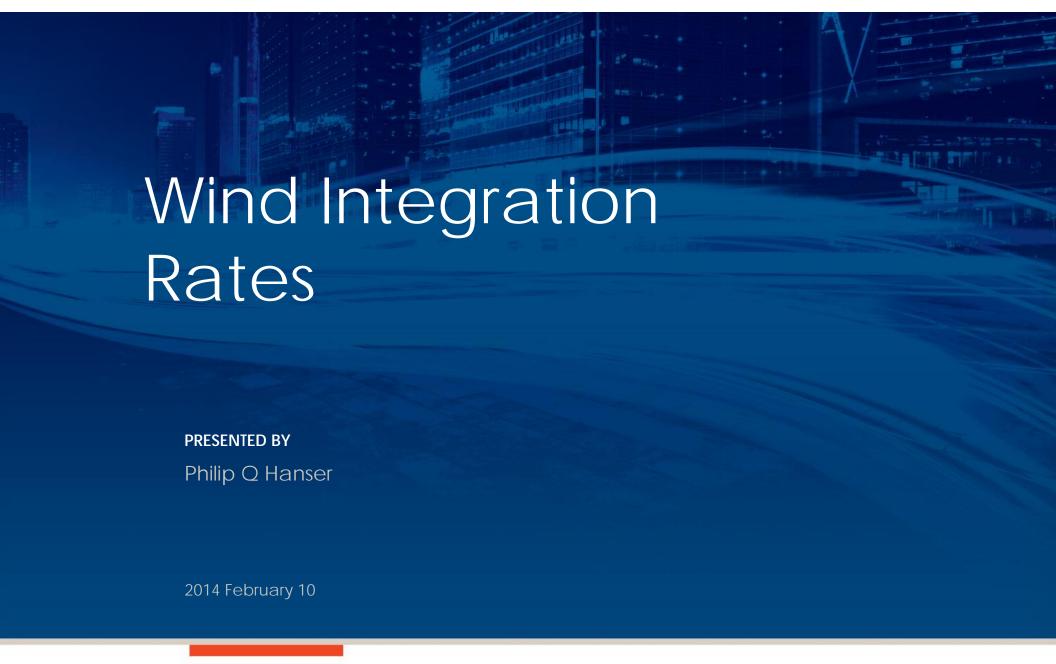


#### PRIX POUR L'INTÉGRATION ÉOLIENNE DANS CERTAINES **JURIDICTIONS NORD-AMÉRICAINES**

PRÉSENTATION DE L'EXPERT PHILIP Q. HANSER

Original: 2016-03-14 HQD-1, document 4





## **Summary of Expert Report**

# The mandate given by Hydro Québec Distribution (HQD) to The Brattle Group (Philip Q Hanser):

- Address the practices regarding the integration of wind generation in other North American jurisdictions.
- Review and discuss HQD's wind integration challenges.

### The principal conclusions of the report:

- Québec's market structure distinguishes it from the majority of U.S. jurisdictions.
- In the United States, the approved rates for wind integration are limited to the services required for intra-hourly variability in wind production.
  - The rates of these services (as addressed in the next slide) are similar to those in the current HQD agreement, but for a reduced set of services.
- The Distributor is responsible for meeting local load, and does not own any generation resources. Procuring integration services for a longer time frame enhances the ability of HQD to meet its responsibilities.

## **Approved Wind Integration Rates**

	MW Installed	Published	Published Rate	Rate in \$/MWh (for	Rate in \$/MWh (reference
	Capacity	Capacity Factor	(\$/kW-month)	published capacity factor)	capacity factor of 35%)
BPA	4711	32%	\$1.23	\$5.27	\$4.81
PSE	430	30%	\$1.55	\$7.08	\$6.07
Westar*	614	40%	\$4.44	\$0.50	\$0.58
NorthWestern**	141	40%	\$1.58	\$5.41	\$6.18
Idaho Power	678	27%	<i>NA</i> ***	\$6.50	\$5.01

<sup>\*</sup> Rates for Westar are for regulation only, while for the four other utilities the rate includes following and imbalance services.

<sup>\*\*</sup> Rates for NorthWestern Energy represents a Zone 1, long-term contract rate

<sup>\*\*\*</sup> The published rate for Idaho Power is already in \$/MWh