Improving the Reliability and Efficiency of New England's Wholesale Electric Market

Transitioning to a Locational Installed Capacity Market: June 2004

Background:

Electricity is a product that must be produced as it is consumed. It cannot be stored and is subject to considerable real-time fluctuations in both supply availability and customer usage. For these reasons, it is essential to always have available more capacity than is necessary to meet the actual power needs of consumers, including usage changes associated with different times of the day and year. Infrastructure needed to produce and deliver electricity and to meet these fluctuations is capital intensive and requires long lead times to develop, site and construct. Despite the challenges associated with producing and delivering this unique product, electricity is a necessity of life and is essential for economic activity. Unreliable electric service has serious and costly implications, which is unacceptable to society and public policy makers. ISO New England's (ISO NE) mission includes maintaining the reliability of the bulk power system in New England.

In order to safeguard against unreliable electric service, a mechanism is required to ensure adequate power supplies are available on demand, particularly during peak usage periods. Capacity markets are designed to do just that by securing power supplies at levels above actual consumption in order to provide a cushion of supply and maintain a high standard of reliability—both now and into the future.

To achieve this, capacity resources, namely power plants and customer demand response, need to be compensated for being available to provide supplies to the grid. To be clear, capacity markets are separate from energy markets and do not compensate for power that is produced; rather capacity markets provide revenues to resources for being available to produce power when it is needed. As a result, capacity markets are intended to provide incentives for investment in capacity resources that provide for the needed cushion of supply and long-term resource adequacy.

Overview of New England:

New England's transition to a deregulated wholesale electricity marketplace began in 1999. In a short period of time, significant improvements have been made to the market that are delivering numerous benefits to customers across the six-state region. Most notable has been the construction of over 9,000 megawatts of new, modern, and highly efficient generation resources needed to serve the growing power needs of New England and the installation of a new, more transparent and efficient market design. New England's Standard Market Design, a system of efficiently pricing power and identifying power system needs, was put in place only a year ago and is already meeting one of its intended goals—the encouragement of effective power system solutions to meet the reliability and efficiency needs of the marketplace.

Overall, the wholesale markets in New England are working efficiently, producing highly competitive results, and providing benefits to consumers. However, these markets are not yet complete. While

competition has driven down wholesale electricity prices, these prices are often too low to support the resources needed for both short and long term reliability. The capacity market mechanism acts to supplement energy market revenues and is intended to provide adequate compensation to retain and attract capacity resources. As a result of transmission constraints, New England's present capacity market structure is no longer as effective as it once was and needs to be enhanced to create a mechanism that assures adequate resources will be put in place when and where they are needed to ensure continued reliability.

New England's Current Installed Capacity Market:

Today's capacity market mechanism provides payments to capacity resources based on a region-wide assessment of capacity needs. It does not take into account the capacity needs of areas with limited access to regional power sources, such as in the highest usage areas of Connecticut and Northeast Massachusetts, including Boston (NEMA/Boston), where power system needs differ from other areas of New England. Presently, the overall region-wide capacity outlook is positive and results in low capacity prices, but a mechanism is not in place to send price signals that will lead to the development of needed capacity in the long term, in the areas mentioned above. In the near term, this practice undervalues capacity in the areas that need it most. As a result, some generators are unable to continue operations without additional financial support.

In recent years, ISO NE has been forced to enter into fixed cost contracts outside of the market in order to keep older, inefficient power plants online in high usage areas. These contracts do not solve the problem. In fact, they exacerbate the difficulties faced in these areas by prolonging reliance on capacity resources that are inefficient and by delaying potential investment in more economic, and environmentally friendly power sources. ISO NE's Locational Installed Capacity (Locational ICAP) proposal is a market-oriented approach to addressing this problem.

Transitioning to a Locational ICAP Market:

ISO New England is proposing Locational ICAP as a critical improvement to New England's current installed capacity market and one that will further complete the wholesale markets. Locational ICAP is based on the premise that capacity should be neither overpaid in surplus areas such as Maine, nor underpaid in deficient areas such as Connecticut. By establishing Locational ICAP zones and calculating an appropriate Locational ICAP requirement, based on transmission constraints experienced on the system, the capacity market will be able to properly and accurately value the location of generating resources and, in turn, appropriately compensate these resources for the value provided. This will allow for the capacity market to meet its dual purpose of ensuring availability of needed resources in the short term and providing a market signal to encourage investment in transmission, generation and demand response infrastructure where it is needed for long term resource adequacy.

A variety of power system factors, such as the location and size of power supplies and an area's ability to import electricity from outside resources, will determine the Locational ICAP requirement in each of the four zones of Connecticut, NEMA/Boston, Maine, and the remainder of New England. New England's market participants, including power suppliers, marketers, and utilities, will have an obligation to meet their share of this requirement by procuring capacity either through bilateral contracts or through an auction administered by ISO NE. If a participant fails to meet its full Locational ICAP obligation, it will be required to purchase its requirement at the spot market price. Participants concerned about uncertain or elevated spot market prices have the opportunity to enter into long-term bilateral contracts as the best means of meeting Locational ICAP requirements. Transparent Locational ICAP market signals and information will facilitate informed bilateral contracting activity.

Implementation and Timing:

To ensure a reasonable approach to this change and accommodate unique regional needs, ISO NE is proposing a phased-in approach to the Locational ICAP requirement. This allows ample time for transmission projects and other system solutions to be developed in those areas of New England with limited access to power supplies, such as NEMA/Boston and Connecticut. Power market solutions that increase access to regional supplies, and better meet local needs, will potentially modify the Locational ICAP requirement. In the meantime, the five-year phase-in period will keep the Locational ICAP price capped in these zones to avoid undue rate impacts to consumers. Assuming there are no capacity changes in Maine, Rhode Island, Vermont, New Hampshire and the rest of Massachusetts, preliminary estimates show that there will likely be very limited additional costs, if any, in those areas.

The Federal Energy Regulatory Commission (FERC) mandated that ISO NE file a proposal for a Locational ICAP market on March 1, 2004 and implement the new market by June 1, 2004, before the start of the summer peak period. As part of this filing, ISO NE has requested that its Locational ICAP proposal be approved as a short-term solution that may be replaced or modified by a long-term comprehensive regional resource adequacy proposal. A Resource Adequacy Dialogue stakeholder process was established by ISO New England last year with the goal of developing a long-term resource adequacy solution for the region. In addition, ISO New England plans to review the performance of the initial twelve months of Locational ICAP in New England. ISO New England has committed to making a filing for a long-term solution by the end of 2005 that will be informed by both this ongoing regional dialogue among a broad cross section of participants and public officials and at least one year of operating experience.

The Benefits of a Locational Installed Capacity Market for New England:

Locational ICAP will:

1. Enhance reliability by creating a stronger market signal to promote investment when and where it is needed.

2. Encourage older, inefficient, and polluting power plants to be replaced by newer power sources.

3. Reduce the utilization of fixed cost contracts "outside of the market" and other mechanisms that currently support generators that are needed for reliable service in certain areas but rarely run.

4. Fairly compensate existing generators in Connecticut and NEMA/Boston in the near term to keep plants available and in good working order to protect reliability.

5. Facilitate the availability of transparent information and accurate signals needed to encourage long-term bilateral contracting activity in the capacity market.

6. Provide a phase-in of capacity prices in the deficient areas of CT and NEMA/Boston to allow time for the development of generation and transmission resources and to avoid undue rate increases for consumers.

7. Transition the New England region to a long-term resource adequacy solution that will ensure a reliable and efficient power supply that meets New England's needs.

For more information, please contact the External Affairs Department, ISO New England at 413.535.4000.