PUB-CA-003 **On page 18, line 28 to page 19, line 2 Elenchus discusses the risk that distributed energy resources (DER) will disrupt the electricity sector in Newfoundland, stating that "consumers in Newfoundland will increasingly opt for non-grid supply in the coming half-century."**

a) What are examples of non-grid supply options that these consumers will pursue?

b) Can Elenchus provide information on the experience or expectations in other Canadian provinces with respect to electricity consumers opting for non-grid solutions?

c) Is there any data available which would suggest the expected level of participation of consumers in non-grid supply options in this province in the future, both short-term and long-term?

d) Should consideration of these issues be made in the context of the overall interconnected system on the Island and the role of both Newfoundland Power and Newfoundland and Labrador Hydro?

RESPONSE:

a) Non-grid supply options include behind the meter self-generation options such a solar (photovoltaic generation) which are currently available as well as alternatives that may be economic in the future such as small-scale wind generation and hydrogen fuel cells. There are innumerable self-generation options being pursued by both major corporations and new innovative technology companies. The point being made in the Elenchus Report is that it appears to be imprudent to assume that none of the current, well-funded research will result in self-generation options that will be both economic and convenient in the coming decades. Future non-grid supply tools also include alternatives that reduce demand such as behind the meter storage, demand response programs, and automated load control technologies.

b) To date, the customer adoption of non-grid solutions in Canada has been minimal, in part due to regulatory and legislative impediments. However, major jurisdictions in Canada and internationally are confronting the issues that are arising as a result of the steadily improving economics and convenience of non-grid solutions.[3]

[3] In what may be a sign of the future, the California Energy Commission issued a press release last month, "Energy Commission Adopts Updated Building Standards to Improve Efficiency, Reduce Emissions from Homes and Businesses". The release states that "The 2022 update will be submitted to the California Building Standards Commission (CBSC), which is scheduled to consider it in December 2021. If approved by the CBSC,

The Alberta Utilities Commission ("AUC") began a Distribution System Inquiry in December 2018 to seek information on how emerging technologies will affect electric distribution utilities and how the utilities should respond. The Inquiry concluded with a final report issued in February 2021.[4] Utilities provided information on their experiences to date with DERs to the AUC. Though the AUC found that Alberta had not yet experienced a significant level of DER adoption, the deployment of DERs is growing and will continue to grow. Fortis Alberta, a distribution utility in west-central and southern Alberta, provided information that generation less than 5 MW, which is predominantly rooftop solar generation, has increased from nearly zero a decade ago to 5MW in 2015, then increased to 25MW by 2019. ATCO Electric, a distribution and transmission utility in central and northern Alberta, shared that the number of small-scale generation connections had increased steadily over time up to 2016 then more than doubled in 2017 and 2018. Alberta's urban utilities, ENMAX and EPCOR also experienced an increase in DERs in recent years.[5] The Alberta Electric System Operator's 2021 Long-term Outlook forecasts DER capacity to more than double 2020 DER capacity within the next few years.[6]

The Ontario Energy Board ("OEB") launched a Responding to Distributed Energy Resource consultation in March 2019[7] which was later merged with another consultation in March 2021 and became a consultation on the Framework for Energy Innovation: Distributed Resources and Utility Incentives.[8] The Electricity Distributors Association, which represents distribution utilities in Ontario, provided comments that DERs continue to be deployed in its members' service territories and it is already impacting their system operations and costs.[9] A DER Impact Study prepared by ICF for the consultation projects distributed solar capacity to increase by 7.3% per year over the next decade.[10]

DER deployment has increased rapidly In California over the past decade. Rooftop solar capacity has increased from 397 MW in 2011

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it would go into effect on January 1, 2023, giving builders, contractors and other interested parties a year to gear up for the changes."

[5] AUC Decision 24116-D01-2021, pages 11-12
[6] AESO 2021 Long-term Outlook, page 9
[7] EB-2018-0288 Responding to Distributed Energy Resources (DERs)
[8] EB-2021-0118 Framework for Energy Innovation: Distributed Resources and Utility Incentives
[9] EB-2018-0288, EDA Comments letter dated February 17, 2021
[10] EB-2018-0288, Ontario DER Impact Study

to 6,520 MW in 2021.[11] Solar generation grew from 1.6% of California's generation supply mix in 2011 to 15.4% in 2020.[12] DER deployment has also grown significantly in New York. Behind-the-meter solar capacity has increased from 84 MW in 2011 to 2,545 MW in 2020.[13] The New York Independent System Operator projects solar capacity to triple over the next decade. Non-solar behind-the-meter distributed generation has also increased from 138 MW in 2011 to 248 MW in 2020, and projected to reach 469 MW in the next decade.[14]

c) Elenchus is not aware of any data pertaining to the expected short-term and long-term level of participation of consumers in non-grid supply options in Newfoundland and Labrador in the future. The comments in the Elenchus Report reflect the expectation that Newfoundland and Labrador will not be immune to the inter-provincial and international economic and policy trends that will drive the adoption of non-grid alternatives in the coming decades.

d) Yes, consideration of these issues should be made in the context of the overall interconnected system on the Island and the role of both Newfoundland Power ("NP") and Newfoundland and Labrador Hydro ("NLH"). The need for an integrated approach underpins the Elenchus comments about the possibility that NP may undertake investments that appear economic only if NLH's revenue loss is excluded from the analysis. If the combined impact on NP and NLH are not included in the analysis, there is a risk that a project that constitutes uneconomic bypass by NP of NLH could be approved.

[11] California Distributed Generation Statistics - NEM Solar PV Figures. Data includes only interconnected solar PV eligible for net energy metering (NEM).
[12] CAISO 2020 Annual Report on Market Issues & Performance
[13] NYSIO 2021 Load & Capacity Data Report, page 38
[14] NYSIO 2021 Load & Capacity Data Report, page 42