Q. (Reference Technical Conference Issue 3 relating to financial aspects of projects such as pay-back periods).

a) Does Newfoundland Power do both economic and financial analyses when it analyzes a capital project? For example, has Newfoundland Power determined a pay-back period for any of the projects proposed in the 2023 CBA? Are pay-back periods relevant in light of government initiatives relating to a carbon-free society and the potential for stranded assets; i.e., continued use of diesel generation?

b) Does NP consider any project that has a positive net present value a good investment for customers even if the payback period is more than 20 years into the future?

c) Please confirm that in the assessment of alternatives relating to transmission line 55L, "Alternative 1 – Address Existing Deficiencies" the upfront cost is about $7.5 million while the upfront cost of the favored Alternative 3 – "Rebuild in New Right-of-Way" is $10.6 million. What weighting did NP give to this fact in its economic assessment of the line rebuild?

d) Considering that outcomes are more and more uncertain the further into the future that technology improves over time, would it not be worthwhile for Newfoundland Power to have a pay-back period criterion for projects in addition to the NPV criterion? Otherwise, how does NP adjust NPVs for the uncertainty associated with long-lived project with large up-front capital cost?

e) Please provide pay-back periods of other Canadian utilities undertaking similar projects.

A. a) Newfoundland Power completes economic analyses for its capital projects to determine which alternative would be least cost for customers.[1] Calculations are completed on a net present value basis in accordance with the Provisional Guidelines. The Provisional Guidelines do not require evaluations of payback periods or separate financial analyses.[2]

The textbook *Principles of Engineering Economy* discusses capital budgeting and the weaknesses of using payback periods, or payout periods, for investment decisions. The textbook states:

> *"Except for the special case where funds are so limited that no outlay can be made unless the money can be recovered in an extremely short time, the payout period is never an appropriate way to compare a group of proposed investments. The objection is that the payout period fails to give weight to the difference in consequences of different investment proposals after the date of the payout."*[3]

[1] The terms "economic analyses" and "financial analyses" are, on occasion, used interchangeably. For example, Request for Information PUB-NP-007 requested an updated financial analysis for the *LED Street Lighting Replacement* project. The original analysis referenced was referred to as an economic analysis.

[2] See the Provisional Guidelines, page 16 of 18.

[3] See *Principles of Engineering Economy, Seventh Edition*, John Wiley & Sons, 1987, pages 562 and 563.

In Newfoundland Power's view, the use of net present value analyses is reasonable for evaluating which investments are least cost for customers. Sensitivity analyses provide assessments of risk from the perspective of uncertainty in costs. This can account for different scenarios that may materialize in the future, such as government initiatives relating to a carbon-free society, as long as the scenarios reflect quantifiable assumptions that have a sound basis for inclusion.

b) For projects that are justified on economic terms, Newfoundland Power considers a positive net present value to be necessary in order to proceed. Given utility investments typically involve long life assets, analyses are often completed over long periods of time. However, projects are not always justified solely on economic terms. Other impacts, such as reliability, safety or environmental impacts, may also inform requirements for capital investments.

c) Newfoundland Power confirms that for the *Transmission Line 55L Rebuild* project, the single-year 2023 project cost for Alternative 1 is approximately $7.5 million and the total multi-year project cost for Alternative 3 in 2023 and 2024 is approximately $10.6 million.

Newfoundland Power completed a net present value analysis to determine which of the three identified alternatives would be least cost for customers. In assessing the alternatives, the Company included the upfront capital cost and the other operating and future capital costs over the anticipated service life of the assets. The selected alternative was based on what was identified as being least cost for customers, rather than which alternative had a lower upfront cost.

d) No, in the Company's view, it would not be worthwhile for Newfoundland Power to have a payback period criterion. Uncertainty regarding long-lived projects is accounted for through sensitivity analyses. See part a).

e) Newfoundland Power does not have the information requested.