



## Competitive Electricity Markets: Ontario's Journey to LMP

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For more than twenty years, uniform regional pricing has been an “Achilles heel” for Ontario’s electricity market efforts, according to Susan Pope, Managing Director at FTI Consulting. However, Pope reported in Monday’s energy policy seminar, the Canadian province of Ontario is now close to remedying this problem and implementing some of the key ingredients of competitive electricity markets: locational marginal prices and a day-ahead energy market.

Pope began with a brief introduction to electricity market design, in order to clarify the importance of locational marginal prices. In the electricity sector, Pope explained, because of the limits of the electric grid, the cost of providing electricity varies from place to place—sometimes significantly. For example, costs are often higher in urban areas, since it may be hard to get cheap power sources, such as hydro, through congested urban electric grids, forcing city consumers to rely on more expensive local generation. To reflect this variation and to provide accurate price incentives, electricity market systems must use locational marginal prices (LMPs), Pope explained. Using a uniform price across the market, rather than locational prices, risks overpaying hard-to-access generation, and underpaying the generation most needed to serve local demand.



In the late 1990’s, like many other jurisdictions, Ontario established a market for electricity, Pope said. The idea was that prices would be established, not by administrative analysis, but by competition, resulting in greater efficiency. However, Pope explained, although Ontario established a “close to best-practice real-time dispatch,” the province chose not to reflect its sophisticated understanding of costs in the actual prices paid for energy—instead implementing a competitive market featuring a uniform price. At any given time, the price paid for electricity was the same throughout Ontario. This choice, Pope observed, was the fatal flaw of the Ontario electric market. As a result, in order to implement the optimal dispatch prescribed by the system, Ontario had to supplement its single price with additional compensation to some suppliers, while also compensating other suppliers for being required *not* to produce electricity. The results have been increased costs and a system that failed to provide good signals for efficient generation investment.

Further complicating matters, over the past two decades, Pope noted, the Ontario Ministry of Energy has been engaged in extensive centralized supply planning that has led it to enter into long-term contracts many of which are at above-market costs. The result has been high costs for electricity. For example, in 2017, Ontario electricity customers paid almost \$12 billion through their rates for the costs of these long-term contracts, the fixed cost recovery guaranteed to some regulated suppliers, and conservation program delivery. These charges from centralized supply planning account for a large portion of the cost of power in Ontario.

Recently, however, Ontario has begun an effort towards market renewal, Pope said, aimed at implementing a “best practices” electricity market that will include locational prices, along with other market elements such as a day-ahead electricity market. Ontario is working to transition the provisions of the long-term contracts to continue to ensure suppliers’ participation in economic dispatch and mitigate impacts on pricing. The proposed reforms do face some challenges, Pope acknowledged. For example, it has been hard to gain acceptance for the idea that some customers may have to pay more for electricity than others, based on location, given that customers have become used to the idea of uniform pricing. The Province has worked hard to address stakeholder concerns. The proposed reforms to the spot energy market are expected to reduce the cost of meeting load and to enable Ontario to efficiently and reliably accommodate increase levels of supply from intermittent generators, such as wind and solar.

Pope spoke as part of the Kennedy School’s Energy Policy Seminar Series, which is sponsored by the Consortium for Energy Policy Research of the Mossavar-Rahmani Center on Business and Government.