

Hydrail in Ontario: Grid Impact

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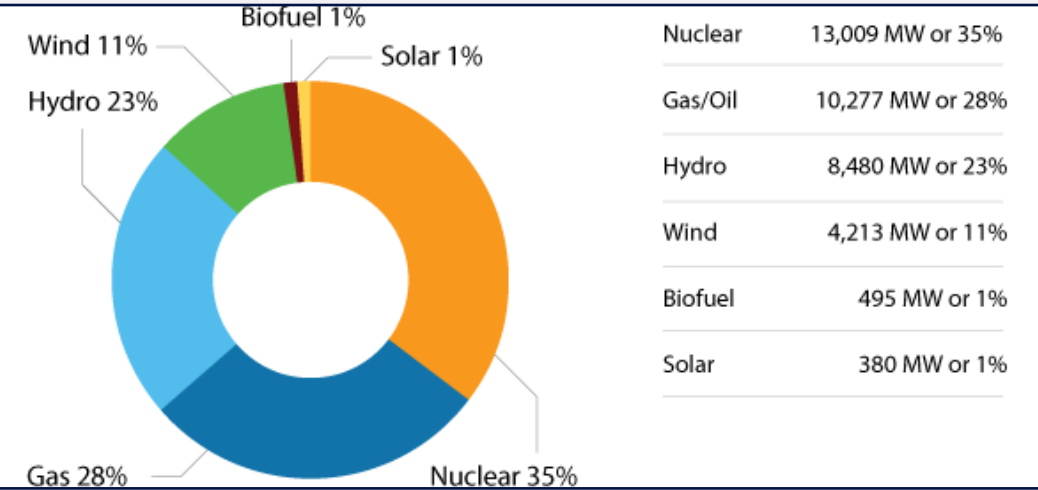
December 8, 2017

Ryerson University

**Ryerson
University**

**Centre for
Urban Energy**

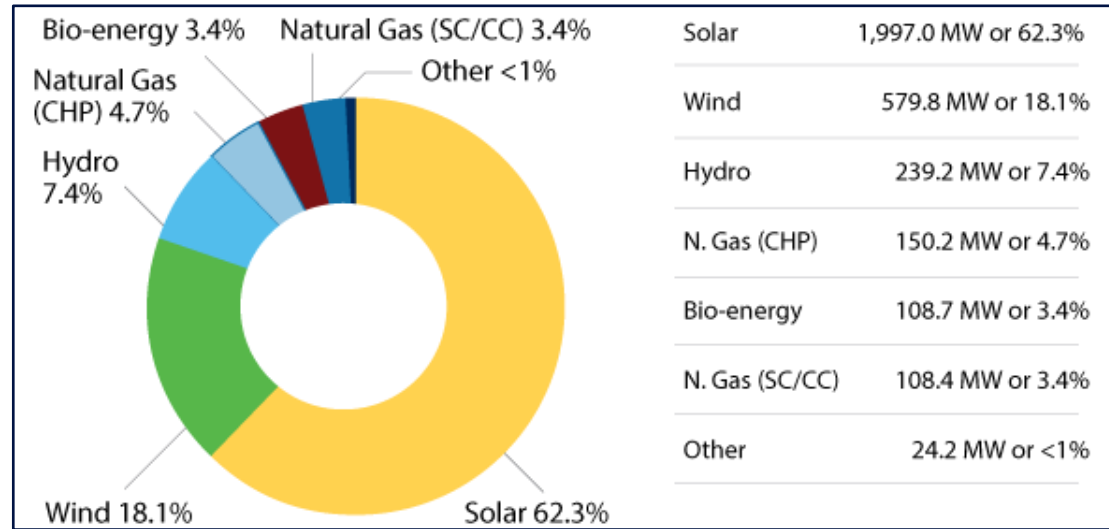
Ontario's Electricity Supply Mix



TRANSMISSION CONNECTED
Generation: 37 GW

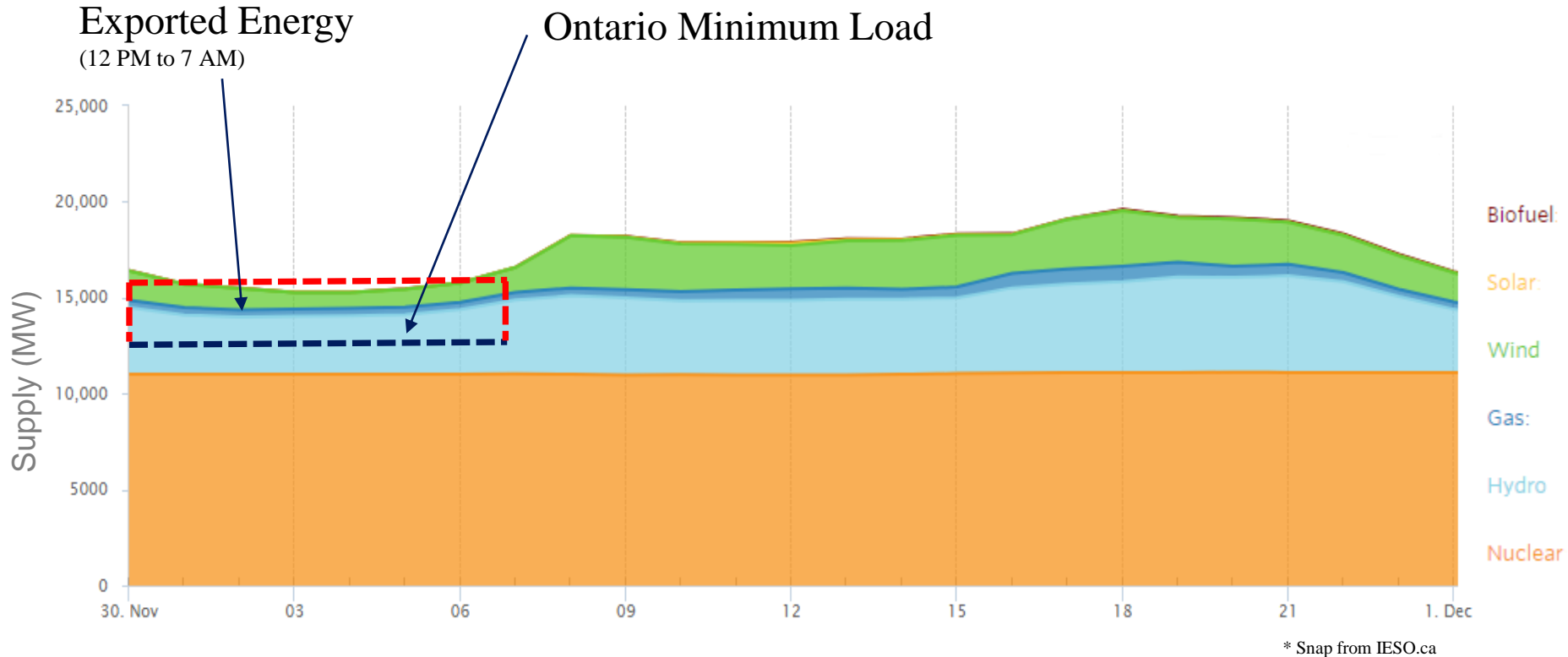
DISTRIBUTION CONNECTED
Generation: 3 GW

TOTAL T&D CONNECTED
Generation: 40 GW
 Wind: 4.8 GW (12%)



* IESO.ca website

Ontario's Electricity Supply Mix



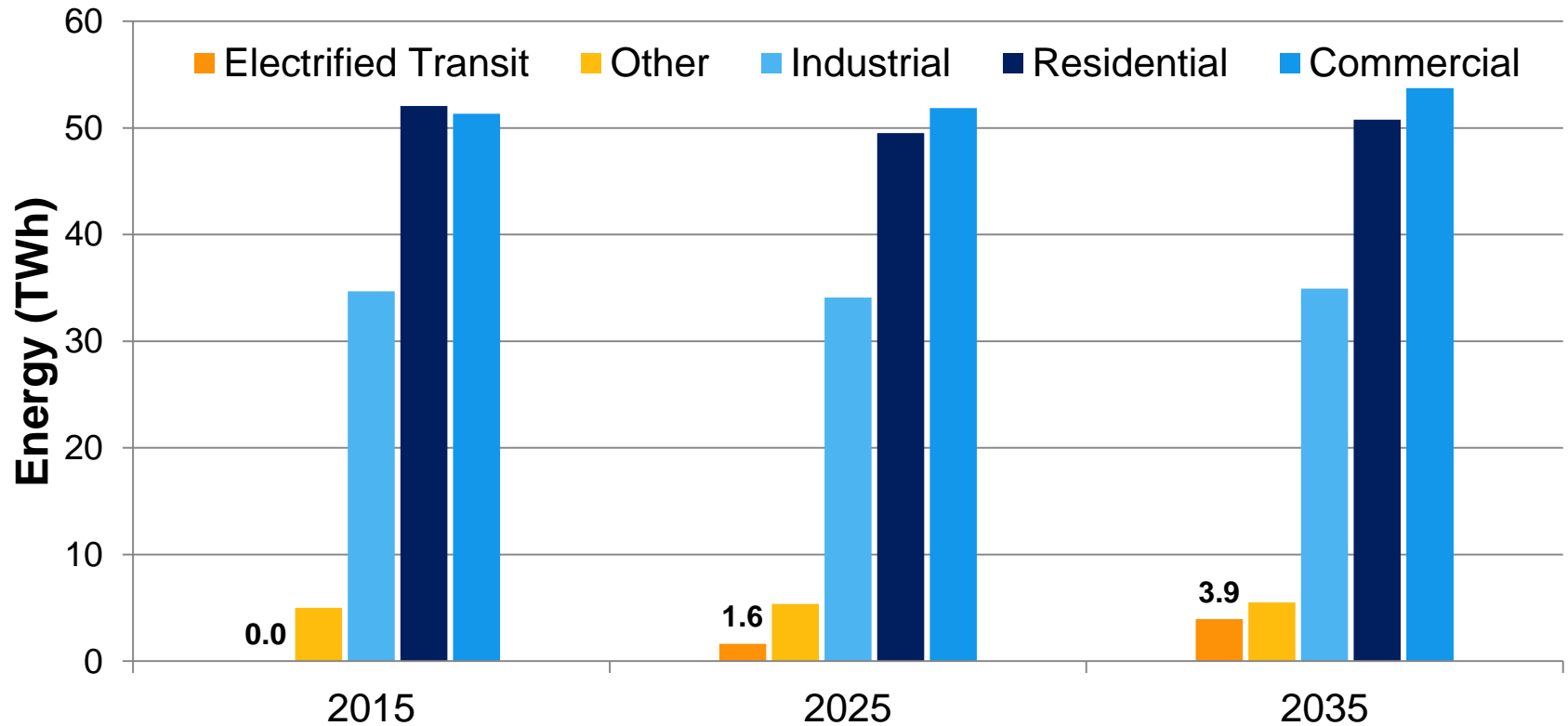
Exports tend to increase in the late evening during Ontario's lower demand hours and fall in the daytime during Ontario's higher demand hours.

[OSPE – An analysis of Ontario's clean energy exports, Nov. 2017.]

Ontario Demand

- How big is the energy need for electrified transit?

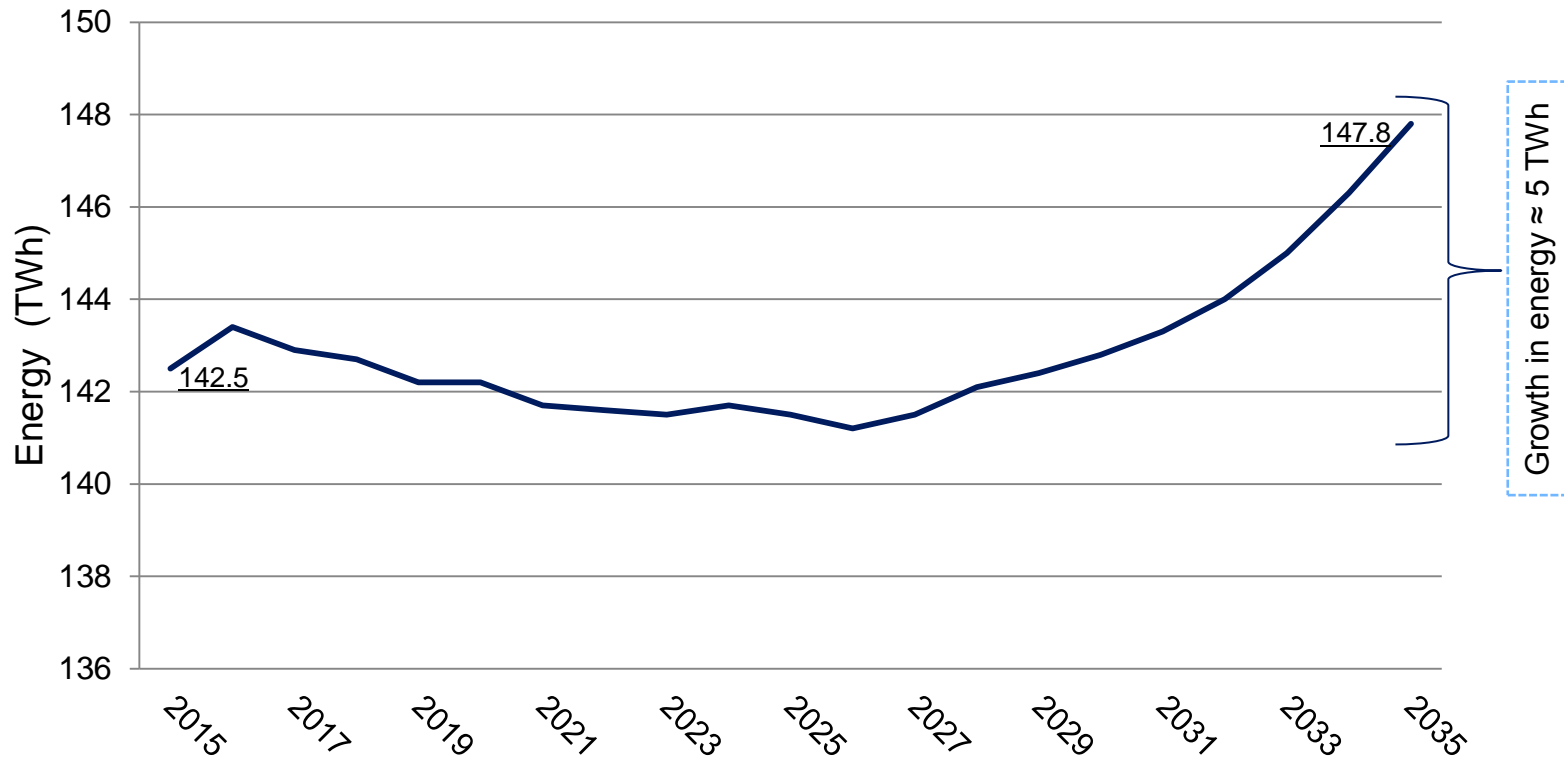
Terms “electrified transit” represent electrical energy consumption for transit applications.



* based on the 2016 IESO Ontario Planning Outlook (OPO) – Outlook B

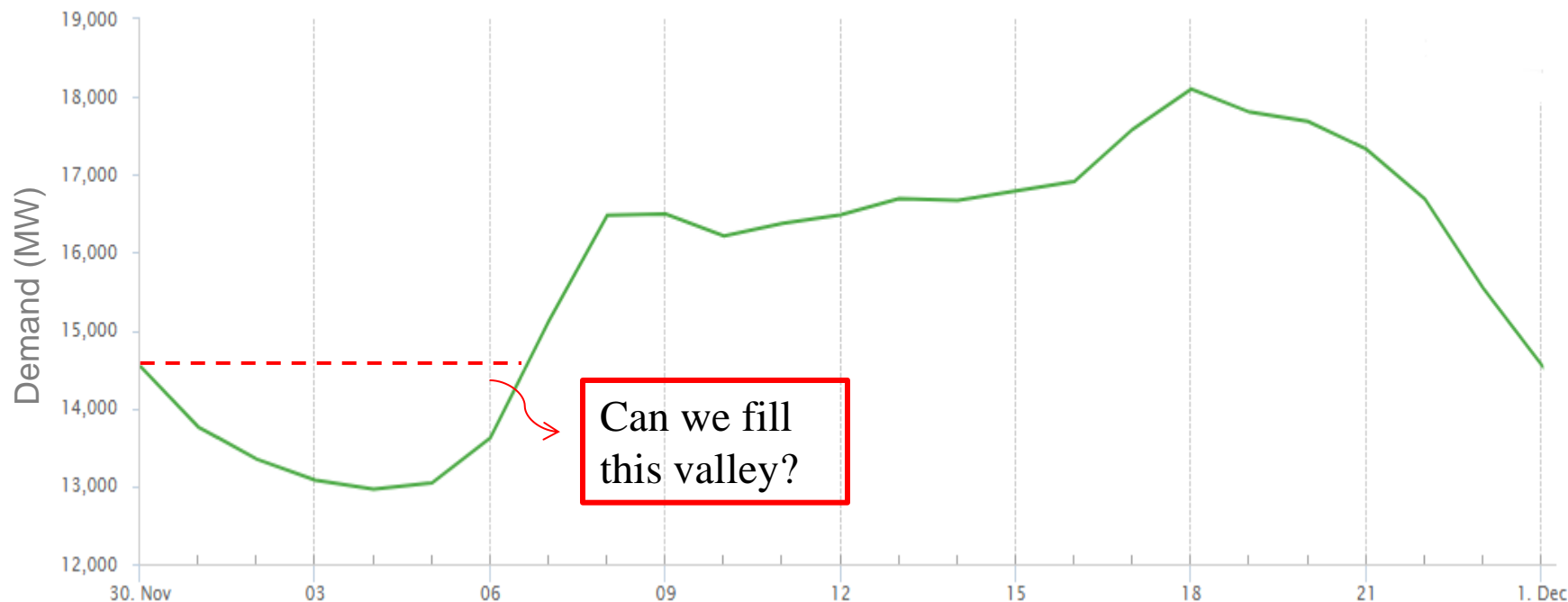
Ontario Demand

- Electrified transit represents 80% of energy growth:



Daily Demand

- Typical weekday demand:



* Snap from IESO.ca

- Hydrogen transit load:

- Size and flexibility in scheduling
- Potential influence over electricity market

- GA avoidance
- Positive influence on prices

THANK YOU