

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

PRÉSENTATION DE L'EXPERT PHILIP Q. HANSER

Wind Integration Rates

PRESENTED BY

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THE **Brattle** GROUP

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 Capacity	Published Capacity Factor	Published Rate (\$/kW-month)	Rate in \$/MWh (for published capacity factor)	Rate in \$/MWh (reference 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%	NA ***	\$6.50	\$5.01

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

** Rates for NorthWestern Energy represents a Zone 1, long-term contract rate

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