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CANMET ENERGY TECHNOLOGY CENTRE

Offshore Wind in the Great Lakes: Ontario

CLEAN ENERGY TECHNOLOGIES

Cynthia Handler

Renewable Energy Technologies Program

Canada 





Jurisdiction and Permitting

- Great Lakes are provincial ownership and jurisdiction
- For Ontario:
 - Lake Ontario
 - Lake Erie
 - Lake Huron
 - Lake Superior
- The Ontario Ministry of Natural Resources is responsible for permitting offshore wind.



Federal Role

- Some federal legislation may apply
 - Fisheries Habitat
 - Navigable Waters Act
 - Species At Risk Act
- If federal permits required or federal funding then
 - Canadian Environmental Assessment Act applies





Ontario's Position

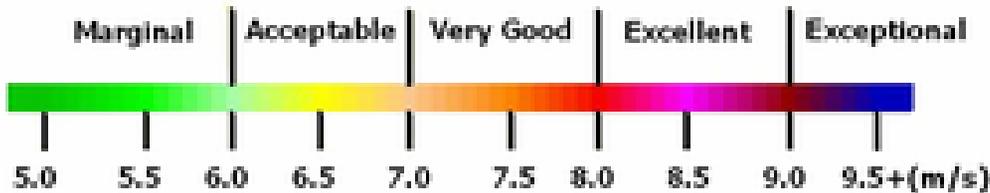
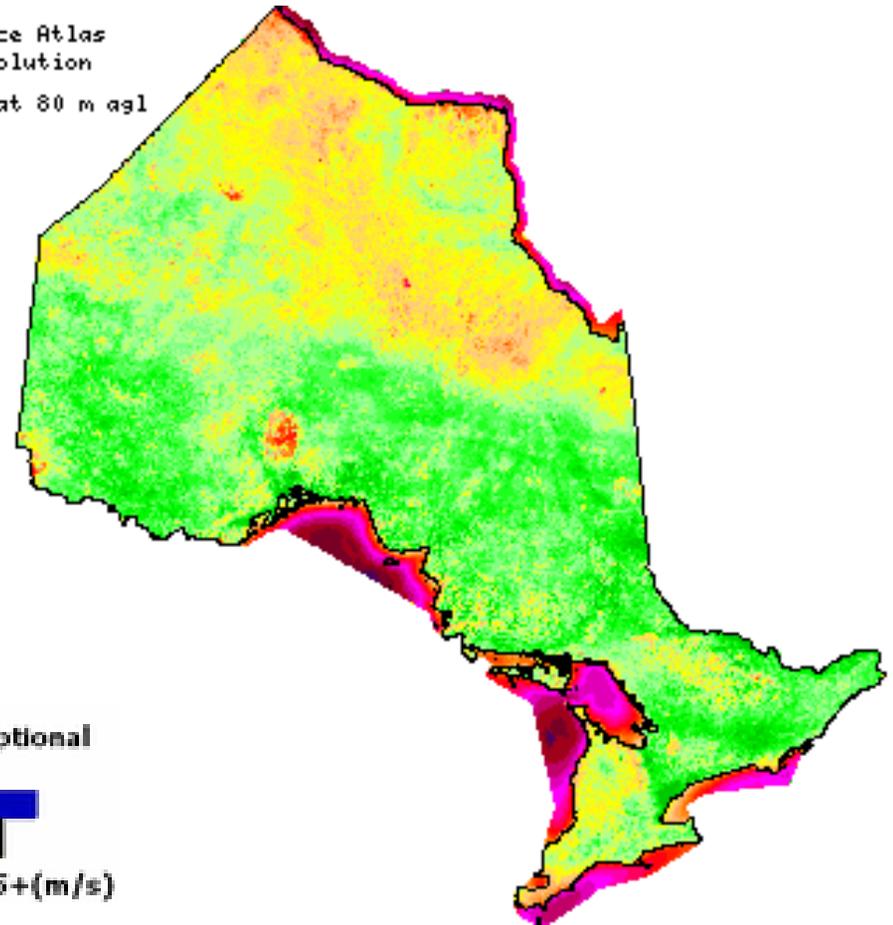
- Ontario is supportive in general of offshore wind installations, subject to a rigorous permitting and approval process which considers:
 - Environmental Impact Assessment including:
 - Fisheries;
 - Birds and bats;
 - Public impacts including aesthetics, noise;
 - Transportation;
 - Other Land use considerations
 - First nations land claims
 - Existing disposition of lake beds (ie mining, oil/gas/salt resources) ;
- Grid Interconnection – The developer must negotiate concurrence from the Ontario Energy Board, the Independent Electricity System Operator, the Ministry of Energy, and the Ontario Power Authority.



Ontario's Potential

- Ontario's best Wind Resources are on the Great Lakes, surrounding its highest demands.

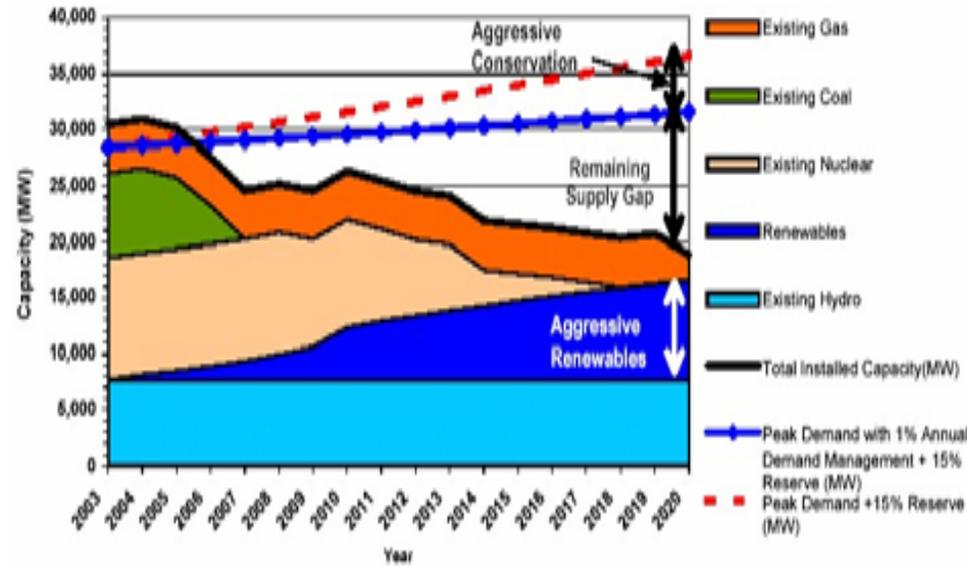
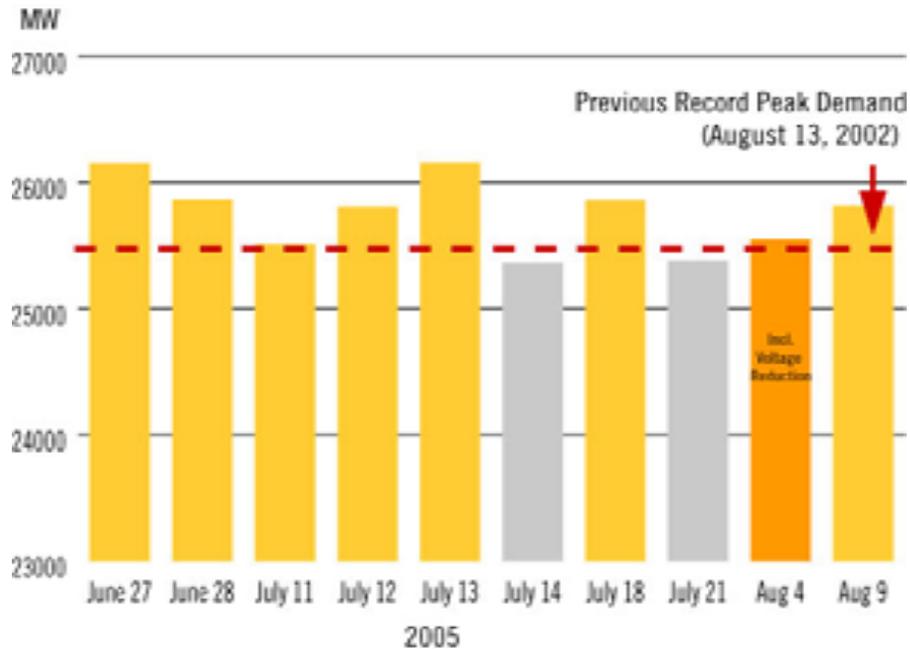
Ontario Wind Resource Atlas
Map Type - 1 km Resolution
Average Wind Speed at 80 m agl





Demand in Ontario

2005's peak demand exceeded 2002's on numerous occasions, creating significant challenges to maintaining system reliability



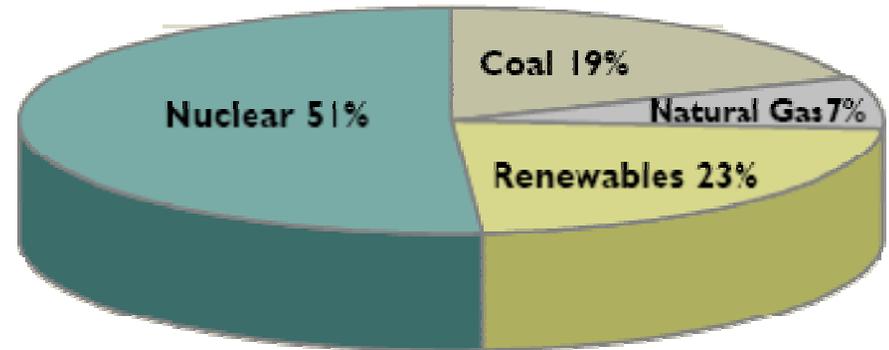
10,000 MW Supply Gap identified by 2020.



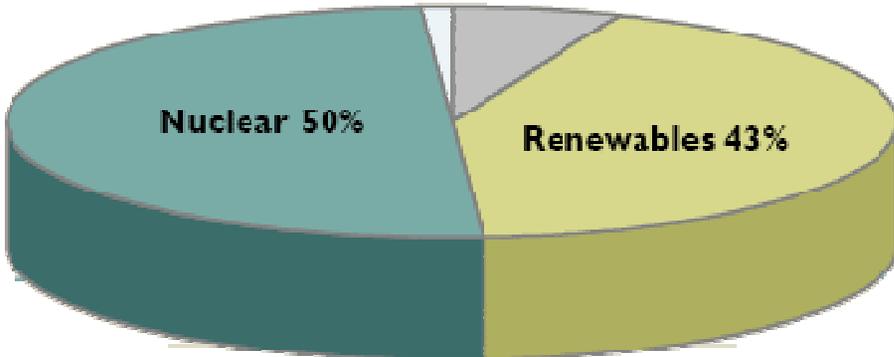


Growth in Renewables

Current electricity mix



Gasification 1% Natural Gas 6%



OPA recommended electricity mix in 2025

Wind:	5000 MW
Water:	1500 MW
Biomass:	500 MW
Solar:	40 MW





Ontario's Activity

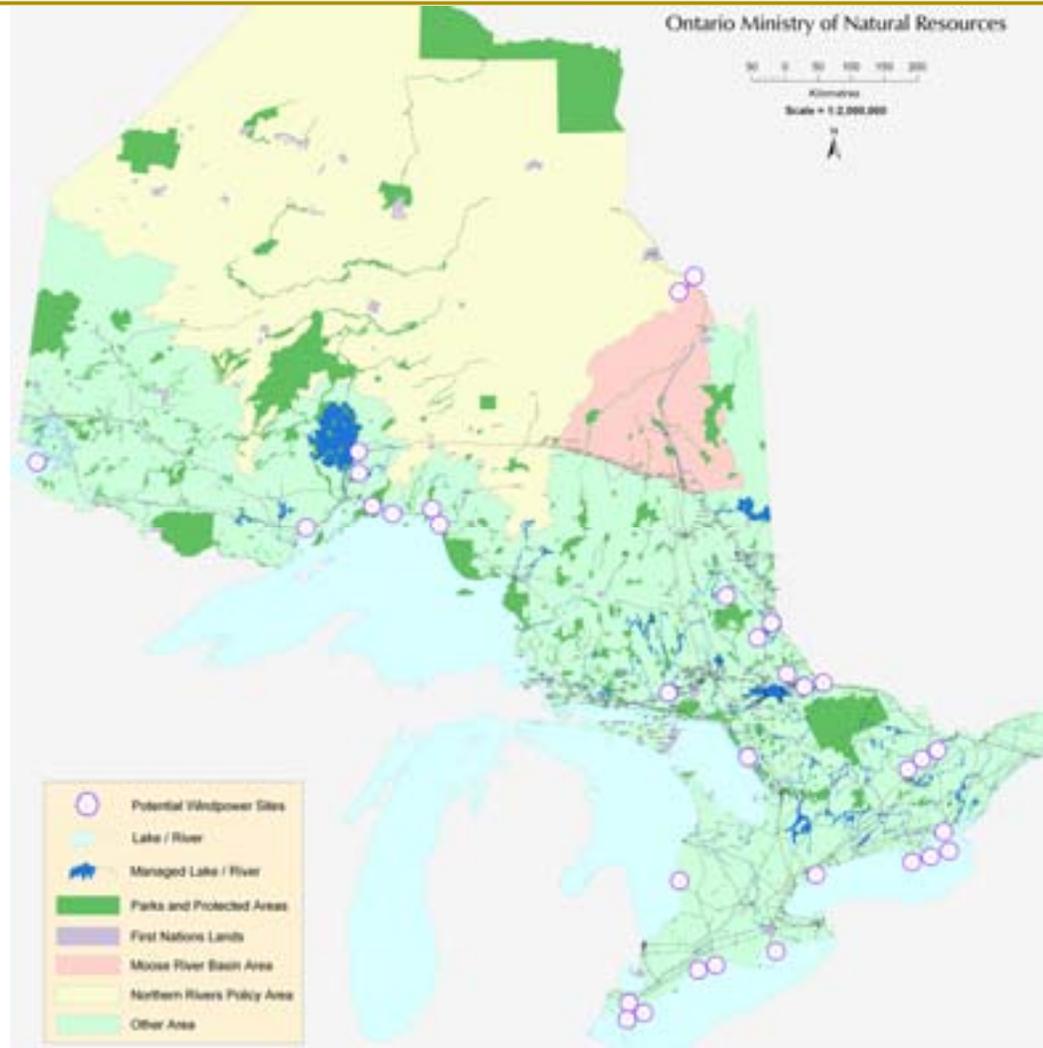
- Currently there are approximately 12 applications for offshore wind development in Ontario
- All applicants are in the process of assessing the wind resources on the coastlines, expected to take up to 3 years
- After wind resource assessment, the environmental impact assessment are expected to take approximately 2 years
- Subject to successful environmental impact assessment, and favourable economic conditions, the first offshore wind developments could occur in 4-5 years.



Ontario's Activity Cont'd

Offshore activity is concentrated on:

- Southern tip of Lake Erie
- Eastern Basin of Lake Ontario



Key Contacts

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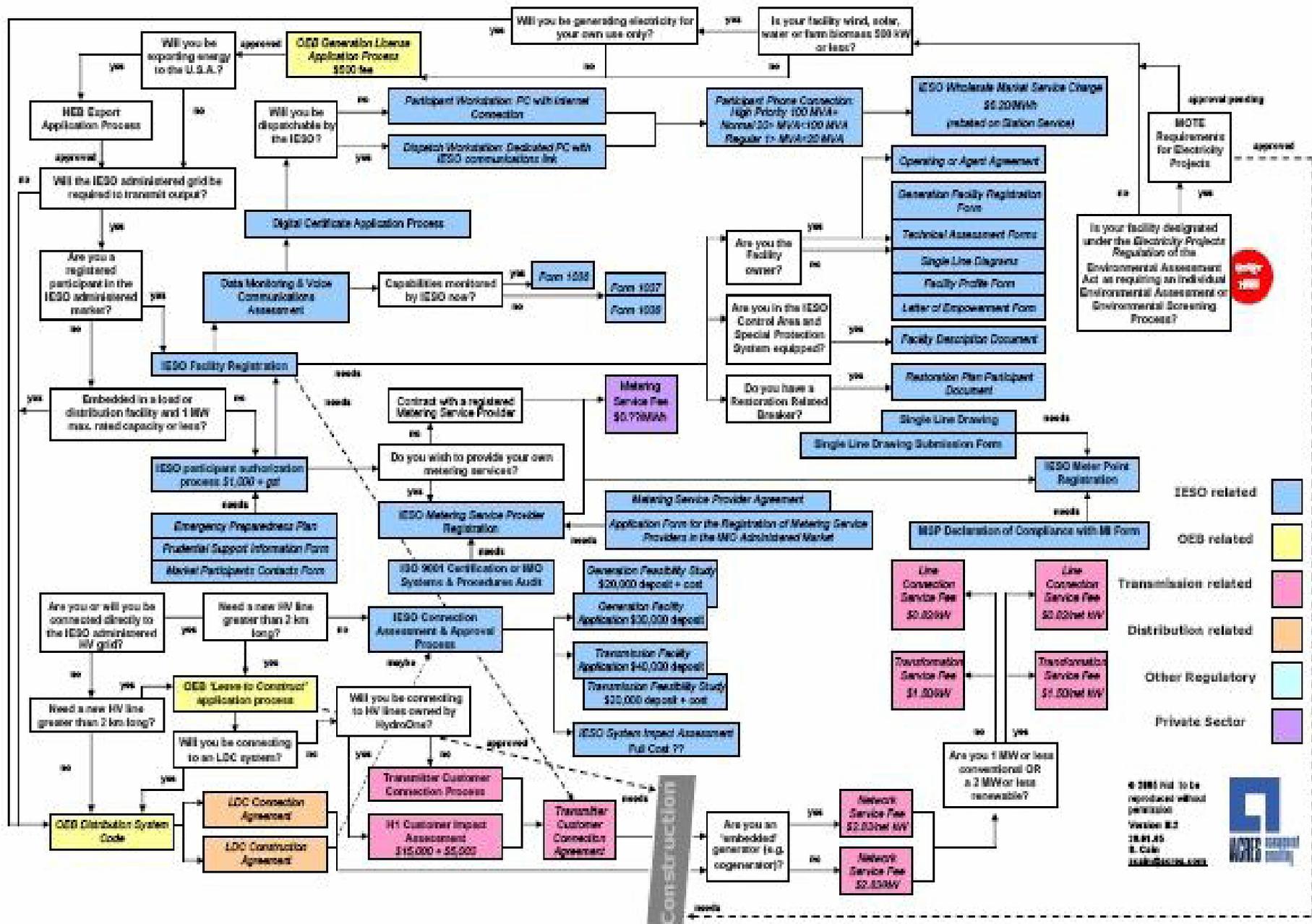
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