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ISO New England Implements Major Enhancements to Wholesale Energy Market

Enhancements improve market incentives, help address grid reliability risks stemming from natural gas pipeline constraints

- Generators can change price and supply offers hourly, reflecting changing fuel costs
- Negative offers to $-\$150$ per megawatt-hour allowed, improving price signals to resource owners to reduce output or shut down when consumer demand is low
- Two-year project involved more than 100 ISO New England staffers from 24 departments
- Virtually all ISO software systems were affected, most extensively those for power grid operations, wholesale markets, market monitoring, and billing and settlements

Holyoke, MA—December 18, 2014—Earlier this month, ISO New England Inc., the operator of the region’s bulk power system and wholesale electricity markets, completed a multi-year transition to a new market system that allows generators to submit supply offers on an hourly basis, an enhancement that will help improve power system reliability.

The Energy Market Offer Flexibility project, which received broad support from industry stakeholders, is designed to bring more accurate wholesale power pricing and financial incentives that recognize power plants’ actual risks from changing fuel costs. Now, power plant owners can change their offers to supply power on an hourly basis, which will allow them to account for fuel costs that change throughout the day.

“The hourly offers project represents a major step forward in the ISO’s ongoing efforts to address the key challenges to the continued reliability of New England’s power system,” said Vamsi Chadalavada, executive vice president and chief operating officer. “The previous market structure worked effectively for many years, but more recently the region has seen natural gas pipeline bottlenecks that not only cause significant volatility in natural gas prices, but also threaten the reliable operation of the power system when generators can’t get fuel. The market enhancements implemented this month will result in more accurate pricing and will provide incentives for resources to remain in the market and perform when needed.”

Key Energy Market Changes

The new system, launched December 3, allows resource owners to submit up to 24 separate offers to supply power for each hour of the following day, and to update their offers during the operating day. These offers specify the quantity of power and the price at which a resource is willing to supply the power. Before the changeover, market rules were designed for resource owners to submit one offer for all hours of the following day, with one opportunity to revise the offer before the operating day. Resources could not alter their offers during the operating day.

Under the previous system, power plants sometimes found themselves committed to provide electricity at a price based on the previous day’s fuel cost but in the meantime, fuel prices had changed dramatically. As a result, sometimes generators were providing much-needed power, but at a price loss. This created financial risks for generators and dampened long-term incentives for resources to remain in the market. Providing the opportunity for resources to reflect changes in their actual cost of fuel ensures more accurate pricing in the wholesale energy market.

The project also allows resources to submit negative offers as low as $-\$150$ per megawatt-hour (MWh). Lowering the “energy offer floor” below the previous minimum of $\$0/\text{MWh}$ helps improve price signals to resource owners to reduce output or shut down when consumer demand is low and there is a risk of excess generation. Allowing resources to submit negative offers accommodates resources that can operate economically at very low energy prices, including wind energy facilities that can only run when the wind blows, and often receive tax credits for production. Resources that want to continue operating, even if they would have to pay rather than get paid, can now submit negative offers to ensure they’re dispatched during times of low demand. The ISO dispatches the lowest-cost resources first in order to meet demand, consistent with reliability.

Another element of the market rule changes ensures that resources committed to operate by the ISO to ensure reliability are better able to cover their costs of supplying the energy requested, under a wider range of circumstances. Major revisions to market monitoring rules also were made.

The Energy Market Offer Flexibility project has been underway for more than two years, starting with a comprehensive market design process with the region’s market participants and other stakeholders. Starting in late 2013 and throughout 2014, extensive revisions were made to nearly all software systems at the ISO to incorporate hourly offers. The project required the work of about 120 ISO employees from virtually every department, and an estimated 120,000 staff-hours. About 40 external consultants, including those from Alstom, the company that provides ISO New England’s energy management system, also contributed to the project.

“The magnitude of this project is second only to the implementation in 2003 of the current energy market, with the creation of eight pricing zones and the addition of both day-ahead and real-time markets. We’re pleased with the rollout, accomplished with the help of market participants, regulators and other industry stakeholders, and expect to see improvements to grid reliability and market efficiency in New England, particularly when demand for natural gas is high,” Chadalavada said.

Addressing Risks to Grid Reliability Through Wholesale Market Design

The Energy Market Offer Flexibility project is a key element of ISO New England’s Strategic Planning Initiative, launched in 2010 to address critical challenges to the continued reliability of the regional power system. The dependence on natural gas for power generation combined with pipeline constraints, declining resource performance, and the recent and pending power plant retirements have emerged as the dominant challenges facing the region.

The ISO, market participants, regulators and policymakers, consumer advocates and other industry stakeholders have worked diligently to design wholesale market rules that will provide appropriate incentives to attract and retain needed resources. Pay-for-performance incentives, due to go into effect in 2018-2019, are another key market reform to incentivize resource owners to make investments to ensure their assets can perform during times of system stress.

ISO New England has made many other market and operational changes to address the reliance on natural gas for power generation, including shifting the deadlines for the Day-Ahead Energy Market to align more closely with the natural gas industry’s trading deadlines, and enhancing already strong communications between the industries.

ABOUT ISO NEW ENGLAND

Created in 1997, ISO New England is the independent, not-for-profit corporation responsible for the reliable operation of New England’s electric power generation and transmission system, overseeing and ensuring the fair administration of the region’s wholesale electricity markets, and managing comprehensive regional electric power planning.

