Feedback Form

2024 Annual Planning Outlook – April 23, 2023

Feedback Provided by:

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Date: May 7, 2024

To promote transparency, feedback submitted will be posted on the Long-Term RFP engagement page unless otherwise requested by the sender. If you wish to provide confidential feedback, please mark "Confidential".

Following the APO Information Webinar on April 23, 2024, the Independent Electricity System Operator (IESO) is seeking feedback and comments from stakeholders on the items discussed. The webinar presentation and recording can be accessed from the engagement web page.

Please submit feedback to engagement@ieso.ca **by May 7, 2024.**

Future Considerations

Topic	Feedback
Do you have any comments regarding information to include in future outlooks?	

General Comments/Feedback

OPG actively supports the IESO in its efforts to communicate information transparently and seek feedback from the sector. The recent stakeholder engagement was valuable for market participants, and we are looking forward to contributing to the improvement of next year's Annual Planning Outlook.

In response to the IESO's request for feedback, OPG has compiled the following comments and questions related to the IESO's latest release of the Annual Planning Outlook.

Section 2 - Demand Forecast

We would like to recommend that the IESO consider conducting and sharing scenario analysis on demand. With the uncertainty in demand growth, relying solely on one demand scenario may no longer be appropriate. It would be appreciated if further clarity on demand assumptions were provided. For example, a breakdown of how each EV battery plant increases demand, what assumptions are being used for their subsequent supply chains and what mining growth assumptions are being used. Similarly, we anticipate data centres to impact demand in the next APO and it would be appreciated if we had some clarity on those assumptions, including resources the IESO uses for that information.

Additionally, scenarios that draw upon assumptions used in regional planning, that consider demand growth sooner and later (not just higher or lower) would also be beneficial.

Under the APO's electric vehicle adoption rate assumptions, has consideration been given to the scale up of charging networks in residential and commercial buildings by the EV deadline of 2035. These built-in assumptions would impact the APO.

Section 5 – Transmission System Needs

OPG values the ability to collaborate with the IESO through the upcoming Bulk Transmission studies. Ensuring transmission access is vital to the success of new generation assets. A wholistic and long-term perspective is essential, as transmission access for long lead assets may be impacted by the upcoming long term procurements.

Section 6 – Operability

The APO indicates that to maintain a balance between supply and demand over the next decade, an incremental regulation service of approximately 40 MW in 2026 is necessary and is anticipated to

grow to 120 MW in 2033. Figure 30 indicates the need for regulation service is projected to be nearly double than what is available today.

Attributes like dispatchability, frequency support and voltage support will become more valuable in future procurements. While these services have traditionally been secured through ancillary service contracts, the report suggests exploring alternative methods for acquiring reliability services. It would be beneficial for the IESO to provide clarity on their planned approach to meet these future requirements.

Section 7 – Risks and Uncertainties

OPG acknowledges and appreciates the efforts made by the IESO to highlight the numerous risks in system planning. However, we would appreciate further understanding of how these risks are being mitigated and/or incorporated into the forecast. The Medium-term RFP 1 did not secure the expected capacity and there is a risk of low participation in the upcoming procurements. OPG would appreciate a better understanding of how the IESO is addressing these system planning risks.

Section 8 & 9 – Integrated Reliability Needs & Planned Actions

OPG values the inclusion of the Integrated Capacity and Energy needs data, particularly Figures 35 and 36, which illustrate the remaining needs and potential resource contributions previously unaccounted for. However, additional detail on the derivation of certain figures would be beneficial.

Analysis of Figures 35 and 36 indicates that resource adequacy cannot be achieved solely through IESO announced procurements, DERs, and CDM. Significant investments in large-scale nuclear, SMR buildout, and long lead-time assets such as hydroelectric, are needed and go beyond the scope of the High Nuclear scenario. It is critical that planning starts now.

While procurements will introduce more low-emitting generation sources, natural gas will continue to play a crucial role as a backup to wind and solar due to its dispatchability and load-following capabilities. This should be factored into the APO's needs assessment. Natural gas is essential for maintaining grid reliability and affordability for the ratepayer during the transition period, until comparable non-emitting generation options are operational. Its dependency is projected to last over the next two decades.

Lastly, it would be appreciated if IESO could provide information on how the energy and capacity needs gap will be addressed post-2034. Scenario analyses of various potential future outcomes would greatly assist in understanding the various approaches the IESO is taking to lead the energy transition in Ontario.

Resource Costs and Trends Module

OPG would like to better understand the methodology used to calculate the Upfront, Operating and Levelized Costs for hydro, which was calculated at 217-311 $/MWh in Table 1. This significantly exceeds the costs OPG has encountered in both large and small hydro developments over the past decade. Furthermore, resources such as the NREL "*Hydropower Investment and Public-Private*

Ecosystem Assessment" (Section 4.3.2) and the USEIA "*Levelized Costs of New Generation Resources in the Annual Energy Outlook 2022*" (Table B1B) suggest a lower cost at approximately $64.27/MWh (USD).

Other Considerations

Policy and Regulation

OPG is understanding of the risks associated with policy and regulation changes, including the Clean Electricity Regulations (CER). We recognize that the CER introduces uncertainty in system planning beyond 2034 and acknowledge the role natural gas generation will play in the transition to low emitting resources. As the final regulation is expected later this year, OPG would appreciate if IESO could incorporate the anticipated system planning assumptions in next year's APO to reflect these changes.

Emissions

The IESO previously included GHG emission forecasts in past APO's (Ex. Figure 48 in APO 2022) and it was noticeably absent in this year's APO. Although a GHG emission forecast chart was included in the article "Six Graphs and a Map: 2024 Annual Planning Outlook and Emissions Update" on March 19, 2024, the lack on this information in the main body of the APO report risks misunderstandings by the public.

At OPG, we recognize that an increase in emissions within the electricity sector, primarily due to increased gas generation, does not equate to an overall rise in economy-wide emissions. As we work though the efforts to decarbonize our economy, it is crucial for the IESO to communicate this distinction publicly. This concept is vital and should be emphasized in future APOs to ensure readers understand the broader context of the shift towards a net-zero economy.

Regarding the emissions chart posted under Six Graphs and a Map: 2024 Annual Planning Outlook and Emissions Update" on March 19, 2024, it would be beneficial to get an understanding of what supply mix is assumed beyond 2034. This information would be beneficial to understand the IESO's strategy for this transition.