

2021 Long-term Outlook Scenarios – December, 2020

2021 Long-term Outlook Stakeholder Feedback



Period of Comment: December 15, 2020 through January 15, 2021	[REDACTED]
Comments From: AirdrieZero.org	[REDACTED]
Date: [2021/01/08]	[REDACTED]

Keeping with the mandate of providing safe, reliable and economic operation of the Alberta electricity system while facilitating a fair, efficient and competitive market for electricity, the AESO is developing the 2021 Long-term Outlook (LTO).

Given the challenges faced as a result of the COVID-19 pandemic and the low oil price, feedback provided to the AESO will be an important input into how we forecast Alberta's the near to long-term electricity. The AESO will use scenarios as a means of stress testing various market, technological, consumer behaviour, policy and economic outcomes, to assist stakeholders in understanding potential long-term future outcomes in the Alberta electricity market.

Please fill email your completed questionnaire to forecast@aeso.ca by January 15, 2021.

We value stakeholder input and thank you for sharing your perspective. In alignment with our Stakeholder Engagement Framework ([link](#)) all stakeholder submissions, in their original state with personal information redacted, will be published online at www.aeso.ca

Further stakeholder engagement on LTO scenarios and preliminary results can be expected as the AESO makes progress toward the anticipated publication date in Q2 of 2021.

Preliminary results will be based in part from stakeholder feedback received in June 2020.

The AESO thanks you for your time and appreciates your input.

The AESO is seeking comments from Stakeholders with regard to the following matters:

	Questions	Stakeholder Comments
1.	<p>Do the proposed LTO scenarios cover a reasonable range of plausible future outcomes? Which scenario do you think is more likely? Which one is less likely?</p>	<p>High RE. I put some non-zero probability on OBPS output based pricing system benchmark being changed from best gas, to best gas with CCS carbon capture and storage. In other words, full pricing of emissions (not OBPS).</p> <p>I say that in part because Biden had EICDA energy innovation and carbon dividend act on his climate page, and EICDA includes BCA border carbon adjustments, which have a domino effect—like William Nordhaus ‘Carbon Club’ – a tariff of 3% on all goods from any country with a carbon price less than X—and I expect Canada to implement the BCA when/as USA does, eliminating the need for OBPS for EITEs, as the BCAs will be stopping the ‘leakage’ of industry to low emissions stringency domains. And that means OBPS in electricity will look funny. Consumers get rebates, so they don’t need it – as carbon pricing in power sector trickles down to them, they’ll have rebates to offset. So it will be more embarrassing to explain why power sector is priced with OBPS against ‘best gas’ – there won’t be a good reason.</p> <p>Except that Deep Decarbonization gurus say there are 2 steps to decarbonize an economy:</p> <p>STEP 1) convert everything to run on electricity</p> <p>STEP 2) clean the electricity grid</p> <p>And if electricity prices are spiking in #2, that reduces economic motivation to do #1, Unless there are ways to avoid the price spike, via demand management and co-generation to heat pumps with higher COP / efficiency above 1.</p>
2.	<p>Does the “Clean-Tech” scenario focus on the appropriate technologies and policies?</p>	<p><i>TOD/TOU/dynamic pricing – we need to know if behind-the-meter demand management / load shifting / peak shaving / load sequencing / seasonal peak shaving / seasonal load shifting is going to be important as equipment / replacement cycles come up in the 2020s. A major cost of rapid decarbonization is ‘stranded assets’ and avoiding stranding means knowing what equipment to buy on the next replacement cycle which depends on knowing demand management pricing/incentives in the equipment life cycle</i></p> <p><i>SO I would say the availability of smart meters that can get instant/dynamic pricing – from AESO? Would there be a separate url for dynamic pricing? – and behind the meter automated demand management -including V2G vehicle to grid, load sequencing and shifting of stove, clothes dryer, heat pumps, EV charging – you need to have a scenario with the smart meter / dynamic pricing mechanism.</i></p> <p><i>Rethinkx.com EnergyReport shows Mark Jacobson style high variable RE scenario can be done with 4 x average capacity plus short term storage. That curtailed extra RE will be another incentive to load shift. Something has to tell us when that otherwise curtailed power is available (and when its not). It’s a High-RE+High-Info scenario.</i></p> <p><i>Besides dynamic demand pricing, there will likely need to be better price signals to encourage just the right amount of battery TOD arbitrage, and that would include adjustments for ‘avoided transmission costs’ – transmission cost into a distribution</i></p>

		<i>branch should only be charged once, and it should probably be the battery arbitrage who gets credit when returning power to the local distribution branch, provided the branch avoids transmission costs as a result. And that depends on how much local generation and battery arbitrage is coming onto the branch at that time of day – if its less than demand, then no curtailment or transmission out. Etc I'm not an expert, it needs to be as sophisticated as necessary to encourage / maximize common good / social utility / net economic gains to society.</i>
3.	Are there different scenarios that warrant inclusion?	<p><i>Fridays for Future / Greta scenaro – investment fund managers calculate stopck price by NPV of future earnings divided by number of shares. As Fridays for Future reach voting age, in general investors put a non-zero stochastic weight on higher emissions regulatory stringency. So one scenario is this ‘investment fund manager’ view of future emissions stringency and its impacts on future earnings potential.</i></p> <p><i>DNV GL Energy Transition Outlook 2020 doesn't include those speculative regulatory tightenings – just what's on the books. And your estimate of tightening under high RE scenario falls short. I expect Paris NDC escalation as countries find viable pathways. And besides carbon pricing escalation I expect escalation of equipment ‘Replacement Mandates’ -like banning sale of natgas appliances and ICE passenger cars, or ramping to 100% Replacement mandate with FeeBates. See RewiringAmerica.org Handbook p.13 graph of carbon tax and replacement mandates. Carbon tax is ramped slowly, to signal ahead so as to minimize asset stranding. Replacement mandates only apply to new equipment sales, so don't strand equipment already in use.</i></p> <p><i>In consumer sector, if appliances / cars last 15 years, then implementing 100% Replacement Mandate now would eliminate consumer sector emissions by 2035.</i></p>
4.	What long-term hydrocarbon demand projections do you think are reasonable for the Robust and Stagnant Global Oil & Gas Demand scenarios?	<p><i>Stagnant should be going down, not flat. DNV GL Energy Transition Outlook 2020 shows global oil demand already peaked in 2019 – pulled ahead 3 years by pandemic. And Biden / EICDA variant with BCA border carbon adjustment with international domino effect will accelerate decline from DNV GL 2020 projection.</i></p> <p><i>That means oil sands would need to replace conventional in a declining market in order to grow, while suffering from higher emissions intensity, in a world with likely more CFS/LCFS clean/low carbon fuel standards / stringency being implemented. Would that increase or decrease their grid power demand?</i></p>
5.	Are there additional generation technologies that warrant inclusion in the 2021 Long	<i>High interprovincial interconnect scenario – then more hydro and solar spread over more hours.</i>

	Term Outlook Scenarios?	
6.	<p>Do you disagree with any of the assumptions in Slide 4 for any of the scenarios? If so, what would you propose?</p>	<p><i>All Scenarios > carbon price 170 by 2030 maybe 350 by 2040, 500 by 2050 – enough to get to net zero 2050 on smooth long-taile finish And when I run a policy simulator at Pembina.org/eps And use only broad based carbon pricing, I need 200 by 2032, 350 by 2042, (projecting) 500 by 2052 to stay on Pairs 1.5C net zero 2050 pathway. Ecofiscal.ca 210 by 2030 IPCC 185 (US) needed Navius research (interpolating an infographic) 383 by 2030 PBO parliamentary budget office 116 by 2030 Summary: I don't see that 170 going lower, and with Paris agreement asking for NDC escalation every 5 years, I won't be surprised to see it go up. I personally sensed the anti-carbon-tax movement lost steam in AB after everyone got their fed backstop rebate. It will be hard for a future gov to take away a rebate from 3/5 60% of voters. I expect it to stick. I expect USA to adopt a variant of EICDA perhaps as a fed backstop like Canada, so California / WCI cap & trade can continue like QC in Canada. I put non-zero stochastic weight on the idea of revenue recycling to rebates to dominate carbon price increases in BC, QC and California permit auction revenue also start being recycled to rebates. The complaints I hear from BC now are not the carbon price level, but that people didn't get a rebate. Rebate envy sweeps the world. And it being progressive -meaning low income come out ahead- in a time when nations are facing increasing income disparity and the political problems that causes, will likely jump on it gladly.</i></p>
7.	<p>The AESO has not yet determined the quantum of change in the scenario variables. Do you</p>	<p><i>I'm a concerned/puzzled/curious citizen trying to figure out what the future will look like, to help people around me avoid stranded assets as replacement cycles come up in the 2020s.. It's easy to get into an 'info bubble' and not put good weights / likelihoods / stochastic probabilities on things. Hypothesis: investment funds – that are diversified / not specializing in Fossil Fuels – are a good source of stochastic estimates of future regulatory stringency and technology learning curve impacts. There's evidence against that too – lots of failed</i></p>

	agree directionally with the scenario assumptions? Do you have insights regarding the magnitude of scenario changes?	<i>investment funds when markets crash. But also well disciplined funds; what would Warren Buffet do?</i>
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