

Wind Power Integration in New Brunswick

Northeast SO Wind Integration Workshop

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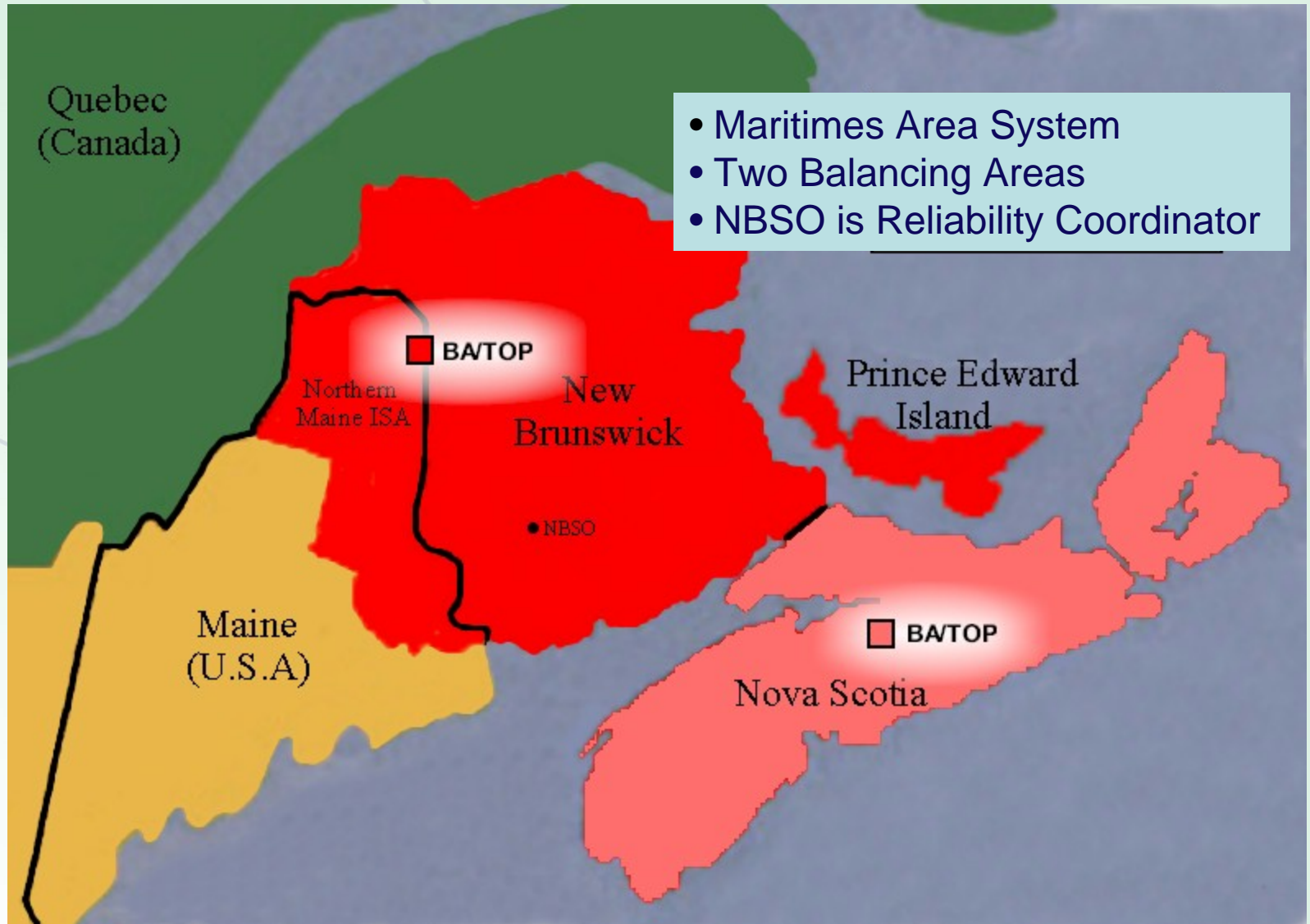


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Wind Power Integration in NB

- ***New Brunswick system overview***
- ***Wind power in New Brunswick***
- ***Relevant system characteristics***
- ***Keys to integration of wind power***





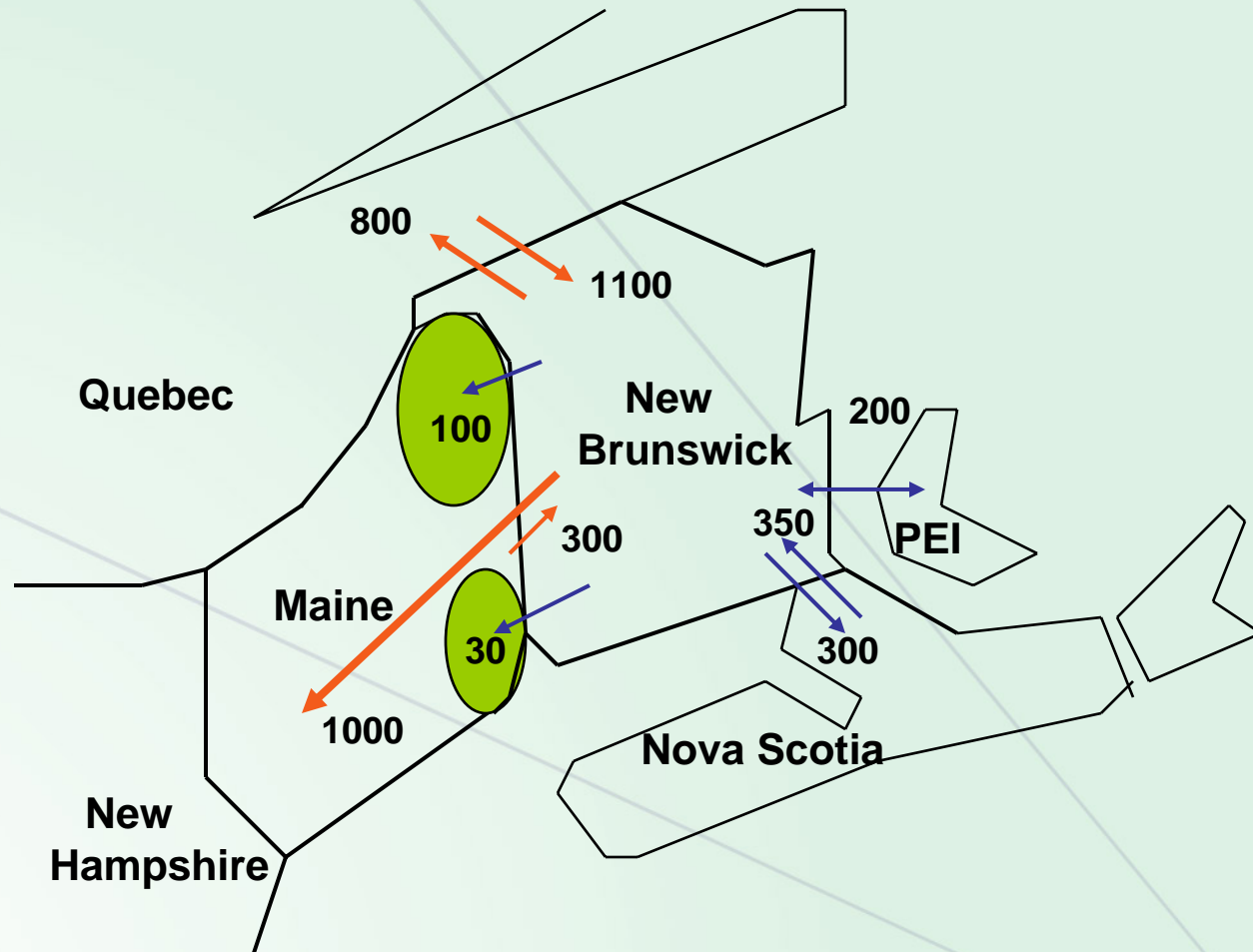
- Maritimes Area System
- Two Balancing Areas
- NBSO is Reliability Coordinator



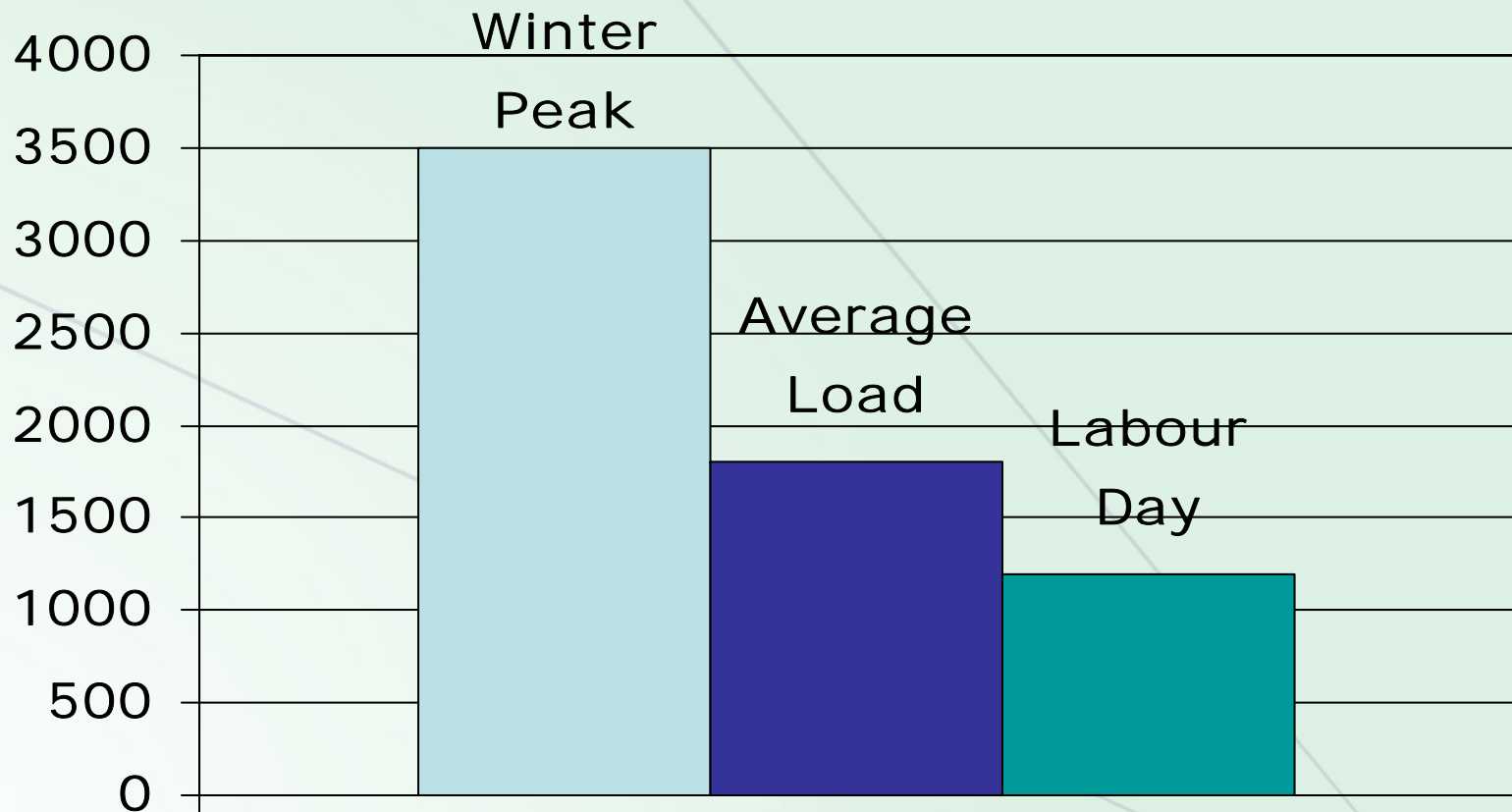
The New Brunswick transmission system diagram that was presented has been redacted from this version of the presentation by NBSO for security reasons.



Maritimes Area Interconnections



New Brunswick Load

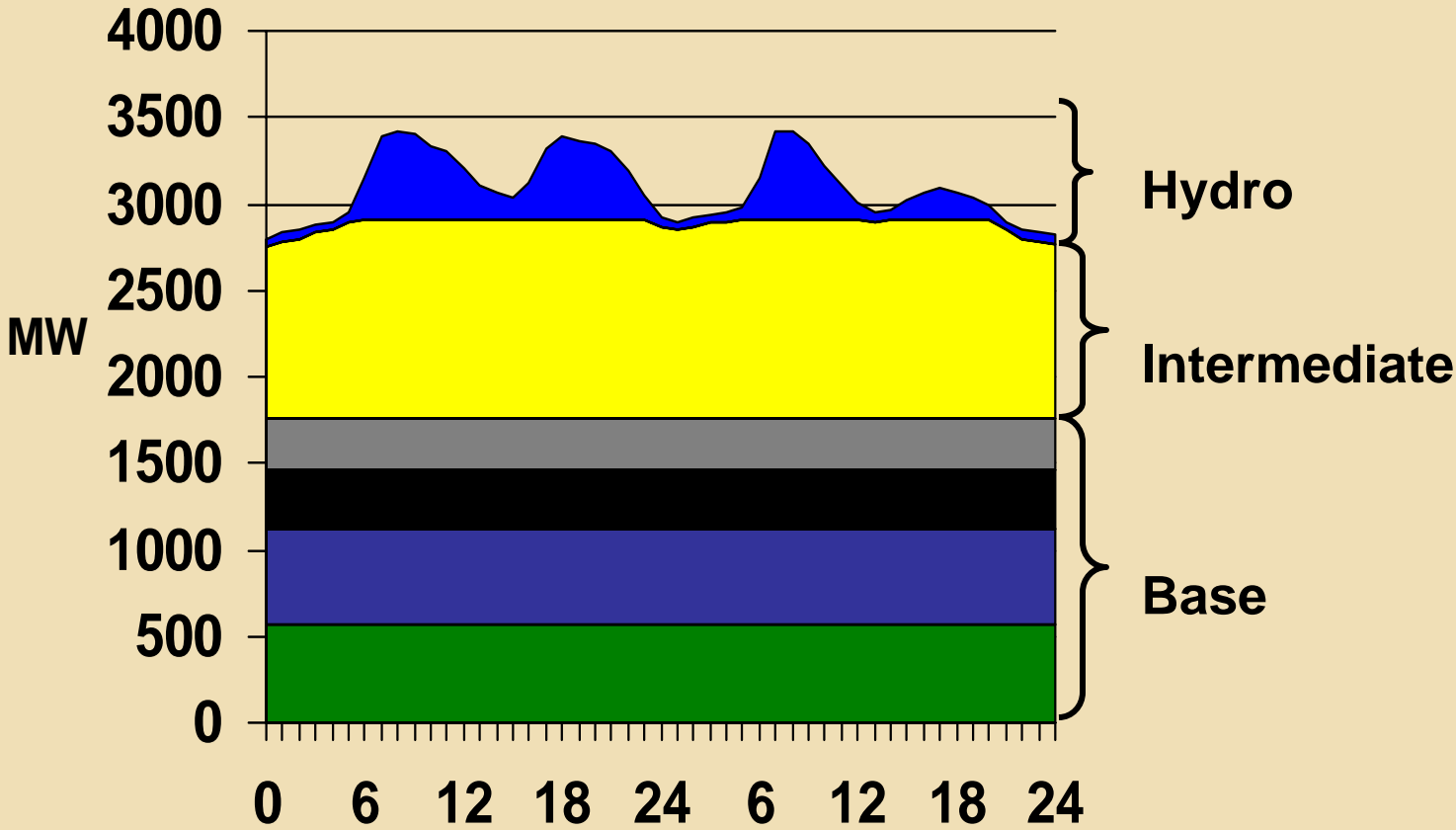


Installed Capacity in NB

<i>Baseload generation</i>	1700
<i>Intermediate generation</i>	1000
<i>Peaking generation</i>	600
<i>Hydro generation</i>	<u>900</u>
	4200 MW



Sample Energy Dispatch



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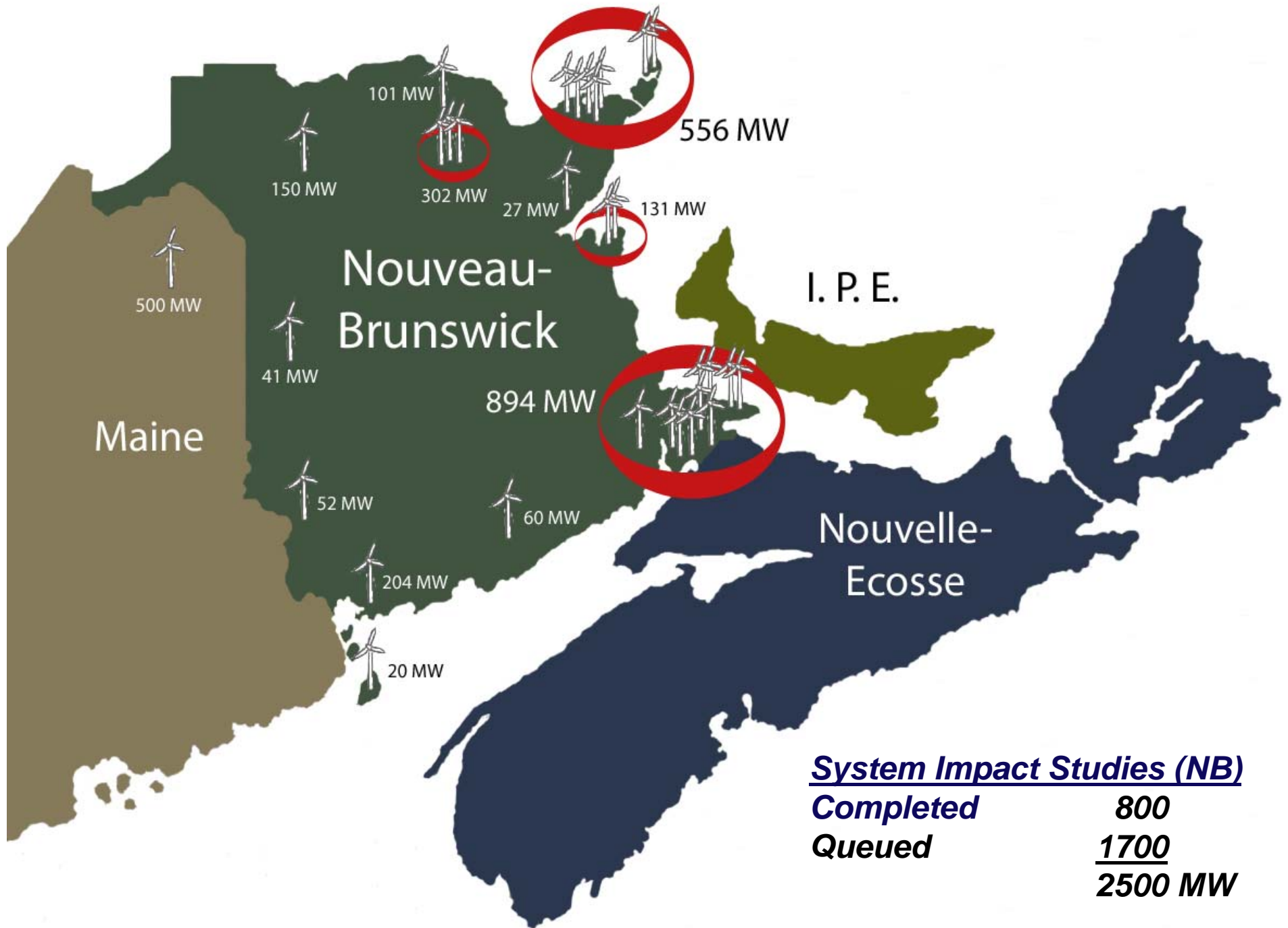
■ Nuclear ■ Coal ■ Gas ■ Oil ■ Oil ■ Hydro

NB Wind Power Production

<i>In production</i>	<i>0 MW</i>
<i>Committed projects</i>	<i>200 MW</i>
<i>NB Power plan</i>	<i>400 MW (by 2010)</i>
<i>RPS (if all from wind)</i>	<i>>400 MW (by 2016)</i>

Plus substantial potential for exports...





Maritimes Area Wind Penetration

Status	Amount (MW)	% of Peak	% of Valley
Existing	175	3%	7%
Committed	580	10%	24%
By 2013	1100	19%	46%
With exports	1800	32%	75%

Relevant System Characteristics

- ***Multi-jurisdictional Area***
- ***Robust transmission system***
- ***Multiple interconnects (relatively large)***
- ***Fully reserved interface to New England***
- ***Diverse generation types/fuels***
- ***Relatively large load swings***
- ***Limited regulation and load following capacity during spring runoff and winter***



Key Issues to Wind Integration

- ***“Mitigation”***
 - Diversity of wind regimes development
 - Accuracy of forecasting (DA and RT)
 - Sharing diversity across larger areas
 - Increasing load following capabilities
- ***New inter-area services required?***
 - Regulation
 - Load following
 - Intra-hour dispatch (e.g. 30-minute)
- ***Appropriate mechanism for our region?***
 - Market solutions?
 - Shared service arrangement?
 - Negotiated contract?



Questions?



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