2008 Wholesale Markets Projects Plan

ISO New England Inc.
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Table of Contents

Section 1
Introduction

The *2008 Wholesale Markets Projects Plan* (WMP08) describes ISO New England's (ISO) ongoing projects for the continued development of New England's wholesale electricity markets. WMP08 provides a high level summary of the market enhancements planned for the next couple of years and lists the ISO's major wholesale markets projects in one document. The plan reflects the consultation on the ISO's business priorities among the ISO, NEPOOL and NECPUC and the Capital Budget Quarterly Filing that is submitted to FERC each quarter. The listing of projects in WMP08 is not exhaustive as the ISO also has other initiatives underway.

Section 2 presents the implementation plan and schedule for the projects included in WMP08. Section 3 includes brief summaries of each of the projects.

Section 2
Implementation Approach and Schedule

The *2008 Wholesale Markets Projects Plan* consists of numerous projects, many of which are multiyear projects that were started in 2007 and are scheduled for completion in 2010. Table 2-1 summarizes the project-release schedules, which are briefly described in Section 3.

Table 2-1
Project-Release Schedule for WMP08

Project	Project Status	Market Design Schedule	Implementation Date
Forward Capacity Market Phase I	Completed	Completed	February 2008
Forward Capacity Market Phase II	Design Effort and Implementation Underway	December 2008	April 2009
Forward Capacity Market Phase III	Implementation to begin in December 2008	No Market Design Changes	June 2010
Forward Capacity Market Winter Provisions	Design Effort to begin in 2009	December 2009	December 2010
Forward Capacity Market Conforming Changes	Design Effort Underway	April 2009	June 2010
Integration of Demand Response	Design Effort Underway	December 2008	June 2010
Long-Term Transmission Rights	Design Filed at FERC	Completed	October 2010
Reserve Market Enhancements	Design Effort Underway	October 2009	October 2010
Net Commitment Period Compensation (NCPC) Enhancements	Design Effort Underway	June 2009	December 2010
Energy Market Enhancements	Design Effort Underway	October 2009	March 2011
Standard Market Design Software Upgrade	Implementation Underway	No Market Design Changes	March 2011
Price Response Demand Programs	Design Effort to begin in October 2008	June 2009	June 2010
Demand Resource Reserve Pilot Project Phase II	Design Effort and Implementation Underway	June 2008	October 2008
Alternate Technology Regulation Pilot Project	Design Effort and Implementation Underway	August 2008	December 2008
Intra-Hour Transaction Scheduling	Design Effort Complete	June 2008	October 2008

Since project implementation is most efficient when design changes are agreed upon early in a project's life, the ISO and its stakeholders have instituted a number of stakeholder process improvements that strive to achieve design consensus before significant project development is undertaken. These changes, which include conceptual white papers or presentations and extensive

stakeholder input early in the design process have been successful and have resulted in timely FERC approval and delivery of many market initiatives.

The Market Design Schedule dates listed in Table 2-1 are intended to reflect the date of expected completion of the regional stakeholder process. It is likely that some projects, such as Reserve Market Enhancements or Integration of Demand Response, will be implemented in multiple phases and that certain elements of the projects will have earlier timelines than reflected in the schedule. The ISO will discuss any phased implementation of projects with its stakeholders. Also, the projects listed in Table 2-1 are subject to change if new priorities arise. For example, recommendations included in the annual markets reports of the Internal Market Monitoring Unit and the Independent Market Monitoring Unit could introduce new projects and change the priorities and sequencing of existing projects.

Section 3
Project Summaries

This section describes the projects listed in Table 2-1.[1] These projects are part of the ISO's ongoing effort to design and administer wholesale electricity markets that efficiently price the products and services needed to reliably operate the power system and ensure long-term resource adequacy. Well designed and efficient markets are important because they produce transparent, accurate prices that enable market participants to make efficient consumption, production and investment decisions.

3.1 Forward Capacity Market (FCM) Phases I, II and III

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 Forward Capacity Market will take place in three overlapping phases, spanning the period from the second quarter of 2006 through June of 2010.

Phase I of the project focused on the design and development of market rules, technology infrastructure and business processes necessary to support asset qualification, conduct the first Forward Capacity Auction, and implement the market clearing optimization engine. This phase of the project ended on February 29, 2008 with the successful completion of the first FCA in February 2008.

Phase II of the project began in 2007 and will extend through April 2009. Phase II includes the design and development of market rules that complete the outstanding design elements of FCM. The Phase II market rules cover several areas; including bilateral contracts, reconfiguration auctions and associated reliability review, capacity resource rights and obligations, availability penalties, and settlement. Technology infrastructure work in Phase II includes changes to the Forward Capacity Auction software and clearing engine to support the second primary auction, completion of the Forward Capacity Tracking System, development and implementation of systems supporting bilateral contracting and reconfiguration auctions, and completion of changes to the financial assurance system.

Phase III of the project will begin in December 2008 and will extend through the June 2010. This phase 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.

3.2 FCM Winter Provisions

The FCM settlement agreement included several provisions to address potential natural gas fuel-supply issues in winter operations. These include advancing offer-submission deadlines for the day-ahead energy market, providing the ability to firm up the supply of an additional 1,000 MW of supplemental natural gas reserves for peak-load periods, and attaining confirmation from market participants with gas-fired resources that they will nominate sufficient fuel to deliver the electric energy and reserves scheduled in the day-ahead market

[1] There is no project summary for the SMD upgrade project. The SMD upgrade project is intended to upgrade the technology platform to provide more flexibility in modeling the power system, enhance core elements such as user interfaces, databases and day-ahead unit commitment, meet increased performance requirements and manage technology obsolescence

The FCM winter provisions are planned to be in effect beginning in the 2010/2011 winter period. In early 2009 the ISO intends to initiate a stakeholder process associated with reviewing and designing these elements of the FCM settlement agreement.

3.3 FCM Conforming Changes

The FCM design affects other, existing markets, primarily the Forward Reserve Market and the energy market. The FCM Conforming Changes project will identify how FCM affects other markets and develop any necessary market rule changes to conform those markets to FCM. The largest area of FCM conforming changes involves modifications to the Forward Reserve Market. The changes include allowing participants to assign delisted resources to meet a Forward Reserve Market obligation and modifying payment rules to net the FCM clearing price from the Forward Reserve Market clearing price to calculate payments for forward reserve resources.

3.4 Integration of Demand Resources

Depending on the amount of demand resources that clear in the second Forward Capacity Auction, demand resources may represent as much as 13% of the total capacity resources in the New England electric system by 2011. Although this level of demand resources provides benefits, it is accompanied by many challenges. To efficiently integrate this amount of demand resources into the bulk power system while maintaining system reliability, effective planning and dispatch methodologies need to be developed. The ISO has launched this project to ensure that changes to the market rules, operating procedures, business processes and software infrastructure are all carefully coordinated. The ISO has initiated a stakeholder process to discuss and design an effective integration methodology.

The demand resource-related changes include improvements to the dispatch rules governing demand resources, increasing the information available to demand resource providers to better enable them to participate in the Forward Capacity Auction, the phasing out of the critical peak resource classification and a review of the impact of significant penetration of demand resources on system operations.

3.5 Long-Term Transmission Rights

On July 20, 2006, FERC issued a final rule on Long-Term Transmission Rights (LTTRs) in organized electric markets. [2] On January 29, 2007, the ISO filed a comprehensive LTTR proposal in compliance with the final rule. On February 25, 2008, FERC ruled on the ISO proposal, granting in part and denying in part the ISO's proposed revisions to the tariff. The ISO subsequently worked with stakeholders to modify the initial LTTR proposal consistent with the FERC ruling. The amended LTTR proposal was filed with FERC on May 26, 2008. Upon FERC ruling on the amended proposal, the ISO will finalize design details and begin implementation. The implementation schedule of the LTTR project has been adjusted to reflect the additional time that has been necessary to gain regulatory approval of the market design, substantial revisions required to software applications, significant resource constraints caused by high priority projects such as the FCM project and the Integration of Demand Resources project and the need to factor in the recommendations of the FTR Credit Working Group. [3]

[2] LTTRs provide the holder with the difference in congestion costs between two nodes on the transmission system for a period greater than one year.

[3] With the recent events involving payment defaults by FTR participants in some regions and the pending introduction of the LTTR market in New England, the ISO and its stakeholders have established a working

3.6 Reserve Market Enhancements

Based upon a review of the performance of New England's existing reserve market, a series of studies are planned to enhance the efficiency and operation of the market, and also improve energy market price formation. To improve price formation, the reserve monitor and reserve calculations need to better reflect operator decisions to commit supplemental or replacement reserves to account for unusually large contingencies. In addition, the levels of the current local reserve constraint penalty price values used in the real-time co-optimized energy and reserve dispatch will be analyzed to assure that they provide the proper price signals while not providing opportunities for the exercise of market power.

The ISO will also evaluate changes to the Forward Reserve Market delivery period and price cap. The current delivery obligation is for weekday, 16 hour on-peak periods. However, the system has been short of operating reserves in off-peak periods. To address this issue, the ISO is considering potentially expanding the delivery obligation to seven days per week, 24 hours per day. Additionally, the ISO's Independent Market Monitor has recommended that there may be economic merit to developing offer caps that are more specific to each reserve zone and product. The ISO will conduct an analysis of the caps and based on the results of that analysis, changes in the offer caps may be proposed. These changes will be discussed with stakeholders in 2009.

3.7 Net Commitment Period Compensation (NCPC) Enhancements

Many changes to the market design have been implemented since 2003. The NCPC settlement infrastructure has not been comprehensively revised or reviewed during that period although it has had incremental changes to accommodate other rule changes. The ISO intends to conduct a comprehensive review of the NCPC payment rules to evaluate their market efficiency and to develop possible recommendations to change the NCPC rules. Recommendations resulting from this review are planned to be presented to stakeholders in 2009. Furthermore, in the most recent annual markets report, the ISO's Internal Market Monitor Unit has expressed concerns about whether the current mitigation thresholds continue to be appropriate given the implementation of FCM and the Forward Reserve Market. The Internal Market Monitor Unit is expected to present recommendations on the mitigation thresholds to stakeholders during the third quarter of 2008.

3.8 Energy Market Enhancements

The ISO believes that enhancements are required to the day-ahead and real-time markets to improve their efficiency. Some of the enhancements include modifications to fast start unit rules to improve real-time commitment and dispatch, improvement to the resource failure-to-follow dispatch logic, and changes to posturing rules to provide reserve market compensation to resources postured to provide reserves. These changes will be discussed with stakeholders in 2009.

An alternate fuel price schedule will also be proposed to allow market participants with resources that can use more than one fuel to enter the cost of the secondary fuel into the ISO systems. Should the primary fuel become unavailable, these resources can request a switch to the secondary fuel for dispatch purposes. The ISO expects to discuss this change with stakeholders during the third quarter of 2008.

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group to re-evaluate the existing financial assurance processes and policies in order to minimize the default risk in the market.

3.9 Price Response Demand Programs

Policy makers, regulators, and market stakeholders all agree that price-responsive demand (i.e. changes in consumption by customers in response to changes in the wholesale power costs) is a critical element of a robustly competitive and economically efficient electricity market. In its role as the market administrator for the New England wholesale electricity markets, the ISO has developed and implemented programs to promote price-responsive demand in the region. The purpose of these programs is to provide program participants with an economic incentive to reduce load in response to high LMPs. These programs are currently set to expire on May 31, 2010 with the start of the first FCM capacity commitment period. However, the ISO has committed to conduct a stakeholder process to review the future of its demand response programs in the context of the FCM. To provide adequate time for the stakeholder process to provide input on this decision, the ISO plans to initiate the process in October 2008. The stakeholder process will consider whether to allow the programs to expire, continue the programs in their current form, or implement modified programs. At the conclusion of the stakeholder process, the ISO plans to file with the Commission, by February 16, 2009, a report detailing the decision to terminate, continue, or modify the price-response programs. If the decision is to continue all or some of the current or modified programs, the February 2009 filing will include a schedule for developing program revisions.

3.10 Demand Resource Reserve Pilot Phase II

The Demand Resource Reserve Pilot Phase II – a pilot program that permits small, dispersed resources (less than 5 MW) to provide operating reserves – is the next step in the process of integrating demand resources into the reserves markets. During the first phase of the pilot program, small demand resources were shown to yield statistically significant levels of load relief during simulated reserve activation events. However, the performance of demand resources varied substantially from one event to another - aggregate performance of these resources varied between 30 to 90 percent. The results of the first phase of the pilot program showed the need for further review to better predict how much reserve service such resources can provide on a daily basis. Furthermore, extending the pilot program will permit the implementation of a secure, low-cost, real-time, two-way communication infrastructure for small demand resources to provide reserve services, and to integrate that infrastructure into operations and market systems.

3.11 Alternative Technology Regulation Pilot

The ISO, partly in compliance with FERC requirements, is reviewing market rules and operating procedures governing the provision of regulation service by non-generation based technologies. In order to develop necessary experience with new, alternative technologies in the regulation market, the ISO is proposing a pilot program to evaluate the performance of alternative technologies and to explore approaches to modifying the technical requirements and market design to enhance the participation of all potential suppliers in the regulation market.

3.12 Intra-Hour Transaction Scheduling

The ISO will be filing market rule changes with FERC by the third quarter of 2008 that will permit the ISO to evaluate and adjust external transactions intra-hour as well as at the beginning of each hour. These rules will be applicable to all external interfaces, however initial use of these features is expected to place over the external tie to New Brunswick beginning in the fourth quarter of 2008. Initial implementation of these rule changes will be as a pilot program on selected days and hours as agreed upon by system operators in both regions. During the initial evaluation, system operators will evaluate transactions twice per hour; once at the top of the hour, and once at the bottom of the hour. With a second evaluation during the hour, the areas will have the opportunity to re-evaluate

transactions intra hour and determine whether transactions that cleared at the top of the hour are still economic, and whether transactions that were not dispatched at the top of the hour have become economic. This will increase price convergence between the regions and make the markets more efficient.

Section 4
Conclusions

The design of New England's wholesale electricity markets has improved significantly during the past several years. With the implementation of the Ancillary Services Markets project in 2006 and the Forward Capacity Auction in February 2008, the New England wholesale electricity markets are mostly complete. Future efforts will be aimed at completing the outstanding design elements of the Forward Capacity Market and enhancing the current suite of markets to make them more efficient.