

Power Workers' Union Submission to the IESO on the Central-West Bulk System Plan
August 29, 2023

The Power Workers' Union (PWU) is pleased to submit comments and make recommendations to the Independent Electricity System Operator (IESO) regarding its August 16th Central-West Bulk System Planning webinar on their study of the area's bulk system needs. The PWU remains a strong supporter and advocate for the prudent and rational reform of Ontario's electricity sector and recognizes the importance of planning for low-cost, low-carbon energy solutions to enhance the competitiveness of Ontario's economy.

Context

The IESO previously completed Windsor-Essex and West of London bulk plans resulted in 2300 MW of capacity improvement initiatives for Ontario's transmission system. The new demand emerging from the Volkswagen, Stellantis and Nextstar electric vehicle sector manufacturing facilities has caused the IESO to advance a bulk system study for the Central-West area this year. This effort was originally identified in the 2022 Annual Planning Outlook (APO) to start in 2024. While the Central-West area is defined to include the Bruce and Niagara regions, the IESO has excluded consideration of those regions from the scope of the current study. This Central-West bulk study will be coordinated with the Windsor-Essex and Burlington to Nanticoke Integrated Regional Resource Plans (IRRPs) currently underway.

The IESO's stated rationale for advancing the Central-West bulk study is to ensure continued, reliable supply to the London area in light of the recently announced Volkswagen EV plant. The IESO notes that large new load connections often require transmission reinforcements with long lead times. The Central-West bulk system plan will help explore where new loads can be accommodated on the existing system and identify any new reinforcements that may be required. The study will consider 200-500 MW of potential development in each of the following planning regions: London area (in addition to the VW EV plant); Windsor-Essex; Waterloo/Kitchener/Cambridge/Guelph; Chatham/Lambton/Sarnia; and, Burlington to Nanticoke. The IESO is expected to complete the study by Q4 2024 but anticipates the need to provide near term recommendations much sooner – by Q1 2024.

The IESO is seeking feedback on three topics:

- The scope of work proposed;
- Other potential growth to be considered when quantifying the needs in the Central-West area; and,
- Additional information to be considered as the options are developed.

The PWU is generally supportive of any initiative that is intended to procure the lowest cost option for supplying reliable electricity to Ontario and provides the following recommendations:

1. The IESO should not base its forecast energy needs on the 2022 APO reference demand case but rather consider the demand forecast implications in the province's recent *Plan for a Clean Energy Future* [Powering Ontario Growth Report].¹

¹ Government of Ontario, "Powering Ontario's Growth: Ontario's", July 10, 2023.

2. The Central-West bulk system study should be coordinated with the IESO's response to the government's directives regarding the evaluation of transmission options for new nuclear developments.²
3. The Central West bulk system study should consider the implications that the demand identified in Powering Ontario Growth Report may have on supply needs in both the Bruce and Niagara regions.

Detailed recommendations

Recommendation #1 - The IESO should not base its forecast energy needs on the 2022 APO reference demand case but rather consider the demand forecast implications in the province's recent Plan for a Clean Energy Future [Powering Ontario Growth Report].

The PWU is concerned with the IESO's statements during the webinar that it will be basing the Central-West bulk system study on the 2022 APO demand reference case and verbally discounted its own Pathways to Decarbonization (P2D) study findings.

The IESO describes its bulk system planning process, developed in previous years, as providing inputs to the APO based on estimates of economic growth in the regions as derived from public engagements.³ The PWU suggests that, while this approach was helpful in informing the APO in an environment of slow and region-specific growth trends, Ontario is now experiencing a rapid energy transition. In addition to regional factors e.g., the Volkswagen plant, rapid demand growth is being driven by macroeconomic factors, such as electrification and population growth.

The Central West bulk system study should be aligned with the demand forecasts of at least the Powering Ontario Growth Report as the IESO develops the 2023 APO. The process for developing a bulk system study should be changed from one where the future outputs of this study are used to inform the 2024 APO 16 months from now to one where demand forecast used for this study proceeds in a collaborative integrated, iterative and concurrent process with the current development of the 2023 APO.

Given the long-lead times required for transmission projects, the Central-West bulk system study should consider the emerging demand in the province from electrification and the new economic growth factors evident in Ontario's Powering Ontario Growth Report. The Powering Ontario Growth Report cites the IESO's P2D study as the basis for the government's broad initiatives identified in the Minister's directives to the IESO. The Powering Ontario Growth Report makes it clear that Ontarians should anticipate at least a doubling of electricity demand in the next 25 years due to a growing economy and electrification. This is over and above the demand expected from the new Volkswagen plant that was not included in the IESO's P2D study. It is noteworthy that the IESO's identified 2300 MW of existing transmission system upgrades are based on the 2021 APO which has lower demand forecasts than the 2022 APO. As a result, the identified plans to 2030 are already inadequate and a likely factor in the IESO's advancement of the Central West study.

² Ministry of Energy, Letter to the IESO re Powering Ontario's Growth, July 10, 2023.

³ IESO, Central-West Bulk System webinar materials, August 16, 2023, page 7.

Additionally, the Powering Ontario Growth Report states that demand in the Windsor-Essex and Chatham regions alone will grow by 1600 MW to 2100 MW by 2035. This is substantially greater than the 200-500 MW under consideration by the IESO for these areas in the Central-West bulk system study.

The IESO should be working closely with the Electrification and Energy Transformation Panel and considering the Panel's commissioned *Cost Effective Energy Pathways Study* expected to be available this year.⁴ It can be expected that the demand forecast from that analysis will likely exceed the IESO's P2D forecast given the P2D exclusions of domestic hydrogen production and its lower assumptions for population growth, the critical minerals strategy and the transformation of the auto sector to EV production.

The IESO should more transparently and proactively identify the demand and supply risks presented by Ontario's energy transition.

Recommendation #2 - The Central-West bulk system study should be coordinated with the IESO's response to the government's directives regarding the evaluation of transmission options for new nuclear developments.⁵

The Ontario government has directed the IESO to address "the timing of completing any future transmission work needed to support the Powering Ontario Growth Report, as well as recommendations on transmission projects that could proceed with early planning and development work". The directive makes specific mention of new nuclear and hydro developments. While the exploration of new nuclear build options has been assigned to OPG and Bruce Power, the timing of the outcomes are the same as the end delivered date for the Central-West bulk system study → i.e. Q4 2024.

Independent analyses show that the demand for non-emitting *baseload supply* across all regions in the Central-West area, including Bruce and Niagara regions, could grow by 4600 MW by 2035 and by an additional 7000 MW by 2050.⁶ The PWU suggests that to cost effectively supply this amount of baseload demand will require the location of new nuclear facilities in the area e.g., Nanticoke with the site's substantial existing transmission capacity connections. The significant near term 2035 demand is well above that stated by the IESO for its Central West bulk system study and will require consideration of possible supply options. The long lead times required for the necessary infrastructure warrants that the Central-West bulk system study make this a priority consideration.

Proceeding with the Central-West bulk system study, absent consideration of these significant implications of new nuclear supply options to meet a doubling of electricity demand will result in time and cost increases for ratepayers, greater reliability and economic risks and a slower transition to a net zero economy.

⁴ Government of Ontario, "Powering Ontario's Growth: Ontario's", July 10, 2023, page 78.

⁵ Ministry of Energy, Letter to the IESO re Powering Ontario's Growth, July 10, 2023.

⁶ Analysis based on finding documented in the Strategic Policy Economics report, "Electrification Pathways for Ontario", 2021.

Recommendation #3 - The Central West bulk system study should consider the implications that the demand identified in Powering Ontario Growth Report may have on supply needs in both the Bruce and Niagara regions.

The Central West Study should consider the implications of the Powering Ontario Growth Report demand on supply in the Bruce and Niagara regions.

Independent analyses show that, assuming all of the potential output from the Bruce Power Nuclear Complex and all of Ontario's hydroelectric facilities at Niagara Falls were devoted to meeting baseload demand in the Central-West area, there will be a capacity shortfall of 2 GW in 2035 and 9 GW in 2050. It is important to note that the GTA's electricity needs will prohibit such a dedication of the Bruce and Niagara output for the Central-West area, implying a greater shortfall in supply for the region.

Ontario's demand scenarios and the Central-West supply should consider the options for locating non-emitting facilities in the region and the impacts on interregional energy trading. Current analyses suggest that Ontario may not be able to support electricity exports and that neighboring jurisdictions are facing similar supply challenges. The scope of the Central-West bulk system study should be expanded to consider the induced demand from Ontario's energy transition and the cost-effective supply options required and available for the area by 2035 and then further on the pathway to 2050. This should be a planning priority given the concurrent timelines associated with the Central-West bulk system study, the government's directives regarding new nuclear, hydro and transmission options for the province, and the long lead natures for the development of all of these new assets.

Closing

The PWU believes that the aforementioned concerns regarding the IESO's current 16-month plan for the Central-West bulk system study highlight significant forecasting omissions and a narrow and limited study scope. The IESO's process should be adjusted to include the critical identified factors that are accelerating demand growth at a pace faster than that being accommodated by the IESO's processes. The PWU has a successful track record of working with others in collaborative partnerships. We look forward to continuing to work with the IESO and other energy stakeholders to strengthen and modernize Ontario's electricity system. The PWU is committed to the following principles: Create opportunities for sustainable, high-pay, high-skill jobs; ensure reliable, affordable, environmentally responsible electricity; build economic growth for Ontario's communities; and, promote intelligent reform of Ontario's energy policy.

We believe these recommendations are consistent with and supportive of Ontario's objectives to supply low-cost and reliable electricity for all Ontarians. The PWU looks forward to discussing these comments in greater detail with the IESO and participating in the ongoing stakeholder engagements.