PUB-CA-002 **On page 17, lines 11 to 15 Elenchus states: "Given the increasing uncertainty about the long-term value of traditional generation, transmission and distribution grid assets, prudence dictates that options that are less vulnerable to stranding should be given preference over traditional assets, even if their expected cost is modestly higher based on a scenario in which market disruptions are more benign than the more dire scenarios that can be envisioned."**

a) Is there a risk of impact to reliability and adequate supply in the near-term if existing sources are replaced with non-traditional options? If so, how can this risk be accounted for in least-cost planning?

b) How does a utility address the uncertainty with take-up by customers of non-grid options while at the same time having the obligation to provide reliable service at the lowest possible cost?

RESPONSE:

a) Provided that standard planning practices are adhered to, there will be no abnormal risk of an impact to reliability and adequate supply in the near-term if existing sources are replaced with non-traditional options.

No supply of power is 100% reliable. This reality is the basis for including reserve margin in power system planning. Planned capacity is set at a level that equals projected demand plus the required reserve margin. The determination of the required reserve margin takes into account the reliability of individual supply resources; hence, the assumed available capacity for intermittent generation resources (e.g., wind and solar), as a percentage of their rated capacity, is much lower than the assumed available capacity for hydro generation.

Least cost planning therefore embeds differences in the reliability of individual supply resources in the economic analysis of the alternatives. This analysis requires the holistic analysis that is provided by integrated resource planning ("IRP") since the impact of the reliability of any individual supply resource on overall system reliability cannot be assessed in isolation.

Elenchus notes that both NLH and NP offer their customers an interruptible supply option. The conceptual approach to incorporating Interruptible supply into system planning as a supply

tool rather than a customer service has evolved in recent years.[2] The interruptible supply option is best utilized to the extent that it is the least cost option for balancing available resources and customer requirements. Interruptible supply options also have the attraction that they are highly flexible since terms and conditions, including price, can be adjusted in response to changes in firm supply and firm demand over the years.

b) The inherent "uncertainty with take-up by customers of non-grid options" can be managed prudently by ensuring that the utility has access to flexible supply resources, including interruptible supply options as noted above.

There are two primary approaches to maintaining flexibility of supply resources consistent with the scenario analysis of the high and low projections of future requirements for capacity and energy.

1) Adopting options that have comparatively low fixed costs and comparatively high variable costs. The high variable costs will not be incurred in the longer run if the capacity is not required. This approach can include technological options as well as contractual options. A flexible alternative will be prudent if the expected cost of the flexible alternative (i.e., the cost weighted by an estimate of the probability of alternate scenarios) is less than the cost of the non-flexible option.

2) Adopting options that can be scaled up if and when additional capacity is required. Again, the flexible alternative will be prudent if the expected cost of the flexible alternative (i.e., the cost weighted by an estimate of the probability of alternate scenarios) is less than the cost of the non-flexible option. This approach is the basis of treating interruptible options for customers as a supply tool.

The least cost option is based on scenario analysis that explicitly takes into account the cost and probability of the alternative scenarios.

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[2] For example see Elenchus Research Associates, *Report on Énergir's Cost Allocation and Pricing of Gas Supply, Transportation and Load Balancing Services and Supply of Interruptible Service*, October 17, 2019 which was prepared for the Régie de l'énergie.