UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

ISO New England Inc.) Docket No. ER09-1282-000

MOTION TO INTERVENE AND COMMENTS
OF THE NEW ENGLAND POWER GENERATORS ASSOCIATION, INC.

The New England Power Generators Association, Inc. ("NEPGA")—representing 18 companies and approximately 27,000 megawatts (or 85 percent) of the generation in New England—moves to intervene and submit these comments in response to ISO-NE's filing of the Internal Market Monitoring Unit's report recommending several reforms to the Forward Capacity Market for stakeholder review. NEPGA fully supports the prompt stakeholder process discussed by ISO-NE to consider these reforms.[1] To facilitate a constructive stakeholder process and to ensure that reforms are implemented in time for the fourth Forward Capacity Auction, the Commission should require ISO-NE to file a reform package by no later than February 20, 2010.

To supplement the record and to inform the stakeholder process, NEPGA has also commissioned a response to the market monitor's report by Robert Stoddard, attached hereto. Mr. Stoddard is an economist and capacity market expert who helped to negotiate and design the Forward Capacity Market. Mr. Stoddard underscores the urgency of fixing the serious market flaws in time for the fourth Forward Capacity Auction.

COMMENTS

The Forward Capacity Market settlement included a provision requiring ISO-NE's Internal Market Monitoring Unit to report on the operation of the new market design—and for

[1] The comments contained in this filing represent the position of The New England Power Generators Association, Inc. as an organization, but not necessarily the position of any particular member(s) with respect to any statement, concept, issue or position expressed herein. NEPGA's members are BG North America, Boston Generating, Brick Power Holdings, Brookfield Renewable Power, Competitive Power Ventures, Dominion Resources, Dynegy, Entergy, Exelon, FirstLight Power Resources, Granite Ridge Energy, International Power America, Mirant Corporation, North American Energy Alliance, NextEra Energy, NRG Energy, PPL EnergyPlus, and PSEG Power.

ISO-NE to file that report with the Commission—within six months of the completion of the second Forward Capacity Auction.[2] ISO-NE's filing fulfills that requirement. This reporting requirement was one of the key settlement provisions designed to ensure that stakeholders would have a chance to evaluate the effectiveness of the Forward Capacity Market and to determine whether changes were necessary. As set forth herein, changes *are* necessary and should be promptly implemented to ensure the viability of the capacity market design.

The market monitor's report describes the Forward Capacity Market and discusses the results of the first two capacity auctions. The market monitor's report then recommends "improvements" to the Forward Capacity Market in four key areas:

- the criteria for modeling capacity zones
- the Alternative Price Rule and capacity price setting when "out of market" resources enter
- pricing mechanics, including price collars and the use and level of the Cost of New Entry ("CONE"), and
- role and obligations of demand resources.

ISO-NE argues that these recommendations "should be promptly considered in the stakeholder process," but cautions against specific Commission "directives on particular substantive issues" at this time.[3]

First, NEPGA agrees with the market monitor that the Forward Capacity Market needs improvement in the substantive areas identified in the report. NEPGA does not agree with all of

[2] *See Devon Power LLC*, Docket No. ER03-563 *et al.*, Explanatory Statement in Support of Settlement Agreement of the Settling Parties and Request for Expedited Consideration and Settlement Agreement Resolving All Issues, Attachment 1, Settlement Agreement Resolving All Issues, § 5 (filed Mar. 6, 2006), now codified at ISO New England Inc. FERC Electric Tariff No. 3, Market Rule 1, Standard Market Design, § III.13.8.4.

[3] ISO New England Inc. Informational Filing of the Internal Market Monitoring Unit's Report Analyzing the Operations and Effectiveness of the Forward Capacity Market at 1 (filed June 5, 2009) ("Transmittal Letter").

the market monitor's specific recommendations for reform, but does agree that reforms identified in these four substantive areas are crucial.

To flesh out the record on these issues, NEPGA asked Robert Stoddard to prepare a response to the market monitor's report.[4] Mr. Stoddard largely agrees with the findings in the report, but identifies and expands upon additional issues that should be included in the analysis of the performance of the Forward Capacity Market to date and that may point to different recommendations for reform. Mr. Stoddard also responds to the recommendations in the market monitor's report, and suggests other considerations for stakeholder deliberations. We will not discuss the details of Mr. Stoddard's response here, but point the Commission and the parties to the response itself.

Mr. Stoddard's key conclusion is that reforms are urgently needed to maintain the viability of the Forward Capacity Market design.[5] "New England consumers are paying over a billion dollars annually in capacity costs, and they deserve to have that money spent wisely to guide investment in the region's energy infrastructure, lead to orderly retirement of uneconomic resources, support efficient long-term contracting, and ensure the regional and local reliability of the grid."[6] The current market design is failing to achieve these goals, "[s]ending the wrong price signals through the auctions [that] will result in the wrong capital stock for efficient and reliable system operations."[7] The current market dysfunction is also "a recipe for the accumulation of a new set of RMR contracts and a lack of locational price signals that invite new

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[4] Report on ISO New England Internal Market Monitoring Unit's Review of the Forward Capacity Market Auction Results and Design Elements ("Stoddard Response"), Attachment A hereto.

[5] *See id.* at 33-35.

[6] *Id*. at 35.

[7] *Id*. at 33.

capacity to displace the older resources."[8] Delay will only add to costs, so the time to reform the Forward Capacity Market is now.[9]

Second, NEPGA fully supports the prompt stakeholder process discussed by ISO-NE to consider recommendations and reforms to the Forward Capacity Market.[10] NEPGA also agrees with ISO-NE that it is likely premature for the Commission to issue substantive directions to "pre-judge" the solutions at this time.[11] Stakeholders should be given the opportunity to promptly address these concerns and file solutions to the market design deficiencies.

While we seek no substantive order at this stage, NEPGA requests Commission assistance to ensure that the stakeholder process remains prompt and constructive. The Commission is well aware that stakeholder consensus on issues related to organized capacity markets has been extremely difficult, and has often only come about after protracted legal proceedings, if ever.[12] Commission intervention has almost always been necessary.

While stakeholders often do not agree on capacity design issues, that does not mean that they should not be given the chance to fully vet the issues and hopefully reach consensus. It only means that a stakeholder process must have boundaries. NEPGA thus requests a Commission-imposed deadline by which ISO-NE must submit tariff changes to correct the deficiencies

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8 *Id*. at 34.

9 There are other substantive areas of the Forward Capacity Market also in need of reform, in addition to those identified in the market monitor's report. *See id.* at 2. Stakeholders should not exclude consideration of these other issues.

10 Transmittal Letter at 1.

11 *Id*.

12 *See, e.g.*, *Devon Power LLC*, 115 FERC ¶ 61,340 at PP 3-14 (2006) (discussing the process that produced the Forward Capacity Market settlement); *PJM Interconnection, L.L.C.*, 119 FERC ¶ 61,318 at PP 5-35 (2007) (discussing the process that produced PJM's Reliability Pricing Model); *New York Indep. Sys. Operator, Inc.*, 122 FERC ¶ 61,211 at PP 2-7 (2008) (discussing the process to reform the mitigation of capacity offers in New York City); *California Indep. Sys. Operator Corp.*, 125 FERC ¶ 61,053 at PP 2-15 (2008) (describing the process to develop Interim Capacity Procurement Mechanism); *PJM Interconnection, L.L.C.*, 126 FERC ¶ 61,275 at PP 2-17 (2009) (discussing the process to revise PJM's Reliability Pricing Model).

identified in the current Forward Capacity Market design. NEPGA's proposed deadline is no later than February 20, 2010, a date that ISO-NE and the NEPOOL Participants Committee have previously identified would "allow sufficient time so that the Commission can act on any new rules and those rules can be in place before the Installed Capacity Requirements and Informational Filings must be made for the 2013-2014 Power Year and the fourth Forward Capacity Auction."[13]

The Commission adopted similar stakeholder deadlines in the proceedings leading up to the recent package of reforms to PJM's Reliability Pricing Model. There, the Commission permitted stakeholders to continue ongoing deliberations of reforms to PJM's capacity market design in several previously identified substantive areas, but—recognizing that they might fail to achieve consensus—adopted procedures and deadlines to ensure that necessary reforms would be before the Commission on a timely basis. As the Commission explained:

> We recognize that PJM's stakeholders are already addressing some of the issues discussed above as well as other issues raised by RPM Buyers and the Brattle Report. We agree with PJM's stakeholder review approach and strongly encourage stakeholders to make efforts to achieve consensus on the issues discussed above in time for implementation prior to the May 2009 RPM auction. To the extent stakeholders are able to reach agreement on changes to RPM with respect to these issues, we strongly encourage PJM to file tariff sheets no later than December 15, 2008, with an effective date of February 1, 2009, in order for the changes to be implemented for the May 2009 RPM auction. In the event stakeholders are unable to reach consensus and/or PJM determines that it is unable, or it is infeasible, to file proposals to implement changes in time for the May 2009 auction, we will require PJM to file a report fifteen days after the completion of the stakeholder process (but no later than December 15). This report should contain detailed explanations for why changes in the areas listed by the Commission were not made, or could not be made in time for the May 2009 auction, as well as its plans for how and when the outstanding identified changes will be implemented. Furthermore, if PJM and/or its stakeholders believe a change is unnecessary with respect to any of the issues discussed above, we will require PJM to include in its December 15, 2008 report a detailed explanation as

[13] *ISO New England Inc. and New England Power Pool Participants Comm.*, 126 FERC ¶ 61,115 at P 52 (2009).

> to why any such identified issue does not need to be addressed. Stakeholders will have 15 days to comment on PJM's report. At that time, the Commission will determine whether it would be appropriate for us to take action under section 206 of the FPA to require additional changes to RPM. If, at that time, we determine that such action would be appropriate, the Commission intends to take this action in time to ensure that any additional necessary changes take effect prior to the May 2009 auction, where feasible.[14]

In that case, the May 2009 auction was the critical deadline, and ultimately, the reform package was in place in time to be implemented by that auction.

In the current case, the critical deadline is the fourth Forward Capacity Auction, to be held in August 2010. The Commission should require ISO-NE to file reforms in the substantive areas identified in the market monitor's report and the Stoddard response by no later than February 20, 2010, reflecting consensus wherever it has been achieved.

Some parties may oppose Commission-imposed boundaries on the stakeholder process, arguing that these are unnecessary and may upset previously-established stakeholder priorities. Many parties, however, apparently believe that they benefit from the artificially low clearing prices produced by the current dysfunctional Forward Capacity Market design. And while NEPGA does not oppose the use of a "steering committee" to help set stakeholder priorities,[15] the price floor on Forward Capacity Market prices expires after the third Forward Capacity Auction. With the expiration of even the price floor's minimal level of protection against the fatally flawed price formation rules of the current design, it is critical for market reforms to be in place by the fourth Forward Capacity Auction. It was, moreover, the Internal Market Monitor who identified these areas as in need of reform, not stakeholders. Therefore, it is both reasonable and appropriate for the Commission to require substantive reforms to address the deficiencies

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[14] *PJM Interconnection, L.L.C.*, 124 FERC ¶ 61,272 at P 52 (2008) (footnotes omitted).

[15] *See* Transmittal Letter at 2.

identified in the market monitor's report and in the Stoddard response by a date certain. If this deadline cannot be met, then at the very least the current price floor should be extended through the fourth Forward Capacity Auction.

As underscored in Mr. Stoddard's response to the market monitor's report, it is urgent for reforms to the Forward Capacity Market to be promptly implemented.[16] In addition, many of the issues identified in the market monitor's report were previously flagged for review over a year ago and have already been the subject of stakeholder deliberations.[17] Absent Commission-imposed boundaries on the process, stakeholders have made little progress on these issues to date. Eight more months of additional stakeholder deliberations on these issues should be plenty of time, however, to reach any achievable consensus for reform.

NEPGA commits to continue to work in good faith with ISO-NE and other stakeholders to participate in this stakeholder process to address these key issues, and to ensure the success of the Forward Capacity Market design.

MOTION TO INTERVENE

NEPGA is the largest trade association representing competitive electric generating companies in New England. NEPGA's member companies represent approximately 27,000 megawatts of generating capacity throughout New England. NEPGA's mission is to promote sound energy policies which will further economic development, jobs, and balanced

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[16] *See* Stoddard Response at 33-35.

[17] *See, e.g., ISO New England Inc.*, 123 FERC ¶ 61,290 at P 36 (2008) ("parties are encouraged to address concerns related to the determination of capacity zones as soon as practicable"); *id*. at P 60, 65 (parties "should raise their concerns regarding performance of demand resources—including examination of the FCM rules as they pertain to demand resources—in the New England stakeholder process"); *id.* at PP 81-82 ("The Commission encourages . . . all interested parties to discuss the concerns [involving the "decline of CONE" and the definition of capacity zones] . . . in the stakeholder process."). The Commission made these statements over a year ago, yet serious deliberations on zonal issues only started in April, and there have been no significant debates around CONE. *See also ISO New England Inc. and New England Power Pool Participants Comm.*, 126 FERC ¶ 61,115 at PP 52-53 ("the Commission supports ISO-NE's commitment to the stakeholder process beginning in the first quarter of 2009 to discuss the identified issues related to Local Sourcing Requirements and Capacity Zones").

environmental policy. In furtherance of that mission, NEPGA supports properly designed competitive markets that enable all resources to participate and contribute to a reliable and affordable resource mix. A balanced playing field for all resources fosters competition in the wholesale power markets consistent with sound economic principles, long-standing national policy and the Commission's core responsibilities.

NEPGA submits that its intervention in this proceeding is in the public interest and that no other entity can adequately represent its interests. NEPGA requests that all further correspondence, communications and other documents relating to this matter be served upon the individuals listed in the signature block below.

CONCLUSION

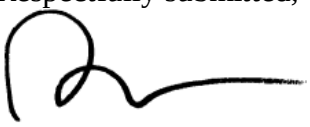
NEPGA respectfully requests that the Commission grant this motion to intervene and issue an order requiring ISO-NE to submit a filing with proposed market reforms by no later than February 20, 2010, to be implemented in time for the fourth Forward Capacity Auction in August, 2010. The reforms should address—at a minimum—the following four substantive areas:

- the criteria for modeling capacity zones
- the Alternative Price Rule and capacity price setting when "out of market" resources enter
- pricing mechanics, including price collars and the use and level of the Cost of New Entry ("CONE"), and
- role and obligations of demand resources.

If reforms cannot be in place in time for the fourth Forward Capacity Auction, then at the very least the Commission should extend the current price floor through that Auction.

NEPGA also requests that the Commission accept Robert Stoddard's response to the market monitor's report.

Respectfully submitted,



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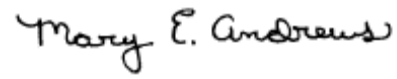
June 26, 2009

CERTIFICATE OF SERVICE

I hereby certify that I have this day caused to be served copies of the foregoing document upon each person designated on the official service list as compiled by the Office of the Secretary in the captioned proceeding, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and procedure, 18 C.F.R. § 385.2010.

Dated at Washington, D.C., this 26th day of June, 2009.



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ATTACHMENT A

REPORT

Prepared For:

New England Power Generators Association, Inc.

REPORT ON ISO NEW ENGLAND INTERNAL MARKET MONITORING UNIT REVIEW OF THE FORWARD CAPACITY MARKET AUCTION RESULTS AND DESIGN ELEMENTS

Prepared By:

CRA International

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Date: June 26, 2009

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REPORT ON ISO NEW ENGLAND INTERNAL MARKET MONITORING UNIT REVIEW OF THE FORWARD CAPACITY MARKET AUCTION RESULTS AND DESIGN ELEMENTS

Robert B. Stoddard[1]
CRA International

1. INTRODUCTION AND SUMMARY

On June 5, 2009, ISO New England ("ISO") filed at FERC the "Internal Market Monitoring Unit Review of the Forward Capacity Market Auction Results and Design Elements," ("INTMMU Review") that provides the "initial assessment of the Forward Capacity Market" of the Internal Market Monitor ("INTMMU").[2] The INTMMU Review provides an overview of the Forward Capacity Market ("FCM") design, an analysis of the results of the first two Forward Capacity Auctions ("FCA"), an assessment of the effectiveness of the FCM design elements, and recommendations for changes in four major areas:

- Modeling of capacity zones,
- Capacity price setting when "out of market" resources affect the market clearing,
- Pricing mechanics, including price collars and the use and level of the Cost of New Entry ("CONE"), and,
- Role and obligations of demand resources.

The New England Power Generators Association ("NEGPA") commissioned CRA International ("CRA") to independently assess the outcomes and operation of the FCM to

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1 Robert B. Stoddard is an economist and vice president of CRA International, Inc., where he co-heads the Energy Practice. The author was one of the architects of the Forward Capacity Market design in ISO New England, where he represented Boston Generating, Dominion, Entergy, FPL Energy, and Mirant. He also was closely involved in the RPM regulatory proceedings and settlement process in the PJM market as an economic expert for Mirant, NRG Energy, The Williams Company, and Duke Energy. He is the principal author of the California Forward Capacity Market design sponsored by FPL Energy, NRG Energy, Reliant Energy, Southern California Edison, and San Diego Gas & Electric. Mr. Stoddard has also testified at FERC on New York capacity market design issues on behalf of ConEdison, the City of New York, the New York Energy Buyers Forum, and the Association for Energy Affordability, Inc.; and on Midwest ISO resource adequacy markets on behalf of Duke Energy and FirstEnergy. The preparation of this report was supported by the New England Power Generators Association ("NEPGA"). However, the views expressed are those of the author and do not necessarily reflect the views of NEPGA or its members.

2 ISO New England, *Internal Market Monitoring Unit Review of the Forward Capacity Market Auction Results and Design Elements*, June 5, 2009.

date. This report summarizes the result of that assessment. Because the INTMMU Review covers much of the same material and identifies many of the same issues as our assessment, this report builds from the INTMMU Review. This report has three principal objectives:

First, this report identifies areas where the INTMMU Review's analysis of the outcomes of the first two FCAs is incomplete, and where this incompleteness leads to flawed conclusions as to what changes in the FCM rules would be appropriate.

Second, this report discusses in some detail the INTMMU's recommendations for changes to the FCM design. In particular, we challenge those recommendations that are premised on questionable interpretations of historical outcomes or on unsupported judgments.

Third, this report discusses why the deficiencies identified by the INTMMU are serious and need to be remedied promptly. Even though we do not agree with each of the particular recommendations for reform offered by the INTMMU, it is clear that the underlying issues are serious and must be addressed by substantive reforms before the fourth FCA.

We note that this report does not address other potential flaws in the market that are not discussed in the INTMMU Review. In addition to the reforms discussed herein, stakeholders have raised other potential rule changes that should also be considered through the stakeholder process. For example, other issues include adding an option to delist resources on a multi-year basis, allowing replacement of import capacity with other comparable external resources, relaxing the mitigation applicable to delisted capacity that voluntarily offers into the real-time energy market, explicitly ensuring that permanently delisted resources can retire immediately once all capacity obligations have been satisfied, exempting resources that clear at the Rest-of-Pool clearing price from obligations of local resources, and reviewing the PER calculation to ensure that it satisfies its intended purpose. The fact that none of these issues were addressed in the INTMMU Review and are therefore not discussed in detail here should not preclude them from being addressed in advance of FCA #4.

1.1. INTMMU'S REVIEW OF AUCTIONS TO DATE AND MARKET PERFORMANCE

Much of the analysis presented by the INTMMU Review is sound and represents a balanced statement of facts. However, there are two specific areas where additional facts or clarifications of the facts presented could lead to different conclusions. A more complete factual record should be established before related recommendations are accepted.

The INTMMU Review concludes that "the FCM is attracting sufficient interest from new resources to both meet the objectives of procuring sufficient resources and to do so at a reasonable price."[3] It goes on to state, "because of the large amount of new, in-market resources (primarily new demand resources) that remained in the auction until the floor price

3 INTMMU Review at 2.

was reached, both FCA #1 and FCA #2 would have cleared at the floor price even if no out-of-market resources had participated in the auctions."

These conclusions are not supported by the facts. We disagree that prices resulting from FCA #1 and FCA #2 were "reasonable," if "reasonable" is understood to mean "compensatory for all cleared resources." The INTMMU Review appears to reach this flawed conclusion by ignoring several potentially significant sources of capacity compensated outside the FCM:

- New capacity that was treated as existing in FCA #1, pursuant to a one-time exemption (including resources that were contracted and will be compensated under a Connecticut RFP for new capacity),
- Demand resources receiving subsidies from system benefit charges,
- Dynamic De-List Bids that were rejected for reliability reasons, and
- Surplus resources in Connecticut that were not allowed to delist rather than receive prorated capacity payments.

Although these resources are not defined as out-of-market within the narrow definition of the ISO's tariff, economically they are not relying on FCM market prices and, hence, should be considered as out-of-market for the purposes of this review. Had these resources been classified as out-of-market capacity, the market outcomes may have been markedly different.

The second area in which the INTMMU Review is incomplete is its analysis of the structure of competition in the FCM, especially in potentially import-limited zones. The INTMMU Review asserts that the "potential efficiencies of this ideal approach [of modeling all zones in the auction] are outweighed by market power concerns, particularly in concentrated, constrained zones."[4] Our report examines whether the potentially constrainable zones of Connecticut and Northeast Massachusetts ("NEMA") are, in fact, so "concentrated" as to warrant prohibiting all Static and Dynamic De-List Bids from establishing a separate clearing price in these zones. The evidence indicates that there is a substantial and economically important quantity of capacity resources in import-constrained zones offered by suppliers that do not have market power or whose bids have been reviewed by the INTMMU and filed with the Commission. There is no evidence supporting a categorical prohibition on permitting De-List Bids that have been reviewed and approved by the INTMMU or from these smaller suppliers from setting a zonal price. If the price floor is allowed to expire for FCA #4, the possibility of zonal separation created by competitive De-List Bids from existing supply is very real and should not be suppressed by rule. Otherwise, legitimate cost differentials across the region cannot be reflected in the locational capacity prices.

4 Id. at 5.

1.2. SUMMARY OF INTMMU RECOMMENDATIONS

The INTMMU Review includes an assessment of the first two FCAs and twelve recommendations for refinements and revisions to the market design and rules. These twelve recommendations address four broad issues: formation of zones, the Alternative Pricing Rule ("APR"), pricing mechanics and CONE, and demand resources.

1.2.1. Formation of Zones

The INTMMU Review puts forward two recommendations regarding capacity zones. First, it addresses how the quantity of capacity required in a zone should be determined:

> …the reliability criterion used in determining the FCM zones [should] be the same as the zonal reliability criteria the ISO uses to review De-List Bids in the auction."[5]

Specifically, the INTMMU provides three approaches, all of which boil down to "Continuing to calculate both the LSR [Local Sourcing Requirement] and TSA [Transmission Security Analysis] and using the higher of the two for both [the auction and the reliability reviews]," but with possible adjustments to the way either or both of those measures are computed.[6] If adopted, this recommendation would help to ensure that the FCA is able to secure capacity commitments from enough local resources without resorting to out-of-market payments or the need to retain surplus capacity above the Local Sourcing Requirement, such as occurred in the first FCA ("FCA #1").

We agree with this first recommendation. In FCA #1, the ISO determined that Connecticut need not be modeled as a zone because existing resources exceeded the LSR. When some resources attempted to delist, however, those De-List Bids were rejected because of the TSA requirement. Even after the close of the auction, suppliers of 320 MW of resources in Connecticut that will receive prorated capacity payments were denied requests to delist surplus capacity in order for the ISO to maintain reliable operations of the system, with capacity significantly above the LSR requirement. Without a uniform requirement at all stages of the FCM, the resulting prices cannot sensibly communicate to the market the quantity of resources required in a particular location.

Second, the INTMMU Review addresses two closely related issues with capacity zones: (i) when are they to be modeled in the auction, and (ii) what categories of De-List Bids will be allowed to set the clearing price. The INTMMU concludes that only permanent De-List Bids should be considered for either of these purposes.[7] The INTMMU Review explicitly states

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5 Id. at 4.

6 Id. at 42.

7 Id. at 5.

that neither static nor Dynamic De-List Bids should be allowed to create a zone; it is ambiguous whether these bid types could set the price in a defined import-constrained zone.[8]

This second recommendation is too limited. Although the INTMMU Review acknowledges that there is an efficiency loss if zones are not modeled, it asserts that the "risk of the exercise of market power that can occur when resources submit De-List Bids outweighs the potential efficiency improvement of permitting a static or Dynamic De-List Bid to set the price and create a zone during the FCA."[9] Not all suppliers in import-constrained zones possess market power, however, and so this rationale fails with respect to their De-List Bids. Moreover, all Static De-List Bids are reviewed by the INTMMU—which has the authority to mitigate such bids--and filed with the Commission prior to the auction, so it is difficult to understand how even "large suppliers" could "withhold capacity by submitting static … delist bids to create a zone, which would increase the price received by their other resources within the zone."[10] This is not withholding capacity—it is bidding capacity at its demonstrated cost.

So while we support the INTMMU's proposal to consider Permanent De-List Bids for the purposes of determining whether a zone should be modeled and setting zonal clearing prices, we find that the INTMMU Review's recommendation against extending this same treatment to static and Dynamic De-List Bids is unsupported and contrary to sound economic theory. Moreover, once the price collar expires after FCA #3, it becomes more essential from the standpoint of efficient market design to allow De-List Bids to set zonal clearing prices below the level of CONE.

1.2.2. Alternative Pricing Rule

Perhaps the single greatest gap between theory and practice in the FCM design is with the handling of out-of-market ("OOM") resources. The fundamental design of FCM was premised on new capacity, bidding its actual long-run marginal cost, to enter the market in response to growing capacity requirements and to set the long-run FCM clearing price. Recognizing that new entry might occur via contracts or other subsidized means outside of the FCM, the Alternative Pricing Rule was intended to reset the capacity clearing price up to the competitive cost of new entry in the event that market-based entry was crowded out by other resources that did not rely solely on market prices. If new resources were entering the market, the capacity clearing price should reflect the cost of new entry.

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8 Id. at 42. Under current rules, if the determination is made in advance of the auction to model the zones and allow them to price separate, all De-List Bids are eligible to set the price for a zone. The INTMMU proposal seems to step back from this efficient design by recommending that Static and Dynamic De-List not be allowed to affect the determination of zones, or lead to price separation consistent with competitive market interplay.

9 Id. at 42.

10 Ibid.

In practice, however, the rules governing these resources have failed for two principal reasons:

- In FCA #1, planned resources that would reach commercial operation prior to the delivery period could participate as existing resources, thereby allowing a significant tranche of resources to bypass the OOM test;

- Although the tariff has a multi-year protection against the pricing effects of efficiently-scaled new capacity additions within import-constrained zones that eliminate the need for new entry in immediately subsequent years, there is no analog protection against OOM capacity that eliminates the need for entry in the years after it is added. Hence, even when OOM resources create a substantial surplus, the APR could only apply in the first year. Thereafter, continued supply in excess of demand would keep capacity prices below new entry costs, even though OOM resources with higher revenue requirements are entering the market. Moreover, as long as OOM resources are added before any new capacity is needed, the APR will never be triggered and the market price will never rise to a level sufficient to support new entry.

The next four recommendations in the INTMMU Review address deficiencies in the APR and associated rules:

3. "the triggering conditions should be modified to properly account for multiyear effects of [Out of Market ("OOM")] resources that clear in a single year and eliminate the need for new entry in subsequent years."[11]

4. "the adjusted price should apply only to existing capacity, not to OOM new capacity,"[12] in order to "encourage potential self-supply and bilateral contract-based entrants to offer closer to their true costs, with entry contingent on clearing in the auction."[13]

5. "the APR price adjustment no longer needs to be capped by the CONE, since competitive offers by new entrants should provide a competitive cap."[14]

6. "it is appropriate to monitor the effectiveness of the APR over time and to identify ways to improve monitoring, mitigation, and incentive mechanisms."[15]

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11 Id. at 6.

12 Id. Note that we interpret this recommendation to mean more simply, "the adjusted price should not be paid to OOM new capacity." i.e., if market-based new capacity cleared, it could be paid the adjusted price.

13 Id. at 46.

14 Id. at 6.

15 Id.

As discussed in more detail below, we generally support Recommendations #3, #5, and #6, although each will require careful stakeholder review to ensure that the market is providing sensible signals to investors and fair prices to consumers. Recommendation #4, however, is contrary to the general economic principle of a single clearing price paid to all suppliers of a common product. If adopted, it would create a bias in FCM away from new resources that require a significant investment prior to the FCA. Bifurcated prices also may tend to discourage contracting or to reduce the certainty normally associated with bilateral contracts.

1.2.3. Pricing Mechanics and CONE

The INTMMU Review makes several recommendations about the price collar and other uses of CONE in the FCM. We gather these together into one section.

7. "The INTMMU supports the expiration of the price collar as planned" after FCA #3.[16]

8. "Instead of a price collar that is in effect for all auctions, the INTMMU supports additional changes to the APR to offer some price certainty to existing resources when the price is artificially depressed by the OOM resources. Applying a price floor only when the APR is triggered is superior to a price collar…."[17]

9. "the auction starting price should be decoupled from the CONE and set at a level high enough to ensure that both generation and demand [resources] will enter and create a competitive auction."[18]

10. The current CONE level of $4.918/kW-month is "still high enough" for De-List Bid review purposes.[19]

11. At the current CONE level, "the CONE's use in setting credit requirements remains appropriate because these requirements should be based on the amounts resources are being paid."[20]

The price collar served the purpose of setting the FCM onto a stable path—the training wheels on the FCM bicycle to prevent it from wobbling too far to either extreme – which was especially important in light of the fact that FCM was an entirely new market design. FCA #1 and FCA #2 both cleared with a surplus at the price floor, and there is every indication that FCA #3 will as well. In light of the design weaknesses noted in the INTMMU Review, taking off the training wheels for FCA #4 may be premature. If sound changes to address all these

16 Id.

17 Id.

18 Id. at 8.

19 Id.

20 Id.

weaknesses are adopted for FCA #4, and if those changes actually work as intended, then Recommendation #7 may be reasonable. The difficulty is that no one can know whether the tariff revisions will be entirely effective until they are implemented. And allowing prices to fall to undesirably low levels may have damaging consequences, such as the premature retirement of cost-effective resources, including demand resources, and a renewed proliferation of RMR agreements.

Recommendation #8 is an intriguing, albeit incomplete, concept. The floor level—or levels, since it may be sensible for the floor price to decrease as the level of oversupply increases—presumably ought to be some substantial fraction of a realistic estimate of CONE. The current administrative CONE value, however, has sunk far below any defensible estimate of the cost to build generation. An APR-triggered price floor would also need to recognize the substantial OOM surplus created in FCA #1 and FCA #2.

Recommendation #9 correctly recognizes the fact that the starting value of the FCA can be arbitrarily high without risking unreasonable clearing prices. This recommendation appears, however, to merely be side-stepping the need for a reset of the CONE value up to a realistic cost to build new generation. If CONE were reset to levels consistent with recently approved CONE values in New York and PJM, or to levels reflecting recent long-term cost-of-service contracts for new peaking generation approved in Connecticut, there would be no need for a rule change on the starting price of the FCA.

Recommendation #10 is made without any analysis or foundation. The thresholds at which the INTMMU needs to review Permanent and Static De-List Bids were negotiated as a balance between letting the market function, on the one hand, and limiting the potential exercise of market power, on the other. These thresholds were premised on a CONE that reflected the cost of new generation. As the CONE estimate falls (which it will do through FCA #3), more De-List Bids come under review by the INTMMU, and therefore the business judgment of more suppliers becomes subject to being overruled (even if that supplier lacks market power). If the INTMMU has such confidence that its bid review is sound, then its recommendation *against* allowing Static De-List Bids—all of which it has reviewed—to trigger zonal price separation is even more puzzling.

Recommendation #11 requires further investigation. If the CONE has fallen to unrealistic levels, the collateral level will have declined with it, which should lower ISO's confidence that resources committed to its markets will actually show up. Some minimum collateral level, therefore, may be prudent.

The INTMMU Review implies that addressing its Recommendations #8 through #11 would obviate the need for any CONE reset. We disagree. These recommendations are only a partial list of the uses of CONE in the FCM. In particular, the standard of review for OOM resources is now 75% of $4.918/kW-month, or $3.689/kW-month, well below any plausible value for new construction. Thus, without a CONE reset, the APR cannot operate sensibly. CONE is also used to set the FCA clearing price in the event of insufficient competition or inadequate supply, and the Quantity Rule (which allows ISO to defer purchase of a portion of replacement capacity for delisted resources) also uses CONE. The CONE value is also used

in the Reconfiguration Auctions in a number of roles. These mechanisms were built assuming that the CONE value would reflect the cost of new generation. Unless CONE is reset to reflect actual cost levels in today's market, these mechanisms will no longer function as intended and FCM will produce inefficient results.[21]

1.2.4. Treatment of Demand Side Resources

The huge influx of demand resources is simultaneously one of the greatest triumphs and one of the greatest concerns coming from FCA #1 and FCA #2. If this DR shows up and performs, the FCM will have achieved a notable transformation of the bulk power system with a step-change increase in the level of load participation and decrease in the total physical capacity required to maintain reliability. If DR does not perform as well as active generation, however, the apparent savings realized in the FCM to date may simply reflect a tradeoff of lower costs for lower reliability. The INTMMU Review examined whether the "payment, incentive, and penalty structures" were comparable for DR and generation, and concluded that they "have comparable performance requirements and penalty structures, but that generation has stronger performance incentives."[22] It therefore makes a single recommendation regarding DR:

> 12. The INTMMU recommends adopting the PER deduction for all demand resources and enabling these resources to participate in the electric energy market.[23]

This recommendation stops well short of placing DR in a comparable position as active generation. The INTMMU would "permit" demand resources to offer into the energy market; generation resources, however, are required to offer all of their available energy each and every day. This requirement on generators is consistent with the notion that "'Capacity' … amounts to a kind of call option that electric transmitters purchase from parties—generally, generators—who can either produce more or consume less when required."[24] The much weaker performance obligation on DR of performing only in OP4 conditions is fundamentally a different product. FCM recognizes that real-time emergency-only generation ("RTEG") is a lower-quality capacity product, and so it limits the quantity and payment to those generators. While imposing a PER on DR may be a step towards aligning the differences that now exist between the obligations and requirements placed on generators and those placed on DR, critically important differences remain.

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21 Note that CONE was intended to reflect the cost of new generation, because the majority of capacity resources are, and must continue to be, generation, and the efficient long-run capacity price should be expect to be set by new generation.

22 Id. at 7.

23 Id. at 7.

24 US Court of Appeals, DC Circuit, Ruling in Case No, 07-1375, *Connecticut Department of Public Utility Control v. Federal Energy Regulatory Commission*, ,at p. 4

1.3. REFORMS TO THE ISO NEW ENGLAND MARKET DESIGN ARE NEEDED PRIOR TO FORWARD CAPACITY AUCTION FOR 2013/14

It is important that these recommendations be considered and appropriate fixes to the market design be implemented quickly. While some of the recommendations are well-founded, others require additional consideration and reformulation. This report identifies questions related to several factual matters that form a basis for the INTMMU recommendations. Answers to these questions and the establishment of a better factual basis for redesign recommendations will be critical to developing appropriate reforms.

This report raises several questions and issues related to the twelve specific recommendations in the INTMMU Review. While we disagree with some aspects of the particular recommendations, we agree that the underlying issues that these recommendations seek to address are serious deficiencies that require serious solutions. Each FCA shapes the long-run investment in the region, guiding the construction of new resources, the fuel diversity of the generating fleet, the retirement of uneconomic resources, the development of DR, and transmission expansion. If the FCA prices are not set sensibly, the harm is not just that some parties are paid too much or too little; the composition of the energy infrastructure of the region will be distorted, imposing higher costs or lower reliability on the region, with long-lived consequences.

2. INTMMU REVIEW OF FORWARD CAPACITY AUCTIONS

Section 4 of the INTMMU Review provides a review of the two FCAs held to date, FCA #1 for the 2010/2011 delivery year and FCA #2 for the 2011/2012 delivery year. The review provides much of the factual basis for the INTMMU's recommendations about FCM design changes and highlights general observations about the market outcomes. A complete and accurate analysis of the market outcomes to date provides a critical input for the stakeholder process to address how well the market has worked, identify market flaws, and develop potential reforms. It also contributes to the written record that the Commission, ISO New England, and other stakeholders can rely upon in evaluating the market. Moreover, review by the INTMMU is an especially critical input to the market reform process, as the INTMMU has access to data and other market information that is not generally available to other stakeholders, but is potentially important for understanding the need for and importance of potential rule changes.

The INTMMU Review provides a balanced and generally factually accurate review of these initial auctions. However, some of the information presented, while factually accurate, may paint a somewhat misleading picture of the market results. In particular, the extent and impact of OOM supply is likely significantly understated. Additionally, the INTMMU Review of the extent of competition in the market is quite brief and superficial and provides very little information about whether competitive outcomes can be expected within FCM zones if they are constrained in future auctions. While this information is not critical to assessing the market outcomes of the first two auctions, it is important for evaluating how the market may work in future auctions and assessing what rule changes may be appropriate.

This section of the report provides a discussion of the INTMMU Review and addresses specific areas where the review is either incomplete or where the findings may be misleading.

2.1. EXTENT OF OOM UNDERSTATED

The INTMMU Review provides an assessment of the extent of OOM offers in the first two FCAs. It relies on a narrow definition of OOM capacity, as specified in Section III.13.2.7.8.1 of the ISO-NE Tariff. Specifically, new capacity is flagged as OOM if it was self supplied or remained in the auction at prices below 0.75 x CONE without prior approval by ISO-NE. Because this standard matches the criteria for triggering of the APR, it is useful in assessing the proper implementation of that rule. However, it provides very little information, especially for FCA #1, about the actual extent to which resources were offered at prices below their true economic costs, potentially lowering market prices artificially.

The INTMMU notes that capacity should be treated as OOM when resources "participate in the FCM at prices below their costs."[25] Put another way, capacity is OOM when it is supplied despite receiving market revenues that are not sufficient to cover its truly avoidable costs and therefore must cover its costs through another non-market means. While this definition is conceptually reasonable, the INTMMU Review fails to flag all capacity that likely fell into this category. Consequently, if such capacity sets the FCA clearing price, the price fails to reflect the true cost of those resources. The APR was designed to remedy precisely this situation, but it can operate as intended only if all OOM resources are flagged.

Specifically, the INTMMU Review identifies 40 MW of OOM capacity from FCA #1. While this number may correctly reflect the total capacity that meets the strict definition of OOM capacity from the Tariff, it grossly understates the true extent to which new capacity cleared in the auction at a price below its actual costs.

First, FCA #1 included 1,495 MW of new capacity, including 585 MW of new generation resources, which was treated as existing. These resources received special treatment available for FCA #1 only, in which new capacity that was already scheduled to be in service in advance of the delivery period was treated as existing, even if it was not yet on-line at the time of the auction. While some of this capacity may have had costs below the FCA clearing price, no facts have been provided to confirm whether the costs of supply resources were in fact below the FCA price floor where the auction settled. Given that some of these resources may have been committed to coming on-line before the FCM market was in place, this treatment may have been sensible for that auction—OOM resources that were previously committed based on expectations in another market context should not be precluded from receiving an FCM payment. However, a fundamental goal of the FCM market is to provide efficient price signals for needed new capacity through a uniform market clear price that is paid to all resources. These OOM additions in FCA #1 have, in effect, supplied the region's new capacity needs in advance. Conceptually, the "early timing" of new capacity additions

25 INTMMU Review, at p.32.

should not prevent prices from reflecting the cost of such new capacity when it is eventually needed. The intent of the APR is to facilitate such efficient pricing in the presence of OOM capacity. The INTMMU has made recommendations for revisions to this rule, which are discussed later in this report. Evaluating this rule and implementing revisions requires an accurate and complete assessment of OOM supply.

Another source of capacity supply excluded from the INTMMU assessment is the result of rejected Dynamic De-List Bids. In FCA #1, NRG submitted Dynamic De-List Bids for the units at its Norwalk Harbor plant that were rejected for reliability reasons. NRG will be paid its bid for this 330 MW of capacity, but the bid did not affect the clearing price. Although this capacity is not OOM new entry, for the purposes of the INTMMU's analysis it should be counted as part of the OOM supply, inasmuch as the ISO's actions during the FCA had the effect of restating the legitimate De-List Bids from 330 MW of capacity down to zero, rather than allowing it to set the locational clearing price at its bid price. Additionally, in FCA #1 a significant number of surplus resources in Connecticut were not allowed to delist rather than receive prorated capacity payments. Hence, the apparent reliability need for these resources was also not properly reflected in the market clearing price.

The final source of OOM capacity that merits discussion is subsidized demand resources. The INTMMU asserts that the proper test for OOM resources is whether the additions were cost-effective, including consideration of utility programs for DR. The INTMMU report suggests that DR resources should not be considered OOM because they meet this standard, even if supplied through programs funded by utility system benefit charges.[26] However, the INTMMU report includes no analysis to support the assertion that the benefits of these DR resources exceeded their costs.

Moreover, this standard is conceptually flawed and inconsistent with the treatment of OOM generation resources. Under the standard suggested by the INTMMU, utilities should also be allowed to offer new generation resources at a price below CONE if the benefits to the utilities of doing so exceed the cost. In other words, the utility should be able to buy OOM capacity at a premium to the FCA price as long as the benefits realized in terms of a lower FCA price exceed the costs. But such an outcome would not be consistent with a single price auction and competitive outcome in which the price for all capacity reflects the cost of marginal supply. Rather, new capacity would be paid one price, outside of the market, and other capacity would be paid a lower price—exactly the outcome the APR is designed to prevent. Similarly, offering DR at a price that reflects its costs, net of the utilities' savings (which includes lower costs for *other* capacity purchases), understates its true costs and artificially lowers the market clearing price. In that case, the utilities have covered the full cost of DR through system benefit charges, but offered it into the market at a lower price, which is exactly the opposite of the incentives the INTMMU wishes to create in recommendation #4. In effect, this standard would codify the ability of load to exercise and benefit from buyer market power.

26 Id. p.31.

2.2. INTMMU REPORT INCLUDES NO ANALYSIS TO SUPPORT THE ASSERTION THAT MARKET POWER WITHIN ZONES IS PROBLEMATIC

The INTMMU Report asserts that market power within zones is problematic, requiring measures to limit the potential for market power to affect prices.[27] In particular, although the INTMMU supports changes to allow *Permanent* De-List Bids to cause zonal price separation, it opposes allowing either Static or Dynamic De-List Bids from doing the same on the grounds that "large suppliers [would have] an incentive, particularly in constrained zones, to withhold capacity."[28] The INTMMU claims that avoiding this "risk of the exercise of market power … outweighs the potential efficiency improvement of permitting a Static or Dynamic De-List Bid to set the price and create a zone during the FCA."[29] However, the INTMMU Review fails to examine whether the auction data support this hypothesis.

As noted above, the INTMMU Review is incomplete in its examination of the body of data related to FCA #1 and FCA #2. Unfortunately, the ISO has failed to publish enough detailed data to allow stakeholders to perform thorough independent examinations of the market in action. The published tables of qualified and rejected capacity offers, including those from LSEs and demand response aggregators, are not even aligned with the published results of FCA #2 and FCA #1. In particular, there is no transparency with respect to which retail suppliers of accepted DR (hospitals, retail chains, universities, factories, etc.) correspond with which qualified capacity offers.

While the body of publicly available data on the FCA offers and results do not permit us to produce a robust analysis of the structure of competition in the FCAs to date, there is enough information to provide indicative information. Using a conservative approach with this data, we are able to make certain observations about the nature of the FCA #2 results in Connecticut and NEMA-Boston, two potentially constrained zones. For the benefit of transparent markets with adequate data available to all stakeholders, we urge ISO-NE to publish more comprehensive and internally consistent reports on the capacity offered into FCAs, including rejected offers, and links to the actual auction results and accepted capacity, especially demand response entities and their connections to LSEs and other capacity aggregators.

In particular, the INTMMU fails to report any analysis whatsoever on the market concentration of individual load zones such as Connecticut and NEMA-Boston, despite the obvious potential for economic separation from the rest-of-pool due to aging generation assets and transmission constraints. Without such an analysis, any decision as to which De-List Bids should be allowed to set zonal clearing prices is baseless. Using the available public data from the FCM filings to the Commission, along with ISO-NE's current Seasonal Claimed

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27 Id. at 42.

28 Ibid.

29 Ibid.

Capacity (SCC) reports to link capacity offers and resources with Lead Participants (treated as full owners), we have performed an examination of the FCA #2 results to look in detail at the structural competition in the Connecticut and NEMA-Boston zones (had they been modeled and allowed to price-separate). While this approach does not account for joint-ownership and contractual arrangements (and likely overstates the level of market concentration), it provides a characterization of the diversity of ownership that is sufficient to observe general trends and issues related to market concentration, market power, and the general diversity of the smaller fringe players in the capacity auction (of which there are many).

In the following analysis, the "Rest-of-Pool" qualified capacity offers from Connecticut Light & Power, United Illuminating, and other LSE's and assorted demand response aggregators (e.g. EnerNoc) are assumed to transfer to the myriad small entities listed as having accepted offers in FCA #2 Results (e.g. hospitals and retail centers). With these caveats, we can observe the following trends in the Connecticut and NEMA-Boston data from FCA #2:

For the FCA #2 period, Connecticut (as a stand-alone load zone) had a Local Sourcing Requirement of 6,817MW. For this auction, CT suppliers qualified 10,777 MW to participate in the auction, including 1,166 MW of demand response (765 MW existing, 366 MW new). The FCA #2 results indicate a total of 9,159 MW accepted in CT for June 2011. Connectiuct in FCA #2 had a surplus of 3,960 MW of qualified capacity in excess of the LSR. Based on this threshold of 3,960 MW, the CT load zone has *no* pivotal suppliers and only one supplier with a share of qualified resources above the 20% threshold used by the Commission in merger analysis: NRG (with 2,940 MW qualified, 27.3% share).[30]

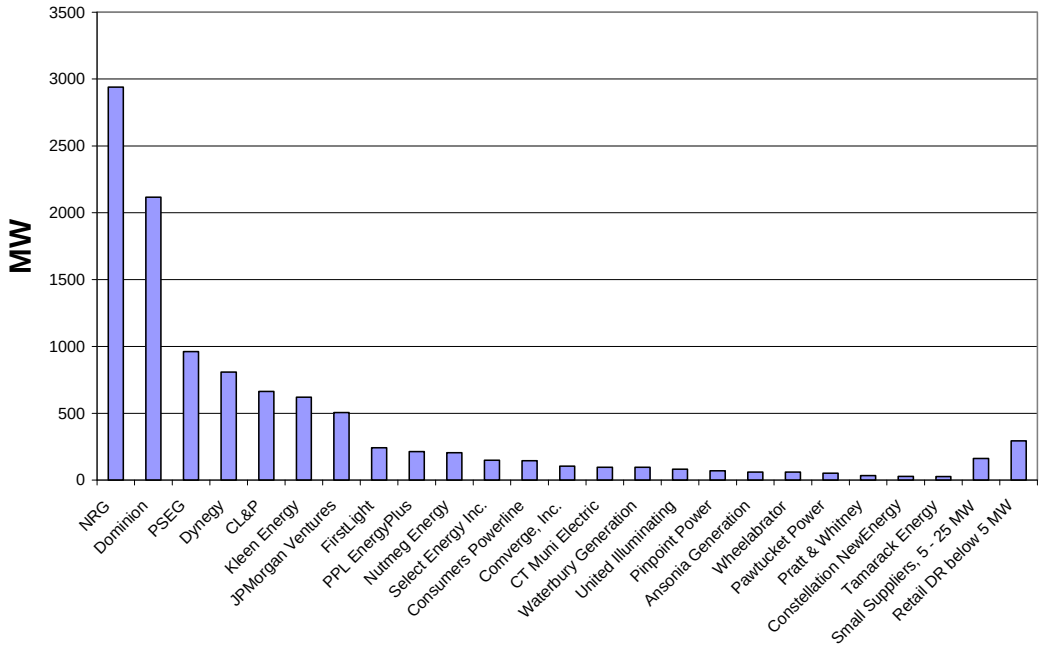
It is also important to note that a significant amount of NRG's qualified capacity (1,066 MW) for FCA #2 was new generation. Given that NRG was offering a significant amount of new capacity, it was unlikely it had the incentive to simultaneously withholding resources from the market. Moreover, of the 1,066 MW of new capacity that NRG offered, 374 MW cleared the market as OOM resources. This new generation consists of capacity expansion projects tied to the Connecticut RFP for new peaking power resources, which NRG has jointly developed with United Illuminating, an LSE with no incentive to raise capacity prices. Excluding this 1066 MW from NRG's total qualified tally lowers their total to 1875 MW (20.5% of total).

Approximately 53% of the qualified capacity is associated with suppliers with a market share below 10%, the largest of which were PSEG (961 MW, 8.9% share) and Dynegy (808 MW, 7.5% share). The fifth largest supplier, with 664 MW (6.2% share) is Connecticut Light & Power, one of several Connecticut LSEs with no incentive to raise capacity prices. Below that there are approximately 30 entities with qualified capacity between 600 MW and 5 MW, followed by 900-plus "Small Retail DR" entries with less than 5 MW of qualified capacity each. This distribution is illustrated in Figure 1 below, clearly showing the "diverse fringe" of entities that make up the tail of the distribution. These "Small Retail DR" entities include 91 entries

30 The second-largest supplier, Dominion, qualified 2,117 MW, a 19.6% share.

from a telephone utility (SBC-SNET), 73 entries from grocery chain Stop & Shop, and many small entries from individual hospitals, universities, towns, factories, and retail centers.

Figure 1: Distribution of Qualified Connecticut Capacity among Lead Participants, FCA #2



This analysis leads to an important conclusion regarding market power in constrained zones. Although there are one or two large suppliers that some may argue have structural market power in the constrained zones, there are also many suppliers with little or no market power. In Connecticut, there were no pivotal suppliers in FCA #2; suppliers with less than a 6 percent market share represent about one-quarter of the qualified supply. Another traditional measure of market concentration, the Herfindahl-Hirshman index, has a value of 1,391 for Connecticut for FCA #2, which is only "moderately concentrated."[31] Indeed, after removing the top two suppliers from the stack, the remaining entities have an effective HHI value over the residual supply of 900, indicating an unconcentrated market. There is simply no plausible reason why the De-List Bids from suppliers that do not possess market power should not be allowed to set the zonal clearing price, a topic we take up in more detail below.

In addition, the large and diverse pool of participants offering new entry capacity clearly demonstrates that the 3-year lead time allows new entry and as a result the Connecticut market is contestable, consistent with the intentions of the FCM market designers.

The situation is similar in the NEMA-Boston zone, another zone that might exhibit economic separation from Rest-of-Pool due to congestion and aging local generation resources. For

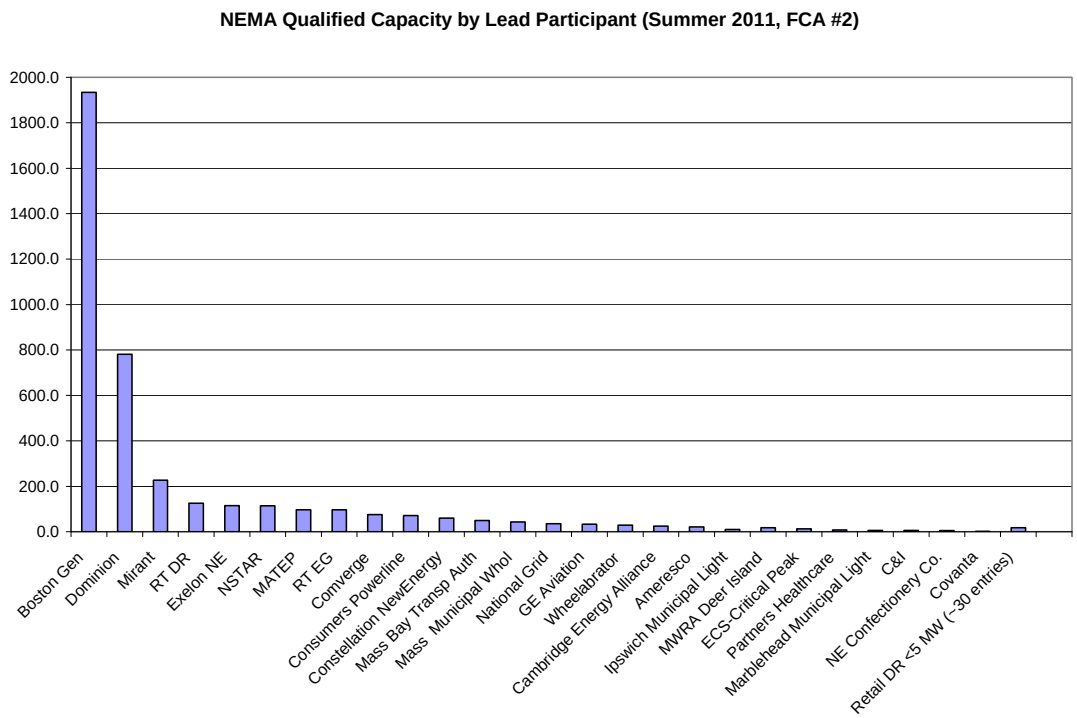
31 Horizontal Merger Guidelines, US Department of Justice and Federal Trade Commission, Issued April 2, 1992, revised April 8, 1997, at p. 15.

the 2011/2012 delivery year (corresponding to FCA #2) the LSR for NEMA-Boston (as a stand-alone load zone) is 2,016 MW. For this auction, NEMA-Boston suppliers had 4,019 MW qualified to participate in the auction, including 717 MW of demand response (368 MW existing, 349 MW new) indicating a surplus of 2,003 MW beyond the LSR. From this capacity, the FCA #2 results indicate a total of 3,892 MW cleared the auction and was accepted in NEMA for June 2011.

Based on the surplus of 2,003 MW, there are *no* pivotal suppliers in NEMA-Boston. As in CT, there is only one participant with over 20% of qualified capacity: Boston Generating, LLC has 1,934 qualified MW (48.1% of the total qualified MW) for Summer 2011, all of which is existing generation at the Mystic Plant. [32]

Approximately 32% of the qualified capacity is associated with suppliers with a market share below 10%, the largest of which were Mirant Energy Trading (227 MW, 5.7 %) and Exelon New England (115 MW, 2.9 %).. Below that there are approximately 22 smaller participants, plus about 30 small retail sources of DR, again forming a diverse fringe of capacity suppliers in the long tail of the distribution. The distribution of qualified MW by lead participants in NEMA-Boston is shown below in Figure 2.

Figure 2: Distribution of Qualified NEMA-Boston Capacity among Lead Participants, FCA #2



32 The second largest participant, Dominion Energy Marketing has 781 MW (19.4%), also all existing generation.

Of the 362 MW of qualified new entry in this zone, 13 MW is attributable to new generation (all from MATEP, LLC, a smaller supplier who has 84 MW existing generation). The 349 MW of newly qualified demand response is spread across ten participants, plus a small amount of increased supply (<2 MW) from the group of small retail suppliers. The largest commercial sources of new qualified DR in NEMA-Boston are aggregators Comverge (75 MW), Constellation NewEnergy (50 MW), and Consumers Powerline (25 MW). The largest total suppliers of DR include two LSEs with no incentive to raise capacity prices – NSTAR (114 MW) and National Grid (35 MW). Consistent with a contestable market, all of this potential new entry is from suppliers that do not appear to have market power.

Taking out the top two suppliers (Boston Generating and Dominion), the residual supply is not concentrated, with a HHI value of approximately 800. With the top two included the market is concentrated, but as in CT, the Market Monitoring Unit could mitigate bids from these participants if needed. As in CT, the inability of smaller suppliers to set prices in NEMA-Boston through De-List Bids is a direct consequence of the FCM rules limiting the separation of NEMA-Boston as a separate capacity market.

3. REVIEW OF INTMMU RECOMMENDATIONS

As discussed above, the INTMMU Review includes recommendations for changes in four major areas:

- Modeling of capacity zones,
- Capacity price setting when "out of market" resources enter,
- Pricing mechanics, including price collars and the use and level of the Cost of New Entry ("CONE"), and,
- Role and obligations of demand resources.

Our review of the results of FCA #1 and FCA #2 also flagged these four areas as requiring material changes to the market rules:

Capacity Zones: Although no capacity zones bound in any FCA to date, this outcome masks important issues. In FCA #1, Connecticut *would* have bound had it been modeled and had De-List Bids been allowed to set the clearing price. Because Connecticut was not allowed to separate, ISO committed to make out-of-market payments to two supply resources, and *no* supplier was permitted to delist any portion of their Connecticut resources, notwithstanding the apparent surplus of resources secured in the FCA.[33] In FCA #2 (and possibly FCA #1), it seems likely that zonal price separation would have occurred had there

33 Subsequently, ISO has accepted the De-List Bid from one of these two RMR resources, so only one will be paid its De-List Bid during the delivery year.

been no price floor and, again, assuming that De-List Bids could set the clearing price within a zone. Because of the descending clock design of the FCA, it is not possible to recreate what prices would have emerged had zones been fully modeled, but in the PJM RPM, the Independent Market Monitor has observed that modeling all capacity zones in a recent Base Residual Auction would have created a substantial price differential between PJM zones, even though no zone was absolutely capacity deficient.[34] Failure to model relevant constraints leads to incorrect locational pricing, inefficient entry and retirement, and incorrect price signals for transmission expansion.

Out of Market Resources: As discussed in more detail above, a significant fraction of the new resources added in FCA #1 and FCA #2 have not relied on the FCA prices as the signal to enter. These out-of-market resources have led to a substantial over-supply of committed resources—although it remains to be seen what portion of these commitments will be honored. The intention of the FCM design was that, when new resources entered the market, the market-clearing price should reflect the true, unsubsidized cost of new entry. Several market rules, including the APR, the definition of an Out-of-Market Resource, and the Capacity Carry-Forward Rule, were crafted to achieve this result, but several shortcomings in the drafting of those rules has caused capacity prices to drop even as costly new generation resources clear in the market. Unless this situation is addressed, large load-serving entities will continue to have a strong incentive to perpetuate the oversupply, thereby keeping prices paid to existing resources at artificially low levels compared to the compensation available to new resources contracted by those LSEs.

Price Collars and CONE: Although the level of CONE plays a smaller role in the FCM design than it does in either the New York or PJM capacity markets, it is still the foundation for many FCM mechanics. By our count, there are at least 14 distinct uses of CONE in the FCA, Reconfiguration Auctions, and Financial Assurance sections of the Tariff. The fact that new resources have not been required in either FCA #1 or FCA #2 implies that the market-clearing price in the auctions provides no useful information about the true value of CONE; if anything, the prices imbedded in the contracts for new generation in Connecticut confirm our view that even the starting value of $7.50/kW-month understates the true CONE. Nonetheless, the mechanical rules in the Tariff have steadily reduced the CONE value, so that it now stands at a level that is inarguably lower than any plausible estimate of the actual cost of building new generation—well below recent estimates used in other Northeast capacity markets.. Although the INTMMU Review examines a few of the ways in which CONE is used in the FCM design and suggests workarounds in a few cases, these recommendations would not be needed if the simple and obvious step were taken instead: reset CONE to reflect the actual cost of new entry. Without such a reset, the reasonableness of many design elements is questionable.

Some may argue that low CONE levels may simply reflect the lower cost of DR, unit upgrades, or incremental imports. It is entirely reasonable that FCA *prices* should be set by

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34 Monitoring Analytics, *Analysis of the 2011/2012 RPM Auction,* Report of the Independent Market Monitor for PJM, September 12, 2008.

those sources of supply, but offers from those resources should not adjust the CONE value. The market rules must reflect the inarguable fact that the vast majority of existing supply is active generation, and going forward the FCM must be able to attract and retain active generation. DR, upgrades, and imports cannot serve the entire requirements of New England customers. Unlike other markets, the value of CONE does not influence the clearing price of the FCA, except under unusual circumstances. CONE is used primarily as a standard of review of the De-List Bids and new-entry offers, and the vast majority of those bids and offers will be from active generation. It is appropriate, therefore, that CONE reflect the costs associated with building and financing new generation.

We also have serious reservations about removing the price collars for FCA #4. Even if substantial reforms are adopted in time for FCA #4, those reforms will be untested and could lead to unexpectedly high or low prices. A price floor associated with the triggering of the APR (or, perhaps, a set of price floors, depending on the quantity of oversupply) may address this need to some degree, but it would depend critically on how the APR is recrafted.

Demand Resources: Demand-side participation in the energy, reserves, and capacity markets is an important goal, and FCM has—at least apparently—been very successful in this regard. We have concerns, however, that a contributor to this success has been different standards, obligations, and incentives for generators versus demand resources. Although the INTMMU addresses one aspect of this disparity, it is still the case that generation resources would have greater obligations to the market than demand resources and, therefore, will be contributing to the overall reliability of the system in markedly different ways. Closing this disparity, or recognizing the disparity and reflecting the different value in capacity prices paid, should be an important goal in any FCM reform.

3.1. CREATION AND PRICING OF ZONES

The creation and pricing of capacity zones in the FCM is an important aspect of the market design that allows for efficient price signals to attract and retain capacity resources where they are most needed and to ensure that transmission constraints do not lead to local reliability problems that need to be addressed through reliability must-run (RMR) payments. Moreover, properly implementing capacity zones and locational pricing is a critical element to ensure that all resources providing the same locational capacity product are paid the same price, and that the auctions do not result in a de facto pay-as-bid market clearing due to unnecessary RMR payments. Without well-implemented locational pricing, higher cost resources that are needed for local resource adequacy may be paid their bids through RMR payments, while other resources within the zone providing an equivalent contribution to local resource adequacy will be paid less. Or perhaps worse, resources that could cost-effectively provide valuable contribution to local resource adequacy may not receive necessary compensation through FCM and exit the market. In fact, without adequate FCM zones and price separation, much of the new entry for ISO-NE could end up being procured on an RMR basis to solve local reliability problems, creating a risk of a two-tiered pricing system with new entry paid one price based on bids for new resources and existing capacity paid another, lower price, which was one of the problems FCM was intended to remedy. This outcome of multi-tiered pricing has already occurred for Connecticut in the first two FCA, with units with

De-List Bids rejected for reliability paid one price, OOM new units with contracts under state-sponsored RFPs paid another set of prices (outside of the market), and existing capacity receiving a lower market-clearing price.

The importance of locational pricing in establishing an efficient market is underscored by the fact that it was a requirement stipulated by FERC in the development of the ISO-NE capacity market. In its June 2, 2004 Order in Devon, the Commission stated:

> *"One market design change that was suggested in the PJM Order was the use of locational markets for installed capacity or operating reserves for the constrained area. The Commission believes that designing and implementing a well-functioning and equitable LICAP market represents a significant step in resolving Reliability Compensation Issues. In fact, we have identified locational installed capacity as a market design feature that can serve as a solution. The New England market as a whole appears to have adequate capacity. At the same time, nearly all existing units within SWCT are needed for reliability. Additionally, ISO-NE has also recently conducted a Request for Proposals to obtain additional resources in SWCT. Thus, the use of a local capacity market would better reflect the value of capacity in SWCT than the existing system-wide capacity market."*[35]

Given the importance of FCM zones and efficient locational pricing in assuring just and reasonable pricing, the INTMMU is correct to have included it as an area for potential market reforms based on auction outcomes to date. FCM zones should be an important topic for stakeholder discussion and consideration of rule changes. However, the INTMMU's recommendations for rule changes do not, in our opinion, go far enough towards developing rules for efficient locational pricing.

The INTMMU Report makes two specific recommendations related to FCM zones and locational pricing:

1. "…the reliability criterion used in determining the FCM zones [should] be the same as the reliability criteria the ISO uses to review De-List Bids in the auction."[36]

and

2. "…[allow] permanent delist bids to affect the creation and pricing of a zone during the FCA to improve zonal price formation"[37]

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35 107 FERC ¶ 61, 240. ORDER ON COMPLIANCE FILING AND ESTABLISHING HEARING PROCEDURES, Issued June 2, 2004, at P.37.

36 INTMMU Review at 41.

37 Id. at 43.

We agree with the first recommendation and the justifications provided by the INTMMU for this proposed rule change. The INTMMU has provided three alternatives for how the change could be implemented; these alternatives are a good starting point for stakeholder discussion and, along with other approaches that may be proposed, can form a basis for discussion of design alternatives.

The second recommendation is also a step in the right direction, but stops short of providing a mechanism that is sufficient to produce robust locational price signals whenever possible. In particular, the INTMMU's recommendation explicitly precludes Static and Dynamic De-List Bids from leading to the formation of a capacity zone in an FCA and setting the price for that zone if it is constrained. The INTMMU asserts that while allowing Static and Dynamic De-List Bids to set the price for an FCM zone should, in theory, lead to more efficient market pricing, in practice it would create insurmountable market power problems. According to the INTMMU,

> *"Ideally, in the absence of market power, the determination of all zones would be included in the auction. The auction would identify the most efficient solution in which the lowest-cost resources would clear and the higher-cost resources would not, whether or not they were new or existing resources, to meet the zonal and regional resources requirements….However, the potential efficiencies of this ideal approach are outweighed by the potential for existing resources to gain market power…"*

Given the relatively small size of some FCM zones, the INTMMU concerns about market power may be valid. However, no support is provided to demonstrate that the market power issues cannot be addressed by a means other than precluding *any* potential for locational prices to be established by Static or Dynamic De-List Bids. Based on the evidence presented above and the design of the market, the concerns over the potential exercise of market power are unfounded. First, because the FCA occurs more than three years in advance of the delivery year, it is a highly contestable market: even incumbents with large market shares are limited in their ability to exercise market power by the threat of potential entry. This contestability of the FCM was a principal reason for incorporating forward procurement.[38] Second, the hoped-for contestability was in fact realized by a broad and deep range of actual competition. Even if the largest Connecticut supplier had sought to delist all of its generation in FCA #2, there would have been sufficient remaining supply to meet the LSR. Further, more than half of the supply was offered by relatively small suppliers, who have no meaningful structural market power.

Notwithstanding this lack of evidence of a potential risk of the exercise of market power, the INTMMU's recommendation is to allow price separation for an FCM zone only if created by permanent De-List Bids or new resources added in response to an insufficiency of capacity resources to meet locational requirements. This exclusion is overly-broad and eliminates the potential for a more efficient, workably competitive market design.

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38 Affidavit of Peter Cramton, PhD, on behalf of ISO New England. in *Devon Power LLC, et al.*, Docket ER03-563-030. March 5, 2006, at pp.3-4..

If Static and Dynamic De-List Bids cannot cause zonal price separation, the FCM design will fail in one of its fundamental duties: to provide locational price signals to the market. In directing ISO to replace its older capacity market design, the Commission cited first and foremost the lack of locational pricing. While creating appropriate incentives for new entry is important, it is not enough that there be locational prices only when new entry is required. To the contrary, the market issue that led to the Devon proceeding and eventually the development of the FCM was the need to prevent retirement of existing facilities through a market mechanism rather than RMR. When existing resources are at the margin, whether it be in a constrained zone or in the broader region, the capacity clearing price should reflect the marginal going-forward cost of the marginal resource, even if that resource has not sought to retire.[39]

In fact, there are two situations in which, with less restrictive criteria for the creation of price separation among zones, Static and Dynamic De-List Bids could set locational prices without undue risk of the exercise of market power. The first involves approved Static De-List Bids. Static De-List Bids are submitted in advance of resource qualification and therefore subject to approval by the INTMMU.[40] In order to be approved, requests for Static De-List Bids must be

> *"consistent with the Existing Generating Capacity Resource's net marginal going forward costs (as determined pursuant to Section III.13.1.2.3.2.1.1) and opportunity costs (as determined pursuant to Section III.13.1.2.3.2.1.2)"*[41]

and

> *"Sufficient documentation and information must be included in the Existing Capacity Qualification Package to allow the Internal Market Monitoring Unit to make such determinations."*[42]

With proper review by the INTMMU, no Static De-List Bid should be approved unless it is demonstrably supported by the resource owner's actual economic costs. Allowing these bids

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39 This ability to set prices zonally is exactly analogous to the energy markets. Under the current Standard Market Design, ISO monitors the potentially binding constraints every day, and prices reflect the energy offers from resources needed to meet load under a security-constrained dispatch. Resources in constrained load areas may be subject to bid mitigation, but those potentially mitigated bids are nonetheless allowed to set the clearing price. The situation in the FCM, however, is more like the energy market prior to the SMD implementation. Resources needed in constrained areas were paid their bid, but the prices paid to other resources operating in the area were set by the unconstrained dispatch.

40 ISO New England Open Access Transmission Tariff, at Section III.13.1.2.3.1.1. The Tariff stipulates that "Static De-List Bids are subject to review by the Internal Market Monitoring Unit pursuant to Section III.13.1.2.3.2 and must include the additional documentation described in that section."

41 Id, at Section III.13.1.2.3.2

42 Id.

to set the zonal or regional market clearing price should therefore pose no market power concerns.[43] Rather, allowing Static De-List Bids to influence locational price formation should increase market efficiency and help ensure workably competitive outcomes.

Second, as already discussed in Section 2.2 of this report, results from the first two FCA indicate that a significant portion of the capacity offered into potentially constrained locations was supplied by sellers with relatively small market shares and very limited incentive or ability to raise prices above a competitive level. While supply in some FCM zones has been moderately concentrated, there is no valid reason De-List Bids from competitive suppliers should be precluded from setting zonal or regional clearing prices. Additionally, the FCAs are conducted with long lead times, allowing ample time for the INTMMU to address any concerns about structural market power issues in advance of the actual auctions.

Overly restrictive limits on zonal price separation lead to inefficient outcomes and excessive reliance on RMR payments—the precise problem that the FCM was supposed to resolve. Failing to account for zonal import limitations can lead to an outcome in which the FCA secures sufficient capacity on a regional basis, but at the resulting market price, the FCA would secure an insufficient amount of locational capacity obligations to assure local resource adequacy. Consequently, ISO must reject some of the De-List Bids from resources in the location and pay them more than the market-clearing price. Adopting Recommendation #1 (aligning the LSR and TSA) does not solve this problem, because the INTMMU recommends modeling a zone only when the existing resources net of Permanent De-List Bids is below the LSR. If a Static or Dynamic De-List Bid has to be rejected in order to secure enough local capacity, the ISO will still have RMR payments that could and should have been avoided by sound market design that models all potentially relevant constraints and avoids use of a "pay-as-bid" element.

Finally, it is worth noting that rules for establishing and pricing capacity zones in a manner that allows zones to break out due to economic cost difference and not just resource insufficiency are not without precedent. The same concepts that ISO New England already applies in it locational energy market and through its Reserve Constraint Penalty Factor formulation have been implemented in other capacity markets. In fact, zonal price separation created by unit offers is an important aspect of the market designs in both the NYISO and PJM. The rules to allow zonal price separation under a broader range of conditions was part of recent reform of the RPM market rules. In its approval of the rule change, FERC noted,

> *"If the area's need to import (CETO) is less than the transmission capability to import (CETL), that measurement demonstrates that the area has so much existing generation that it does not need to use all of its import capability to meet reliability standards. Thus, congestion will not arise into the area for reliability reasons. However, the area's existing generation may be more*

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43 The Commission acknowledged that offers subject to review by the PJM Market Monitor should not pose market power concerns in its recent order denying PJM denying rehearing of RPM Buyers' complaint in Docket EL08-67-001. See *Maryland Public Service Commission et al. v. PJM Interconnection, L.L.C.*, 127 FERC ¶ 61,274 at 13 (2009).

expensive than generation in neighboring areas, and as a result, the actual occurrence of transmission congestion47 can arise not only because of reliability needs, but also because of economic conditions. That is, congestion can arise not only because of a lack of transmission relative to the reliability need to import; it is also a result of supply and demand conditions within the LDAs. For example, if capacity costs are less in one LDA than in another, parties in the higher-cost LDA would want to import more than the available CETL in order to avoid paying higher capacity costs. However, the existing capacity of the transmission system would prevent the importation of power, resulting in higher prices (congestion) in the import LDA than in the export LDA. When prices cannot equilibrate across areas due to transmission constraints, each of those areas is a separate market. We therefore find that PJM's proposal to increase the CETL/CETO ratio will capture situations in which congestion occurs more effectively than the current tariff provisions, and we accept it on that basis."[44]

3.2. REFORM OF THE APR

Remedying the APR is a significant market design challenge. Even if the FCM were working as intended in theory, in practice the range of "in-market" new resources will be small. Incumbents will typically represent the vast majority of supply, and their competitive bids will tend to reflect their marginal going-forward costs, not the full cost of new entry. Of the small amount of new capacity needed in a typical year to replace exiting suppliers and to meet load growth, some quantity will be under construction, under contract, or otherwise have an incentive to clear in the FCA regardless of the clearing price. Competitive price formation dwells at the edge, competing for the last, typically small fraction of supply requirements unmet by either of these two other supply categories. But lacking a demand curve or design element intended to avoid ruinous swings in capacity prices, FCM prices could fall very low on a sustained basis, or could spike abruptly.

The APR, together with the definition of OOM resources and the Capacity Carry-Forward Rule, were intended to cause the capacity clearing price to reflect the competitive cost of new entry when new entry occurred, with the broader intent that prices in the FCM would tend toward 'stable long-run equilibrium prices'. The ability of the FCM to provide a meaningful, consistent, and predictable price signal to the market was an important design feature that underlies the FCM.[45] The rules as crafted, however, leave some significant gaps.

- The APR presumes that new entry occurs only when new entry is needed. In FCA #1 and FCA #2, however, we have seen a significant amount of new OOM capacity clearing in the market even though the market would be in surplus without those resources. This new entry further increases the capacity margin and suppresses capacity prices in many subsequent auctions.

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44 126 FERC ¶ 61,275. ORDER ACCEPTING TARIFF PROVISIONS IN PART, REJECTING TARIFF PROVISIONS IN PART, ACCEPTING REPORT, AND REQUIRING COMPLIANCE FILING, Issued March 26, 2009, at p. 42.

45 Affidavit of Robert B. Stoddard in Support of the Settlement Agreement in *Devon Power LLC, et al.*, Docket ER03-563-030. March 6, 2006, at p 2

- Even if the APR had kicked in, the presence of some new DR willing to enter at prices well below the cost of new generation would have limited, or eliminated, the price reset. This is not *per se* a problem, if it were the case that DR took on the same set of risks and obligations that generation does. As discussed in Section 3.4, however, the two resource types are providing fundamentally different services to ISO and, hence, the DR bid level is not a reasonable reference point for generation resources.

- Even if the APR had kicked in and shifted the clearing price for existing generation up to a new-generation price in FCA #1 or FCA #2, in the following year the prices would again collapse. In constrained zones, the Capacity Carry-Forward Rule has the effect of extending the APR for as many years as it takes to work off any "overhang" created by OOM entry. There is no comparable provision in the Rest of Pool area, however, because it was thought unlikely that in the larger area the overhang could be larger than a single year's load growth. That assumption has proved to be very mistaken.

To address these deficiencies, the INTMMU Review makes four recommendations concerning the APR and associated rules:

3. "the triggering conditions should be modified to properly account for multiyear effects of [Out of Market ("OOM")] resources that clear in a single year and eliminate the need for new entry in subsequent years."[46]

4. "the adjusted price should apply only to existing capacity, not to OOM new capacity,"[47] in order to "encourage potential self-supply and bilateral contract-based entrants to offer closer to their true costs, with entry contingent on clearing in the auction."[48]

5. "the APR price adjustment no longer needs to be capped by the CONE, since competitive offers by new entrants should provide a competitive cap."[49]

6. "it is appropriate to monitor the effectiveness of the APR over time and to identify ways to improve monitoring, mitigation, and incentive mechanisms."[50]

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46 Id. at 6.

47 Id. Note that, because no *market-based new* capacity clears when the APR is invoked, I interpret this to mean more simply, "the adjusted price should not be paid to OOM new capacity."

48 Id. at 46.

49 Id. at 6.

50 Id.

We support the first of these recommendations (#3). The FCM design already includes a "capacity carry-forward" rule for import-constrained zones. Extending this rule to the entire pool would be a good starting place, but some additional change may be necessary to reflect the considerable surplus in New England associated with OOM resources cleared in prior auctions.

Recommendation #4, however, is contrary to the general economic principle of a single clearing price paid to all suppliers of a common product. If adopted, it would create a bias in FCM away from new resources that require a significant investment prior to the FCA, because the economically rational bid for such resources ignores those sunk costs; if those sunk costs are large, its efficient offer price could easily trigger the OOM rule and, therefore, constrain its return on investment unreasonably. It may also adversely affect incentives to enter into commercially reasonable bilateral contracts, as discussed below.

Recommendation #5 presumes that competition in all future FCAs, and in all constrained zones, will be sufficient to provide a competitive cap. While this was the case in the first two FCAs, there is no assurance that this level of robust competition will continue. The price cap could be eliminated, provided that some check on the sufficiency of competition is included. Just as the FCA clearing price is reset to 1.1 x CONE in the event of insufficient competition, the APR reset price could also have a fail-safe price of 1.1 x CONE if there were not enough new entry offers to provide a reasonable benchmark.

Recommendation #6 is a sensible approach not only for the APR but for all elements of the FCM.

Modification of APR to account for multi-year effects is a sound recommendation, but the modification needs to explicitly account for surplus capacity created by previous OOM additions in the application of the adjustment for future years (as is done in buyer-side mitigation approved for New York City).

3.2.1. APR Should Not Prevent Efficient Forward Contracting

Recommendation #4 would exclude OOM additions from receiving prices set through APR addition. This recommendation should be reconsidered to ensure that it would not preclude efficient bilateral contracting for capacity resources. Market design should encourage efficient contracting outside of the FCAs, but should not allow that contracting to prevent efficient price signals in the FCA.

ISO has long argued against pay-as-bid markets, and this position has been upheld by the Commission and supported by considerable amounts of academic research. Introducing a pay-as-bid element into this market will, in our view, raise more issues than it settles. Specifically, we see two flaws with this recommendation as it relates to contracting.

First, some resources, such as base-load nuclear or coal-fired plants, may require significant lead time for development, beyond the 3-year window provided by FCM. (These resources are intentionally excluded from consideration as OOM in the parallel rule in the PJM RPM

design.) Cost-effective capacity additions that are supported by long-term contracts and meeting a demonstrated need for additional resources should be allowed to participate in the FCAs as price-takers, with the expectation that they will be paid the market price, not their bid.

Second, the INTMMU apparently is envisioning a contingent contract, whereby the LSE agrees to contract with a capacity supplier if and only if that suppliers' capacity is economic enough to clear the market. This approach does not provide any clear benefits, however. Under a 15- or 20-year contract, the first-year capacity price is a relatively small portion of the total revenue stream and, while the supplier may choose to bid some non-zero price in that first FCA, it still has an incentive to stay in the FCA even if the first-year price falls below its levelized revenue requirement, depending on how exactly the contract is written. Indeed, large LSEs would have an incentive to craft the contract in a way that would make the supplier indifferent to staying in the market no matter the price; while such a "make-whole" provision in the contract would increase the cost of the resource to the LSE, it would decrease the cost of all the market-priced capacity that the LSE purchased. Since this incentive problem is precisely what the APR is intended to remedy, the INTMMU's recommendation seems not to advance the solution while adding new problems.

3.2.2. Elimination of Price Collar and Creation of an APR Price Floor

As a general matter, price caps and price floors are undesirable elements in a market design. They do have their place, however. Bid caps in the ISO's energy markets limit the ability of a supplier to profit through the exercise of market power and, therefore, reduce the likelihood that such exercise will be attempted. Likewise, the price collar in the FCM serves several valuable roles. Given the lack of experience with a market design like the FCM, market participants wanted to guard against extreme outcomes and limit volatility during a period when investors, suppliers, LSEs, and other stakeholders were still gaining experience with the market. Furthermore, because all the forecasts showed a need for new capacity starting with FCA #1, setting a collar around the expected clearing price of CONE seemed unlikely to result in a distortion of the market signal. After a three-year shakeout period, when participants would presumably have gained some experience and confidence in the market mechanisms, the price collars disappear.

The INTMMU Review makes two specific recommendations about the price collar:

7. "The INTMMU supports the expiration of the price collar as planned" after FCA #3.[51]

8. "Instead of a price collar that is in effect for all auctions, the INTMMU supports additional changes to the APR to offer some price certainty to existing resources

51 Id.

> when the price is artificially depressed by the OOM resources. Applying a price floor only when the APR is triggered is superior to a price collar…."[52]

Given the scope of the issues identified by INTMMU and by our own review, and the extent of changes contemplated by the INTMMU Review, Recommendation #7 may be premature. The changes would introduce several new market rules, and the operation of those rules adds substantial uncertainty to the market design. It may, therefore, be prudent to delay removal of the price collar by a short period, possibly combined with some modification to the parameters of the collar. At a minimum, however, allowing the collar to expire should be contingent on implementing a suitable replacement through the APR.

Recommendation #8 offers a novel approach to the APR that, depending on the details, may go far to address the deficiencies of the APR/OOM elements. The FCA clearing price *should* be allowed to fall low enough to clear the market, provided that the reason for the low price is not the subsidy of new entry by LSEs or others. The current price floor may not allow prices to fall low enough to induce exit of redundant resources. At the same time, however, the market design should not encourage subsidized entry that causes economic capacity resources to become uneconomic prematurely. The result is an inefficient over-build. By triggering a price floor only in those cases when OOM entry has created or exacerbated the surplus, the INTMMU's recommendation offers a way of avoiding inefficient pricing on the one hand while not creating an incentive for buyers to overbuild the market to suppress capacity clearing prices.

Other market designs have rules accounting for the multi-year effects of OOM entry. For example, the buyer-side mitigation rules implemented for the New York City Capacity market explicitly account for not only the impact of OOM entry in a given auction, but also for all prior OOM entry. The buyer-side mitigation in that market is implemented through an offer floor at 75 percent of CONE. New resources are subject to that offer floor for as long as they are expected to create or perpetuate a market surplus. The duration for which the floor applies is calculated by dividing the surplus that would be in the market with the new capacity, including any surplus created by prior OOM entry, by the average expected growth in the capacity requirement. Hence, the mitigation is applied for as long as the OOM entry is expected to affect the market, not just for the period when the capacity fist comes in.

An APR-triggered price floor will require care in design. In particular, offering the same price to a potentially unlimited amount of capacity may lead to greater surpluses and higher capacity bills for New England. If the APR-triggered price floor declined with the amount of surplus, market prices would better reflect the supply/demand balance in the region, though this feature would need to be tempered by a countervailing concern of not creating an incentive for buyers to over-supply the market even more.

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52 Id.

3.3. COST OF NEW ENTRY

3.3.1. Current CONE Should Be Reviewed

Section 5.4 of the INTMMU Report addresses the level and uses of administrative CONE. The INTMMU notes,

> *"As a result of the magnitude of the magnitude of excess supply…the CONE will not be adjusted and will remain at the current level which appears low relative to the cost of new generation but may well reflect the cost of additional demand resources. If this occurs, CONE may not effectively serve it intended purposes of setting the auction starting price, price collars, floor price in the Alternative Pricing Rule, offer thresholds for INTMMU reviews, the Quantity Rule for replacing delisted capacity, and credit requirements."*[53]

We agree that the CONE appears low relative to new generating capacity costs and believe that it should be reviewed to ensure it is consistent with its intended purposes in FCM. There are several reasons to believe the current CONE is too low. First, the CONE has been reduced from its initial level through the automatic adjustment process included in the FCM design, which incorporates information from the market clearing prices in the auctions. Yet, there is no reason to believe the first two FCAs have provided *any* information about the actual cost of new capacity resources. Both auctions have cleared at an administrative price floor that is not only disconnected from any actual market offers, but also set at a level reflecting an explicit discount to CONE. Hence, the CONE value has been reduced by auction prices influenced only by surplus existing capacity, OOM new capacity, and administratively determined values. It is therefore not a meaningful indicator of actual new build costs.

Moreover, comparable CONE values applied in NYISO and PJM, which are based on detailed studies, are much higher than the ISO-NE CONE. The current ISO-NE value is $59.02/kW-year. The equivalent value that will be applied in the NYISO market for 2010/2011 is $96.46/kW-year statewide, with values of $143.15/kW-year and $89.47/kW-year in New York City and Long Island, respectively. Similarly, the CONE value for the PJM RTO for 2012/2013 is $94.28/kW-year. Were ISO-NE to conduct a similar study of the cost of building new capacity and the offsetting market net revenues generated from the energy and ancillary services markets, it would likely come up with a value that was also in this much higher range.

The INTMMU notes that the current CONE may be similar to the cost of adding new DR. However, no analysis has been conducted to support this assertion. And it is not clear that the costs for demand response already cleared in FCM would be indicative of the future costs of new capacity for New England, as low-cost DR resources are finite and new generation will be needed to meet future growth and the replace older, less efficient generating units. And the extent to which non-market subsidies contributed to how DR bid into the first two FCA's is

53 Id., at p. 53.

unknown. Hence, the FCM CONE should be evaluated and reset to a level reflective of the actual expected new entry costs for the market, allowing CONE to serve its intended purpose.

3.3.2. Setting CONE Appropriately Is Important to a Properly Functioning Market

The INTMMU has made the recommendation to separate the auction starting price from CONE in order to ensure the auction starts at a high enough value to attract new entry when needed. The INTMMU then suggests there is no immediate need to adjust CONE or the other market parameters that are tied to its value. However, because CONE is used to set, among other things, thresholds for minimum offers for new capacity, as well as maximum delist offers, it is important to make sure it is neither unreasonably high nor low.

In principle, having the auction starting price separated from CONE is not problematic. However, leaving the remaining auction parameters at a value that is disconnected from new entry price is problematic. The fact that INTMMU's concern that the starting value may be too low to attract new capacity further underscores the need to adjust CONE. If INTMMU is concerned that actual new build costs may be above *two times* the current CONE, it is almost certain that they are above the current CONE. In addition to the starting price, CONE serves several functions in terms of setting auction parameters:

- The transitional price collar is set at 0.6 x CONE and the cap at 1.4 x CONE.
- If the Insufficient Competition rule is triggered, existing capacity resources are paid the lower of the Capacity Clearing Price or 1.1 x CONE.
- Under inadequate supply, existing supply is paid at 1.1 x CONE.
- Thresholds for triggering Market Monitor review of bids are tied to CONE: delist or export bids > 0.8 x CONE are reviewed as are new capacity or import bids < 0.75 x CONE.
- Permanent De-List Bids below 1.25 times CONE shall be eligible to set the price in the FCA.
- CONE Sets the level of Financial Assurance new suppliers must demonstrate (the "new capacity FA amount").
- CONE affects price thresholds for purchasing capacity to replace Permanent and Export De-List Bids (1.25, 1.5 x CONE).
- The price set by the APR, when triggered, is capped at CONE.
- CONE is used for the Quantity Rule and in the reconfiguration auctions.

While a high enough starting price may be especially important to successful auctions, a robust market design and just-and-reasonable pricing also requires these other auction

parameters be set to appropriate levels. For example, in the case of insufficient supply, existing capacity is paid 1.1 x CONE. The INTMMU notes that this payment is reasonable because it is linked to "a close approximation of the cost of new entry."[54] Maintaining that payment at a reasonable level requires the administrative CONE value to reflect actual new entry costs. A value of CONE that is too low also clearly serves to undermine the intent of the APR by lowering the value that triggers it, allowing OOM resource to enter at lower prices, and by reducing the cap for the level to which the APR reset prices. Hence a CONE that is too low clearly leads to problems with the restrictions for new capacity offers. An artificially low CONE that leads to artificially low prices is also not appropriate for setting collateral requirements and non-delivery penalties.

The INTMMU asserts that the current CONE is probably not problematic for review of De-List Bids below 0.8 x CONE. But this assertion ignores the original intent of setting the threshold at a level that allows the market function, on the one hand, but limits the potential exercise of market power, on the other. This threshold (as well as the threshold to trigger the APR) was premised on a CONE that reflected the cost of new generation. As the CONE estimate has fallen (and will continue to fall through FCA #3), the threshold for De-List Bid review has fallen further below the cost of new generation. Yet, there has been no underlying change in the market or the structure of competition to justify the decrease. In FCA #1, dynamic delisting was allowed at prices of $6.00 and below. But for FCA #3 it will not be allow at prices above $3.93. There is no underlying economic logic to support this decrease, which illustrates why getting an appropriate value for CONE is important for the market rules that depend on it to function properly, and for the auction mechanics to work as intended.

3.4. TREATMENT OF DEMAND RESOURCES

3.4.1. PER Deduction

The implementation of the INTMMU recommendation to deduct PER from FCM payments to DR resources should be considered along with other rule changes that would facilitate more symmetric treatment of DR and other resources. Given the current market design, energy market participation should not be voluntary for DR while it is mandatory for generation. In order to be truly comparable to a generator, an Active DR supplier should be required to submit its available energy quantity equal to its CSO at energy prices reflective of its willingness to reduce load in all hours, subject to scheduling constraints supported by physical customer load needs.

3.4.2. Consistent Treatment of Resources

Under the current FCM design, the auctions clear both generation and DR as if they were a single commodity. In fact, however, the risks and obligations on DR are materially weaker than those placed on generation. These differences lead to a Gresham's Law problem—

54 Id.

higher cost, higher value generation resources are displaced by lower cost DR that provides a lower quality of service. Counting 1 MW of DR as equal to 1 MW of generation overstates its reliability value, particularly as the total level of DR on the system increases. It also overstates the level of surplus capacity readily available to meet those reliability services which rely primarily on the generation form of the capacity product.

In particular, the INTMMU Review overlooks commercially important differences other than the PER deduction. Under the current market design all capacity resources are required to provide service in Shortage Events; however, only imports and generators are required to provide service in other hours (normal system operation, including contingency response). These generation resources are also all subject to offer mitigation in the energy markets, so they are effectively selling a call option on their energy at a price linked to their variable cost of operation.[55] These call options are valuable, but because DR can limit its service hours arbitrarily to OP4 conditions, end-use customers in New England are not necessarily receiving reliability support or economic power (or reductions in consumption) outside of these limited numbers of hours. Moreover, even during OP4 hours, there is no requirement that DR curtail. DR faces an economic penalty, but it can freely make the choice of whether that penalty is worth the cost any time it is called. Generators, by contrast *must* offer and respond to ISO instructions if the unit is physically available.

The INTMMU Review recognizes the importance of comparability of obligations, penalties, and incentives across resource classes, but it fails to consider the effect of these starkly different obligations for DR, on the one hand, and generation and imports on the other. The FCM was intended to be technology neutral, but the rules as they now stand place lighter performance obligations on DR than on other resources. When DR was a very small portion of the total resource base, the practical importance of these differences was also small. With DR and RTEG now accounting for over 10 percent of the peak load, and rising, it should be a high priority of the ISO to "mainstream" DR by requiring that they participate in the energy market in all hours, just as active generation resources and imports are required to do.

If full participation in energy markets in infeasible for all DR, an alternative design that would allow participation as capacity resources by DR while also treating other resources equivalently could be structured by explicitly creating two classes of resources:

1. Tier 1 resources have an obligation to offer into the energy markets in all hours, subject to physical availability and operating characteristics. Active DR could participate as a Tier 1 resource if it offered load reduction in all hours (again, subject to reasonable operating characteristics) and their obligation to curtail when dispatched became mandatory, not voluntary.

2. Tier 2 resources have a more limited obligation. Open to all qualified supply resources, this tranche may be called only during Shortage Events and OP4 events. ISO would establish what portion of the total ICR could be met by

55 Likewise, a recent rule change will require importers to offer energy at capped prices.

Tier 2 resources and use the FCA to establish a market price for this lower-quality product.

Segmenting the market in this way should not be the preferred approach. Not only does it add complexity to a market than many consider over-complex already, but also there is a simpler and more effective means to address the issue of non-comparable treatment: place the same offer obligations on DR as on all other capacity resources.[56]

4. ADDRESSING THE SHORTCOMINGS IN THE CURRENT FCM RULES AND ADOPTING REFORMS BEFORE THE 2013/14 FCA IS ESSENTIAL

The FCA for the 2013/14 delivery year will be conducted in August 2010; it is essential to develop and implement rule changes in time to be implemented for that auction. Some may argue that there is no need for swift and decisive action; after all, unlike 2006 when there was a well-grounded concern that insufficient resources would be available to meet New England's reliability needs, there is a surplus of committed resources of over 4,000 MW, at a time when load growth has slowed and new generation technologies seem poised to displace fossil generation. Such thinking, though, fundamentally misunderstands the important role of the FCM and its importance in shaping the region's energy infrastructure.

Each FCA shapes the path of investment in generation, DR, and transmission for years to come. Sending the wrong price signals through the auctions will result in the wrong capital stock for efficient and reliable system operations. For example, consider renewable generation. Some renewable generation, such as geothermal and certain ocean-based generation, contributes more to system reliability than other, intermittent sources, such as tidal or wind generation. Capacity prices value the reliability contribution of resources, so if capacity prices are low, the rational choice for meeting Renewable Portfolio Standards is technologies that produce Renewable Energy Credits at least cost, even if those technologies contribute less to system reliability than alternatives. If this choice is driven by prices from a well-functioning market, then this is a prudent decision; if instead the prices are suppressed by flaws in the FCM rules, then those flaws are misguiding the development of renewable generation and the transmission needed to deliver those resources to market.

Capacity markets not only direct *new* investment; they also guide decisions about existing resources. Generation owners are making important commercial decisions about retirement, refurbishment, and new entry based on these auctions. Even if no new generation is needed, inefficiently low prices may cause premature retirement of resources that support system and local reliability. This problem was precisely what led the Commission to find that the predecessor capacity market in New England was not just and not reasonable: capacity prices were low and not locational, and so existing resources needed for reliability were held

56 RTEG has yet lighter obligations, but the quantity of RTEG is capped and its payment limited.

on through expensive, inefficient RMR contracts. Two of the issues flagged by the INTMMU Review threaten to lead FCM down this same ill-fated path: the ineffective treatment of OOM entry in the current, flawed APR, and the inability of De-List Bids to cause zonal price separation. The former suppresses the general level of FCM prices, and the latter prevents prices in import-constrained zones from being set by competitive De-List Bids at levels reflective of existing resources' marginal costs as supply resources. Together, we have a recipe for the accumulation of a new set of RMR contracts and a lack of locational price signals that invite new capacity to displace the older resources.[57]

While perpetuating OOM new capacity additions may lower FCM payments in the near term, the distortions it causes will prevent the least-cost solution for meeting resource adequacy needs and ultimately will lead to higher costs. What may appear to be cost-effective for a single market participant is not necessarily consistent with an efficient, competitive market.. Adding new capacity that results in lower FCM prices may appear cost-effective to some buyers. But investing billions of dollars in new resources that are not needed for reliability nor serve any other policy goal is not behavior that a supposedly competitive and efficient market should encourage. Moreover, such actions undermine the foundations of the competitive markets themselves. In New England at least, this shift has serious repercussions. Competitive energy retailers may have neither the financial means nor the stable customer base to enter into long-term contracts for capacity, so removing liquidity and price transparency from the wholesale capacity market may impair their ability to compete in the retail space. Furthermore, the central market has an interesting cost advantage over bilateral contracting, inasmuch as the risk of non-payment by the LSE disappears, because ISO has the ability to raise sufficient funds to pay its capacity obligations through the Filed Rate Doctrine, whereas even the most creditworthy utility has some degree of non-payment risk.

Setting the FCM back on a sound course is also essential for developing trust in the ISO's markets and their ability to attract market-based investment. This report has discussed OOM new entry at some length, and there is nothing intrinsically wrong with OOM new entry; to the contrary, providing LSEs the correct incentives to enter into long-term arrangements to cover their current and future reliability obligations is an important goal of the FCM. A broken capacity market, however, interferes with sensible contracting. If capacity prices are perennially too low, then LSEs will have little incentive to enter into long-term contracts that reflect the true costs of new entry, yet those low FCM prices would not attract new market-based investment. The sound operation of the markets is essential to provide ISO-NE participants the confidence that the market is acting to protect reliability at least cost, thereby forestalling preemptive contracting by the states.

Unreasonably low FCM prices are likely to have other, unintended and adverse side effects. Collateral requirements for planned investment are set based on the FCM clearing price, and so at low prices, there is a greater risk that a planned resource will fail to deliver, potentially

57 No market design will completely eliminate the need for some short-term RMR contracts with resources that serve very particular reliability needs. In this case, however, RMR arrangements may be needed just to meet the generic LSR of import-constrained zones.

jeopardizing reliability. Performance incentives are also directly tied to the clearing price, so a low price means a low penalty for failure to perform during a Shortage Event performance – 5% of nothing is nothing. Again, low penalties may result in low reliability. If capacity prices are suppressed by poor market rules, cost-effective DR is unlikely to be sustainable, setting back the apparent gains of FCM in promoting DR so far.

Taken together, the adverse consequences of delay are serious. New England consumers are paying over a billion dollars annually in capacity costs, and they deserve to have that money spent wisely to guide investment in the region's energy infrastructure, lead to orderly retirement of uneconomic resources, support efficient long-term contracting, and ensure the regional and local reliability of the grid. The INTMMU Review has identified four areas that are in urgent need of material reform. Without such reform, the FCM will fail to deliver the full benefit that it can and should provide to New England.