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FORECASTING SHORT-TERM ELECTRICITY PRICES

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Buying and selling electricity is a complex business. Because prices can fluctuate by more than 100 per cent in the space of a few hours, choosing the wrong time to buy or sell can prove costly. That's why both wholesale buyers and generating companies pay close attention to two figures.

The hourly Ontario energy price (HOEP) is a province-wide uniform market price that applies to wholesale customers. It's what they actually pay. The pre-dispatch prices (PDPs) are forecasts of the HOEP, based on simulations. PDPs are published every hour by the Ontario Independent Electricity System Operator to help buyers decide whether to buy and sellers whether to sell.

The problem? PDPs are far from accurate. In 2004, for example, the PDP released one hour before the actual HOEP had a mean absolute error of 26 per cent. UW researchers, on the other hand, have been able to generate more accurate forecasts of HOEP.

A group led by Kankar Bhattacharya and Claudio Cañizares have created HOEP forecasting models that take into account historical HOEP values, PDPs, and information about electricity supply and demand. The implementation of these models by their partner Energent consistently generates forecasts for its customers that outperform the PDPs.

Predicting the future is never easy. Thanks to this new model, however, the crystal ball just got a little clearer.

Partners: Energent Incorporated

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