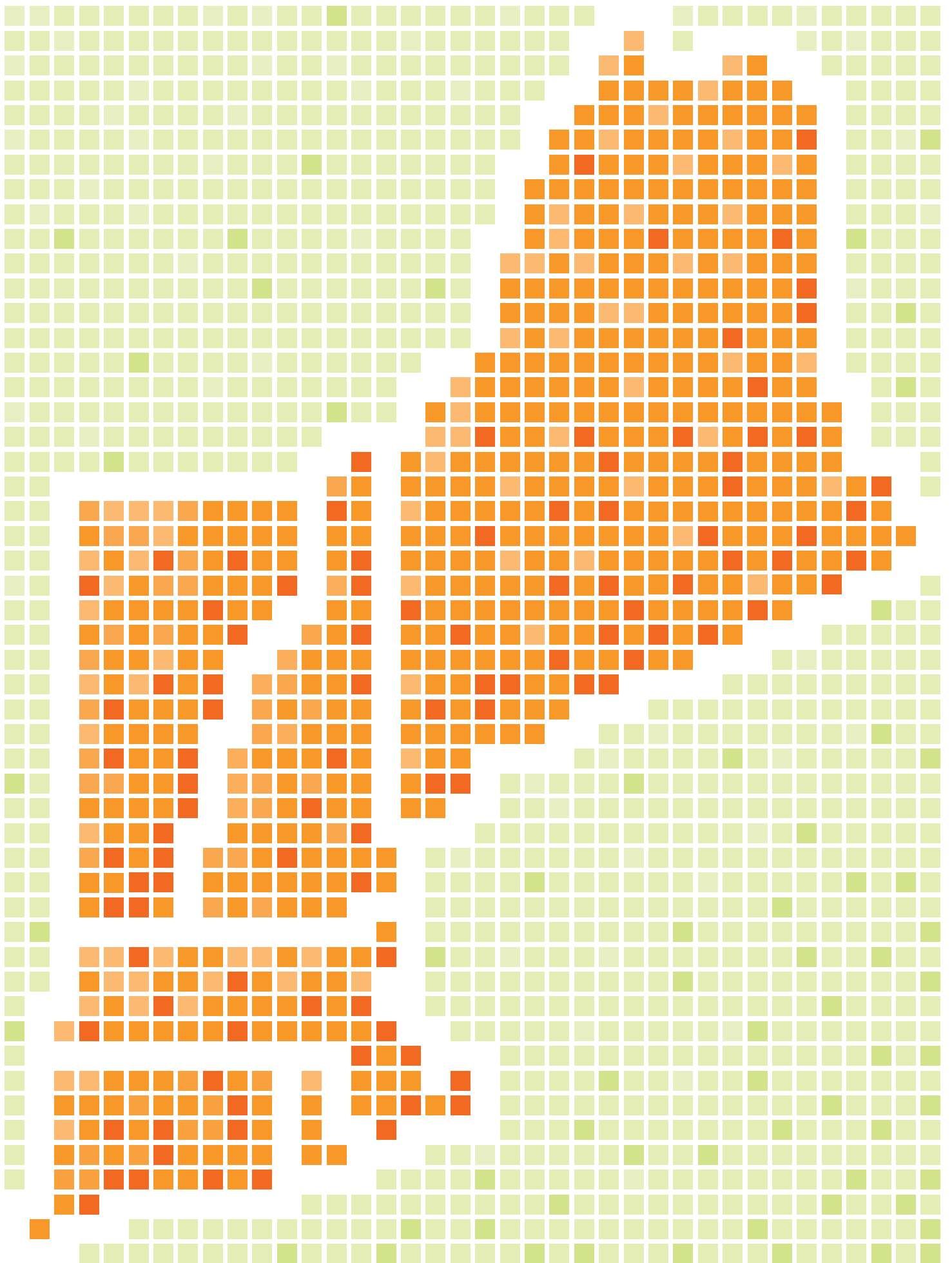




WMPP10

2010 WHOLESALE MARKETS PROJECT PLAN



■ **Since 2004**, ISO New England has published a plan to provide a brief, technical summary of projects underway over the coming few years to enhance the region's wholesale electricity markets. This annual plan identifies the timing and scope of projects, providing a clear view of the continuous design and development of wholesale markets in New England to maintain a reliable and efficient electricity system, achieve greater efficiencies to reduce costs, and stay in step with emerging technological and resource challenges.

ISO New England works collaboratively with market participants, state regulators, and other government officials and groups to put together comprehensive market solutions that will yield the best possible results for the region. The ISO follows rigorous stakeholder processes that strive to achieve market design consensus before significant project development is undertaken. In addition to formalized processes, the ISO forms working groups and holds numerous meetings to provide additional lines of communication, facilitate discussion, and help build common understanding of the issues as key decisions for the region's energy future are considered. Obtaining extensive stakeholder input early and often in the design process has resulted in timely approval by the Federal Energy Regulatory Commission (FERC) and delivery of many market initiatives.

This *2010 Wholesale Markets Project Plan* describes the nearly 20 market-related projects the ISO has in development through 2012. The booklet also provides a brief overview of the wholesale electricity markets and products traded in New England and reviews the many benefits of continuous, robust market design.

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Developing Competitive Wholesale Markets

Overview of New England's Wholesale Electricity Markets

ISO New England is the not-for-profit corporation responsible for overseeing and administering New England's interrelated suite of competitive wholesale electricity markets. These markets work together to ensure the constant availability of electricity for the region's 14 million residents. More than 400 companies annually complete between \$5 and \$12 billion in transactions to buy and sell wholesale electricity. The wholesale electricity markets and products traded in New England fall into three categories:

ENERGY MARKETS for buying and selling day-to-day wholesale electricity

DAY-AHEAD ENERGY MARKET—allows market participants to secure prices for electric energy the day before the operating day and hedge against price fluctuations that can occur in real time.

REAL-TIME ENERGY MARKET—balances the dispatch of generation and demand resources to meet the instantaneous demand for electricity.

FINANCIAL TRANSMISSION RIGHTS (FTRS)—allows participants to hedge against the economic impacts associated with transmission congestion and provides a financial instrument to arbitrage differences between expected and actual day-ahead congestion.

CAPACITY MARKET for ensuring long-term system reliability

FORWARD CAPACITY MARKET (FCM)—ensures the system has sufficient resource capacity to meet the future demand for electricity by sending appropriate price signals to attract new investment and maintain existing investment.

ANCILLARY SERVICES for maintaining short-term system reliability

REGULATION MARKET—compensates resources that the ISO instructs to increase or decrease output moment by moment to balance the variations in demand and system frequency.

FORWARD RESERVE MARKET—compensates generators for keeping operating capacity available to provide electric energy within 10 or 30 minutes when needed to meet system contingencies, such as unexpected outages.

REAL-TIME RESERVE PRICING—compensates on-line generators that offer their electric energy above the marginal cost for the increased value of their energy when the system or portions of the system are short of reserves. It also provides efficient price signals to generators when redispatch is needed to provide additional reserves.

VOLTAGE SUPPORT—compensates resources for maintaining voltage-control capability, which allows system operators to maintain transmission voltages within acceptable limits.

BLACK-START CAPABILITY—compensates specific power plants at strategic locations for their capability to restore generation to restart the transmission system following a systemwide blackout.

Robust Markets Yield Positive Outcomes

In the 1990s, the New England states restructured the region's wholesale electric power industry to create a transparent marketplace that would introduce competition and bring about efficiencies in the way electricity had been bought, sold, generated, transmitted, and even used for more than seventy years. The goal was twofold: to provide electricity at the lowest possible cost and to establish a sound framework to promote investment in new resources and manage electricity use.

In a relatively short time, New England's suite of competitive energy, capacity, and ancillary services markets has led to much-needed investment by the region's electric power industry, guiding the development of a bulk power system that is reliable, economical, and environmentally sound.

SUPPLY: Since their inception, the markets have attracted investment in nearly 14,000 megawatts (MW) of new generation, ensuring the system operates reliably and that adequate supply is available to meet demand over the long run. Since this investment is made by private firms and not public utilities, consumers are shielded from the investment risks they had been exposed to under a regulated system. Moreover, under markets, power plants are paid only for performance and therefore operate more efficiently, contributing to system reliability and lower costs.

DEMAND RESOURCES: New England's markets, particularly FCM, have prompted rapid expansion of demand-side resources such as energy efficiency, load management, and distributed

generation. These resources help stabilize wholesale prices and contribute to system reliability during periods of peak demand, lessen the need to build expensive new infrastructure, and help achieve environmental goals. By 2011, over 2,900 MW of demand resources—almost 10% of total system capacity—will be available to lower electricity consumption. This is a significant increase from the 100 MW of demand resources that existed in 2001.

ENVIRONMENT: The open and transparent markets are enabling the growth and development of power supply resources that run on renewable and low-carbon-emitting fuels, thereby helping market participants respond to state and federal environmental policies and goals. Currently, developers are proposing approximately 3,100 MW of renewable resources throughout New England, with wind accounting for roughly 85% of these proposals.

TECHNOLOGY: Markets are stimulating technological innovations that are modernizing the bulk power system. These "smart grid" projects will result in a more efficient, responsive, and reliable system that can incorporate greater amounts of demand resources, price-responsive demand, and alternative energy resources.

TRANSMISSION: The markets, along with the region's collaborative regional planning process, have helped guide the largest expansion of transmission infrastructure since the 1970s. Enabling wholesale electricity to move more efficiently within and between regions provides greater access to lower-cost power, reduces transmission congestion costs and line losses (both components of market prices), reduces

the need for costly reliability agreements, and improves the region's ability to import and export electricity. In total, over 300 transmission upgrades—representing an investment of \$4 billion—have been put in service in all six New England states from 2002 through 2009.

PRICE: The markets are working to produce competitive prices that accurately reflect suppliers' costs of production as well as system conditions (i.e., the amount of consumer demand on the system, available supply on the system, and transmission constraints.) In addition, new investment and technological advances have had a positive impact on wholesale prices.

Volatility in wholesale electricity prices directly correlates to the fluctuations in the prices of natural gas and oil. Roughly 60% of the region's power plants use these fuels to generate electricity, and the costs of these fuels are reflected in the plants' production costs. This close link between fuel costs and wholesale electricity prices illustrates that our wholesale markets are efficient and competitive, because the cost inputs are reflected appropriately in prices.

Good Market Design Yields Robust Markets

FOSTERING COMPETITION

When markets are well designed, they produce transparent, accurate prices for products and services. The prices provide an incentive for buyers and sellers to make economical and innovative decisions about how they purchase, produce, and develop those products and services. In the case of wholesale electricity, these competitively-

BULK POWER SYSTEM BUILDING BLOCKS

- Full complement of **competitive markets** provides transparent price signals for investment in resources
- Robust **planning** process identifies system needs including the amounts, types, and locations for market-based resources
- **State and federal incentives** help promote the development of clean resources and grid technologies

To learn more about the status of the bulk power system, regional challenges and opportunities, and initiatives underway to address the power grid's needs over the coming 10 years, read the *Regional System Plan* available on ISO New England's Web site.

based decisions among buyers and sellers stimulate more efficient and cost-effective ways of producing and delivering electricity, as well as investment in new resources and technologies, thus providing economic and reliability benefits for the entire region.

Markets are most competitive and effective when they are "liquid"—or have many buyers and sellers. Markets become liquid if they are guided by fair, understandable rules that offer flexibility and low-cost participation by all potential players.

As the market administrator, ISO New England's job is to design the markets so that they produce these accurate and transparent price signals and

so that the market rules provide a level playing field for participation by a mix of diverse entities and interests.

CONTINUOUS REFINEMENT, ENHANCEMENT

Much has been learned in the decade since centralized markets for electricity were introduced in New England. The markets are being continuously refined to enhance transparency and efficiency and provide more options and incentives for participation. Moreover, the electricity system and the challenges the industry faces are complex and ever-changing, so the markets must evolve to stay in step with technological and resource advancements and government policy goals that affect the industry.

Over the past 10 years, numerous enhancements have been made to the market rules, procedures, and software to ensure the markets are working as intended. The markets will continue to evolve to provide the region's electricity consumers with even greater gains, by maintaining a reliable and efficient electricity system, achieving greater efficiencies to reduce costs, and responding to future challenges.

SUCCESS THROUGH COLLABORATION

New England's wholesale electricity markets have proved successful over the past decade in large part because the process used to develop the markets is highly collaborative and transparent. ISO New England works with numerous stakeholders representing a wide variety of constituencies, technologies, and interests to put together comprehensive market solutions that will yield the best possible results for the region. These stakeholders include the New England Power Pool (NEPOOL), the voluntary association of the participants in New England's wholesale electricity marketplace; state regulators who form the New England Conference of Public Utilities Commissioners (NECPUC); state and federal legislators, attorneys general, consumer advocates, and environmental regulators; and the six governors, primarily through the New England Governors' Conference (NEG) and New England States Committee on Electricity (NESCOE).

Market Design Project Plan

ISO New England plans to focus on nearly 20 market-related projects through 2012. The projects listed in the table below are in various stages of the market development process. The implementation dates are targets based on best information regarding the availability of ISO resources and expectations regarding the time requirements of the stakeholder and regulatory processes.

All projects' implementation dates are subject to change if new priorities are identified. For example, recommendations from the Internal or External Market Monitors could introduce new projects and change the priorities and sequencing of existing projects. **1** The ISO will discuss any phased implementation of projects with stakeholders.

2010 to 2012 Planned Design Projects and Estimated Completion Dates

PROJECT	EARLIEST IMPLEMENTATION/ COMPLETION DATE FORECASTED	DESIGN STATUS
FCM Phase 3	Q2 2010	Complete
Demand-Resource Integration	Q2 2010	Complete
FCM Manual updates	May 2010	NEPOOL Participants Committee vote May 2010
FCM Market Rule 1 conforming changes	May 2010	FERC filing February 2010
FCM design reforms	TBD 2011/2012	FERC filing February 2010
Price-Responsive Demand	2012	Phase 1: FERC filing April 2010 Phase 2: Following FERC Order on Phase 1
Forward Reserve Market enhancements	July 2010	FERC filing July 2010
External capacity transaction competitive offer requirements	May 2010	FERC filing February 2010
FERC Order 719 compliance	Q4 2010	Drafting response to FERC
Changes to Real-Time Reserve Requirement	Q4 2010	In development
Alternative Technology Regulation Pilot and market changes	Q4 2010	Pilot complete/In development
Revisions to failure-to-follow procedures	Q4 2010	In development
Pricing of Demand-Response Program activation and nonmarket operator actions	2011	In development
Net Commitment-Period Compensation restructuring	2011/2012	In development
Integration of wind resources	2011/2012	In development
Pricing of congestion at external nodes	2011/2012	In development
Real-time reoffers	2011/2012	In development
Interregional coordination	2012-2014	In development

Market Design Project Summaries

This section summarizes the scope and requirements of the projects listed in the Market Design Project Plan.

Forward Capacity Market Phase 3

The auction-based FCM is a locational capacity market intended to send appropriate price signals to attract new investment and maintain existing resources where and when they are needed, thus ensuring the reliability of the New England electricity grid. Implementation of the FCM is taking place in three overlapping phases, spanning the period from the second quarter of 2006 through June 2010. Phases 1 and 2 of the project are complete (read more about these phases in the *2008 Wholesale Markets Project Plan* available at www.iso-ne.com).

Phase 3 of the FCM project primarily focuses on the design and development of software systems and business processes necessary to support the settlement of the market, administration of capacity resource rights and obligations, availability penalties, and integration of the various FCM systems. The design components of this phase are complete. Development and implementation of the systems and processes that support the following activities either is complete or underway:

- Settlement of the Forward Capacity Market.
- Registration and administration of demand-resource assets at the dispatch-zone level to support the integration of these assets into ISO market and system operations.

- Facilitation of the exchange of Capacity Supply Obligations between resources through bilateral transactions.
- Enhancements to the mathematical program used by the Forward Capacity Auction Market Clearing Engine to improve performance.
- Development of business procedures and tools to support the reliability reviews conducted by ISO system operations of resources requesting to shed their capacity supply obligation in reconfiguration auctions.
- Enhancements to the ISO's forecast, long-term outage coordination, and short-term outage coordination functions to include both FCM and requirements for demand-resource integration.

Demand-Resource Integration

With the start of the FCM in June 2010, load management, energy efficiency, and distributed generation will be treated as capacity resources and will represent roughly 10% of the capacity resources needed in the New England electric power system by 2011. To gain all the benefits that this level of demand resources can provide, the ISO must be prepared to integrate these resources into system operations, market operations, and system planning without creating undue barriers to participation. Because the integration of large amounts of active demand resources is challenging, the ISO launched the Demand-Resource Integration project to ensure efficient and careful coordination of changes to the market

rules, operating procedures, business processes, and software infrastructure.

The design portion of the Demand-Resource Integration project has been completed and approved by FERC. Complete integration of the FCM active demand-resource products is on schedule for June 1, 2010. The work includes the following:

- Update *Market Rule 1* to allow the effective use of demand resources during shortage events and emergencies.

- Develop an effective registration methodology that defines assets at the nodal level for use in the system planning and system and market operations processes.

- Develop operational practices and software user interfaces to support having large quantities of demand resources participating in the FCM. This enables operators to study interruptions and dispatch demand resources to maintain system reliability.

GOVERNING DOCUMENTS PROVIDE CLEAR RULES AND PROCEDURES

A variety of agreements, tariffs, and contracts govern the services ISO New England provides and the relationships it has with entities that generate, buy, sell and transport electricity in New England. These documents can be found on ISO New England's Web site.

The Transmission, Markets and Services Tariff (Tariff) sets forth the rates, terms, and conditions for transmission, markets, and other services provided by ISO New England. Section 205 of the *Federal Power Act* requires FERC approval of all changes to the tariff.

- **Open Access Transmission Tariff** provides the rights and responsibilities of electric energy suppliers that are interconnected to the region's transmission system.
- **Market Rule 1** governs the operation of New England's wholesale electric power markets. It includes detailed information on pricing, scheduling, offering, bidding, settlement, and other procedures governing the purchase and sale of electricity.
- The **Self-Funding Tariff** controls how the ISO collects funds to pay for administrative

functions; the **Capital Funding Tariff** controls how the ISO collects funds to pay for capital assets not covered by private financing.

Manuals explain the rules and procedures for the region's wholesale electric power markets and bulk power system, including *Market Rule 1*, the *Open Access Transmission Tariff*, and the *ISO Self-Funding Tariff*.

Operating procedures inform generators, importers, and demand resources of operating and reliability requirements in the region's bulk electric power system.

Planning procedures set requirements for participants regarding reliability standards, pooled transmission facility cost review, and notice of intent to change facilities.

Participants' Agreement provides the overall governance structure related to the ISO's administration of New England's wholesale electricity markets and bulk electric power system and establishes the processes for stakeholder input.

Restated NEPOOL Agreement outlines NEPOOL's governance structure.

- Replace the current demand-resource communication infrastructure. The current infrastructure has single points of failure that can render all New England demand-resource assets unusable during an emergency or economic dispatch. The solution is to replace the current infrastructure with a redundant and secure infrastructure between the ISO and the demand-resource aggregators.
- Update internal processes to more effectively integrate demand resources into the market and system operations at ISO New England.

FCM-Related Manual Revisions

The ISO is updating several manuals to conform to Section III.13 of *Market Rule 1*, which governs the administration of the Forward Capacity Market. The manuals identify the actions that a market participant must take to comply with the market rule requirements, and when and how these actions are taken. The scope of work includes a comprehensive review of Section III.13 and the associated software and processes that implement the market rule. The goal is to have the manuals revised for a May 2010 vote at the NEPOOL Participants Committee. **2**

FCM Market Rule 1 Conforming Changes

The FCM design introduces new terminology and adds requirements that affect other existing markets. For example, the FCM design replaces the Installed Capacity Market provisions of Section III.8. It also revises the energy-market offer requirements for resources and imposes new rights

and obligations on resources that supersede the existing provisions in Section III.1.10A.

The purpose of the FCM Conforming Changes project is to review and modify other sections of *Market Rule 1* as appropriate to conform to the Forward Capacity Market rules contained in Section III.13. The review primarily focuses on the rules in Section III.8 to identify provisions that need to be retained beyond June 1, 2010, when the first FCM capacity commitment period begins. The balance of the rule will be examined to identify obsolete terminology, such as references to installed capacity (ICAP) and unforced capacity (UCAP), terms that are no longer applicable under FCM, and to provide appropriate modifications to provisions that are superseded by requirements specified in Section III.13.

FCM Design Reforms

In 2009, the Forward Capacity Market Working Group (FCMWG) was formed to develop improvements to several aspects of the FCM design, including the definition of out-of-market capacity, reforms to the Alternative Capacity Price Rule, zone definitions, and capacity requirements.

The FCMWG was established in response to a request by NECPUC for a coordinated and comprehensive discussion of potential FCM changes as recommended by the ISO's Internal Market Monitor report dated May 2009. The group was made up of representatives from NECPUC, NEPOOL, and ISO New England. They met more than a dozen times over a three-month period.

In early November 2009, the work of the FCMWG was incorporated into a summary

design basis document that outlined proposed changes to the FCM. The NEPOOL Participants Committee subsequently amended and voted on the document. Between December 2009 and January 2010, the ISO reviewed the market rule changes with the NEPOOL Markets and Reliability committees to implement the recommendations of the FCMWG. In February these rules were approved by the Participants Committee and filed with FERC.

Further recommendations for changes to the FCM design may be recommended. The External Market Monitor has been asked by certain stakeholders to review the Alternative Capacity Price Rule and the rules for modeling capacity zones. The ISO will evaluate recommendations to further revise the FCM and make any changes to the market rules through the NEPOOL stakeholder and FERC regulatory processes.

Price-Responsive Demand

It is generally agreed across the industry that a critical element of a robustly competitive and economically efficient electricity market is the ability for customers to change their consumption in response to changes in wholesale power costs.

The goal of the Price-Responsive Demand project is to develop a set of market rules and/or programs that encourage market participants serving retail customers to offer products and services that create financial incentives for retail customers to modify their electricity consumption in response to changing wholesale market prices. The ISO, working with stakeholders, is developing two approaches to

encourage price-responsive demand: a demand-side approach and a supply-side approach.

Under the proposed demand-side approach, a new methodology will be developed to determine a load-serving entity's future capacity requirements. The goal of the new methodology is to eliminate the uncertainty inherent in the current method by giving load-serving entities advance notice of the days and hours that will be used to determine their future capacity requirements and associated obligations. With advance notice, load-serving entities may be able to take actions (or cause their retail customers to take actions) that reduce their consumption during the predefined days and hours and thereby reduce their future capacity requirements and costs.

Under the proposed supply-side approach, market participants will be able to offer load reductions into the wholesale energy markets in a manner similar to the supply offers of traditional generation resources. The load-reduction offers will be integrated into the market-clearing, price-setting, and resource-scheduling systems to meet the market objective of minimizing production costs.

The ISO, working with NEPOOL, completed a term sheet describing the framework for the demand-side and supply-side approaches. This term sheet was filed with FERC on December 18, 2009. The ISO will continue to work with stakeholders in 2010 to develop market rules to implement the proposed designs.

The ISO plans to develop a limited set of market rules dealing with product definition, eligibility, payment rates, and cost allocation for the supply-side approach for a Phase 1 filing with FERC in April 2010. After the FERC's order on the Phase I design, the ISO will prepare a Phase 2 filing

on the supply-side approach that addresses the remaining design issues and complete the development of market rules for the demand-side approach.

Forward Reserve Market Enhancements

To address recommendations made by the External Market Monitor, the ISO will implement changes to the Forward Reserve Market to enhance the efficiency and operation of the market. This project has two components:

- Elimination of the Rest-of-System (RoS) minimum-purchase requirement.
- Elimination of the planned maintenance outage exemption for Forward Reserve Market resources taken in constrained reserve zones.

These changes will help to ensure that the amount of reserves purchased reflects the specified need and that prices reflect the marginal cost of constructing portfolios and managing the risks associated with meeting a Forward Reserve Market obligation.

External Capacity Transaction Competitive Offer Requirements

The market power mitigation authority of the Internal Market Monitor allows the market monitor to mitigate the electric energy offers of internal resources found to have offered in a noncompetitive manner, when these offers affect market prices. When mitigated, the internal resource continues to provide electric energy but receives as compensation the resource's

reference price. This methodology does not work for capacity import transactions under FCM. Capacity import transactions are facilitated by, and to a degree are contingent upon, an adjacent balancing authority area and thus are not subject to the same degree of dispatch control from the ISO.

Consistent with the Internal Market Monitor's expressed view, a competitive-offer requirement and penalty mechanism is needed. The goal of this mechanism would be to provide appropriate incentives for market participants with import capacity resources to (1) offer supporting import transactions into the market at a competitive price and (2) physically import (i.e., deliver) the energy whenever the ISO requests it. These changes are scheduled for June 1, 2010.

FERC Order 719 Compliance

On October 17, 2008, FERC issued its Final Rule, *Wholesale Competition in Regions with Organized Electric Markets* (RM07-19-000 & AD07-7-000), to improve the operation of organized wholesale electric markets in the areas of (1) demand response and market pricing during periods of operating-reserve shortage; (2) long-term power contracting; (3) market-monitoring policies; and (4) the responsiveness of RTOs and ISOs to stakeholders. Each RTO and ISO was required to file with FERC by April 28, 2009, proposed amendments to comply with these requirements or demonstrate that its existing tariff and market design already satisfy these requirements.

On the demand-resource issue, the ISO compliance filing proposed rule changes that address the provision of ancillary services by demand resources

and deviation charges. On the responsiveness issue, the ISO agreed in its compliance filing to provide quantitative and qualitative information to stakeholders on the need for, and the impacts of, major ISO initiatives. Such information will allow stakeholders to evaluate significant changes in market design, transmission planning, and operation of the bulk power system.

ISO New England received a response from FERC in January 2010 on demand response, long-term power contracting, and market-monitoring policies. The ISO will be making a 90-day compliance filing on April 21, 2010. As of March 2010, the ISO had not received a response from FERC on the responsiveness issue.

Changes to the Real-Time Reserve Requirement

ISO New England proposes to modify the reserve monitor and reserve calculations for the Unit Dispatch System (UDS) so that when the real-time UDS is solving for reserve requirements, it appropriately reflects the operator decisions to commit supplemental or replacement reserves when faced with an unusually large contingency exposure.

Alternative Technology Regulation Pilot and Market Changes

For many years, conventional generation sources such as fossil-fuel-fired and pumped storage power plants have provided regulation services. The existing Regulation Market accommodates the characteristics of these traditional regulation suppliers and has worked well to meet the regulation needs of the region. In November 2008,

the ISO launched the Alternative Technology Regulation Pilot to determine whether, or how well, non-generating resources and new technologies with significantly different economic and performance characteristics could provide regulation services and what modifications to the existing market rules might be required to allow these new technologies to compete equally to meet New England's regulation requirements.

The ISO will use the information gained from the 18-month program to assess whether permanent changes to the Regulation Market rules are required and, if so, to support the development of the necessary changes through the NEPOOL stakeholder process. Data gained from the pilot program will provide a firm technical basis for any decisions to modify the existing market rules and operating procedures. The pilot program will provide the ISO and stakeholders with a high level of confidence that any market changes proposed will be appropriate and beneficial and ultimately will provide the desired results.

The ISO is planning to begin the NEPOOL stakeholder process for any related regulation market changes in the fourth quarter of 2010.

Revisions to Failure-to-Follow Procedures

In the Real-Time Energy Market, resources are required to follow the ISO's dispatch instructions. The existing market rules prevent any resource that fails to follow these instructions from setting the price in the Real-Time Energy Market for those dispatch intervals in which the violation occurs and to possibly be ineligible for Net Commitment-

Period Compensation (NCPC). **3** The current tolerances provided within *Market Rule 1* offer much greater flexibility to large resources than for small resources. These proposed changes will tighten the thresholds for assessing when a large resource is following dispatch instructions and will measure all resources' ramp and steady-state performance.

Pricing of Demand-Resource Program Activation and Nonmarket Operator Actions

As described in the Demand-Resource Integration section, a significant number of demand resources will serve as capacity under FCM. In scenarios where the ISO is forecasting or has implemented Operating Procedure No. 4, Action during a Capacity Deficiency (OP 4), the ISO would call upon these resources. However, since most of these resources are not dispatchable asset-related demand resources, their dispatch will not be reflected in the real-time dispatch solution. **4** To prevent prices from collapsing when this type of demand resource is called, the ISO must develop a methodology to establish prices that reasonably reflect the opportunity cost of the various nonmarket (i.e., outside of UDS) actions operators take to maintain system reliability.

The ISO is planning to begin the NEPOOL stakeholder process on this item in the fourth quarter of 2010.

Net Commitment-Period Compensation Restructuring

While many changes to the market design have been implemented since 2003, the market rules and procedures and software used to calculate

NCPC have not been comprehensively revised during that period. Rather, incremental changes have been made to support various market modifications. Review of the day-ahead and real-time NCPC payment rules suggest that the rules are, at a minimum, confusing and unnecessarily complex. The software also has become challenging to support and presents a risk going forward. The ISO will redraft *Market Rule 1* to ensure that the rules are clearly presented to the users of the tariff.

The ISO plans to perform an internal assessment of the current rules and approach starting in 2011 and to present proposed changes to stakeholders in early 2011 with a goal of implementing the revised market rules in 2012.

Integration of Wind Resources

The purpose of this project is to modify the Day-Ahead and Real-Time Energy markets to allow for the integration of large quantities of intermittent resources such as wind. Key issues that must be resolved include commitment decisions, dispatch, and price formation, as well as the impacts these resources could have on the capacity, reserve, and regulation markets.

Pricing of Congestion at External Nodes

An external interface binds when the total net transactions seeking to use the external interface exceed its total transfer capability (TTC). Up to the point at which the external interface binds, the clearing of external transactions works exactly as the clearing of supply and demand at any other location in New England (i.e., as a function of bids

and offers subject to transmission constraints). However, when the external interface limit is reached, a nodal constraint is enforced to limit the total net transaction schedule to the capability of the interface. Unlike transmission constraints which, when bound, produce shadow prices that contribute to the price, nodal constraints when bound produce shadow prices that do not contribute to nodal prices, including those at external nodes.

Rules have been put in place to eliminate gaming opportunities at external locations (e.g., the submission of import and export transactions at the same location with the intent of generating large NCPC payments). However, the fundamental issue remains that the true cost of using the limited interface capability in the Day-Ahead and Real-Time Energy markets is not transparent. To remedy this issue, the ISO proposes to modify its rules to allow for the explicit pricing of congestion through the locational marginal price (LMP) at external nodes. The ancillary benefits include reducing a seam with New York, which explicitly prices congestion at its external locations, and laying the foundation for efforts to better integrate congestion management with New England's neighbors (see Interregional Coordination).

Real-Time Reoffers

The ISO proposes to add functionality to the market design that allows resources to modify

commitment cost components (i.e., start-up and no-load costs) of an offer up to the time of commitment and to modify the incremental energy cost component of the offer as frequently as hourly, with appropriate restrictions.

Interregional Coordination

ISO New England and the New York ISO are committed to removing barriers to a broader regional market and improving the efficiency of electricity exchange between the two markets. Beginning in late 2009, staff from the ISOs began meeting to explore a package of joint operational coordination measures and market design changes. The shared objective is to improve the economic utilization of the transmission ties and leverage the regions' capabilities to minimize out-of-market actions. The initiatives identified are as follows:

- Improve procedures related to real-time transaction scheduling (in progress).
- Interregional transaction (scheduling) coordination (Phase 1).
- Market-to-market (congestion management) coordination (Phase 2).

The following table outlines the key milestones associated with the two phases of work. It is important to note that these phases are not being done in parallel but sequentially in order to ensure sufficient resources are available to complete the work.

Interregional Transaction and Market Coordination

MILESTONES	TARGET DATES FOR PHASE I	TARGET DATES FOR PHASE II
Draft scope for stakeholder review	12/2010	12/2012
Conceptual design	2/2011	2/2013
Detailed design	6/2011	6/2013
Filing with FERC and finalize project charter	10/2011	10/2013
Software and business procedures completed	10/2011 - 12/2012	10/2013 - 10/2014
In service	12/2012 - 03/2013	10/2014 - 12/2014

Notes

1 ISO New England has both Internal and External Market Monitors responsible for monitoring the New England wholesale electricity markets, including both the overall market design and market participant behavior. The Market Monitors seek to ensure that the markets are working fairly and efficiently and that market participants abide by the market rules and procedures.

2 Market participant involvement in ISO processes is accomplished primarily through the NEPOOL Participants Committee (NPC). The NPC has three technical committees: Markets Committee (MC), Reliability Committee, and Transmission Committee. Through the NEPOOL process, the MC and the larger NPC must review, provide input, and conduct advisory votes on all changes to *Market Rule 1*, manuals, and some operating procedures.

3 NCPC is the payment to an eligible resource that did not fully recover its costs from either the Day-Ahead or Real-Time Energy markets. The accounting for the provision of these credits is performed daily for each market and considers a resource's total offer amount for generation, including start-up fees and no-load fees, compared with its total energy-market value during the day. If the total value is less than the offer amount, the difference is credited to the market participant.

4 Dispatchable asset-related demand resources are demand resources that can be interrupted within 10 or 30 minutes in response to a dispatch order.

ISO New England is an independent, not-for-profit corporation responsible for providing the day-to-day reliable operation of New England's bulk power generation and transmission system, overseeing and ensuring the fair administration of the region's wholesale electricity markets, and managing comprehensive regional bulk power system planning.

Its board of directors and 460 employees have no financial interest in any company doing business in the region's wholesale electricity marketplace. ISO New England serves a six-state region that includes Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont.



2010 WHOLESALE MARKETS PROJECT PLAN