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Transmission Congestion Study Workshop
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Progress in New England

Since the passage of the Energy Policy Act in 2005 and the issuance of the Department of Energy's first congestion study in 2006, New England has continued to make significant progress building infrastructure, including market-based supply- and demand-side solutions and regulated transmission.

ISO New England and the region's stakeholders have introduced enhancements to the planning process and wholesale electricity markets that keep New England on a path to meet mandatory reliability standards and ensure resource adequacy today and in the future. These developments have not been without controversy, but in the end, we've worked to meet these challenges together as a region. The New England states have been actively involved in shaping this success.

One of the keys to this success is the robust stakeholder process in New England. Almost everything we do – from selecting a board of directors, to formulating a budget, to developing market rules and tariff changes, to developing the regional system plan – is conducted through an open and inclusive stakeholder process with the active participation of the states.

I would like to offer a few examples of how we're getting things done here in New England.

Market signals resources to locate in areas of need

The first auction under the new Forward Capacity Market has resulted in commitments for 1,800 MW of new resources to come online by 2010. Two-thirds of this is for new demand resources. And the show of interest for supply and demand resources for the next auction is robust. The results of the first auction show that resources are being developed in areas of greatest need, such as Connecticut and Massachusetts.

Figure 1 shows the levels of new demand and supply resources that cleared in the auction for each state in New England.

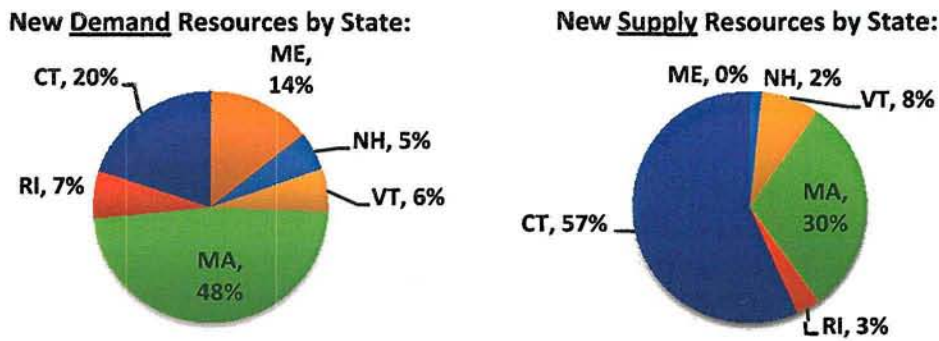


Figure 1: Resources Cleared in FCA-1

Many of the projects in the ISO Generator Interconnection Study Queue (the Queue) are proposed for areas where the capacity is needed the most. A list of projects in the Queue is updated regularly on the ISO Web site.¹

Regional planning process leads to transmission investment throughout New England

Since 2000, when ISO was granted authority for regional system planning by the Federal Energy Regulatory Commission (FERC), ISO has identified system needs that have resulted in transmission projects in each of the six New England states.

Figure 2 shows the major transmission projects and studies underway in New England.

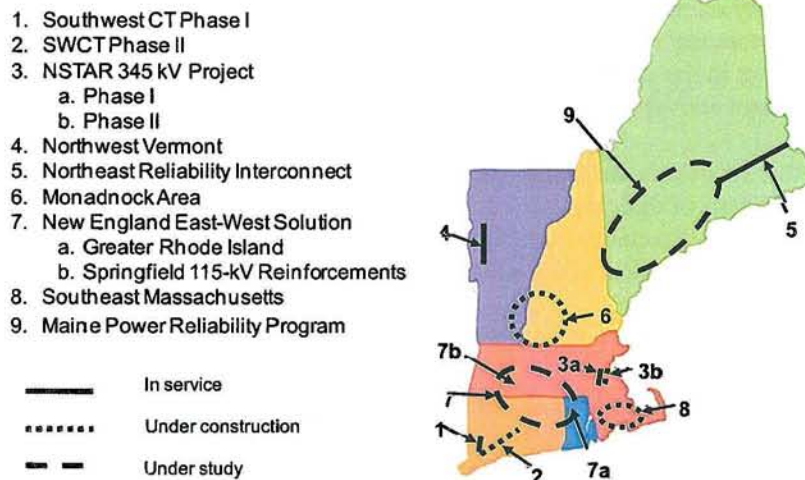


Figure 2: Transmission Projects in New England

We have completed four major 345-kV transmission projects in four states, with two additional projects under construction. These projects reinforce critical load pockets, such as Southwest Connecticut and Boston, and areas that have experienced significant load growth, such as Northwest Vermont. This also includes a new connection to New Brunswick, which increases our ability to import power from Canada.

¹ http://www.iso-ne.com/genrtion_resrcs/nwgen_inter/status/index.html

An upgrade of an existing underwater transmission cable between Connecticut and Long Island – part of the New England-New York interface – is also underway. This cable (known as the 1385 line) is an important source of supply into Southwest Connecticut.

Since 2002, more than 200 projects have been put into service totaling more than \$1 billion.² *This represents the first significant transmission expansion in New England in three decades.*

ISO’s planning process has identified the need for more than \$6 billion of additional transmission investment over the next decade to ensure the region meets reliability standards.

Figure 3 shows the projected transmission investment for New England over ten years.

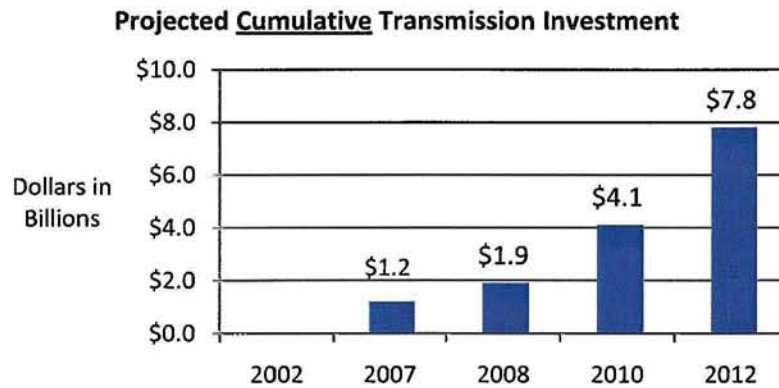


Figure 3: Transmission Investment in New England

ISO believes that the existing planning process in New England, which includes active participation from the states, is working to get needed transmission built.

In addition to planning improvements within New England, the ISO is actively involved in interregional system planning with neighboring systems and other members of the Northeast Power Coordinating Council (NPCC). ISO is actively involved in developing the Joint Coordinated System Plan with system operators and stakeholders throughout most of the Eastern Interconnection. In addition, the Joint ISO/RTO Planning Committee has been actively providing system assessments and has initiated studies of new ties between the ISO-NE, NYISO, and PJM systems. This activity has been coordinated through an open stakeholder process that includes market participants and governmental representatives from these three ISO/RTO regions.

Critical improvements to an area with acute reliability problems

Connecticut and Southwest Connecticut have historically comprised a major area of concern for ISO, the Department, FERC, and the region due to the area’s aging transmission and generation infrastructure and growing demand for electricity. However, several developments since the Department issued its first congestion study have resulted in noticeable improvements for the state.

² This includes 51 projects in 2005, 53 projects in 2006, and 35 projects in 2007. An additional 62 projects are expected to be in service this year, and an additional 68 projects in 2009.

For example, the first phase of the Southwest Connecticut Reliability Project – the Bethel-Norwalk Project – has been put into service, and the second phase – the Middletown-Norwalk Project – is scheduled to be in service before the summer of 2009, ahead of its original schedule. These projects, which together complete a 345-kV loop into Southwest Connecticut, address one of the top reliability needs in New England.

As another example, New England has had up to 5,500 MW of generators operating under reliability agreements in recent years at a cost of nearly \$700 million to the region. Most of these agreements have been needed due to transmission constraints in Connecticut. Currently, the state has 2,600 MW of units operating under reliability agreements at an annual cost to Connecticut consumers of approximately \$240 million. However, as a result of the resources committed in the first auction, ISO expects the level of reliability agreements across the region to drop significantly to only two units in Connecticut totaling 330 MW by 2010. The termination of these reliability agreements is evidence of improvement to the infrastructure in Connecticut.

Almost half of the existing capacity resources enrolled throughout New England in ISO's Demand Response Program is located in Connecticut, and most of this is concentrated in Southwest Connecticut.

Connecticut has also taken action at the state level since 2005 through various requests for proposals and other procurement mechanisms that offer incentives for new resources to locate in the state, including distributed, base load and peaking generation resources.

The development of additional resources is helping to relieve long-standing transmission constraints in Southwest Connecticut and Connecticut, which helps move the state closer to equilibrium with wholesale electricity prices in the rest of the region.

Congestion

In 2007, ISO observed little persistent transmission congestion overall in New England, although congestion can occur under certain circumstances, such as short-term outages on the transmission system. Total annual congestion costs for the region fell from \$192 million in 2006 to \$112 million in 2007, in a wholesale energy market valued at \$10 billion in 2007.³ Furthermore, little congestion is apparent within the region under the conditions being analyzed for the forthcoming 2008 Regional System Plan (RSP08).⁴

Historically, the highest levels of congestion in New England have occurred in Connecticut. However, the improvements described above have been effective in reducing the level of congestion in this area. In 2007, congestion represented 4% of the average annual LMP in the Connecticut zone, down from 2006.

Other system conditions can require commitment of out-of-merit (i.e., uneconomic) generators for reliability, particularly in local areas that may need protection for certain contingencies. These conditions might not result in a higher congestion component of the LMP, but could result in added costs to operate the system reliably. The RSP has and will continue to address these situations within New England.

³ 2007 Annual Markets Report, ISO New England, June 6, 2008.

⁴ Energy, congestion and losses represent the three components of the locational marginal price (LMP) calculated by ISO for eight load zones and a hub in New England. Congestion results when transmission constraints do not allow ISO to dispatch the lowest priced energy resources to serve demand on the system. The incremental cost of dispatching higher-priced resources in a zone is reflected in the congestion component of the LMP for that zone.

Active stakeholder process involves the six New England states

The six New England states are actively engaged in the regional planning process through the Planning Advisory Committee (PAC). Additionally, ISO meets with individual state commissions and jointly with the New England Conference of Public Utilities Commissioners (NECPUC) throughout the year.

ISO issues the annual RSP in October as a culmination of the PAC process. We plan to issue the first draft for PAC review at the end of the month. ISO will hold its annual public meeting September 4th in Boston to present the final draft of the RSP and hear feedback from stakeholders. The states are featured on the agenda each year to represent their views directly to ISO and its Board of Directors.

States play a crucial role in infrastructure development through their authority to site transmission projects that emerge from the RSP and generation projects that emerge from the FCM.

Currently, states are reviewing a multi-state project that will involve building or upgrading transmission in Massachusetts, Rhode Island and Connecticut. This project is known as the New England East-West Solution (NEEWS) since it would enhance power flows from generation-rich areas in the east to load centers in the west. It would also improve power flows into and within Connecticut and address reliability concerns in Springfield, Massachusetts and Rhode Island. ISO presented the initial needs analysis to stakeholders in 2005 and Transmission Owners are expected to begin siting in the 2008/09 timeframe. This project represents a significant development since the Department's first congestion study.

Transmission Project Listing

The planning process is transparent and ongoing. In addition to issuing the annual RSP, ISO issues periodic updates to the list of transmission projects in the plan (the Project List), and reviews the status of these projects with the PAC. The ISO and Transmission Owners bring the scope of work, preliminary and final results for transmission studies to the PAC regularly throughout the year.

One of the reasons for the success of transmission development in New England is that the region has a FERC-approved mechanism for transmission cost allocation. In New England, the cost of transmission projects that benefit the region is shared by consumers throughout the region. This includes upgrades needed for reliability or to improve market efficiency. Most of the transmission projects identified through ISO's planning process have been needed for reliability. The factors for evaluating market-efficiency transmission upgrades are currently under consideration through a stakeholder process led by ISO and representatives of the states and the New England Power Pool (NEPOOL).

The federally-approved cost allocation mechanism provides financial certainty for Transmission Owners to develop these projects.

Economic Studies Process

ISO implemented enhancements to the regional planning process following an extensive stakeholder process in 2007. FERC approved these changes, which are included in a new Attachment K of ISO's *Open Access Transmission Tariff* (OATT), as part of ISO's proposal to fulfill the requirements of FERC Order 890.

ISO will conduct three economic studies each year at the request of stakeholders to provide information on the economic and environmental performance of the system for various expansion scenarios.

Based on the requests from stakeholders, ISO expects the first round of economic studies to provide information on production costs, load-serving entity (LSE) electric energy expenses, and environmental emissions. ISO expects the studies to include various expansion scenarios of resources within New England and neighboring Canadian provinces.

In 2008, New England stakeholders submitted more than 12 requests for economic studies. The ISO is in the process of evaluating the scope of work for the economic studies with input from the PAC.

NECPUC submitted requests to: 1.) Study transmission to connect renewables (wind and biomass) in northern New Hampshire and northeastern Vermont; and 2.) Study transmission to connect offshore wind facilities in northern and southern New England. ISO anticipates that these concepts will be incorporated into the scope-of-work for the economic studies to be conducted in the 2008/09 timeframe.

ISO will keep the Department apprised of the progress of these economic studies and related information.

Conclusion

The regional system planning process and wholesale electricity markets are working to achieve the region's goals for developing transmission, generation and demand resources. As a result, congestion has been reduced. ISO will continue to work collaboratively with state and federal agencies, market participants and other stakeholders to meet the electricity needs in the region.