remove his conflict like Muzychka did!

Only in NL you say!

#### Anonymous 27 March 2019 at 23:20

Peng2, you are silent on Kate's reward and termination of services for the Inquiry! What is your thoughts? PF

#### Anonymous 28 March 2019 at 09:17

PF @ 23:20:

Performance wise, I never had any dealings with her - so I couldn't say if suitable as a judge or not.

Considering there is about 10hrs prep for each 1hr camera time, I am not sure any of us have good basis for assessment.

For her replacement, some of the insinuations of her potentially being biases because her firm represented NL Power are a bit non-sensical - there is a limited number of law firms in NL, if all the firms/lawyers that have in the past represented the province, Nalcor, the CA or other parties in the Inquiry were excluded, there wouldn't be anyone left as co-counsel. Most lawyers over the course of their career represent and oppose actions by the same client, so nothing unusual in that I could see.

PENG2

#### Reply

### Anonymous 27 March 2019 at 13:05

As to this 620 page report as to power reliability issues:

Consultation was with Nfld Power, the CA, and Industrial customers, so meetings with them where minutes were kept and questions answered.

The other stakeholders is the public , the 250,000 accounts, most being residential, and some small business. How was that handled? It was by a survey, a few questions: how often do you have outages, how long are the outages, would you pay higher rates for more reliability, is it better now than at DarkNL etc Rather useless as to having input to how Nalcor tackles reliability

This type of stakeholder engagement by telephone, and mostly internet survey is dubbed in this report as DIGITAL ENGAGEMENT.

Reminded me of doctors doing a prostate exam, the finger penetration up the back passage to see if it hurts. Most who were engaged were 55 to 65, so senior citizens who can't afford higher power bills, and can't much cope with more outages.

This is stakeholder engagement! WOW. Winston Adams

Reply

#### Replies



# TM 27 March 2019 at 13:59

The same age group who won't be able to afford the higher bills when they come and can't afford alternatives.



Bruno Marcocchio 27 March 2019 at 21:04

Winston is digital engagement without permission sexual assault?

Reply



#### Robert G. Holmes 27 March 2019 at 19:26

Check out Ontario Hydro sunshine list;

https://www.cbc.ca/news/canada/toronto/ontario-releases-annual-sunshine-list-for-2018-1.5073389

Those at Deputy Minister and Exec level across this marvellous landscape called Canada can only hope that the good times continue to roll, and cash cows such as NL offshore and tar sands operated like West Texas feed their rich lifestyle tastes. Can the planet sustain this much longer

Reply

#### Levy Payer 27 March 2019 at 20:39

Did anyone else besides me hear in yesterday's testimony that Bob Card of SNC tried to give Ed the Risk Assessment and he refused to look at it? Did i dream that because no one in the media has picked up on it. Is this the same report Dwight later revealed and Ed said "it never got transmitted to me", and created a big poopstorm. I guess its small potatoes now after all the other more pressing revelations. What a mess.

Reply

#### Replies

#### Anonymous 27 March 2019 at 21:01

It is beyond a mess, it's a full blown tragedy-farce all rolled into one. That these people such as Harrington et al. still have contracts with Nalcor and are still being paid is beyond the pale. That Stan hasn't immediately shown them the door, or at least suspended them without pay pending followup investigations, after the allegations of bullying and character assassination from yesterday, speaks poorly of him as the boss. He will rue the day he took on managing the cesspool that is Nalcor; his name will be tarred forever as well. Cut down the beast that is Nalcor before it completely corrupts all in this province; it has already bankrupted us.

#### Anonymous 27 March 2019 at 23:56

How much money is wasted on Nalcor and it's many subsidiary boards like MF Corp.,Lower Churchill Corp.,NL Hydro Corp.,CFLCO,Bull Arm Corp. And God knows what else.No wonder Mr. Bechard was surprised at the number of personnel at Nalcor when he arrived.All of the Hydro could and should be handled by NL Hydro.Time to shut down Nalcor.

#### Reply

#### Anonymous 27 March 2019 at 23:37

This report suggests an entirely different approach going forward dealing with our winter peak load, and energy supply options, and somewhat aligned with Synapse.

Most all reasonable options are on the table for consideration ( though may be leaning to new gas turbines, some which will be definitely needed). Seems more like what should have been assessed for the Isolated Option.

Straton, who did the forecasting pre MFs, said at the Inquiry he would do the same approach all over again. That approach included intentionally increasing winter peak demand via baseboard heat.

So is Stratton still involved in forecasting and system planning, or had a conversion, and maybe a promotion, as this approach is a complete reversal.

Has PENG2 read these 2 reports....and his opinions? Can almost assume that MFs may not operate at all as PENG2 suggests, so this is Plan B if that happens?

And if it operates and very unreliable, it may as well be Plan B, as it may be shut down anyway. Winston

Reply

#### Replies

#### Anonymous 28 March 2019 at 09:06

WA @ 23:37:

I haven't digested these reports yet - did a quick run through though.

I mentioned a while back that not operating MF was a possibility (for reliability and commercially concerns) might be a worthwhile consideration.

Have you thought about the different in operating costs if MF runs at 20% vs 100% capacity (my gut is there is no difference in the operations costs). I think this is likely a key input here also - that is economical operations.

PENG2

Reply

#### Anonymous 28 March 2019 at 08:27

NALCOR CFO Derrick Sturge says it would have to be a "serious" matter for him to file a report to the Board of Directors?

I don't know how much more serious you can get when you look at what this one entity (NALCOR), and a relatively small number of individuals who have literally put the entire Province on the brink of bankruptcy!

It is long overdue for pink slips to be issued to a significant number of Nalcor employees as well as others!

Starting with Derrick Sturge himself!

Mr. Sturge's testimony was self serving at best!

This man, as well as others, were being paid substantial sums of money to hold important positions of trust to ensure that things just like Muskrat Falls do not happen!

I'm sorry we are not buying the "Ed Martin wouldn't keep me in the loop song and dance!"

People need to be held accountable for the positions they were holding!

This thing has farce written all over it!

Reply

#### Anonymous 28 March 2019 at 09:28

#### ON KATE:

These reports referenced in these pieces on UG shows a multi resource approach of about a dozen ways to deal with the Avalon power shortage we face due to MFs and the DC line poor reliability.

MFs was the plan, deemed least cost reliable power to deal with the Avalon problem, not a Nfld problem, just as Holyrood plant existed solely for the Avalon.

Review of these reports now begs the questions to be asked at this Inquiry: why were all these various options, now tossed in the lap of the PUB, not considered as part of the Isolated Option?

These are options requiring engineering analysis and best practices for power utilities.

These reports is a treasure trove for an engineer to ask: Why Nalcor, and Nfld Hydro, and Nfld POwer, did you not consider and do analysis this way, and that way as now being contemplated?

When one is both an engineer, and in particular, an electrical engineer with experience in the power sector, plus being an experienced lawyer, who happens to be co-counsel at this Inquiry, these reports are a windfall to assist in hard hitting questions to the engineers who engineered this MFs fiasco.

How little we have seen of Kate's engineering knowledge and skills at this Inquiry. Apart from me stating this fact, that she is an electrical engineer on this blog several times, who would even suspect she had such skills? Did she challenge and trip up Nalcor's self professed world class engineers on the many false assumptions made to get to sanction, apart from the risk P factor issue?

At one point I was impressed at her hard questioning of Gilbert Bennett, who was evasive for days. But dozens of other issues what warranted exposure went by the wayside.

Kate, for me: overall a big disappointment, but not very surprising.

Recent disclosures presents opportunity when those witnesses are recalled. Kate, armed with knowledge and

Page 26

facts, could then hit a knock out blow. Instead she up and leaves this Inquiry at this critical time. And Kate's replacement..... needing to catch up on some 5 million documents, no engineering knowledge or experience, and from the firm representing Nfld Power, a party to these proceedings, and a distributor of power to 90% of Nfld residents, and who jointly, and 90% administers our failed Conservation and Energy Efficiency Plan.

All just peachy. Winston Adams

Reply

Replies

# B

# Bruno Marcocchio 28 March 2019 at 09:53

Peachy Keen Winston. Kate was the only one with technical skills so better be sure she does not embarrass the Nalcor crew of sycophants.

Yes Kate did not shine with technical brilliance but best take no chances! It is off to the judiciary!

Learmonth, Kate's senior must be pissed he was passed over for appointment to the bench. His droll approach would make him a perfect judge!

# Robert G. Holmes 28 March 2019 at 09:59

Winston, I understand your point regarding the questionable Engineering aspects of the project, and the new Judge's limiting the probing in that direction. However, Kate did impress with her grasp of the main root problem; the importation of the corruptible petroleum industry biased EPCM process, substituted for the less manipulative, business/science based hydro/civil project management process. Bechard's testimony illustrated this. Kate, with her lessons learned in contract law, is better qualified to serve her fellows and society from her new appointment, where regrettably, some of us professionals have been led astray by devious minds at work in the construction industry at large.

#### Anonymous 28 March 2019 at 10:54

Robert / WA:

To me the bigger failing of bringing in the oil industry crew for MF is that those guys operate in a private investment arena where the accountability is vastly different than undertaking public infrastructure works. Memory tells me in 2015 just after the election, DB said this is what to expect when taking 'Oil guys' into a dam project - appropriate comment by DB in my mind.

It doesn't get mentioned much - and that is no excuse, just that they probably assumed what was acceptable in private ventures was acceptable with public monies especially when told by the government to do MF at all costs(and not only s).

PENG2

#### Robert G. Holmes 28 March 2019 at 11:09

PENG2; Would you not agree, when "Business interests from the private sector" gain office, corrupt business practices tamper with the public interests? Rarely do Engineers get elected to high office, and that is probably a good thing. Very few of us can mesh Engineering practice with public interests. Danny's private business ethic brought chaos to the Public Utility side, at Public expense, and we are all the worse for this unfortunate situation.

#### Anonymous 28 March 2019 at 11:15

#### Rober @ 11:09:

Pretty close to what I said above.

I also made a comment quite a while ago that we don't often see Engineers in politics for the same ethical reasons. Honestly, I don't know many Engineers that actually want to be involved in politics - stuff like MF is probably why.

PENG2

#### Anonymous 28 March 2019 at 17:02

Joe blow says, there is a saying; engineers sometimes consider themselves lawyers; but rearly do lawyers consider themselves engineers...lol... And also very true very few engineers become politicians... But many lawyers become politicians. But locally in our recent history (50 years or so) teachers have featured prodimately as our politicians? Another source of our politicans has been promotions from municipal leaders, some town or community around the bay. But who else would you elect...fisher folks, carpenters, electricians, owners of local grocery stores...??

# Reply

#### Maurice Adams 28 March 2019 at 14:51

I don't know what some of Nalcor's senior people thought was their proper or appropriate duty when they excused their own inaction by saying it was Martin's call, or it was not my call, etc.

In my years as a federal public servant, it was almost routine for me to go to my superior when I became aware of something, or some policy or plan that was or likely to be detrimental to the NL Region.

Page 27

I once went at least 3 times with repeated attempts to stoke my superior (successful the 3rd time) and after writing several draft papers and finally got it down to a short briefing note that convinced him to take action.

That's, at least in part, what public servants are supposed to do, are they not?

# Reply

# Replies

# Anonymous 28 March 2019 at 16:51

They are all YES people, incompetent, evasive and unaccountable....a sad pitiful lot that should be fired and tarred and feathered.

Are other govn depts run any better, even MUN?

Nalcor had no limit on the purse.....and this is the result.

#### Bruno Marcocchio 3 April 2019 at 08:23

Sadly Maurice civil servants have gone from speaking truth to power to being cover for corrupt politicians. In NL especially they are a sorry lot, whipped by Justice lawyers to never step out of line.

Sadly federally things are going the same way with the top civil servant acting like "muscle" for Junior trying to "persuade" Jody to grant SNC the DPA or he would "get it one way or another". One can only hope that those are famous last words for the corrupt arrogant bastards!

# Reply

#### Anonymous 28 March 2019 at 16:42

Who is the guy asking the questions this afternoon....a Nalcor lawyer or engineer? Trying even to blame the Labrador Innu who was to have priority for hiring......so the Innu the cause of the 5 billion extra? This is laughable. PF

Reply

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#### Bruno Marcocchio 3 April 2019 at 08:12

Well, well, It seems Gov of Canada has been giving SNC, thinly veiled, money to bribe foreign Gov't! I wonder if part of the loan guarantee went to bribe NL gov't members? If no one asks, at say a public inquiry, we will never know.

On another front Junior has offed Judy and Jody, betraying his "sunny ways" bullshit. He will not stand for ANY cabinet member acting with integrity! So much for respect for women, cabinet independence, the AG and Justice minister and the public, duped once again by a charlatan hypocrite!

#### Reply

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