

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

New England Power Generators
Association, Inc.

v.

ISO New England Inc.

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Docket No. EL14-7-000

**MOTION TO INTERVENE AND PROTEST OF THE
NEW ENGLAND STATES COMMITTEE ON ELECTRICITY**

November 27, 2013

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Pursuant to Rules 211, 212, and 214 of the Federal Energy Regulatory Commission’s (“Commission” or “FERC”) Rules of Practice and Procedure (the “Rules”), 18 C.F.R. §§ 385.211, 385.212, and 385.214 (2012), the Commission’s November 1, 2013 Notice of Complaint, and the Commission’s November 19, 2013 Notice of Extension of Time, the New England States Committee on Electricity (“NESCOE”) hereby files this Motion to Intervene and Protest in response to the Complaint and Request for Fast Track Processing filed by the New England Power Generators Association, Inc. (“NEPGA”) against ISO New England Inc. (“ISO-NE”) on October 31, 2013 (the “Complaint”).¹

I. EXECUTIVE SUMMARY

The Commission should reject NEPGA’s last minute attempt to impose on consumers new and unjust and unreasonable administrative pricing provisions on the eve of the next Forward Capacity Auction (“FCA”).² Pursuant to the Commission’s directives, the upcoming eighth FCA

¹ Complaint of the New England Power Generators Association, Inc. and Request for Fast Track Processing, Docket No. EL14-7-000 (filed Oct. 31, 2013).

² Capitalized terms not defined in this filing are intended to have the meaning given to such terms in the ISO-NE Transmission, Markets and Services Tariff (the “Tariff”).

(“FCA 8”) is the first auction in which the administratively-set price floor will be removed.³

Through this proceeding, NEPGA would have the Commission order a new suite of administrative pricing revisions at the same time the capacity market is to move away from a long-standing administrative pricing construct. Further, it would have the Commission do so under a Fast-Track process that would allow states, stakeholders and the Commission an unreasonably short time frame to analyze and understand the full implications of changes that could result in billions of dollars in additional costs to consumers in FCA 8 alone.⁴

The Commission accepted changes to the pricing provisions that are the subject of the Complaint less than one year ago. NEPGA did not seek rehearing of that order. Yet, NEPGA now asks the Commission to expedite its decision-making process so that pricing rules that are materially more advantageous to capacity resources, and materially more burdensome to New England consumers, are in place before the next auction. The Commission should deny the Complaint. NEPGA has made no showing that the pricing provisions have failed to work as intended and that they are unjust and unreasonable. Additionally, NEPGA has not shown changed circumstances since the Commission’s approval of the pricing provisions at issue less than a year ago, and its Complaint seeking changes to rules that have not had the opportunity to be triggered in a single auction constitutes a collateral attack on the Commission’s order approving the rules. Nor has NEPGA met its burden to demonstrate that its proposed replacement provisions are just and reasonable. The Commission should not direct ISO-NE to adopt NEPGA’s further administrative changes, which, as shown below, would impose substantial costs on consumers and cannot withstand scrutiny.

³ See *ISO New England Inc.*, 138 FERC ¶ 61,238 at PP 27, 35 (2012).

⁴ See *infra* n. 25.

In the event the Commission finds that some revisions to the FCM rules are warranted, it should direct ISO-NE to conduct a meaningful stakeholder process to explore a range of solutions that, unlike the NEPGA Complaint, consider consumer costs. That ISO-NE has recently identified what it refers to as a “gap” in the Insufficient Competition rule, as discussed below, reinforces the need for a stakeholder process to consider holistically NEPGA’s proposed changes. Alternatively, if the Commission neither denies the Complaint nor establishes a stakeholder process to consider the issues raised by the Complaint, given the complexity of these issues, the Commission should set the Complaint for hearing under Track II time standards and establish settlement procedures.

II. COMMUNICATIONS

Pursuant to Rule 203, 18 C.F.R. § 385.203 (2012), the person to whom correspondence, pleadings, and other papers in regard to this proceeding should be addressed and whose name is to be placed on the Commission’s official service list is designated as follows:

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III. BRIEF DESCRIPTION OF THE COMPLAINT

The Complaint focuses on the price setting mechanisms in two areas of the Forward Capacity Market (“FCM”) rules: (1) Inadequate Supply or Insufficient Competition (collectively, “IS/IC”), and (2) the Capacity Carry Forward Rule. NEPGA alleges that these rules create price discrimination between new and existing resources and result in artificially low prices being paid to existing resources that are far below what new entrants receive. NEPGA asks the Commission

to find that the rules are unjust and unreasonable and requests that the Commission direct ISO-NE to adopt its alternative provisions. NEPGA also requests that the Commission Fast-Track the proceeding, contending that changes should be made in advance of FCA 8, thereby effectively eliminating the opportunity for sufficient time for state, stakeholder, and Commission review of multiple complicated rules.

A. IS/IC: Current Rules and NEPGA’s Alternative

Under the Tariff provisions currently in effect, Inadequate Supply occurs when “there is less new capacity offered . . . than the amount of new capacity required to satisfy the needs of that zone.”⁵ Insufficient Competition is present when “1) there is a need for new entry to meet the forward capacity requirement; and 2) a limited number of new entrants make offers to enter and provide the needed capacity.”⁶ ISO-NE recently summarized the intended design of these two rules and the Capacity Carry Forward Rule, noting that all three pricing mechanisms were driven by concerns over seller market power:

[T]he Inadequate Supply provision was intended to address the situation where the total of existing and all new resources was less than the Installed Capacity Requirement (“ICR”). . . . [T]he Insufficient Competition provision intended to address the situation where there were less Existing Resources than ICR and not enough eligible new resources to assure competition in the auction (although when combined, the eligible existing and new resources exceeded ICR).⁷

⁵ Complaint at 10, citing Tariff § III.13.2.8.1.1.

⁶ *Id.* at Prepared Direct Testimony of Michael M. Schnitzer (“Schnitzer Testimony”) at 11; *see* Tariff § III.13.2.8.2.

⁷ Memorandum from Vamsi Chadalavada, Ray Hepper and Anne George, ISO-NE, to NEPOOL Participants Committee and New England State Regulators, ISO Perspective on the NEPGA Complaint on Administrative Pricing Rules; Identification of Additional Problem with Insufficient Competition Rule (Nov. 9, 2013) (“November 9 Memo”) at 1, *available at* http://www.iso-ne.com/committees/comm_wkgrps/mrks_comm/mrks/mtrls/2013/nov13142013/a04_iso_administrative_pricing_rules_memo_11_09_13.pdf.

When Inadequate Supply occurs in a zone or system-wide, existing resources are paid 1.1 times the Capacity Clearing Price for the most recent FCA not having Inadequate Supply, with new resources receiving the FCA starting price for that auction.⁸ During Insufficient Competition in a zone or system-wide, existing resources are paid the lower of (i) the Capacity Clearing Price for that auction, or (ii) 1.1 times the Capacity Clearing Price for the most recent FCA where there was not Insufficient Competition.⁹

NEPGA asserts, *inter alia*, that these prices “are not a reasonable proxy for the competitive cost of new entry, are a fraction of the prices paid to new entrants and do not begin to approach the benchmark prices designed to reflect the cost of new entry.”¹⁰ NEPGA proposes that the Inadequate Supply rule be revised so that, rather than setting the price for existing resources based on the Capacity Clearing Price in a prior FCA, the prices would be set to 1.1 times the Offer Review Trigger Price (“ORTP”) for a combustion turbine (“CT”) (referred to together herein as “ORTP-CT”).¹¹ For the Insufficient Competition rule, NEPGA proposes that, rather than setting the price for existing resources to the lower of the Capacity Clearing Price or based on the Capacity Clearing Price in a prior FCA, the price would be set to the lower of the Capacity Clearing Price or 1.1 times the ORTP-CT. The ORTP-CT is set at \$10.00/kW month for FCA 8.¹² It must be recalculated no less than once every three year period.¹³

⁸ Testimony of James F. Wilson in Support of the Protest of the New England States Committee on Electricity (“Wilson Testimony”), attached hereto as Exhibit 1, at 3; *see* Tariff § III.13.2.8.1.1.

⁹ Wilson Testimony at 3-4; *see* Tariff § III.13.2.8.2.

¹⁰ Complaint at 22.

¹¹ *Id.* at 38.

¹² Tariff § III.A.21.1.1.

¹³ Tariff § III.A.21.1.2. ISO-NE recently proposed to the New England Power Pool (“NEPOOL”) Markets Committee that the ORTP-CT calculation would rise to \$13.424/kW-month for FCA 9. *See* ISO New England Inc., Market Rule 1 Appendix A Redlined Pages 11-13-13, Markets Committee Materials Nov. 13-14, 2013, available at http://www.iso-ne.com/committees/comm_wkgrps/mrks_comm/mrks/mtrls/2013/nov13142013/index.html.

B. Capacity Carry Forward Rule and NEPGA’s Alternative

The Capacity Carry Forward Rule “was intended to address the . . . situation where a large resource met a zonal need, but eliminated any need for new resources in the subsequent auction.”¹⁴ This condition would occur where a new entrant’s resource is “lumpy,” *i.e.*, significantly larger than the amount of new capacity needed in the zone to satisfy capacity obligations in that year, and where the new entrant has elected to receive a multi-year pricing option under the FCM rules.¹⁵ Pursuant to these rules, eligible new resources may elect to receive new entry pricing, effectively locking-in for a five-year period the capacity clearing price from the FCA in which the new entrant first clears.¹⁶ When these conditions are met and a new entrant elects this multi-year pricing option, the Capacity Carry Forward Rule requires ISO-NE to establish the clearing price for existing generators in a manner that will mitigate the price suppressive effect that the lumpy new capacity may have on the auction clearing price in the next auction. The mitigated price under the rule is the lesser of (i) \$0.01 below the price at which the last offer from a new resource withdrew from the FCA; or (ii) the ORTP-CT.¹⁷

NEPGA complains that the Capacity Carry Forward Rule requires the “lumpy” new entrant to be a price taker, *i.e.*, to submit a \$0 bid in the four annual auctions subsequent to the first auction in which the new entrant clears the market,¹⁸ and that the “last ‘new’ capacity offer that is withdrawn in the FCA is not a reasonable proxy for a competitive market outcome”

¹⁴ November 9 Memo at 1.

¹⁵ Complaint at 24-25.

¹⁶ Tariff § III.13.1.1.2.2.4.

¹⁷ Tariff § III.13.2.7.9.2; Complaint at 6. The Complaint notes a pricing exception applicable under certain circumstances during Insufficient Competition. *Id.* at n. 12.

¹⁸ *Id.* at 24.

because it will set prices for existing resources far below the cost of new entry.¹⁹ NEPGA requests that the Commission change the pricing provision to instead “establish a shadow de-list bid for such resource at the lower of (i) the [ORTP-CT] . . . or (ii) the Capacity Clearing Price in the Capacity Zone for the FCA in which the New Capacity Resource electing a multi-year commitment initially cleared.”²⁰

IV. MOTION TO INTERVENE

NESCOE is the Regional State Committee for New England. It is governed by a board of managers appointed by the Governors of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont and is funded through a regional tariff that ISO-NE administers.²¹ NESCOE’s mission is to represent the interests of the citizens of the New England region by advancing policies that will provide electricity at the lowest reasonable cost over the long-term, consistent with maintaining reliable service and environmental quality.

The Complaint has system reliability, consumer cost and environmental implications. NESCOE has a direct, immediate, and substantial interest in this proceeding, which will not be adequately represented by any other party. In addition, NESCOE’s participation in this proceeding as the representative of the New England Governors will serve the public interest. NESCOE respectfully requests leave to intervene in this matter.

V. PROTEST

The Commission should dismiss the Complaint on both procedural and substantive grounds. As a threshold matter, the Complaint is a collateral attack on a recent Commission order accepting modifications to the very same provisions NEPGA now challenges. In addition,

¹⁹ *Id.* at 27.

²⁰ *Id.* at 39.

²¹ *ISO New England Inc.*, 121 FERC ¶ 61,105 (2007).

NEPGA has failed to meet the requirements of Section 206 of the FPA. In bringing this Complaint, NEPGA bears a dual burden under Section 206. First, it must demonstrate that the existing rate, rule, or practice is “unjust and unreasonable, unduly discriminatory or preferential.”²² Then, NEPGA must demonstrate that its proposal is a just and reasonable alternative.²³ As set forth below, NEPGA has not met either requirement under Section 206.

NEPGA has not demonstrated that the pricing provisions, which the Commission approved less than one year ago, are not operating as intended and are unjust and unreasonable. NEPGA has also not satisfied its burden to show that the replacement provisions it proposes are a just and reasonable alternative. Appended to this protest is the Testimony of James F. Wilson in Support of the Protest of the New England States Committee on Electricity (“Wilson Testimony”). As Mr. Wilson explains in his testimony, NEPGA’s alternative proposal, if implemented, would: impose an administrative price far exceeding a reasonable estimate of a competitive price, result in market distortion and substantial increases in consumer costs without a clear connection to resource adequacy or other value, create regulatory uncertainty through an additional administrative intervention, and have other unintended consequences.²⁴

Should the Commission find that rule changes may be warranted, ISO-NE, states, and stakeholders must have a reasonable opportunity to analyze the asserted problem and to develop revisions, as appropriate. If the Insufficient Competition rule is triggered in FCA 8, NEPGA’s unilateral proposal to modify the rule could result in as much as almost \$3 billion in additional

²² 16 U.S.C. § 824e(a).

²³ See *Blumenthal v. FERC*, 552 F.3d 875, 881 (D.C. Cir. 2009), quoting *Atl. City Elec. Co. v. FERC*, 295 F.3d 1, 10 (D.C. Cir. 2002).

²⁴ Wilson Testimony at 6-7, 39-42.

costs to consumers but with no demonstrated reliability benefit.²⁵ To date, there has not been reasonable time or a meaningful stakeholder process to allow states and stakeholders to consider the issues that NEPGA alleges in its Complaint. Additionally, as explained below, ISO-NE has recently identified what it believes is a gap in the Insufficient Competition rule, underscoring the need for a thorough stakeholder process to vet both the current rules and the range of potential solutions. Such a stakeholder process is consistent with Commission policy strongly encouraging stakeholder consideration before an issue is brought to FERC. In this case, where one entity has proposed one potential solution that could cost consumers *billions* of dollars more than under current FERC-approved rules, a meaningful opportunity for states and stakeholders to analyze the assertions and discuss the range of potential solutions is essential. Alternatively, the Commission should set the Complaint for hearing using a Track II schedule and establish settlement procedures.

²⁵ NEPGA asserts that system conditions may cause the Insufficient Competition rule to be triggered in FCA 8. Complaint at 3-4, 19-20. According to NEPGA, existing capacity suppliers are expected to be paid in the range of \$1.50/kW-month to \$3.50/kW-month in FCA 8 under the current pricing provisions NEPGA challenges in the Complaint. *Id.* at 4. The cost impact of the rule change NEPGA seeks will depend, of course, on the actual FCA 8 auction results, which will be influenced by the amount of existing supply that enters the auction. However, NESCOE offers the following cost estimate to provide a sense of order of magnitude for FCA 8 if the Insufficient Competition rule is triggered:

$$32,742 \text{ MW}^* \times \$7.53/\text{kW-mth}^{**} \times 1,000 \text{ kW/MW} \times 12 \text{ mths} = \$2,958,567,120$$

*32,742 MW is assumed for existing supply participating in FCA 8 (35,877 total existing MWs minus possible non-price retirements of 3,135 MW). See ISO New England Inc., Informational Filing for Qualification in the Forward Capacity Market, Docket No. ER14-329-000 (filed Nov. 5, 2013) (“ISO-NE FCA 8 Informational Filing”) at 4 (stating that Qualified Existing Capacity Resources total 35,877 MW for FCA 8); Complaint at 19-20 (detailing ISO-NE memorandum stating that it received a total of 3,135 MW of Non-Price Retirement requests for FCA 8).

** \$7.53/kW-mth represents the difference between NEPGA’s Insufficient Competition replacement provision (1.1 times the ORTP-CT, *i.e.*, \$11/kW-mth) and the current provision (1.1 times the Capacity Clearing Price for the most recent FCA not having Insufficient Competition, *i.e.*, \$3.47/kW-mth (110% of the FCA 7 price of \$3.15)).

See also Wilson Testimony at 40 (testifying that the capacity cost to consumers could increase by over \$2 billion annually if NEPGA’s proposed alternatives are adopted for the IS/IC rules and that the changes to the Capacity Carry Forward Rule could result in roughly \$1 billion in increased costs to NEMA/Boston consumers over the next four years).

A. NEPGA Has Not Shown Why the Commission’s February 2013 Findings – That the Revisions that Are Now the Subject of the Complaint were Just and Reasonable – Are No Longer Valid.

1. The Commission’s Actions

Not even nine months prior to the date of the Complaint, the Commission accepted as just and reasonable the very provisions that NEPGA challenges.²⁶ In its February 12 Order, the Commission found that ISO-NE’s proposed revisions to the IS/IC rules and the Capacity Carry Forward Rule complied with its prior orders.²⁷ The Commission also noted that “no party has objected to them or otherwise questioned their compliance with prior Commission orders.”²⁸ Neither NEPGA nor any other generator interest sought rehearing of the February 12 Order.

In addition, the Commission explicitly rejected effectively the same proposal to revise the IS/IC rules that NEPGA now submits as an alternative mechanism to pay existing generators when the rules are triggered. The February 12 Order followed a lengthy proceeding regarding significant changes to the FCM rules. As part of that proceeding, the Commission addressed ISO-NE’s proposal to eliminate or replace use of Cost of New Entry (“CONE”) as a reference point in the market rules.²⁹ ISO-NE proposed to replace the then-effective mechanism for setting the price that existing capacity would receive in the case of Inadequate Supply or Insufficient Competition (1.1 times CONE) with a new pricing provision, 1.1 times the Capacity Clearing Price from the last competitive FCA.³⁰ However, NEPGA proposed to the Commission that

²⁶ *ISO New England Inc.*, 142 FERC ¶ 61,107 (2013) (“February 12 Order”).

²⁷ *Id.* at PP 127-128. *See ISO New England Inc.*, Forward Capacity Market Redesign Compliance Filing and Request for Waiver of Compliance Obligation, or, In The Alternative, Limited Filing Pursuant to Section 205 of the Federal Power Act, Docket No. ER12-953-001 (filed Dec. 3, 2012) (“December 2012 FCM Compliance Filing”) at 44.

²⁸ February 12 Order at n. 120.

²⁹ *ISO New England Inc. and New England Power Pool Participants Committee*, 135 FERC ¶ 61,029 at PP 342-345 (2011) (April 2011 Order), *order on reh’g and clarification*, 138 FERC ¶ 61,027 (2012).

³⁰ *See id.* at PP 338-339.

existing resources should instead be paid “slightly above the benchmark cost of a peaker, so as to provide the proper incentive for new entry.”³¹

In general, the Commission found ISO-NE’s proposal to eliminate or replace uses of CONE in the Tariff to be just and reasonable.³² After accepting the elimination altogether of the use of CONE relative to certain mitigation rules, the Commission found that replacing CONE “in its remaining functions with the starting price or clearing price of the FCA to be just and reasonable, because such values reasonably reflect market conditions.”³³ The Commission rejected NEPGA’s proposed modification to the IS/IC rules, finding it “unnecessary” in light of the revised mitigation rules.³⁴

2. Without Evidence of Changed Circumstances, NEPGA’s Complaint Amounts to a Collateral Attack on the Commission’s February 12 Order.

The Commission’s acceptance *less than a year ago* of the very same pricing provisions at issue in the Complaint establishes clearly that the Commission viewed these rules as just and reasonable. Perhaps intending to present evidence of changed circumstances, NEPGA states that over 3,000 MW of capacity resources have announced their exit from the market in advance of FCA 8, that there is the potential for significant price differences between new and existing resources in FCA 8, and that this may lead to additional premature retirements and risks to the region’s reserve margin.³⁵ However, NEPGA produces no evidence to support its conclusory assertion that the recent retirement announcements are tied to the pricing provisions at issue in

³¹ *Id.* at P 339. Testimony in the proceeding submitted on NEPGA’s behalf indicated that such a “peaker” would be a new gas-fired combustion turbine. *See* Opening Brief of the New England Power Generators Association, Inc., Docket Nos. ER 10-787-000, *et al.* (July 1, 2010), Exhibit 2, Testimony of Robert B. Stoddard, at 85.

³² April 2011 Order at P 342.

³³ *Id.*

³⁴ *Id.*

³⁵ *See, e.g.*, Complaint at 4-5, 20.

this proceeding. Nor could it provide such evidence. NEPGA may attempt to establish a causal connection between these rules and resources exiting the market, but there are myriad conditions and factors that could individually or collectively motivate retirements, including, for example, the removal of the price floor in FCA 8, low natural gas prices leading to lower marginal energy revenues, and environmental regulations. In fact, a majority of the retirements that NEPGA references appear to be in direct response to the mitigation of certain Static De-List Bids, as demonstrated by the conversion to Non-Price Retirement Bids of 1,907 MW initially submitted into FCA 8 as Static De-List Bids.³⁶ Generating resources may have consternation over falling gas prices, market changes and the dynamics that drive prices down (or costs up), but that does not amount to evidence of changed circumstances or a demonstration that the pricing mechanisms are failing to work as intended.

NEPGA's inability to make a showing of relevant changed circumstances substantially undermines its Complaint when assessed in light of the fact that the next FCA will be the *first* in which the pricing provisions approved in the February 12 Order may actually be triggered.³⁷ In other words, NEPGA is asking the Commission to require ISO-NE to modify these pricing provisions before ISO-NE has even had the opportunity to apply them in a single auction. In light of the Commission's recent order approving the pricing provisions, it is incumbent on NEPGA to demonstrate that there has been a significant change in circumstances that warrants

³⁶ See ISO-NE FCA 8 Informational Filing at 4-5 ("A total of 7,851 MW of de-list bids were submitted for the eighth FCA. Subsequently, 1,907.024 MW of these de-list bids were later converted into Non-Price Retirement Requests. In total, 98 existing resources submitted Non-Price Retirement Requests.") (footnote omitted). As FERC has explained: "A de-list bid represents the lowest price a resource is willing to take. A one-year de-list bid is either a Static De-List Bid, which is submitted well before the FCA takes place and is reviewed by the Internal Market Monitor (IMM) or a Dynamic De-List Bid, which is submitted during the auction A Permanent De-List Bid also is submitted well before the auction and reviewed by the IMM; this type of bid, however, removes a resource from the FCM permanently." *ISO New England Inc.*, 140 FERC ¶ 61,088 at PP 4-5 (2012) (footnotes omitted).

³⁷ FCA 7 was run on February 4-5, 2013, prior to the February 12 Order.

the Commission revisiting its February 12 Order and finding that the rules it approved just over nine months ago are no longer just and reasonable. As explained herein, however, NEPGA has made no such demonstration.

The Commission has indicated that it will not tolerate complaints that are brought without the requisite support. In an analogous proceeding involving the California market, the Commission dismissed a complaint brought by the California Electricity Oversight Board (“CEOB”) against the California ISO’s (“CAISO”) Automatic Mitigation Procedures (“AMP”), explaining that:

The CEOB, like all other interested parties, had the opportunity to object to the CAISO’s AMP procedures, both in comments preceding our July 17 Order approving the CAISO’s AMP, as well as in its request for rehearing of that July 17 Order. The CEOB, however, did not object to the timing of AMP’s operation in either its comments or its rehearing request. In its current complaint, the CEOB fails to raise any change in circumstances that could indicate that AMP is not functioning as it was expected to operate when the Commission approved the CAISO’s AMP in its July 17 Order, and upheld in it in [*sic*] the October 11 Rehearing Order; nor does the CEOB present sufficient evidence to demonstrate that, even though AMP is operating the way it was expected to operate when approved, it is producing unjust and unreasonable prices....Accordingly, the CEOB’s argument that AMP should not be based on a predictive price -- raised years after the CAISO implemented AMP -- is an impermissible collateral attack on our prior orders adopting the CAISO’s AMP. Consequently, such collateral attack warrants dismissal of this issue in the complaint.^[38]

Although NEPGA speculates about ways in which the rules may be unjust and unreasonable, even putting unsubstantiated numbers to its speculation, NEPGA has not demonstrated that a substantial change in circumstances has occurred since the Commission accepted the modified rules on February 12, 2013. Accordingly, NEPGA’s Complaint amounts

³⁸ *Calif. Electricity Oversight Board v. Calif. Independent System Operator Corp.*, 109 FERC ¶ 61,182 at P 28 (2004).

to an impermissible collateral attack on the Commission’s February 12 Order approving the modifications.

Moreover, the extent to which NEPGA or others may have viewed the rules as temporary or interim measures³⁹ is irrelevant under a Section 206 proceeding. The FPA does not allow the Commission to accept provisions that are unjust and unreasonable merely because they are going to be in effect for only a temporary period. Nor did the Commission do so in its February 12 Order. There is no indication that the Commission applied a lesser level of scrutiny to the rule revisions that NEPGA challenges in the Complaint, and the Commission’s determination in the February 12 Order was clear. In any case, even if the current provisions were considered “interim” or “temporary,” that is no justification for asserting that they should *never* be applied in the very circumstances for which they were designed, which would be the consequence of granting the Complaint.

B. NEPGA Has Failed to Meet Its Burden to Demonstrate that the IS/IC Rules are Unjust and Unreasonable and that Its Proposed Alternative Is Just and Reasonable.

1. NEPGA Does Not Make the Required Showing that the IS/IC Rules Are Unjust and Unreasonable.

NEPGA asserts that the IS/IC rules “result in capacity prices that are well below any reasonable approximation of a competitive market outcome and which do not begin to approach the prices paid to new entrants.”⁴⁰ According to NEPGA, the IS/IC pricing provisions are not a reasonable proxy for the cost of new entry.⁴¹ The Commission should reject these arguments and find that NEPGA has failed to establish that the current market-based proxy is unjust and unreasonable.

³⁹ See Complaint at 13-14.

⁴⁰ *Id.* at 19.

⁴¹ *Id.* at 22.

In its April 2011 Order, the Commission made the finding that, in addition to eliminating CONE from certain market rules, replacing CONE “in its remaining functions with the starting price or clearing price of the FCA” was just and reasonable “*because such values reasonably reflect market conditions.*”⁴² In the absence of adequate supply or sufficient competition, it is of course impossible to know what the competitive auction price would have been. However, to the extent possible and as reflected in the current pricing provisions, the resulting administratively set price should be based on a competitive market outcome. Use of the last prior competitive auction achieves this objective, and the Commission appears to have shared this view in its April 2011 Order. While there may be other proxy values that could “reasonably reflect market conditions,” the Commission’s acceptance of the prior competitive auction as that proxy indicates that it considered such a value a reasonable approximation for market conditions in the absence of competition. In fact, Mr. Wilson confirms that the current rules would set an administrative price that falls within the range of competitive price outcomes experienced over past PJM capacity auctions.⁴³

NEPGA provides insufficient support for its assertion that the rules result in price levels that do not reflect the cost of new entry.⁴⁴ Market conditions will, of course, dictate the price signal for new entry in the FCM—*i.e.*, set a lower price when there is surplus capacity in the system and a higher price when new resources are needed. NEPGA points to the potential for a prior auction to reflect capacity surplus prices as evidence that the current proxy value is flawed.⁴⁵ It does not acknowledge the other possibility, *i.e.*, that new resources were needed in

⁴² April 2011 Order at P 342 (emphasis added).

⁴³ Wilson Testimony at 27.

⁴⁴ Complaint at 22. *See also id.* at 5-6.

⁴⁵ *Id.* at 20-22.

the last competitive FCA. Under that scenario, if the Inadequate Supply or Insufficient Competition rule is triggered, consumers might have to pay existing resources considerably more than what NEPGA views as the appropriate proxy for the cost of new entry, ORTP-CT. Accordingly, in some years, existing resources might be paid less than NEPGA's view of the cost of new entry, but in other years, existing resources could receive a consumer-funded windfall. Imperfect as any proxy value may be, NEPGA's contention that the current market-based mechanism will pay existing resources below the cost of new entry ignores the potential for more favorable pricing in some years. NEPGA itself appears to assert that the *average* price over time should approximate the cost of new entry, not the price in any particular auction, and the current rule meets that test.⁴⁶

Moreover, just because existing resources may earn less than new resources in the context of an uncompetitive auction does not make the pricing provisions unduly discriminatory. There is no justification for existing resources to be paid the same as new entrants year-on-year when competition—and a competitive market price—does not exist. In fact, as Mr. Wilson explains, there may be a rational basis for paying new resources a high, uncompetitive price (*e.g.*, added incentive for new entry), but that does not make it appropriate to pay the same price to existing resources.⁴⁷ Instead, the market should “attempt to ensure that all resources are paid prices that reflect competitive circumstances, which prices can at times be quite high, rather than to extend supra-competitive pricing to all resources.”⁴⁸

NEPGA's challenge to the existing market-based mechanism rests upon an assertion that it is unjust and unreasonable to pay an existing resource *more* (*i.e.*, 110%) in an uncompetitive

⁴⁶ *See id.* at 23.

⁴⁷ Wilson Testimony at 25-26.

⁴⁸ *Id.* at 26.

auction than the same resource willingly accepted to assume a Capacity Supply Obligation (“CSO”) in a prior competitive auction. This reasoning is illogical. Furthermore, the replacement pricing provisions that NEPGA itself submits could similarly lead to the new entrant being paid more than existing resources, so it does not eliminate the alleged discrimination.

NEPGA’s claims that the current rules result in price suppression that leads to premature retirements and myriad other adverse system conditions rest on the flawed foundation that the rules at issue in the Complaint are to blame for what NEPGA characterizes as “artificially low” capacity prices.⁴⁹ As discussed above, the current market-based pricing provisions are a reasonable approximation for a competitive outcome. They are not precise. No administratively-set price can be. Where there is insufficient competition, it is not the use of a proxy price *per se* that would cause the price to be lower than what it “would have been” under competitive conditions. The relationship between the theoretical competitive price and the price paid depends, as described above, on whether the proxy price was established in a period of surplus or shortage. NEPGA is simply dissatisfied that the proxy price in this instance happens to be based on the competitive price set in a surplus market, but over time, the proxy price should, on average, provide a reasonably accurate estimate of the market value of capacity.

2. NEPGA Has Not Shown That Its Proposed Alternative Is Just and Reasonable.

In addition to failing to demonstrate that the IS/IC rules are unjust and unreasonable, NEPGA fails to offer a sufficient justification for using ORTP-CT as the appropriate benchmark value for the price needed to support new entry and to retain existing resources. Indeed, as Mr. Wilson explains, ORTP-CT is an administrative estimate and a poor proxy for a competitive

⁴⁹ Complaint at 17. *See id.* at 4-6, 23, 33. Separately, Mr. Wilson rebuts NEPGA’s predictions of uneconomic retirements if the current rules remain in effect, and explains how NEPGA’s proposed alternative could have the unintended consequence of encouraging uneconomic retirements. Wilson Testimony at 37, 41.

price, is not borne out by the long experience in PJM, and will result in consumers paying unreasonable and excessive prices to existing resources.⁵⁰

Using ORTP as a proxy value may be a simple alternative to administer, but it would be an unnecessarily and unreasonably costly one for consumers. In his testimony, Mr. Wilson details the results of ten years of PJM Reliability Pricing Model (“RPM”) base residual auctions (“BRAs”), finding that this decade of auctions offers a “wealth of experience regarding how capacity is offered and prices formed” in that capacity market.⁵¹ As context, Mr. Wilson details PJM’s benchmark reference point representing the cost of new entry:

The analogous price [to ORTP] is called Net CONE, an administrative, levelized construction cost estimate for a new power plant net of a historical average of estimated earnings in energy and ancillary services markets. Net CONE values are calculated for combustion turbines and combined cycle units and are used as parameters of the RPM capacity demand curves and as a screen within the [Minimum Offer Price Rules].⁵²

Over the course of ten capacity auctions in PJM, “the auction clearing prices nearly always remain far below” Net CONE levels.⁵³ Additionally, “1.1 times ORTP-CT is far above nearly all RPM clearing prices, and far above Net CONE estimates for combined cycle units,” which are “the vast majority of the new power plants” that have recently cleared the PJM auctions.⁵⁴

Mr. Wilson details the results of RPM BRA auctions in “Figure 1” of his testimony, which he describes as follows:

⁵⁰ *Id.* at 6-7, 22-29, 39-40. Additionally, as Mr. Wilson explains, PJM is an appropriate point of comparison because, among other things, both ISO-NE and PJM use a 3-year forward capacity procurement design. *See id.* at 9. *See also id.* at 21-22, 26-27.

⁵¹ *Id.* at 9-22.

⁵² *Id.* at 14.

⁵³ *Id.*

⁵⁴ *Id.* at 27.

The figure shows that while Net CONE for [PJM] is presently \$330.53/MW-day (\$10/kW-month), RPM prices have generally been in the \$100/MW-day to \$250/MW-day range (\$3.0 to \$7.6/kW-month), with one price spike to \$357/MW-day (\$10.86/kW-month).⁵⁵

There are numerous factors that Mr. Wilson points to as contributing to price levels that persist below Net CONE:

- Entry decisions are based on long-term analyses, and once the decision to enter is made, the new capacity is generally offered as a price taker into capacity auctions, or perhaps based on avoided cost, not at Net CONE. Prices are generally set by the types of resources that wish to accept a CSO, or not accept a CSO, based on the auction clearing price.
- The timing of new entry generally anticipates the need for new capacity rather than delaying until prices rise substantially. For example, a developer that waits for higher prices may never proceed because competing capacity is already committed and under construction.
- Entry that is occurring is generally not the reference combustion turbine resource, but more cost-effective resource types such as combined cycle and demand response. Over ten RPM delivery years, combustion turbines have represented only six percent of the total incremental capacity cleared through RPM BRAs.
- The administrative Net CONE calculations systematically overstate the values that the proxy is attempting to estimate—by a quite substantial margin at times.⁵⁶

PJM's experience undercuts NEPGA's claims as to the justness and reasonableness of its proposed alternative. As described above, over ten years of competitive auctions, the clearing price has almost always been below Net CONE for a new CT. In addition, over that long time frame, only *six percent* of the new capacity that cleared through the auction was a CT. Recent auction results for the 2016/2017 delivery year continue this trend, with almost all new

⁵⁵ *Id.* at 14-15.

⁵⁶ *Id.* at 15-16. Mr. Wilson also describes RPM rules and other circumstances that contribute to prices rising or falling. *Id.* at 16-17.

generation comprising gas-fired combined cycle units.⁵⁷ Based on the experience in PJM, setting the IS/IC pricing mechanism for existing capacity at a level above the ORTP-CT price would amount to an unsupported, costly experiment thrust on consumers at the last minute and without reasonable stakeholder process.

Moreover, NEPGA fails to support its premise that the proxy cost of new entry for these pricing provisions should be set to the estimated cost for one resource type rather than to a market-based pricing mechanism. In seeking to hard-wire a particular technology into the IS/IC rules, NEPGA does not account for technological changes over time and assumes incorrectly that a new CT will always be the appropriate benchmark for the cost of new entry. This is overly simplistic and myopic. It is no more evident than in the dramatic change in the ORTP for CT, Combined Cycle, and On-Shore Wind resources recently calculated by ISO-NE for FCA 9.⁵⁸ As Mr. Wilson explains: “Whatever the ‘cost of new entry’ might be today, we know it will be different in three or five years, and may reflect quite different incremental resources. One need only look back five, ten, twenty or thirty years, and contemplate the types of resources that were being built and their costs at the time, to understand that the notion of ‘equilibrium’ is a fiction, and that conditions are constantly changing.”⁵⁹ NEPGA’s proposal implicitly asserts that a CT will always be the appropriate benchmark for cost of new entry in New England, but it does not provide a sufficient basis to fix the rules in favor of one resource type.

Furthermore, to adopt NEPGA’s proposal would ignore the inevitability that a new resource type will displace a CT as a more appropriate benchmark and require another rule

⁵⁷ *Id.* at 26.

⁵⁸ *See supra* n. 13.

⁵⁹ Wilson Testimony at 28. Mr. Wilson also rebuts the suggestion that there is a certain price level that is required to attract new resources, emphasizing the long-term revenue analysis underlying the decision to build a new generating unit and concluding that “the notion that there is a certain single-year price that is needed or sufficient to suddenly attract new entry by long-term resources is mistaken.” *Id.* at 27.

change, then yet another, as even newer incremental resources come on-line. A market-based pricing mechanism, as is in place today, avoids this confusion, inefficiency, and future *ad hoc* petitions to increase costs to consumers.

Finally, NEPGA's proposal fails to consider whether there are less costly ways to address the pricing shortcomings it identifies. This is not surprising, given the eleventh hour Complaint before the Commission that effectively eliminates any reasonable process for states and stakeholders. As support for its assertion that the current rule is flawed, NEPGA alleges that the prior FCA price resulted from an auction in which there was surplus capacity and, therefore, new entry was not needed.⁶⁰ NEPGA argues that in such a case, "there is no nexus between the mitigated price and what a competitive price for new entry would be."⁶¹ NEPGA also expresses concern that the rules could lead to an inconsistent and problematic result when de-list bids clear at a price higher than the current pricing mechanism allows. According to NEPGA, a resource would receive a CSO under such a scenario but at the lower IS/IC administratively-set price, even though this would be "directly at odds with the tariff requirement that a resource cannot be forced to accept a CSO at a price below its delist bid."⁶²

To purportedly remedy these concerns, NEPGA proposes the use of ORTP-CT as the new proxy value, set to \$10/kW-month in FCA 8 and potentially rising in FCA 9 and subsequent auctions. However, NEPGA does not appear to have considered whether less extreme rule changes would address its concerns while reducing consumer costs. For example, to address

⁶⁰ Complaint at 21-22.

⁶¹ *Id.* at 21.

⁶² *Id.* at n. 36; Schnitzer Testimony at 14. Since the Complaint was filed, ISO-NE has clarified that any static de-list bid that cleared *above* the IS/IC price would not get a CSO. Rather, ISO-NE would purchase the difference in the next annual reconfiguration auction. *See, e.g.*, ISO-NE, Administrative Pricing Rules for Forward Capacity Auction #8, Nov. 18, 2013, at Slide 12, *available at* http://www.iso-ne.com/committees/comm_wkgrps/mrkt_comm/mrkt/mtrls/2013/nov182013/index.html. The material differences in understanding of how the rule would operate further underscores the need for a meaningful stakeholder process to consider the rules at issue in a holistic manner.

concerns about surplus capacity without entirely foreclosing reference to past auction prices, NEPGA might have proposed that the price be set at the *lower of* (i) the ORTP-CT, (ii) the ORTP for a combined cycle gas turbine, or (iii) the capacity clearing price in the last competitive auction where a new generating resource cleared. Similarly, to address concerns in the context of delist bids, NEPGA could have suggested provisions that set the price at *the higher of* 1.1 times the last competitive FCA or the highest static delist price in the current auction.

These examples are simply illustrative and are not exhaustive. NESCOE is not proposing alternative rule changes, nor does it ask that the Commission direct the adoption of these or any other rule revisions. Indeed, because the current rules are just and reasonable, no change is required. Nevertheless, as detailed below, to the extent that the Commission finds that revisions to the pricing mechanisms are warranted, the Commission should require ISO-NE to convene a meaningful stakeholder process. But the fact that the Complaint would propose such a sweeping change to the current rules without considering a more narrowly tailored change evidences a fundamental failure in the development of the alternative proposal. Without a reasonable stakeholder process and consideration of a range of alternatives that could solve the alleged problem at far lower consumer costs, the Commission should not find that NEPGA's replacement revisions will result in just and reasonable rates.

C. The Complaint Fails to Demonstrate That the Capacity Carry Forward Rule Is Unjust and Unreasonable or That the Proposed Replacement Is Just and Reasonable.

The Commission should reject NEPGA's request to modify ISO-NE's Capacity Carry Forward Rule approved less than one year ago in the February 12 Order. NEPGA has not demonstrated that the pricing provisions of the existing Capacity Carry Forward Rule are unjust and unreasonable or that NEPGA's alternative would be just and reasonable.

The basic premise of NEPGA’s Complaint is that use of the “last new” offer to establish a clearing price for existing resources will not sufficiently mitigate the potential price suppression that allegedly could occur in the wake of new entry by a “lumpy” resource because that price may be below the level needed to attract new entry. However, the fact that the first auction in which a new entrant clears the market results in a surplus of capacity within the zone does not mean that the appropriate mitigation measure is one that will *always* set the clearing price for existing resources at a level needed to attract new entry. To the contrary, the existence of a capacity surplus should appropriately cause capacity prices in future auctions to decline.

The Capacity Carry Forward Rule is an administrative fix to address the *possibility* that prices may be suppressed when a new entrant elects new entry pricing and brings surplus capacity into the market. That administrative fix properly relies on a market outcome to determine the price to be paid to existing suppliers—the “last ‘new’ capacity offer that is withdrawn in the FCA.”⁶³ The use of the “last new” offer to determine market clearing prices in the subsequent four-year period properly relies on competitive market conditions within the current FCA to address concerns of potential price suppression.

NEPGA would have the Commission reject the current market-based solution to mitigating the potential for price suppression in favor of another administrative fix that would artificially prop up FCA clearing prices for existing suppliers to the level required by new entry, despite the fact that the change in the supply/demand balance should result in prices that decline for all capacity in the zone to reflect the surplus capacity. By setting the capacity clearing price based on a shadow price that reflects either the ORTP-CT or the clearing price from the first auction in which the lumpy new resource cleared the market, NEPGA’s complaint would mean

⁶³ Complaint at 28.

that existing generators always receive a price that reflects the need for new entry despite the fact that new entry is no longer required. This is plainly unjust and unreasonable and would send the wrong price signals to existing capacity. As Mr. Wilson explains, NEPGA’s proposed administrative fix would distort price signals in the zone, could result in excessive new entry, and could require that consumers pay enormous and unnecessary costs to encourage new entry notwithstanding the significant surplus of capacity likely to exist.⁶⁴

1. NEPGA Does Not Establish That the Pricing Provisions in the Capacity Carry Forward Rule Are Unjust and Unreasonable.

The only argument NEPGA advances in support of its complaint against the Capacity Carry Forward Rule is that there is no nexus between the type and size of the “last new” resource submitting an offer to withdraw from the FCA and the existing generators that will receive the clearing price established by this rule.⁶⁵ However, NEPGA does not explain why any such nexus is necessary. Rather, NEPGA contends only that there is no connection between the resource making the “last new” offer and the resources that are paid based on that offer price, and that this lack of nexus somehow produces unjust and unreasonable prices.⁶⁶ NEPGA’s rationale is that “small amounts of new energy efficiency or demand response with very low offer prices *could* represent the last ‘new’ capacity offer that failed to clear in the FCA.”⁶⁷ However, the fact that there is a *possibility* that a low-priced new resource will be the “last offer” to withdraw from the FCA does not demonstrate that the Capacity Carry Forward Rule is unjust and unreasonable.

NEPGA’s “nexus” argument should be rejected for two reasons. First, NEPGA’s argument that a nexus must exist between the type and size of the resource used to determine the

⁶⁴ Wilson Testimony at 6-7, 29-35.

⁶⁵ Complaint at 28.

⁶⁶ *See id.*

⁶⁷ *Id.* (emphasis added).

price for existing resources and the type and size of the existing resources to be paid under the rule, if it has any merit, should be true of any pricing rule adopted. This would mean that a nexus should also be required between the type and size of resources that set the clearing price under NEPGA's proposed replacement pricing mechanism and the type and size of existing generator resources receiving that price. But NEPGA does not make that argument, nor does its proposed replacement pricing mechanism require a nexus between the "lumpy" new resource that cleared the relevant FCA and existing resources.

Second, under ISO-NE's auction design, all capacity is homogenous for clearing price purposes. In an auction in which new entry is needed to satisfy capacity obligations within the zone, the new resource—regardless of type or size—sets the clearing price for *all* resources in the auction. There is no nexus requirement.

Additionally, NEPGA does not demonstrate that the existing rule results in unjust and unreasonable prices simply because a clearing price paid to existing generators could be below the level paid to a new resource. NEPGA posits that new energy efficiency or demand response resources may be the last "new" capacity that fails to clear in an FCA and that offer prices for such resource types "*may be as low as \$1.00/kW-month for Demand Response or \$0/kW-month for energy efficiency.*"⁶⁸ However, allegation of possible lower competitive prices in a single auction does not justify granting NEPGA's complaint. The current pricing provision of the Capacity Carry Forward Rule is based on the premise that the last new resource to withdraw did so because of competitive conditions—*i.e.*, that this price properly reflects otherwise prevailing competitive auction outcomes. Moreover, even if NEPGA's supposition proves true in one

⁶⁸ *Id.* (emphasis added).

auction, the fact that the current rule may result in a low price for existing generators in that single auction does not mean that future auctions will clear in this uncharacteristic manner.

Extreme examples of what could conceivably happen in any given year do not demonstrate actual harm to any existing resource. Nor do these allegations constitute evidence of any existing resource leaving the market because of the Capacity Carry Forward Rule. NEPGA provides no such evidence.

NEPGA also fails to explain why existing resources should reasonably expect to receive a year-on-year new entry price. In his testimony attached to the Complaint, Mr. Schnitzer acknowledges that “owners of capacity resources make decisions based on a multi-year view of capacity prices – not just prices in a single year.”⁶⁹ Mr. Schnitzer further states that “when the capacity market rules limit the opportunity for capacity prices to existing resources to approach new entry levels *when new entry is required*, existing resources will be less likely to wait for recovery and will instead exit the market.”⁷⁰ This statement, however, does not support NEPGA’s argument for changing the rule. In a situation where a “lumpy” new resource has entered the market under a new entry pricing option, new entry is no longer required and existing resources under competitive market conditions would not be expecting to earn new entry prices.

NEPGA’s allegation that new entry will not seek to participate in the auction under the current rule, causing the region to fall short of needed new capacity to meet the ICR, is likewise unsupported.⁷¹ The actual experience in FCA 7 does not bear out the speculation that is the basis for NEPGA’s complaint. Footprint Power, a new resource entering the NEMA/Boston Zone that

⁶⁹ Schnitzer Testimony at 21.

⁷⁰ *Id.* (emphasis added).

⁷¹ Complaint at 4 (“Accordingly, if not remedied prior to FCA 8, they [the current rules] will lead to . . . difficulties attracting needed new entry in the future.”); at 36 (“this bifurcated pricing scheme [paying new entrants a higher price than existing resources] is likely to undermine the ability of the ISO-NE capacity market to attract new entry, even at higher prices.”).

is discussed in the Complaint,⁷² participated in and cleared FCA 7. The existing market rules did not deter Footprint Power's participation in FCA 7. Rather, Footprint Power accepted a CSO, even though the locked-in new entry pricing period it elected to receive would end in year six and Footprint Power would then become an existing resource subject to the Capacity Carry Forward pricing provision that NEPGA challenges in this proceeding.⁷³ Contrary to NEPGA's allegations, an actual market participant's response to the pricing mechanism in the Capacity Carry Forward Rule shows that resources have not been discouraged from investing in the FCM based on the current rule.

2. NEPGA Fails To Demonstrate That Its Proposed Replacement Pricing Provision Under the Capacity Carry Forward Rule is Just and Reasonable.

NEPGA's complaint does not satisfy the second prong of its burden of proof—that its proposed alternative pricing mechanism is just and reasonable. As set forth above, even if the current pricing provision in the Capacity Carry Forward Rule *could* result in a low clearing price in one auction, that does not mean that the rule is unjust and unreasonable or that the result is inconsistent with a competitive market outcome. When there is excess supply in the market, prices should fall below the cost of new entry, thus sending the rational price signal that new entry is no longer required.

When new entry is no longer required in the subsequent years of the multi-year new entry pricing period, clearing prices should not be based on an administrative fix designed to artificially prop up prices to the level needed to encourage new entry, but NEPGA's proposed replacement provision would do just that. In using a shadow price based on the lesser of the

⁷² *Id.* at 26.

⁷³ Although the current iteration of the Capacity Carry Forward Rule was not in effect for FCA 7, the current rule's pricing provision is virtually identical to that in the prior rule that was in effect for FCA 7. In ISO-NE's own language, the current version of the Capacity Carry Forward Rule "will now incorporate and largely retain the trigger and pricing provisions" of the prior rule. December 2012 FCM Compliance Filing at 24.

ORTP-CT or the price at which the new resource cleared its first auction, NEPGA would have existing generators paid a price during years two through five of the new entry pricing period at a new entry price that is divorced from the supply/demand balance in those auction years. This makes no sense. The fact that the new entry pricing rule allows a new resource to lock in the new entry price over a five-year period does not mean that existing capacity should also receive a price over the multi-year period based on the hypothetical cost of new entry. As Mr. Wilson concludes, this amounts to a “large transfer of wealth from consumers to the owners of existing capacity without any clear connection to resource adequacy or other value to consumers.”⁷⁴ NEPGA’s proposed replacement for the existing provisions would artificially inflate prices for existing resources to a level required for new entry regardless of whether new entry is needed, would send distorted and incorrect price signals to the market and could result in excessive new entry.⁷⁵

3. The PJM Order Upon Which NEPGA Relies Is Not Applicable in the Context of ISO-NE’s Different Market Rules.

NEPGA’s reliance on the Commission’s order approving a New Entry Price Adjustment (“NEPA”) for PJM is misplaced and premised on an unfounded assumption. NEPGA argues that the ISO-NE approach to mitigating price suppression in the wake of a new entry pricing election by a new resource is akin to allowing this new resource to bid \$0 into subsequent year auctions.⁷⁶ NEPGA contends that this runs contrary to the Commission’s rejection of such an approach in *PJM Interconnection, LLC*, 128 FERC ¶ 61,157 (2009) (“PJM Order”).⁷⁷

⁷⁴ Wilson Testimony at 7, 39.

⁷⁵ *See id.* at 30-31, 35.

⁷⁶ Complaint at 24.

⁷⁷ *Id.* at 31.

However, as Mr. Wilson testifies, NEPGA’s proposed replacement for the Capacity Carry Forward Rule’s pricing provisions is not consistent with the policy reflected in the PJM approach.⁷⁸ Mr. Wilson explains that, unlike NEPGA’s proposal, the PJM rule has no “shadow” bid.⁷⁹ Additional significant differences between the PJM NEPA rule and the FCM include: (1) the PJM NEPA was designed to apply in very limited circumstances, *i.e.*, when a large new resource in a small zone would have a very large price impact on the zone by moving the clearing price from at least 1.125 times Net CONE (the price if less capacity than is required to satisfy the reliability requirement clears) to a low price of no greater than 0.4 times Net CONE; (2) the PJM NEPA rule allows the option for only two additional years of multi-year pricing; and (3) the PJM NEPA resource’s capacity in the two subsequent years of the multi-year pricing period is first offered at the lower of the NEPA resource’s original offer price or 0.9 times the applicable Net CONE in the original auction in which the NEPA resource cleared, and if this offer fails to clear the auction, it then is resubmitted at a price sufficiently low to clear the auction.⁸⁰ Mr. Wilson testifies that the PJM NEPA is highly restricted, extremely difficult to trigger and use, has only been used once, and is limited to a three-year period.⁸¹ As Mr. Wilson explains, the PJM NEPA “would not have nearly the distorting impact” of NEPGA’s proposed shadow de-list bid.⁸² Mr. Wilson testifies that the one time the NEPA rule was used in PJM, the zonal clearing price in the subsequent year was less than 50% of the applicable Net CONE.⁸³

The PJM rule does not stand for the broad proposition reflected in NEPGA’s proposed

⁷⁸ Wilson Testimony at 32-33.

⁷⁹ *Id.* at 32.

⁸⁰ *Id.* at 33. NEPGA incorrectly characterizes the PJM rule as providing for supply offers at the first-year clearing price or 100% of the cost of new entry.

⁸¹ *Id.* at 33. *See also id.* at 12.

⁸² *Id.* at 33

⁸³ *Id.* at 34.

modification that existing resources should receive prices at the level required for new entry over the full five-year election period.

The shadow price approach proposed by NEPGA would be inappropriate in ISO-NE's market, especially considering the lack of eligibility restrictions comparable to those in PJM's market rules. That the mitigation approaches approved for the PJM and ISO-NE markets differ does not mean that ISO-NE's approach is unlawful. Both approaches mitigate the potential for price suppression in the context of their differing capacity auction structures.⁸⁴

Indeed, if the PJM Order provides any guidance relative to the Capacity Carry Forward Rule, it is that different pricing for existing and new resources is acceptable. In the PJM Order, the Commission rejected PJM's proposal to extend its current three-year NEPA rule to a seven-year period on the basis that PJM's proposal "goes beyond the justifiable need to protect against lumpy investment."⁸⁵ Although the Commission recognized that "[b]oth new entry and retention of existing efficient capacity are necessary to ensure reliability and both should receive the same price so that the price signals are not skewed in favor of new entry,"⁸⁶ the Commission left in place PJM's existing three-year multi-year payment period along with its different prices for new and existing resources as a reasonable approach to encouraging new investment. Accordingly, contrary to NEPGA's claim that the Capacity Carry Forward Rule "is at odds with well-

⁸⁴ The Commission has consistently recognized and approved the differences in RTO market structures and rules. *See, e.g., Wholesale Competition in Regions with Organized Electric Markets*, Order No. 719, FERC Stats. & Regs. ¶ 31,281 at P 9 (2008), *order on reh'g*, Order No. 719-A, FERC Stats. & Regs. ¶ 31,292 (2009), *order denying reh'g*, Order No. 719-B, 129 FERC ¶ 61,252 (2009) ("Significant differences exist between regions, including differences in industry structure, mix of ownership, sources of electric generation, population densities, and weather patterns. . . . We recognize and respect these differences across various regions.").

⁸⁵ PJM Order at P 102.

⁸⁶ *Id.*

established Commission policy,”⁸⁷ the PJM Order illustrates that different prices are not dispositive of discrimination and that it may reflect a reasonable approach.

D. Fast-Track Processing Should be Denied and, to the Extent Rule Revisions are Required, the Stakeholder Process is a More Appropriate Forum to Address the Issues Raised by NEPGA.

Even though NEPGA did not seek rehearing of the February 12 Order approving the modifications to the IS/IC rules and the Capacity Carry Forward Rule contained in ISO-NE’s December 2012 FCM Compliance Filing, NEPGA now asks that the Commission Fast-Track its Complaint. The Commission should reject NEPGA’s request. A Fast-Track process does not allow sufficient time for review and analysis of the multiple complicated rule changes presented in this proceeding. That NEPGA’s proposed changes could impose *billions* of dollars of unanticipated costs on consumers makes the insufficient time and process to fully evaluate the consequences of the relief NEPGA requests all the more unreasonable.

In addition to the substantial and unexpected cost impact on consumers, as Mr. Wilson explains, “sudden rule changes without stakeholder consensus” have a destabilizing effect on market rules and further enhances a view among some market participants that capacity prices are “unpredictable and not to be relied on.”⁸⁸ Mr. Wilson states that “[t]he regulatory uncertainty resulting from granting [NEPGA’s] requested relief after such a brief process would affect not just the FCM,” but also other ISO-NE markets and other regions with similar constructs.⁸⁹ Potential new resources would be particularly concerned about regulatory uncertainty and the adoption of NEPGA’s proposal “after such a brief process and without stakeholder support.”⁹⁰

⁸⁷ Complaint at 7.

⁸⁸ Wilson Testimony at 42.

⁸⁹ *Id.*

⁹⁰ *Id.* at 38.

Furthermore, if the Commission finds that changes to the rules are required, it should allow market participants, other stakeholders, and states to work with ISO-NE in developing appropriate and balanced changes that take consumer costs into account. As discussed below, states and stakeholders have not had the benefit of working with ISO-NE in the development of further changes to the provisions at issue. NEPGA's own preferred solution now before the Commission might be presumed to satisfy a narrow group of shareholders' interests. However, there is no reason to presume that NEPGA's unilateral proposal even considered mitigating consumer costs in reaching its desired end.

The cost implications of adopting NEPGA's replacement provisions are significant, perhaps as high as roughly \$3 billion in FCA 8 alone if the Insufficient Competition rule is triggered.⁹¹ Further, Mr. Wilson testifies that, independent of the proposed IS/IC rule changes, NEPGA's proposed revisions to the Capacity Carry Forward Rule could result in around \$1 billion in increased costs to *one* zone over the next four years.⁹² A litigated FERC proceeding does not provide the same level of flexibility as a stakeholder process to consider the complex interplay between these rules and, among other things, potentially inconsistent tariff provisions, recent announcements of resource retirements, and ongoing discussions around larger structural changes to the FCM (*e.g.*, ISO-NE's Performance Incentives framework and ISO-NE's plan to propose next year a sloped demand curve). The Commission should ensure that the process for ISO-NE, states, and stakeholders to consider these issues is not short-circuited.

In other proceedings, the Commission has underscored the importance of proposals being vetted through the stakeholder process. *See, e.g., FirstEnergy Solutions Corp. and Allegheny Energy Supply Company, LLC v. PJM Interconnection, L.L.C.*, 138 FERC ¶ 61,158 at P 46

⁹¹ *See supra* n. 25.

⁹² Wilson Testimony at 40.

(2012) (“Given that a sufficient record does not exist for the Commission to resolve this issue, and PJM has committed to providing additional evidence as to such causes by May 1, 2012, we find it would not be an efficient use of Commission or industry resources for the Commission to circumvent PJM’s processes by establishing our own proceedings to evaluate the complaint at this time.”); *PJM Power Providers Group v. PJM Interconnection, L.L.C.*, 135 FERC ¶ 61,022 at P 27 (2011) (“With respect to P3’s request to defer addressing certain issues not raised in PJM’s filing, we find that those issues should first be considered by PJM’s stakeholders. Accordingly, we deny P3’s request without prejudice with respect to the deferred issues as noted above. P3 can file another complaint if these issues are not resolved to its satisfaction.”). There is precedent in New England in particular where the Commission has declined requests to take action so as to ensure that the stakeholder process is not circumvented.⁹³

NESCOE agrees with NEPGA that the Tariff provisions at issue in the Complaint have received only brief review in the regional stakeholder process.⁹⁴ Despite any best intentions, as NEPGA outlines in its Complaint, ISO-NE never initiated a stakeholder process to consider further changes to the pricing provisions in the IS/IC rules and Capacity Carry Forward Rule.⁹⁵ One market participant, Exelon Generation Company, LLC (“Exelon”), subsequently offered modifications to the rules.⁹⁶ However, stakeholders were afforded just weeks to consider

⁹³ See, e.g., *ISO New England Inc.*, 138 FERC ¶ 61,042 at P 114 (2012) (“ISO-NE’s stakeholder process is the appropriate venue for Joint Parties to propose and develop appropriate rules”); *ISO New England Inc.*, 128 FERC ¶ 61,266 at P 55 (2009) (declining to require ISO-NE to make tariff changes where it would end-run the stakeholder process); *New England Power Pool*, 107 FERC ¶ 61,135 at PP 20, 24 (2004) (rejecting an entity’s proposed changes because the “suggested revisions have not been vetted through the stakeholder process and could impact various participants.”).

⁹⁴ Complaint at 13.

⁹⁵ See *id.* at 13-17.

⁹⁶ *Id.* at 17.

Exelon's proposed changes.⁹⁷ Exelon's presentations also focused heavily on the Capacity Carry Forward Rule and its implications, with far less discussion of the IS/IC rules. Moreover, the consideration of Exelon's proposed revisions took place in the midst of stakeholder discussions regarding ISO-NE's Performance Incentives proposal, a potential material structural change to the FCM. Exelon's proposal ultimately failed at the Markets Committee by a vote of 37.66% in support and later failed at the Participants Committee by a show of hands.⁹⁸ While NESCOE appreciates NEPGA's desire to implement changes before FCA 8, the Commission must ensure that the complex issues raised in the Complaint are thoroughly and meaningfully considered—and that the range of potentially less costly solutions are explored—before making changes.

More recent stakeholder meetings on the rules likewise should not be construed as providing a sufficient opportunity for stakeholders to discuss the issues presented in the Complaint. On November 25, 2013, ISO-NE made a filing with the Commission under the Exigent Circumstances provision of the Tariff, proposing rule changes to address a possible “gap” in the trigger provision of the Insufficient Competition rule.⁹⁹ This “gap” was not identified in the Complaint, and ISO-NE discovered it and brought it to stakeholders' attention only after NEPGA's filing.¹⁰⁰ ISO-NE also proposes a revision to the same IS/IC pricing provisions that are challenged in the Complaint, as well as proposing clarifications to the IS/IC

⁹⁷ See *id.* at 13. See also Minutes of September 10 and 11, 2013 Markets Committee Meeting, at 7-8 (discussion of whether meeting rules allowed for Exelon's proposal to be voted on only two weeks after it was first presented), available at http://www.iso-ne.com/committees/comm_wkgrps/mrks_comm/mrks/mins/index.html.

⁹⁸ See September 24, 2013 Actions of the Markets Committee, available at http://www.iso-ne.com/committees/comm_wkgrps/mrks_comm/mrks/actions/index.html; October 4, 2013 Minutes of the Participants Committee, available at http://www.nepool.com/uploads/Minutes_NPC_2013_1004.pdf.

⁹⁹ ISO New England Inc., Exigent Circumstances Filing of Revisions to Forward Capacity Market Rules, Docket No. ER14-463-000 (filed Nov. 25, 2013). NESCOE's reference to this filing should not be construed as substantive comments in that proceeding, in which NESCOE may seek to intervene separately. The filing is referenced here solely to address the stakeholder process in the context of NEPGA's Complaint.

¹⁰⁰ See *id.* at 4.

rules and the Capacity Carry Forward Rule.¹⁰¹ Preceding its filing, ISO-NE presented the proposed changes at two Markets Committee meetings.¹⁰² These two meetings, convened by ISO-NE to discuss matters it identified as exigent, should not be viewed as a substitute for a reasonable and more meaningful stakeholder process on the range of issues presented in the Complaint. In addition to the limited meetings, discussion was narrowly focused on the Insufficient Competition rule and, as is evident in ISO-NE's filing, the Capacity Carry Forward Rule was only addressed with respect to a rule clarification. Indeed, ISO-NE's identification of a possible gap in the Insufficient Competition rule *after* the Complaint was filed is reason alone to ensure that the pricing mechanisms at issue receive the full benefit of the stakeholder process.

Alternatively, if the Commission does not direct ISO-NE to convene a stakeholder process, it should set the Complaint for hearing and settlement procedures. As detailed above, the Complaint involves multiple rules and complex issues warranting a hearing and settlement process.

VI. CONCLUSION

For the reasons stated herein, NESCOE respectfully requests that the Commission (i) grant its Motion to Intervene, (ii) deny the Complaint, (iii) to the extent the Commission finds that rule changes are warranted, direct ISO-NE to convene a meaningful stakeholder process to address issues raised in the Complaint, or in the alternative, set the Complaint for hearing using a Track II procedural schedule and establish settlement procedures, and (iv) take other necessary and appropriate actions consistent with the foregoing protest.

¹⁰¹ *See id.* at 4, 10-15.

¹⁰² *Id.* at 7.

Respectfully submitted,

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Date: November 27, 2013

CERTIFICATE OF SERVICE

In accordance with Rule 2010 of the Commission's Rules of Practice and Procedure, I hereby certify that I have this day served by electronic mail a copy of the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Washington, D.C. this 27th day of November, 2013.

Respectfully submitted,

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**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

New England Power Generators
Association, Inc.

v.

ISO New England Inc.

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Docket No. EL14-7-000

EXHIBIT 1

**TESTIMONY OF JAMES F. WILSON
IN SUPPORT OF THE PROTEST OF THE
NEW ENGLAND STATES COMMITTEE ON ELECTRICITY**

NOVEMBER 27, 2013

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

New England Power Generators)	
Association, Inc.)	
)	Docket No. EL14-7-000
v.)	
)	
ISO New England Inc.)	

**TESTIMONY OF JAMES F. WILSON
IN SUPPORT OF THE PROTEST OF THE
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1 proposed its Reliability Pricing Model (“RPM”) capacity construct in 2005, I have
2 prepared numerous affidavits, reports, and analyses of RPM and RPM-related issues. I
3 have also been involved in the related issues of resource adequacy planning and peak
4 load forecasting.

5 I have submitted affidavits and presented testimony in proceedings of the Commission,
6 state regulatory agencies, and U.S. district court. I hold a B.A. in Mathematics from
7 Oberlin College and an M.S. in Engineering-Economic Systems from Stanford
8 University. My curriculum vitae, summarizing my experience and listing past testimony,
9 is attached hereto.

10 **II. PURPOSE AND SCOPE OF TESTIMONY**

11 **Q 3: On whose behalf are you testifying in this proceeding?**

12 A: I prepared this testimony on behalf of the New England States Committee on Electricity,
13 Inc. (“NESCOE”). NESCOE is the Regional State Committee for New England and is
14 governed by a board of managers appointed by the Governors of the six New England
15 states. Its stated mission is to represent the interests of the citizens of the New England
16 region by advancing policies that will provide electricity at the lowest reasonable cost
17 over the long-term, consistent with maintaining reliable service and environmental
18 quality.

19 **Q 4: What is the purpose and scope of your testimony?**

20 A: I was asked by NESCOE to review and evaluate the complaint filed by the New England
21 Power Generators Association, Inc. (“NEPGA”) on October 31, 2013 (“Complaint”) and
22 the supporting testimony of Michael M. Schnitzer (“Schnitzer Testimony”). The
23 Complaint pertains to certain rules and parameters of the Forward Capacity Market
24 (“FCM”) of ISO New England Inc. (“ISO-NE”, “the ISO”). In particular, I was asked to

1 evaluate the proposed relief and the economic theory offered in support of it, and
2 recommend whether any changes to the tariff provisions at issue are warranted at this
3 time.

4 **III. SUMMARY AND RECOMMENDATIONS**

5 **Q 5: Please describe the tariff rules that are the subject of the Complaint.**

6 A: The Complaint focuses on the administrative prices that are set under three very specific
7 circumstances in the Forward Capacity Auctions (“FCAs”) of ISO-NE’s FCM capacity
8 construct. The following are intended to be concise rather than complete and rigorous
9 descriptions of the four rules at issue:

- 10 1. *Inadequate Supply*, as defined in the ISO-NE Transmission, Markets and Services
11 Tariff (“Tariff”) Section III.13.2.8.1.1 (for import-constrained zones) and Tariff
12 Section III.13.2.8.1.2 (for the New England Control Area, system-wide). This rule is
13 included to mitigate the impact of potential seller market power when the total
14 amount of existing and new supply participating in the FCA is less than the quantity
15 the ISO will attempt to purchase in the auction (based on the Local Sourcing
16 Requirement for each zone and the Installed Capacity Requirement for the Rest-of-
17 Pool Capacity Zone, with various adjustments). When there is Inadequate Supply in
18 a zone or system-wide, existing resources are paid 1.1 times the Capacity Clearing
19 Price (“CCP”) for the most recent FCA not having Inadequate Supply, while new
20 resources are paid the FCA Starting Price as defined in Tariff Section III.13.2.4.
- 21 2. *Insufficient Competition*, as defined in Tariff Section III.13.2.8.2. This rule is
22 included to mitigate the impact of potential seller market power when there is not
23 inadequate supply as described above, but when there are indications of insufficient

1 competition to ensure competitive pricing (there are two triggers pertaining to the
2 amount of new capacity offered and one trigger based on whether any Market
3 Participant's new capacity is pivotal). When there is Insufficient Competition in a
4 zone or system-wide, existing resources are paid the lower of the CCP or 1.1 times
5 the CCP for the most recent FCA not having Insufficient Competition, and new
6 resources are paid the CCP.

7 3. *Capacity Commitment Period Election* (also called the New Entry Price Adjustment,
8 or "NEPA") under Tariff Section III.13.1.1.2.2.4. This rule provides multi-year price
9 assurance as an incentive for new entry, and allows a new resource to elect to receive
10 a Capacity Supply Obligation ("CSO") and be paid the same CCP, indexed for
11 inflation, for up to four additional years. The capacity associated with the CSO may
12 not be subject to any type of de-list bid for the duration of the multi-year
13 commitment.

14 4. *Capacity Carry Forward Rule* as defined in Tariff Section III.13.2.7.9.1. The
15 Capacity Carry Forward Rule can be triggered in an import-constrained capacity zone
16 when excess new capacity was cleared in an earlier FCA and is carried forward due to
17 rationing (according to the Capacity Rationing Rule, Tariff Section III.13.2.6), and is
18 intended to mitigate the price suppression impact of the excess capacity. When
19 triggered, the Capacity Carry Forward Rule calls for the CCP to be set to the lesser of
20 \$0.01 below the price at which the last new resource withdrew from the FCA, or the
21 Offer Review Trigger Price for a combustion turbine ("ORTP-CT"), defined in Tariff
22 Section III.A.21.1.1).

1 **Q 6: The Complaint claims that these rules are not just and reasonable. Please**
2 **summarize the alleged problems with these rules.**

3 A: The Complaint alleges that these rules set prices that are too low for existing resources, in
4 particular when new capacity is needed, and the rules result in pricing that discriminates
5 between existing and new resources. Complaint pp. 3-4. The Complaint alleges that
6 these flaws will lead to retirement of economic resources and difficulty attracting new
7 entry in the future. Complaint p. 4.

8 **Q 7: Please summarize the relief requested in the Complaint.**

9 A: The Complaint proposes that for the Inadequate Supply rule, rather than setting prices for
10 existing resources based on the CCP in a recent FCA, prices should be set to 1.1 times the
11 ORTP-CT. The Complaint proposes that for the Insufficient Competition rule, rather
12 than setting prices for existing resources to the lower of the CCP or 1.1 times the CCP in
13 a recent FCA, prices should be set to the lower of the CCP or 1.1 times the ORTP-CT.
14 For NEPA resources, the Complaint proposes modifying the Capacity Carry Forward
15 Rule so that a de-list bid for the entire capacity of a cleared NEPA resource would be
16 included in subsequent FCAs for the duration of the multi-year price election period at
17 the lower of the ORTP-CT or the CCP for the FCA in which the NEPA resource initially
18 cleared. Complaint pp. 5-7.

19 **Q 8: Please describe the ORTP prices and their role in FCM.**

20 A: The Offer Review Trigger Prices, defined in Tariff Section III.A.21.1.1, are established
21 by ISO New England's Internal Market Monitor ("IMM") for six different resource
22 categories, as thresholds or triggers for the IMM's review of offers from new resources.
23 The methodology to determine the ORTPs is intended to calculate the break-even
24 contribution from FCM required to yield a discounted cash flow with a net present value

1 of zero. Tariff Section III.A.21.2. The ORTPs are described by the IMM as “benchmark
2 prices” that “approximate the net cost of entry of each resource.” ISO New England Inc.
3 Internal Market Monitor, *2012 Annual Markets Report*, p. 7. The ORTPs are therefore
4 administrative estimates of the levelized cost of new entry net of anticipated net revenues
5 from energy and ancillary services markets.

6 **Q 9: What have you concluded with regard to the change proposed in the Complaint to**
7 **the administrative pricing under the Inadequate Supply and Insufficient**
8 **Competition rules?**

9 A: This change should be rejected. The proposed administrative price, based on the ORTP-
10 CT, is far above a reasonable estimate of a competitive price, even under conditions of
11 tight supply. It will result in excessive costs imposed on consumers and could also distort
12 conduct.

13 **Q 10: What have you concluded with regard to the change proposed in the Complaint to**
14 **the Capacity Carry Forward Rule as it pertains to NEPA resources?**

15 A: The proposed change should be rejected. It would distort markets and substantially
16 increase the cost to consumers, without commensurate (if any) benefit.

17 **Q 11: The Complaint criticizes the current rules as causing price discrimination between**
18 **new and existing resources. What have you concluded in this regard?**

19 A: While price discrimination in general is to be avoided, the FCM rules tolerate some price
20 discrimination under circumstances where new resources may receive prices in excess of
21 competitive levels. Under these circumstances, the FCM rules mitigate the prices paid to
22 existing resources to more competitive levels. To the extent price discrimination is
23 deemed unacceptable, the focus should be on efforts to ensure new resources are paid
24 more competitive prices, rather than to extend supra-competitive prices to all resources.

25 **Q 12: Please summarize your conclusions regarding the potential adverse consequences of**
26 **granting the relief requested by the Complaint.**

1 A: The potential negative impacts and unintended consequences of the requested relief
2 include the following.

- 3 1. A large increase in the cost to consumers. The proposed change to the administrative
4 prices could cost consumers over two billion dollars annually. The proposed change
5 to the Capacity Carry Forward Rule could cost consumers in one zone one billion
6 dollars over the next four years.
- 7 2. A large transfer of wealth from consumers to the owners of existing capacity without
8 any clear connection to resource adequacy or other value to consumers.
- 9 3. Unintended consequences of the high administrative prices, possibly including
10 uneconomic retirements as part of an attempt to trigger the administrative prices.
- 11 4. Gaming and other unintended consequences of the change to how NEPA resources
12 are represented in subsequent FCAs.
- 13 5. Additional regulatory uncertainty about FCM prices and payments resulting from the
14 sudden change in rules, leading to further discounting of this source of revenue,
15 discouraging entry.
- 16 6. Negative impacts beyond FCM and New England of the increased regulatory
17 uncertainty.

18 **Q 13: Please summarize your conclusions regarding the potential consequences of**
19 **executing FCA 8 under the current tariff rules.**

20 A: The Complaint alleges that uneconomic retirements could result and resource adequacy
21 could be jeopardized. However, the owners of older plants that face a decision about
22 operation in the 2017/2018 capacity commitment period should be expected to offer static
23 de-list bids in FCA 8. Whether or not they clear in FCA 8, there are three reconfiguration

1 auctions in which the decisions can be modified either way, and in which the ISO can
2 acquire additional capacity if needed. In any case, it should be expected that most
3 decisions about retirement for the 2017/2018 period should be revisited as the time
4 approaches.

5 Furthermore, there are various incremental resources that can become available closer to
6 the capacity commitment period, such as demand response, uprates of existing plants, and
7 incremental imports, in addition to deferred retirements. In addition, the ISO's peak
8 load forecast and ICR may be revised downward based on more recent economic
9 forecasts, resulting in a reduced need for capacity. Consequently, proceeding with FCA 8
10 under the current rules should not cause concern about resource adequacy or uneconomic
11 retirements.

12 **Q 14: How is the remainder of your testimony organized?**

13 A: The next section, Section IV, discusses price formation in three-year-forward capacity
14 constructs, based primarily on the experience with PJM's RPM construct, and how
15 different types of resources are typically offered into the RPM auctions. Then Section V
16 discusses the proposed changes to the pricing under the Inadequate Supply and
17 Insufficient Competition rules. Section VI discusses the proposed change to the
18 treatment of NEPA resources under the Capacity Carry Forward Rule. Finally, Section
19 VII discusses the potential consequences of granting, or not granting, the requested relief.

1 **IV. PRICE FORMATION IN FORWARD CAPACITY MARKETS**

2 **Q 15: Mr. Wilson, what evidence is available regarding how capacity is offered and prices**
3 **formed in forward capacity markets such as FCM, once the construct has had a**
4 **chance to become established?**

5 A: The most relevant evidence is from PJM’s RPM construct, for which “base residual
6 auctions” (“BRAs”) have now been held for ten delivery years. As explained below,
7 there are some important differences between the PJM and ISO-NE capacity markets, but
8 PJM’s RPM is an appropriate point of comparison. Like FCM, RPM determines
9 locational capacity prices on a three-year-forward basis. However, unlike FCM, under
10 which prices have been constrained by administrative floor prices, RPM clearing prices
11 have always been set by the intersection of the supply and demand represented in the
12 auctions, there have never been any floor prices. In addition, also unlike FCM, the RPM
13 auctions have generally resulted in multiple, locational clearing prices, one for the Rest of
14 RTO region and separate, higher clearing prices for one or several import-constrained
15 zones. Over the ten RPM delivery years, a total of 31 distinct locational prices have been
16 set in the RPM BRAs (and numerous additional prices, typically much lower, have been
17 set in the much smaller “incremental” auctions, analogous to FCM’s reconfiguration
18 auctions, held closer to each delivery year). Consequently, there is now a wealth of
19 experience regarding how capacity is offered and prices formed under RPM.

20 There are some important differences between RPM and FCM. For instance, RPM
21 employs a steeply sloped demand curve, while FCM uses a vertical demand curve.
22 However, the importance of this difference has declined over time, because the RPM
23 *supply* curves have become increasingly sloped with more resources offered at a range of
24 price levels, lessening the impact of a sloped demand curve. The slope of the demand
25 curve remains important under circumstances where there may be inadequate supply or

1 insufficient competition, and new entrants may have market power and may be able to set
2 clearing prices to a very high level.

3 **Q 16: Please describe the prices at which various types of capacity are typically offered in**
4 **the RPM base residual auctions.**

5 A: The “offer prices” under the RPM construct are analogous to the de-list prices under
6 FCM; a resource will clear the auction and receive a capacity supply obligation only if its
7 offer price (de-list price) is lower than the auction clearing price.

8 The majority of existing capacity is offered at very low offer prices which leave no doubt
9 about whether the capacity will clear and receive a capacity supply obligation; this is the
10 existing, economic capacity with low or zero net going-forward costs (Tariff Section
11 III.13.1.2.3.2.1.2; called avoided cost under RPM). The capacity offered at low prices
12 will include existing, economic generation, and some demand response, imports, and
13 other types of capacity.

14 Various other resources are offered at a range of prices, including some fairly high prices,
15 meaning that these resources are willing to provide capacity only if the clearing price
16 remains at a higher level. These resources are offered in a manner that allows the auction
17 to determine whether or not they will clear and have a capacity supply obligation for the
18 delivery year. Such resources with relatively high offer prices include some older,
19 higher-cost plants that may be retired if they fail to clear; higher cost demand response;
20 some more costly existing plant uprates; and some potential imports, among others. The
21 offer prices for these resources would typically reflect the net going forward or
22 opportunity cost of accepting a capacity supply obligation.

1 Some older plants may be offered at high prices reflecting the amortized cost of
2 investments that would be necessary to continue operation, while other older existing
3 capacity may be absent from the auction because retirement was announced prior to the
4 auction.

5 Note that much of the capacity offered with relatively high offer prices, and allowing the
6 auction to determine whether or not it will clear and provide capacity, is of resource types
7 that face only relatively small incremental investments, if any, to provide capacity; these
8 are resources that either already exist, or could be developed at a relatively low cost, such
9 as existing plant uprates, or incremental demand response or imports. It makes sense for
10 resources that face relatively low incremental investments to provide capacity to allow
11 the auction to determine whether they will make the investment or not.

12 By contrast, major new power plants requiring large investments are typically offered
13 into RPM as “price takers”, at very low prices. Existing plants that require major
14 investments to continue operation are permitted to offer at high prices that include an
15 amortization of the investment cost, but may also often be offered as price takers in order
16 to win a capacity supply obligation.

17 **Q 17: Why are major new power plants typically offered into RPM as “price takers”?**

18 A: The decision about such a major investment is based on a long-term analysis of potential
19 profitability over the anticipated life of the resource (as Mr. Schnitzer acknowledges;
20 Schnitzer Testimony, p. 8). Once the decision is made to proceed, the proponents do not
21 offer the resource into RPM in a manner that risks failing to obtain a capacity supply
22 obligation. Decisions about such major long-term investments are typically made outside
23 of the capacity auctions; such decisions will not hinge on the magnitude of the RPM

1 capacity price for a single year. (While multi-year pricing is available under RPM, it is
2 only available under highly restricted triggering conditions, and has only been used in
3 one instance. Monitoring Analytics, *Analysis of the 2014/2015 RPM Base Residual*
4 *Auction*, p. 43.)

5 The fact that the proponents of major new power plants will typically choose to offer
6 them as price takers has recently been acknowledged and reflected in changes to the RPM
7 rules, under which the minimum offer price rule, or “MOPR”, now allows new
8 competitive entry and new self-supply resources to be offered as price takers.

9 Existing power plants that require major new investments, such as environmental
10 upgrades, to continue operation, also face decisions that must be made based on a multi-
11 year analysis, and may also be offered as price takers if there is a decision to proceed.

12 Note that new power plants will typically be offered as price takers when permitted
13 (MOPR rules may impose a minimum offer price), and when the offer price is not
14 expected to significantly affect the capacity price the new resource will receive. This will
15 be the case under reasonably competitive circumstances, which generally holds under
16 RPM except perhaps in smaller zones. Under conditions where offering at a high price
17 might result in a much higher capacity payment, either by setting a high market-clearing
18 price under uncompetitive circumstances or as a result of administrative rules, an entrant
19 can be expected to offer in a manner that will maximize its expected revenue and profit
20 rather than offer as a price taker.

21 While there are a number of considerations that can influence the price at which a new
22 plant is offered, the proponent, even if acting competitively, would generally not choose
23 to offer at a price equal to its levelized construction cost net of anticipated market

1 revenues (as MOPR rules might require it to do). There is simply no economic logic
2 behind demanding this particular level of payment from the first auction, which exceeds
3 going forward cost. Wilson, James F., *Forward Capacity Market CONEFusion*,
4 Electricity Journal Vol. 23 Issue 9, November 2010, section V.

5 **Q 18: Given how various types of resources are typically offered, what types of resources**
6 **typically clear and fail to clear in the RPM forward capacity auctions?**

7 A: The large amount of existing capacity offered at low prices clears, of course. Typically
8 some new capacity clears, which might be new demand response, uprates of existing
9 plants, new power plants, or incremental imports. Some existing, higher cost capacity
10 often fails to clear. Of the various types of capacity described above that is offered at
11 relatively high prices, the amount that clears will vary year to year depending upon the
12 overall supply and demand balance and resulting auction clearing price.

13 Thus, the capacity market's auctions will typically reflect a flux. Major new plants enter
14 as price takers; some higher-cost older plants near the ends of their useful lives are
15 pushed out of the mix; and of the various low-investment and short-lead-time resources
16 offered at a range of prices, more of them clear if the auction clearing prices are relatively
17 high and fewer when prices are relatively low.

18 **Q 19: Given these dynamics, how are the clearing prices typically set in the RPM**
19 **auctions?**

20 A: As new plants enter as price takers, some older plants fall out of the mix, and a varying
21 amount of the other resources offered at relatively high prices clear, prices are set by the
22 marginal higher cost resources offered into each auction. High cost existing plants and
23 short lead-time, low investment resources generally remain on the margin and set prices.
24 This makes sense – an auction that generally offers one-year commitments will mainly

1 determine which of the resources that face relatively low investments, or are near
2 retirement, will clear, while the resources that face major investments and long-term
3 decisions will have offered in a manner that does not subject their choices to a single
4 auction result.

5 These price-setting types of resources that may be offered at relatively high prices, and
6 may have short lead times and require relatively low investments (demand response,
7 energy efficiency, existing plant uprates, older plants that may be retired or operated for a
8 few more years, incremental imports) have represented two-thirds of the incremental
9 resources cleared through RPM BRAs over ten delivery years. PJM, *2016/2017 RPM*
10 *Base Residual Auction Results*, Tables 8 and 10.

11 **Q 20: Does RPM have administrative prices analogous to FCM's ORTP-CT, and do**
12 **clearing prices rise to such levels?**

13 A: Yes, there are such administrative prices under the RPM rules, and no, the auction
14 clearing prices nearly always remain far below such levels. The analogous price is called
15 Net CONE, an administrative, levelized construction cost estimate for a new power plant
16 net of a historical average of estimated earnings in energy and ancillary services markets.
17 Net CONE values are calculated for combustion turbines and combined cycle units and
18 are used as parameters of the RPM capacity demand curves and as a screen within the
19 MOPR rules.

20 **Q 21: Please present RPM clearing prices and compare them to the Net CONE values.**

21 A: Figure 1, provided at the end of this testimony, includes all RPM base residual auction
22 clearing prices to date, for Annual resources, plus recent Net CONE values. The figure
23 shows that while Net CONE for the RTO Region is presently \$330.53/MW-day
24 (\$10/kW-month), RPM prices have generally been in the \$100/MW-day to \$250/MW-

1 day range (\$3.0 to \$7.6/kW-month), with one price spike to \$357/MW-day (\$10.86/kW-
2 month).

3 **Q 22: Why do RPM prices generally remain far below Net CONE levels?**

4 A: RPM prices generally remain well below Net CONE levels for a number of reasons.

- 5 1. Entry decisions are based on long-term analyses, and once the decision to enter is
6 made, the new capacity is generally offered as a price taker into capacity auctions, or
7 perhaps based on avoided cost, not at Net CONE, as described above. Prices are
8 generally set by the types of resources that wish to accept a CSO, or not accept a
9 CSO, based on the clearing price.
- 10 2. The timing of new entry generally anticipates the need for new capacity rather than
11 being delayed until prices actually rise substantially. There may be a number of
12 reasons for this, including the fact that the decision to proceed is based on a long-term
13 analysis, and there is some inertia in the development process. In addition, there are
14 often multiple new projects in the interconnection process, and the first movers are
15 more likely to complete their projects, while those who wait for higher prices may
16 never proceed because competing capacity is already committed and under
17 construction.
- 18 3. The entry that is occurring is generally not the reference combustion turbine resource,
19 but more cost-effective resource types such as combined cycle and demand response.
20 Combustion turbines (the reference resource under RPM as under FCM) have
21 represented only six percent of the total incremental capacity cleared through RPM
22 BRAs over ten RPM delivery years. *PJM, 2016/2017 RPM Base Residual Auction*
23 *Results*, Tables 8 and 10.

1 4. The administrative Net CONE calculations overstate the values they are attempting to
2 estimate, by a quite substantial margin at times, due to various shortcomings in the
3 calculations. For instance, the Net CONE values established according to the RPM
4 tariff for the RPM base residual auction for the 2015/2016 delivery year were far
5 above PJM's chief economist Paul M. Sotkiewicz's estimates of the true Net CONE
6 values for that auction (200%, in one instance; Dr. Sotkiewicz's estimate for MAAC
7 is shown on Figure 1). Paul M. Sotkiewicz, *MOPR and Economics of New Entry in*
8 *PJM*, UBS Electric Utilities and IPP Group, June 12, 2012, attached to and discussed
9 at pp. 4-6 in Wilson, James F., *Affidavit in Support of the Protest and Comments of*
10 *the Joint Consumer Advocates*, attached to Protest and Comments of the New Jersey
11 Division of Rate Counsel et al, Docket No. ER13-535-000, December 28, 2012.

12 **Q 23: Are there RPM market rules that also contribute to RPM prices remaining below**
13 **Net CONE levels?**

14 A: No; while there are market rules and other circumstances that tend to push RPM prices
15 lower, other rules and circumstances tend to push RPM prices higher. Overall, I believe
16 RPM prices are elevated, rather than suppressed, compared to the levels that would result
17 from an accurate representation of supply and demand. Some of the main factors that
18 push RPM prices higher or lower are the following:

- 19 1. The over-forecasting of peak load, which has raised the capacity requirement by over
20 six percent, four delivery years in a row.
- 21 2. The 2.5% Short Term Resource Procurement Target ("holdback"), which is deducted
22 from the capacity requirement in the BRA and purchased in incremental auctions.

1 3. Capacity that is economically withheld in accordance with various tariff rules, as
2 evidenced by capacity that fails to clear in the base residual auction being offered and
3 cleared at much lower prices in incremental auctions. This quantity more than offsets
4 the 2.5% holdback.

5 4. Prospective resources offered in perhaps overly optimistic quantities in the base
6 residual auctions, including demand response and imports, resulting in some
7 repurchase of capacity supply obligations in incremental auctions.

8 Overall, the peak load over-forecasting and economic withholding in the base residual
9 auctions, which tend to raise RPM prices, represent a much larger quantity than the 2.5%
10 holdback and the prospective resources that are ultimately not delivered, which tend to
11 lower prices.

12 **Q 24: What evidence is available regarding the capacity offered at intermediate price**
13 **levels in RPM, and how RPM prices change as conditions change?**

14 A: The shape and slope of the RPM supply curves, reflecting the quantity of resources
15 offered at prices in a range around actual clearing price levels, and the potential impact of
16 shifts in supply or demand on clearing prices, is quantified in a set of sensitivity analyses
17 PJM performs following each base residual auction. In these sensitivity analyses, PJM
18 changes the quantity of low-cost supply by a fixed amount, shifting the supply curve, and
19 reports the impact that shift would have had on clearing prices. These sensitivity
20 analyses reveal the slope of the supply curve (interacting with the sloped demand curve).
21 The results for the past few base residual auctions show that while shifts in supply or
22 demand would have a substantial impact on prices, the shifts would generally not send
23 prices to anywhere near Net CONE levels. PJM, *Sensitivity Scenario Analysis Results*,

1 available at <http://www.pjm.com/markets-and-operations/rpm/rpm-auction-user->
2 [info.aspx](http://www.pjm.com/markets-and-operations/rpm/rpm-auction-user-info.aspx).

3 **Q 25: Does the existing generating capacity that fails to clear in the RPM BRAs at these**
4 **price levels always retire?**

5 A: No. Failing to clear the BRA does not mean an existing plant will be retired. While
6 some uncleared plants retire, there is a consistent pattern that a large amount of the
7 existing generation that failed to clear in the BRA is offered and clears in an incremental
8 auction for the same delivery year, generally at lower prices than were available in the
9 BRA.

10 **Q 26: Is new capacity ever offered at high prices into the RPM BRAs, rather than as a**
11 **price taker or some other lower level?**

12 A: Yes, this has occurred. This approach would be taken by an incumbent with a large
13 portfolio in a relatively small zone, who understandably does not want the new capacity
14 offer to depress the clearing price earned by the remainder of the portfolio. As one
15 example, a FirstEnergy affiliate announced over 2,000 MW of retirements in the ATSI
16 zone shortly before the 2015/2016 BRA, and offered proposed new combustion turbines
17 apparently at a very high price, as they failed to clear despite the ATSI zone clearing at
18 \$357/MW-day (\$10.86/kW-month), the highest ever RPM price and 44% higher than the
19 second highest RPM price.

20 **Q 27: In light of the forward capacity market dynamics you have described, do the RPM**
21 **auctions signal when new capacity is or is not needed in a capacity zone?**

22 A: The auction clearing prices tend to be higher when there is relatively less capacity offered
23 in a zone compared to the established requirement, and when the marginal sources of
24 capacity are relatively expensive; and clearing prices tend to be lower when capacity is
25 relatively abundant and low-cost. However, as I described, it will typically be the case

1 that in any auction, there is some new entry, and some available, higher-cost resources
2 fail to clear. Some types of resources, such as demand response and imports, may come
3 in and out of the mix year by year, depending upon whether clearing prices are high
4 enough to make a capacity supply obligation attractive each year. So it is generally not
5 the case that capacity is “needed” in the strict sense of there simply not being enough at
6 any price. However, new capacity may be “needed” in the sense that there are new
7 resources entering that are more efficient than the high-cost resources they displace. The
8 proponents of new power plants choose to enter based on long-term analysis, and
9 potentially based on long-term contracts, and these decisions generally do not hinge on
10 whether additional capacity is nor is not “needed” in a single year, however than might be
11 defined.

12 Furthermore, the proponent of a new power plant may base its long-term analysis on peak
13 load forecasts, anticipated retirements, forward energy and capacity price projections, and
14 other assumptions that may be very different from what its competitors believe, or what
15 has been assumed in determining administrative Net CONE parameters.

16 **Q 28: In light of the forward capacity market dynamics you have described, when RPM**
17 **clears at relatively high prices, does this mean that capacity is scarce for the delivery**
18 **year?**

19 A: Generally no, not necessarily. RPM prices reflect supply and demand as represented in
20 an auction held more than three years before the delivery year. If the peak load forecast
21 is based on an optimistic economic forecast, or if the reserve requirement determinations
22 are conservative, the capacity requirements may be overstated. In a three-years-forward
23 auction, not all of the resources that will or can be available for the delivery year may
24 have been offered in the auction, or some may have been offered at high prices. Some

1 short-lead-time resources such as demand response, plant upgrades or incremental
 2 imports may not have been offered, but may subsequently become available for the
 3 delivery year if prices are attractive. Some existing high-cost capacity near retirement
 4 may be held out of the years-forward auction or offered at high prices that do not clear,
 5 but could be offered at lower prices in subsequent incremental auctions.

6 When prices have spiked in RPM's years-forward auctions, subsequent prices for the
 7 same delivery year in incremental auctions, and in the base residual auction for the
 8 following delivery year, have generally been much lower, calling into question whether
 9 the strong price signal was accurate (Table 1). The highest price spike, in the ATSI zone
 10 in 2015/16, occurred when PJM defined the new ATSI capacity pricing zone, and a
 11 FirstEnergy company caught the market by surprise by announcing retirements in the
 12 zone only months before the auction.

Table 1: Highest RPM Prices and Subsequent BRA, IA Prices							
Highest RPM base residual auction ("BRA") clearing prices				Price in BRA for next delivery year		Price in first Incremental Auction for same delivery year	
	\$/MW-day	Zone	Delivery Year	\$/MW-day	% of BRA price	\$/MW-day	% of BRA price
1.	357.00	ATSI	2015/16	114.23	32%	168.37	47%
2.	247.14	PEPCO	2013/14	136.50	55%	54.82	22%
3.	245.00	EMAAC	2013/14	136.50	56%	178.85	73%
4.	237.33	SWMAAC	2009/10	174.29	73%	86.00	36%
5.	226.15	MAAC	2013/14	136.50	60%	20.00	9%

13

1 **Q 29: Turning now to FCM, do the dynamics you have described also apply to FCM?**

2 A: Yes, various types of resources in different circumstances should generally face similar
3 economic incentives and offer into FCM in a manner similar to how such resources are
4 offered into RPM, resulting in similar dynamics and price formation. However, there are
5 some differences in the FCM rules and circumstances that can influence offer prices and
6 market clearing, and are important in the context of the issues in this proceeding.

- 7 1. It is clear that in the FCAs the supply curves remain quite steep, as they were in the
8 early years of RPM. ISO New England Inc. Internal Market Monitor, *2012 Annual*
9 *Markets Report*, Figures 4-10 to 4-14 (showing supply curves for FCAs 2 through 6).
10 Apparently there are still relatively few resources offered at prices in a range around
11 typical clearing prices, which would tend to moderate price volatility.
- 12 2. The steep supply curves and vertical demand curve combine to give resources the
13 potential ability, especially under circumstances where offered capacity may be close
14 to the requirement, to offer at high prices and set a high clearing price. Sellers
15 offering new capacity are more likely to be able to spike capacity prices, if they
16 attempt to do so, due to the vertical demand curves and steep supply curves. The
17 RPM sloped demand curve allows prices to rise to 150% of Net CONE, but only if
18 the cleared quantity falls to about three percent below the established reliability
19 requirement adjusted by the holdback. The ability and incentive to raise prices exists
20 at times in RPM but may be more likely under FCM.
- 21 3. The NEPA rule gives new resources that elect multi-year pricing an additional
22 incentive to offer at a high price, because the resulting CCP will be the price the
23 NEPA resource is guaranteed for up to four additional years.

- 1 4. The FCM MOPR rule is more likely to force entrants to offer at a high, ORTP-based
2 price, because it applies to all resource types, and does not include the same
3 exemptions for competitive entry and self-supply as under the RPM MOPR.
- 4 5. Under RPM, some high-cost existing capacity has been offered into the auctions at
5 high prices and failed to clear, but subsequently been offered into incremental
6 auctions at lower prices and cleared. Under the FCM rules, plants that submit Non-
7 Price Retirement Requests under Tariff Section III.13.1.2.3.1.5 are obligated to retire,
8 and plants that submit Permanent De-List bids under Tariff Section III.13.1.2.3.1.2
9 are precluded from further participation in FCM unless qualified as a new resource; if
10 these options are chosen, the three-year-forward decision to retire becomes
11 irreversible even if conditions change.

12 **V. THE PROPOSED ADMINISTRATIVE PRICE IS NOT A GOOD PROXY FOR A COMPETITIVE**
13 **PRICE**

14 **Q 30: What changes does the Complaint propose to the pricing under the Inadequate**
15 **Supply and Insufficient Competition rules?**

16 A: The Complaint proposes that when there is Inadequate Supply in a zone or system-wide,
17 existing resources should be paid 1.1 times the ORTP-CT (the current tariff calls for 1.1
18 times the CCP for the most recent FCA not having Inadequate Supply). The Complaint
19 proposes that when there is Insufficient Competition in a zone or system-wide, existing
20 resources should be paid the lower of the CCP or 1.1 times the ORTP-CT (the current
21 tariff calls for the lower of the CCP or 1.1 times the CCP for the most recent FCA not
22 having Inadequate Supply).

23 **Q 31: Please explain the potential impact of the proposed changes on the FCA prices paid**
24 **to existing and new resources if the Inadequate Supply rule is triggered.**

1 A: The Inadequate Supply administrative pricing rule is triggered when the total quantity of
2 existing and new resources offered into the FCA falls short of the identified capacity
3 requirement. Under the change to the administrative pricing proposed in the Complaint,
4 if Inadequate Supply is triggered system-wide, existing resources would be paid \$11/kW-
5 month (1.1 times the ORTP-CT, which is \$10/kW-month for FCA 8), compared to
6 \$3.465/kW-month under the current tariff (1.1 times the CCP in FCA 7, which was
7 \$3.15/kW-month). No change is proposed to the pricing for new resources, which would
8 be paid the FCA Starting Price (\$15/kW-month for FCA 8).

9 **Q 32: Please explain the potential impact of the proposed changes on the FCA prices paid**
10 **to existing and new resources if the Insufficient Competition rule is triggered.**

11 A: The Insufficient Competition administrative pricing rule is triggered when Inadequate
12 Supply is not triggered, but the amount of new resources offered is not large compared to
13 the need, as indicated by three triggers. Under the change to the administrative pricing
14 proposed in the Complaint, if Insufficient Competition is triggered system-wide, existing
15 resources would be paid the lower of the CCP or \$11/kW-month (1.1 times the ORTP-
16 CT), compared to the lower of the CCP or \$3.465/kW-month under the current tariff (1.1
17 times the CCP in FCA 7). No change is proposed to the pricing for new resources, which
18 would be paid the CCP.

19 **Q 33: On what basis does the Complaint propose using ORTP-CT for this administrative**
20 **pricing?**

21 A: The Schnitzer Testimony suggests that when Inadequate Supply or Insufficient
22 Competition are triggered, this reflects “scarcity” in the capacity market (p. 6), and that
23 under such circumstances the ORTP-CT is a proxy for “where a competitive market
24 would have cleared” (p. 30).

1 **Q 34: When Inadequate Supply or Insufficient Competition is triggered, does this reflect**
2 **conditions of scarcity?**

3 A: Not reliably. The FCA is held over three years in advance of the capacity commitment
4 period. While there may appear to be insufficient capacity offered into the FCA, the
5 experience in PJM shows that a large fraction of the incremental resources are of types
6 that typically have shorter lead times and can become available closer to the capacity
7 commitment period, such as demand response, energy efficiency, uprates of existing
8 plants, incremental imports, decremental exports, or deferred retirements. In addition, the
9 load forecast and capacity requirement used in a three-year-forward capacity auction may
10 be inaccurate and overstate needs.

11 **Q 35: When the quantity of capacity offered into the FCA is close to the ICR and may**
12 **suggest inadequate supply, should prices to existing resources be administratively**
13 **set to the levelized net cost of a combustion turbine (ORTP-CT)?**

14 A: No. Even when capacity is in fact relatively tight three years forward, the experience
15 under RPM suggests that prices will typically rise to a level based on the highest cost of
16 the various types of resources offered in a manner that allows the auction to determine
17 whether or not they clear; this is the competitive result. This level can be at or above the
18 levelized net cost of a combustion turbine, but it is typically much lower reflecting other
19 incremental resource types.

20 While prices may rise in a three-year-forward auction, there is generally not a sound basis
21 for a sharp price spike, given that substantial additional resources may become available
22 after the three-year-forward auction, if needed, and the load forecast and capacity
23 requirement may be revised downward. This is reflected in the fact that in each instance
24 of the highest RPM BRA prices, capacity prices in the very first incremental auction for
25 the same delivery year, and in the base residual auction for the subsequent delivery year,

1 were much lower, as shown in Table 1 above. So when a three-year-forward capacity
2 construct sets a very high price, it can often be a false signal of scarcity and the value of
3 capacity.

4 **Q 36: When FCA conditions suggest insufficient competition, should prices to existing**
5 **resources be allowed to rise to the levelized net cost of a combustion turbine (ORTP-**
6 **CT)?**

7 A: No. The FCM rules tolerate new resources exercising market power and setting high
8 CCPs if conditions afford them the opportunity to do this. This is understandable as an
9 added incentive to new entry and because mitigating the market power of new resources,
10 who are not obligated to participate in the FCA, is not practical or appropriate.
11 Conceptually, a competitive price would result if the entry was by numerous very small
12 entities which would offer based on their net going-forward or opportunity cost to
13 provide capacity or, for some long-term resources, as price takers. The resulting
14 competitive price would again be based on the offer price of the highest cost of these or
15 various existing resources offered in the FCA, and would generally be far below the
16 ORTP-CT.

17 **Q 37: The Complaint and Schnitzer Testimony also argue that the proposed**
18 **administrative pricing should be used because price discrimination between new**
19 **and existing resources is bad policy. First, do you agree that price discrimination**
20 **between new and existing resources is to be avoided?**

21 A: Yes. In general, resources providing the same service under the same conditions should
22 be paid the same price without regard to whether they are existing resources or new
23 resources.

24 **Q 38: If price discrimination should be avoided in the market design, does this support the**
25 **Complaint's proposed approach to administrative pricing?**

26 A: No. The FCM rules tolerate some exercise of market power by new resources, as noted
27 above. The Inadequate Supply and Insufficient Competition rules are designed to

1 mitigate market power and establish an administrative price for existing resources under
2 circumstances where either the auction cannot proceed (Inadequate Supply) or will not
3 determine a competitive CCP (Insufficient Competition). Under these circumstances,
4 new resources may receive a very high, uncompetitive price. While price discrimination
5 is generally not a good policy, when new resources are being paid uncompetitive prices,
6 it would not be appropriate to also pay such prices to all existing resources. To the extent
7 the price discrimination is not acceptable, the answer should be to attempt to ensure that
8 all resources are paid prices that reflect competitive circumstances, which prices can at
9 times be quite high, rather than to extend supra-competitive pricing to all resources.

10 **Q 39: What evidence is available about capacity prices in three year forward capacity**
11 **auctions when there is new entry?**

12 A: Recent RPM auction results provide some relevant evidence. In the most recent RPM
13 auction, for the 2016/2017 delivery year, 2,217 MW of new generation cleared in the Mid
14 Atlantic (“MAAC”) zone at a price of \$119.13/MW-day (\$3.62/kW-month). An
15 additional 3,245.9 MW of new generation cleared in the Rest of RTO region at a price of
16 \$59.37/MW-day (\$1.81/kW-month). PJM, *2016/2017 Base Residual Auction Results*,
17 tables 2A and 4. Almost all of this new generation was gas-fired combined cycle, and the
18 MW values are stated on an unforced capacity basis. Some of this new generation was
19 supported by contracts while other new plants entered on a merchant basis without such
20 support.

21 **Q 40: Are RPM capacity prices comparable to New England capacity prices?**

22 A: Yes, they are comparable, although there are some differences in the capacity products
23 between the two markets. In particular, FCM capacity sellers are subject to a Peak
24 Energy Rents (“PER”) deduction (Tariff Section III.13.7.2.7.1.1). The PER deduction is

1 based on the estimated energy market earnings of the “PER Proxy Unit”, assumed to
2 have a heat rate slightly higher than the marginal generating unit that would be
3 dispatched as the system enters a scarcity condition (presently 22,000 Btu/kWh), and
4 assumed to use the higher cost of natural gas or ultra low-sulfur No. 2 oil. However, the
5 PER deduction has been quite small in recent years, and was zero throughout 2012. ISO
6 New England Inc. Internal Market Monitor, *2012 Annual Markets Report*, p. 83. In
7 addition, the new entry in PJM may have access to somewhat lower-cost natural gas
8 supplies than resources located in New England would be able to access.

9 **Q 41: How do the proposed administrative prices, 1.1 times ORTP-CT, compare to**
10 **comparable RPM Net CONE and clearing price values?**

11 A: This information is presented in Figure 2, also provided at the end of this testimony,
12 which builds on the earlier Figure 1. As Figure 2 shows, 1.1 times ORTP-CT is far above
13 nearly all RPM clearing prices, and far above Net CONE estimates for combined cycle
14 units (the vast majority of the new power plants recently clearing in RPM have been
15 combined cycle). By contrast, the administrative price for FCA 8 according to the
16 current tariff, \$3.465/kW-month, falls within the range of past RPM prices in various
17 zones and under a range of market conditions, and even exceeds PJM’s chief economist’s
18 estimate of Net CONE shown in Figure 2.

19 **Q 42: The Schnitzer Testimony suggests (p. 9) that there is a certain price level that is**
20 **required to attract new entry. Is this correct?**

21 A: No. Again, decisions to build new power plants are based on longer-term analysis that
22 takes into account expectations of future energy, ancillary services and capacity revenue
23 opportunities; the notion that there is a certain single-year price that is needed or
24 sufficient to suddenly attract new entry by long-term resources is mistaken. The
25 Schnitzer Testimony acknowledges this, at p. 8: “Investment and retirement decisions

1 are based on a multi-year financial analysis – not just a single year of financial results or
2 market prices.”

3 **Q 43: The Schnitzer Testimony (p. 15), referring to other RTO markets, claims that “In**
4 **the case of inadequate supply in those markets, and the failure to meet the ICR,**
5 **existing resources can be paid a price up to 1.5 times CONE.” Is this correct?**

6 A: No. In PJM prices can only rise to 1.5 times Net CONE, and only if the cleared quantity
7 is well below (three percent) the Reliability Requirement adjusted for the holdback,
8 which has never occurred. In NYISO’s capacity construct, the shortfall must be even
9 larger for prices to rise to 1.5 times Net CONE.

10 **Q 44: The Complaint also asserts (citing the Commission, but without support from the**
11 **Schnitzer Testimony) that FCM capacity prices will need to average out over time to**
12 **the “cost of new entry”, in order to attract and retain sufficient resources. Please**
13 **comment.**

14 A: While “cost of new entry” is a rather ambiguous concept, this statement may be correct as
15 a theoretical, equilibrium notion, but it has little practical implication. The most
16 economical type of capacity being added is constantly changing and is generally not the
17 combustion turbine; recently it has been demand response and gas-fired combined cycle.
18 Whatever the “cost of new entry” might be considered today, we know it will be different
19 in three or five years, and may reflect quite different incremental resources. One need
20 only look back five, ten, twenty or thirty years, and contemplate the types of resources
21 that were being built and their costs at the time, to understand that the notion of
22 “equilibrium” is a fiction, and that conditions are constantly changing. Furthermore, the
23 anticipated profitability of a new resource heavily depends on the proponent’s
24 expectations of future energy, ancillary services, and capacity revenues; such
25 expectations are likely to vary considerably (much more than the construction cost
26 estimates reflected in “cost of new entry”), and to change over time. A proponents’

1 expectations of future revenues will anticipate future changes to incremental resources,
2 supply, demand and market rules. Thus, the notion that prices must average, or be
3 expected to average, some price level that is in any case a moving target, does not
4 provide useful guidance for market design.

5 **VI. THE PROPOSED CHANGE TO THE CAPACITY CARRY FORWARD RULE FOR NEPA**
6 **RESOURCES WOULD DISTORT MARKETS AND IMPOSE UNNECESSARY HIGH COSTS ON**
7 **CONSUMERS**

8 **Q 45: Please describe the NEPA rule and the treatment of NEPA resources under the**
9 **current Capacity Carry Forward Rule.**

10 A: The NEPA rule allows a New Capacity Resource to elect that, if its offer clears in the
11 FCA, the resulting Capacity Supply Obligation and CCP, indexed for inflation, would
12 apply for up to four additional years. Tariff Section III.13.1.1.2.2.4. The NEPA rule is
13 intended to encourage new entry by allowing a new resource up to five years of capacity
14 price certainty. It can be expected that a new resource electing NEPA would wish to
15 clear its entire quantity and would decline capacity rationing (Tariff Section III.13.2.6).
16 Thus, part of the NEPA resource quantity may be excess in the FCA.

17 When a new resource elects the multi-year pricing under the NEPA rule, its capacity is
18 offered into the subsequent FCAs for the elected duration without any de-list bid,
19 meaning the capacity is offered and cleared at any price down to \$0. Thus, the NEPA
20 resource is offered into the subsequent FCAs at a low price, similar to other low-cost,
21 existing resources, however, the NEPA resource is guaranteed to be paid the CCP in the
22 year it originally cleared, index for inflation, which may be higher than the subsequent
23 CCPs.

1 A NEPA resource, if it declined rationing and cleared some excess quantity in the first
2 FCA in which it cleared, could trigger the Capacity Carry Forward Rule (Tariff Section
3 III.13.2.7.9; “CCFR”) to address the potential price impact of the excess cleared quantity.
4 The CCFR, when triggered, calls for the CCP to be set to the lower of \$0.01/kW-month
5 less than the price at which the last new resource withdrew from the FCA or the ORTP-
6 CT.

7 **Q 46: What changes to the NEPA and CCFR does the Complaint propose?**

8 A: The Complaint does not propose any changes to the language of the NEPA rule.

9 However, the Complaint calls for the CCFR to be modified so that, if the rule is “initially
10 triggered by a New Capacity Resource that elects a multi-year commitment”, the ISO
11 would establish a “shadow de-list bid” at the lower of ORTP-CT or the CCP paid to the
12 NEPA resource in the year in which it initially cleared the FCA. This shadow de-list bid
13 would be submitted for the entire quantity of the NEPA resource into subsequent FCAs
14 for the duration of the multi-year period elected by the NEPA resource. Proposed Tariff
15 Section III.13.2.7.9.2.(b).

16 **Q 47: How would the proposed change affect the FCAs during the remainder of the NEPA**
17 **resource’s multi-year commitment period?**

18 A: The proposed change would result in the entire capacity of the NEPA resource being
19 offered at what would likely be a very high price for up to four additional years; in
20 essence, the capacity would be economically withheld, and could easily establish a high
21 floor price for a five year period. This high floor price could set the CCPs in the zone
22 year after year without regard to whether the NEPA resource’s capacity may have already
23 been fully absorbed by the zone, and without regard to whether the zone, but for this
24 price intervention, would clear at a much lower price. Thus, the proposed shadow de-list

1 bid could substantially distort the markets by decoupling prices from actual supply and
2 demand.

3 **Q 48: Please explain how the proposed shadow de-list bid could cause high prices in the**
4 **NEPA resource's zone long after the NEPA resource has been fully absorbed.**

5 A: Consider an example where a 600-MW NEPA resource clears, but only 200 MW was
6 actually needed when the FCA closed, and the other 400 MW was cleared because the
7 NEPA resource declined capacity rationing. Now suppose in the following year the
8 zone's capacity requirement increases by 500 MW, and without the shadow de-list bid,
9 there would be 200 MW of retirements (accepted de-list bids) and 300 MW of cleared
10 new entry. Now the NEPA resource's surplus capacity has been fully absorbed and there
11 has been additional new entry. The CCP would be set based on the marginal offers by
12 the new entry, retirements, and other resources, and would reflect the supply-demand
13 balance in the zone given the additional load growth, retirements, and new entry. The
14 CCPs reflecting supply and demand conditions in the four years of the multi-year pricing
15 election could well be far below the CCP set by the NEPA resource in its year of entry.
16 However, if in addition the shadow de-list bid is included in the auction, the CCP would
17 likely be set by it, since this bid essentially calls for economic withholding of the entire
18 600 MW of the NEPA resource. This higher price would likely clear fewer de-list bids,
19 and would likely clear additional offers by new resources, leading to not only a higher
20 CCP but also potentially a large excess cleared quantity. This potentially substantial and
21 costly distortion could continue through the five-year election period.

22 **Q 49: You suggested that the "shadow de-list bid" could often be a very high price. Please**
23 **explain.**

1 A: The shadow de-list bid is proposed to be set at the lesser of the CCP in the FCA in which
2 the NEPA resource originally cleared or the ORTP-CT. The NEPA resource has a strong
3 incentive to offer at a high price and attempt to cause a high CCP in the original FCA,
4 because it will be paid this CCP for up to five years. If an incumbent is developing a new
5 resource, it might announce some retirements the same year, to attempt to cause a price
6 spike that can be locked in for five years for the NEPA resource (and, under the proposed
7 relief, for all other resources). If the new capacity is needed, and especially if its entry is
8 anticipated by other market participants leading to other concomitant retirements, the new
9 resource electing NEPA may be able to set a very high price in the original FCA.

10 **Q 50: The Schnitzer Testimony (p. 7) suggests that new entrants would bid higher in the**
11 **first year, without the NEPA: “If a new entrant was NOT entitled to a five year**
12 **price guarantee, it would have to bid substantially higher the first year to account**
13 **for the risk of lower prices in later years.” Do you agree?**

14 A: No. The NEPA rule gives entrants a strong incentive to bid as high as possible, to
15 maximize revenues over the five year period. I note that the Schnitzer Testimony is not
16 consistent regarding its theory of how NEPA resources will bid; elsewhere (p. 10) the
17 testimony predicts that a potential entrant’s initial bid “is going to bump up against the
18 price caps in the capacity market – something that has already been observed with the
19 Footprint bid in FCA 7”.

20 **Q 51: The Schnitzer Testimony states that this provision would be consistent with the**
21 **Commission’s policy on multi-year pricing as approved for PJM. Is this correct?**

22 A: No. The RPM NEPA rules (PJM tariff Attachment DD Section 5.14c) have no such
23 “shadow” bid. In addition, there are a number of differences between RPM’s NEPA
24 provision and FCM’s, and the rules must be understood as an interrelated package. The
25 main differences are quite significant, and include the following:

- 1 1. The RMP NEPA provision was designed to be extremely difficult to trigger and use;
2 in ten delivery years it has only been used once. The RPM NEPA provision is
3 designed to only address circumstances where a large new resource in a small zone
4 would move the clearing price from at least 1.125 times Net CONE (the price if less
5 than the reliability requirement would clear) to a low price no greater than 0.40 times
6 Net CONE, a very large (and rather specific) price impact.
- 7 2. The RMP NEPA rule allows electing only two years of multi-year pricing.
- 8 3. The RPM NEPA resource's capacity in the two subsequent years is first offered at the
9 lower of the NEPA resource's original offer price or 0.9 times the applicable Net
10 CONE in the original auction in which the NEPA resource cleared. However, if the
11 NEPA resource's offer does not clear at this price, it is then re-submitted at a lower
12 price such that the original cleared quantity clears.

13 As a result of these differences, RPM's NEPA rule has been of essentially no
14 consequence; and even if it were usable more frequently, it would not have nearly the
15 distorting impact of the proposed shadow de-list bid, due to the lower offer price in
16 subsequent years, provision calling for re-submission at a lower price if the offer fails to
17 clear, reduced duration of the provision, and less incentive for a NEPA resource to offer
18 at a high price in its first auction.

19 **Q 52: The Schnitzer Testimony claims (p. 25), "Under the PJM approach, if even a single**
20 **MW of the NEPA resource is needed to meet the zonal reliability requirement in**
21 **years two and three, then existing resources will receive a price approximating the**
22 **cost of new entry." Does PJM's NEPA result in such pricing?**

23 A: No. As noted above, in subsequent years the NEPA resource is offered at the lower of its
24 original offer price (which, for it to have cleared, is generally well below Net CONE), or

1 0.9 times Net CONE, not CONE; and if that offer doesn't clear, it is resubmitted at a
2 lower level. The one time the NEPA rule was used the zone's clearing price in the
3 subsequent year was less than 50% of the applicable Net CONE value. PJM, *2014/2015*
4 *Base Residual Auction Results*, sheet "BRA Resource Clearing Results".

5 **Q 53: Did PJM stakeholders agree to the RPM NEPA rule as it is now defined?**

6 A: No. The provisions in the current rule were never agreed by stakeholders. The latest
7 changes were required by the Commission in a 2009 order.

8 The PJM NEPA rules have been the subject of stakeholder processes four times – during
9 the original RPM settlement in 2006, and three times since, most recently in 2012. The
10 notion of a NEPA rule appeals to some load interests, as it could potentially encourage
11 new entry and address the widely recognized problem that RPM offers only one-year
12 commitments, while some form of revenue assurance over a longer period can be very
13 valuable to a new entrant seeking financing. Generation interests are understandably
14 generally opposed to a NEPA rule intended to encourage new entry. However, some
15 generation interests can support a NEPA rule if the multi-year pricing arrangement is also
16 available to existing resources or, what amounts to approximately the same thing, rules
17 are in place such that a NEPA resource causes high auction clearing prices paid to all
18 resources during the period of election.

19 However, because extending the advantageous multi-year NEPA pricing to all resources
20 under either approach would distort markets and greatly increase the cost to consumers,
21 load interests consistently oppose NEPA rules with such provisions. Thus, PJM
22 stakeholders originally agreed to a highly restricted NEPA rule with what the
23 Commission later found to be discriminatory pricing; later agreed to revisions that would

1 have continued the discriminatory pricing, which the Commission rejected; and in later
2 stakeholder processes, have sought ways to expand the application of the NEPA rule but
3 failed to agree on the provisions.

4 Thus, in PJM the NEPA rule continues to be highly restricted. PJM stakeholders never
5 agreed to the NEPA provisions as they now exist, and would never agree to modifications
6 as proposed in the Complaint.

7 **Q 54: The Complaint appears to request that the proposed change to the treatment of**
8 **NEPA resources under the Capacity Carry Forward Rule would apply not only to**
9 **future NEPA elections, but to resources that have already elected NEPA in prior**
10 **FCAs. Would this be a sound policy?**

11 A: No. While the proposed change would have adverse consequences, as described above,
12 implementing the proposed changes for resources that have already been permitted to
13 elect NEPA would be an especially bad policy. This would amount to a “bait and
14 switch” for load interests, who might support NEPA in order to encourage new entry, but
15 who would never agree to the market distortion and excess cost that the proposed relief
16 would cause.

17 **Q 55: Are there other potential unintended consequences of the proposed change to the**
18 **treatment of NEPA resources?**

19 A: There likely are. I have discussed potential gaming and distorted incentives resulting
20 from NEPA rules in prior testimony in RPM proceedings. Wilson, James F., *Affidavit on*
21 *Proposed Changes to the Reliability Pricing Model in Support of Protest of RPM Load*
22 *Group*, Docket No. ER09-412, January 9, 2009, PP 140-148.

1 **VII. POTENTIAL CONSEQUENCES OF GRANTING, OR NOT GRANTING, THE PROPOSED**
2 **RELIEF**

3 **Q 56: The Complaint and Schnitzer Testimony predict adverse consequences if the**
4 **requested relief is not granted in time to apply to FCA 8. First, please summarize**
5 **the alleged adverse consequences of executing FCA 8 under the current rules.**

6 A: The Complaint (p. 6) alleges that the current rules would lead to premature, uneconomic
7 retirements, reducing fuel diversity in New England and requiring new entry before it
8 would otherwise be needed. The Schnitzer Testimony (p. 10) also suggests that the price
9 discrimination inherent in the current rules would raise the prices required to attract new
10 entry.

11 **Q 57: How does the Schnitzer Testimony define uneconomic retirement, and do you agree**
12 **with the definition?**

13 A: The Schnitzer Testimony defines uneconomic retirement on pp. 9-10 as follows:

14 “At that time [the next FCA in February 2014] new entrants could be paid over
15 \$15/kW-month, yet plants with going forward costs substantially less than that
16 price could be retired. With two-tier pricing, the ISO can be simultaneously
17 paying high prices to new entrants and driving out existing plants. This is
18 uneconomic retirement.”

19 Thus, “uneconomic retirement” is defined as the retirement of any plant with going
20 forward costs less than \$15/kW-month, if that’s what new entrants are receiving. I
21 disagree with this definition. As I have noted, the FCM rules tolerate non-competitive
22 prices for new entrants; how an existing resource’s going forward costs compare to this
23 price is irrelevant. As the Schnitzer Testimony notes, new entry is evaluated on a long-
24 term basis. To determine whether the retirement is economic or not would require a more
25 sophisticated cost comparison.

1 **Q 58: Please comment on the prediction of uneconomic retirements under the current**
2 **rules.**

3 A: The suggestion is that some power plants that could continue to operate in the 2017-2018
4 capacity commitment period (the subject of FCA 8) might choose instead to retire if the
5 rules are not changed, and the rules lead to a lower payment to existing resources than
6 under the requested relief.

7 However, power plants facing such a decision would be offered into the FCA with a
8 static de-list bid, so that if the CCP is high enough they will receive a CSO. If instead a
9 non-price retirement request or permanent de-list bid was submitted, it means the plant's
10 decision does not depend on the FCA rules and prices. If the CCP falls below such
11 plants' static de-list bids, they will fail to clear in the FCA. But the capacity commitment
12 period remains over three years away, and there are multiple reconfiguration auctions in
13 which such plants can again offer their capacity. If the capacity is needed,
14 reconfiguration auction prices will rise to the levels required to clear the capacity. If,
15 instead, reconfiguration auction prices are low (as has been the rule to date), then the
16 capacity is not needed and can retire. The current rules, taking into account the
17 reconfiguration auctions, flexibly procure the capacity of plants near retirement at the
18 prices such plants require, if the capacity is needed.

19 **Q 59: Please comment on the assertion that operating FCA 8 under the current rules**
20 **would result in higher prices required to attract new entry.**

21 A: The rules at issue do not affect the prices paid to entrants in FCA 8; and potential entrants
22 know that the controversial administrative pricing rules may change, perhaps multiple
23 times, over the coming years.

1 Furthermore, decisions to build new power plants are based on long-term analyses
2 considering future energy, ancillary services, and capacity revenues. In such analyses,
3 capacity revenues are typically heavily discounted due to the controversy and frequent
4 rule changes around these payments.

5 Potential entrants may be most concerned about the increased regulatory uncertainty that
6 would result if the requested relief is granted after such a brief process and without
7 stakeholder support.

8 **Q 60: You noted that prices in the FCM reconfiguration auctions have been low,**
9 **suggesting a low value for capacity as capacity commitment periods approach. Why**
10 **has this been the case?**

11 A: There can be multiple reasons for this, including 1) short lead-time new resources such as
12 demand response that only become available closer to the capacity commitment period
13 and, therefore, miss out on the FCA and are offered into reconfiguration auctions; 2)
14 some amount of available existing capacity that failed to clear in the FCA and may be
15 offered into reconfiguration auctions at lower prices; 3) ISO capacity sales resulting from
16 a downward revision in the peak load forecast and ICR (Tariff Section III.13.4.3).

17 **Q 61: Please elaborate on the possibility that the peak load forecast and ICR planned for**
18 **FCA 8 may be revised downward.**

19 A: The ICR is based on the ISO's peak load forecast, which in turn is based on economic
20 forecasts provided by Moody's Analytics. The ISO's peak load forecast takes as inputs
21 forecasts of the Gross State Products for the six New England States. The ICR to be used
22 in FCA 8 is based on the peak load forecast in the May 2013 CELT report, which is
23 based on Moody's forecasts from December 2012.

24 The Moody's forecasts from December 2012 have the New England States' Gross State
25 Product ("NEGSP") growing by 17.4 percent from 2012 to 2017 (FCA 8 is for the 2017-

1 2018 capacity commitment period). This forecast leads to a New England peak load
2 forecast that reflects 8.6 percent growth (2,360 MW) from 2012 to 2017. The ICR for
3 FCA 8 also reflects an increase in the assumed average forced outage rate from 4.6%
4 used in FCA 7 to 5.8%, which increases the ICR by 410 MW. Maria Scibelli,
5 presentation to the Reliability Committee, September 18, 2013, slide 8.

6 If the peak load growth is overstated, the ICR, and need for capacity in FCA 8, will be
7 overstated and give a false impression of the need for capacity. This could result in
8 excessive CCPs and perhaps unnecessary triggering of the Inadequate Supply or
9 Insufficient Competition rules. However, it could also ultimately lead to ISO capacity
10 sales in reconfiguration auctions for this capacity commitment period.

11 **Q 62: In your summary you suggested granting the requested relief would have negative**
12 **impacts. Please summarize the negative impacts that could result from these**
13 **provisions.**

14 A: The potential negative impacts and unintended consequences of the requested relief
15 include the following.

- 16 1. A large increase in the cost to consumers due to the much higher administrative prices
17 paid to existing resources.
- 18 2. A large transfer of wealth from consumers to the owners of existing capacity without
19 any clear connection to resource adequacy or other value to consumers.
- 20 3. Unintended consequences of the high administrative prices, including conduct
21 directed toward triggering the administrative prices that could result in uneconomic
22 retirements.

1 4. Gaming and other unintended consequences of the change to how NEPA resources
2 are represented in subsequent FCAs.

3 5. Additional regulatory uncertainty about FCM prices and payments resulting from the
4 sudden change in rules, leading to further discounting of this source of revenue,
5 discouraging entry.

6 6. Negative impacts beyond FCM and New England of the increased regulatory
7 uncertainty.

8 **Q 63: Please elaborate on the potential impact on the cost of capacity to consumers.**

9 A: If the Inadequate Supply rule or the Insufficient Competition rule is triggered, the
10 proposed remedy could increase the price paid to existing capacity to \$11/kW-month
11 from approximately \$3.47/kW-month under the current tariff. This price increase applied
12 to all existing capacity in the New England Control Area, excluding the HQ imports,
13 Maine export-constrained zone, and self-supplied capacity, would increase the cost of
14 capacity to consumers by over two billion dollars annually.

15 If the Capacity Carry Forward rule is changed as proposed by the Complaint and this
16 results in a similar price increase in the NEMA/Boston zone for existing resources other
17 than the NEPA resource, this would increase the cost of capacity to consumers in that
18 zone by roughly a quarter billion dollars per year. Over the four additional years of a
19 NEPA resource, it could increase the cost to consumers in this zone by one billion
20 dollars.

21 **Q 64: Please discuss the extent to which the increased cost would benefit consumers.**

22 A: There is no clear connection between this transfer of wealth and value to consumers. The
23 vast majority of the additional cost is paid to existing resources that are not considering

1 retirement. The potential impact on retirements is unclear due to incentives that would be
2 created by the rule.

3 **Q 65: Please explain how granting the requested relief could lead to unintended**
4 **consequences including uneconomic retirements.**

5 A: The requested relief would result in existing resources being paid very high prices when
6 Inadequate Supply or Insufficient Competition administrative pricing is triggered; prices
7 much higher than would likely result if the rules are not triggered and the CCP is set
8 based on a marginal resource. The potential to trigger a very high administrative price
9 provides an additional incentive for market participants to submit non-price retirement
10 requests or permanent de-list requests for existing resources near retirement rather than
11 submitting static de-list bids in the FCA. Resources subject to non-price retirement or
12 permanent de-list requests contribute to the supply shortage as measured by the rule, but
13 are also precluded from further participation in FCM, while static de-list bids permit
14 further participation in reconfiguration auctions where the capacity might clear if it is
15 needed. Thus, by creating incentives to elect the non-price retirement or permanent de-
16 list path rather than using static de-list bids, the proposed relief could lead to uneconomic
17 retirements. Similarly, in years when there is some chance of triggering administrative
18 pricing, incumbents could have an incentive to not offer new capacity they could make
19 available, to increase the probability of the administrative pricing.

20 **Q 66: Please elaborate on the potential impact of the change to how NEPA resources are**
21 **represented in FCAs during the multi-year pricing election period.**

22 A: As described in a prior section, the change to how NEPA resources are represented in
23 FCAs during the multi-year pricing election period could result in excess prices, excess
24 cleared quantities, and market distortion for up to four additional years.

1 **Q 67: Please elaborate on the regulatory uncertainty that would be caused by granting the**
2 **requested relief, and the impact on entry.**

3 A: One thing about which all stakeholders agree is the need for stability in the market rules.
4 Frequent rule changes, and especially sudden rule changes without stakeholder
5 consensus, lead to expectations of further rule changes. This leads to doubts about how
6 future prices will be formed. The proponents of new power plants already heavily
7 discount capacity payments due to their highly administrative and/or volatile nature, and
8 granting the requested relief in this proceeding would only further enhance the
9 impression that capacity prices are unpredictable and not to be relied upon.

10 **Q 68: Please elaborate on the potential consequences of granting the requested relief**
11 **beyond FCM and New England.**

12 A: The regulatory uncertainty resulting from granting the requested relief after such a brief
13 process would affect not just FCM, but other ISO New England markets; and not just the
14 New England region, but other regions where jurisdictional resource adequacy constructs
15 are in place or under consideration. The requested relief, which could cause a large
16 transfer of wealth from consumers to capacity sellers without any clear connection to
17 resource adequacy, would further harden the widespread opposition of load interests to
18 such constructs.

19 **Q 69: Does this complete your testimony?**

20 A: Yes it does.

Figure 1: RPM Base Residual Auction Clearing Prices Over Ten Delivery Years

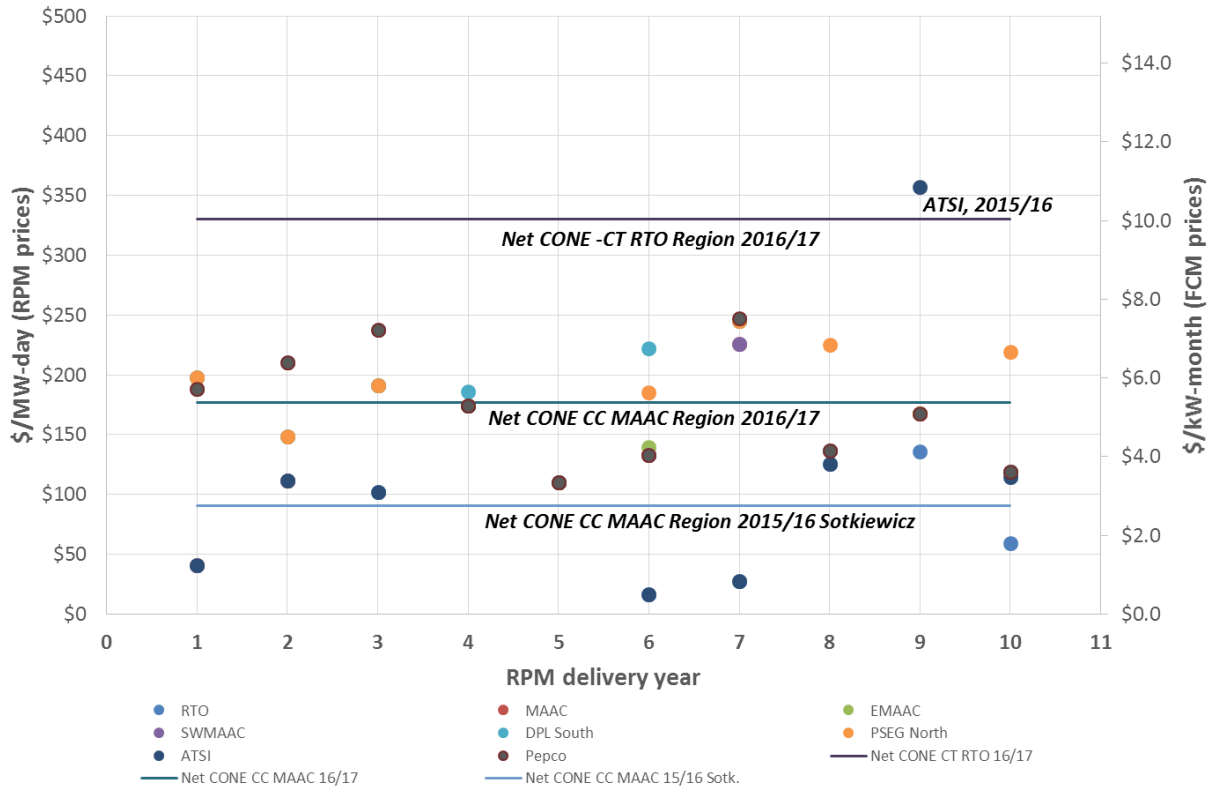
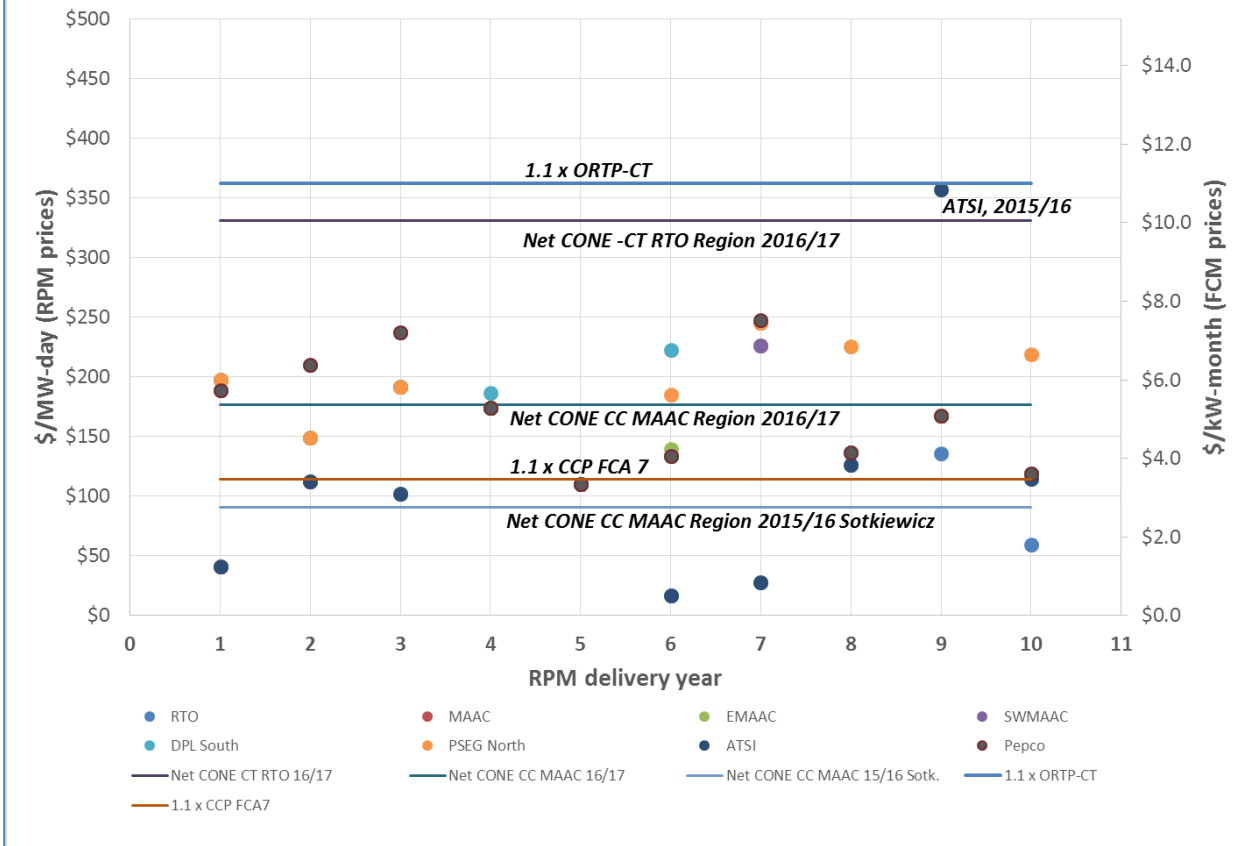


Figure 2: ORTP-CT and the FCA 7 CCP Compared to Other Capacity Prices



**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**


New England Power Generators)
Association, Inc.)
)
v.)
)
ISO New England Inc.)

Docket No. EL14-7-000

James F. Wilson, being first duly sworn, states he is the same James F. Wilson whose Testimony In Support of the Protest of the New England States Committee On Electricity accompanies this affidavit; and that the facts set forth therein are true and correct to the best of his knowledge, information, and belief.


James F. Wilson

Subscribed and sworn before me, a Notary Public in and for the State of Maryland
this 25th day of November, 2013.


Notary Public
LESLIE FUNDEBURK-RUSH
My Commission Expires
Notary Public
Prince George's County
Maryland
My Commission Expires October 17, 2017



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SUMMARY

James F. Wilson is an economist with 30 years of consulting experience, primarily in the electric power and natural gas industries. Many of his assignments have pertained to the economic and policy issues arising from the interplay of competition and regulation in these industries, including restructuring policies, market design, market analysis and market power. Other recent engagements have involved resource adequacy and capacity markets, contract litigation and damages, forecasting and market evaluation, pipeline rate cases and evaluating allegations of market manipulation. Mr. Wilson has been involved in electricity restructuring and wholesale market design for over twenty years in California, PJM, New England, Ontario, Russia and other regions. He also spent five years in Russia in the early 1990s advising on the reform, restructuring and development of the Russian electricity and natural gas industries.

Mr. Wilson has submitted affidavits and testified in Federal Energy Regulatory Commission and state regulatory proceedings. His papers have appeared in the *Energy Journal*, *Electricity Journal*, *Public Utilities Fortnightly* and other publications, and he often presents at industry conferences.

Prior to founding Wilson Energy Economics, Mr. Wilson was a Principal at LECG, LLC. He has also worked for ICF Resources, Decision Focus Inc., and as an independent consultant.

EDUCATION

MS, Engineering-Economic Systems, Stanford University, 1982
BA, Mathematics, Oberlin College, 1977

RECENT ENGAGEMENTS

- Affidavit on the potential for market power over natural gas storage.
- Executive briefing on wind integration and linkages to short-term and longer-term resource adequacy approaches.
- Affidavit on the impact of a centralized capacity market on the potential benefits of participation in a Regional Transmission Organization (RTO).
- Participated in a panel teleseminar on resource adequacy policy and modeling.
- Affidavit on opt-out rules for centralized capacity markets.
- Affidavits on minimum offer price rules for RTO centralized capacity markets.
- Evaluated electric utility avoided cost in a tax dispute.
- Advised on pricing approaches for RTO backstop short-term capacity procurement.
- Affidavit evaluating the potential impact on reliability of demand response products limited in the number or duration of calls.
- Evaluated changing patterns of natural gas production and pipeline flows, developed approaches for pipeline tolls and cost recovery.

- Evaluated an electricity peak load forecasting methodology and forecast; evaluated regional transmission needs for resource adequacy.
- Participated on a panel teleseminar on natural gas price forecasting.
- Affidavit evaluating a shortage pricing mechanism and recommending changes.
- Testimony in support of proposed changes to a forward capacity market mechanism.
- Reviewed and critiqued an analysis of the economic impacts of restrictions on oil and gas development.
- Advised on the development of metrics for evaluating the performance of Regional Transmission Organizations and their markets.
- Prepared affidavit on the efficiency benefits of excess capacity sales in readjustment auctions for installed capacity.
- Prepared affidavit on the potential impacts of long lead time and multiple uncertainties on clearing prices in an auction for standard offer electric generation service.

EARLIER PROFESSIONAL EXPERIENCE

LECG, LCC, Washington, DC 1998–2009.

Principal

- Reviewed and commented on an analysis of the target installed capacity reserve margin for the Mid Atlantic region; recommended improvements to the analysis and assumptions.
- Evaluated an electric generating capacity mechanism and the price levels to support adequate capacity; recommended changes to improve efficiency.
- Analyzed and critiqued the methodology and assumptions used in preparation of a long run electricity peak load forecast.
- Evaluated results of an electric generating capacity incentive mechanism and critiqued the mechanism's design; prepared a detailed report. Evaluated the impacts of the mechanism's flaws on prices and costs and prepared testimony in support of a formal complaint.
- Analyzed impacts and potential damages of natural gas migration from a storage field.
- Evaluated allegations of manipulation of natural gas prices and assessed the potential impacts of natural gas trading strategies.
- Prepared affidavit evaluating a pipeline's application for market-based rates for interruptible transportation and the potential for market power.
- Prepared testimony on natural gas industry contracting practices and damages in a contract dispute.
- Prepared affidavits on design issues for an electric generating capacity mechanism for an eastern US regional transmission organization; participated in extensive settlement discussions.
- Prepared testimony on the appropriateness of zonal rates for a natural gas pipeline.
- Evaluated market power issues raised by a possible gas-electric merger.
- Prepared testimony on whether rates for a pipeline extension should be rolled-in or incremental under FERC policy.
- Prepared an expert report on damages in a natural gas contract dispute.
- Prepared testimony regarding the incentive impacts of a ratemaking method for natural gas pipelines.
- Prepared testimony evaluating natural gas procurement incentive mechanisms.
- Analyzed the need for and value of additional natural gas storage in the southwestern US.
- Evaluated market issues in the restructured Russian electric power market, including the need to introduce financial transmission rights, and policies for evaluating mergers.
- Affidavit on market conditions in western US natural gas markets and the potential for a new merchant gas storage facility to exercise market power.
- Testimony on the advantages of a system of firm, tradable natural gas transmission and storage rights, and the performance of a market structure based on such policies.

- Testimony on the potential benefits of new independent natural gas storage and policies for providing transmission access to storage users.
- Testimony on the causes of California natural gas price increases during 2000-2001 and the possible exercise of market power to raise natural gas prices at the California border.
- Advised a major US utility with regard to the Federal Energy Regulatory Commission (FERC) proposed Standard Market Design and its potential impacts on the company.
- Reviewed and critiqued draft legislation and detailed market rules for reforming the Russian electricity industry, for a major investor in the sector.
- Analyzed the causes of high prices in California wholesale electric markets during 2000 and developed recommendations, including alternatives for price mitigation. Testimony on price mitigation measures.
- Summarized and critiqued wholesale and retail restructuring and competition policies for electric power and natural gas in select US states, for a Pacific Rim government contemplating energy reforms.
- Presented testimony regarding divestiture of hydroelectric generation assets, potential market power issues, and mitigation approaches to the California Public Utilities Commission.
- Reviewed the reasonableness of an electric utility's wholesale power purchases and sales in a restructured power market during a period of high prices.
- Presented an expert report on failure to perform and liquidated damages in a natural gas contract dispute.
- Presented a workshop on Market Monitoring to a group of electric utilities in the process of forming an RTO.
- Authored a report on the screening approaches used by market monitors for assessing exercise of market power, material impacts of conduct, and workable competition.
- Developed recommendations for mitigating locational market power, as part of a package of congestion management reforms.
- Provided analysis in support of a transmission owner involved in a contract dispute with generators providing services related to local grid reliability.
- Authored a report on the role of regional transmission organizations in market monitoring.
- Prepared market power analyses in support of electric generators' applications to FERC for market-based rates for energy and ancillary services.
- Analyzed western electricity markets and the potential market power of a large producer under various asset acquisition or divestiture strategies.
- Testified before a state commission regarding the potential benefits of retail electric competition and issues that must be addressed to implement it.
- Advised a Canadian electric utility on restructuring issues, including: market design and trading arrangements; contractual approaches to mitigating market power; measures for ensuring adequate generating capacity.
- Prepared a market power analysis in support of an acquisition of generating capacity in the New England market.
- Advised a California utility regarding reform strategies for the California natural gas industry, addressing a broad range of market power issues and policy options for providing system balancing services.

ICF RESOURCES, INC., Fairfax, VA, 1997–1998.

Project Manager

- Reviewed, critiqued and submitted testimony on a New Jersey electric utility's restructuring proposal, as part of a management audit for the state regulatory commission.
- Assisted a group of US utilities in developing a proposal to form a regional Independent System Operator (ISO).
- Researched and reported on the emergence of Independent System Operators and their role in reliability, for the Department of Energy.

- Provided analytical support to the Secretary of Energy's Task Force on Electric System Reliability on various topics, including ISOs. Wrote white papers on the potential role of markets in ensuring reliability.
- Recommended near-term strategies for addressing the potential stranded costs of non-utility generator contracts for an eastern utility; analyzed and evaluated the potential benefits of various contract modifications, including buyout and buydown options; designed a reverse auction approach to stimulating competition in the renegotiation process.
- Designed an auction process for divestiture of a Northeastern electric utility's generation assets and entitlements (power purchase agreements).
- Participated in several projects involving analysis of regional power markets and valuation of existing or proposed generation assets.

IRIS MARKET ENVIRONMENT PROJECT, 1994–1996.

Project Director, Moscow, Russia

Established and led a policy analysis group advising the Russian Federal Energy Commission and Ministry of Economy on economic policies for the electric power, natural gas, oil pipeline, telecommunications, and rail transport industries (*the Program on Natural Monopolies*, a project of the IRIS Center of the University of Maryland Department of Economics, funded by USAID). Major activities and projects included:

- Advised on industry reforms and the establishment of federal regulatory institutions.
- Advised the Russian Federal Energy Commission on electricity restructuring, development of a competitive wholesale market for electric power, tariff improvements, and other issues of electric power and natural gas industry reform.
- Developed policy conditions for the IMF's \$10 billion Extended Funding Facility.
- Performed industry diagnostic analyses with detailed policy recommendations for electric power (1994), natural gas, rail transport and telecommunications (1995), oil transport (1996).

Independent Consultant stationed in Moscow, Russia, 1991–1996

Projects for the WORLD BANK, 1992-1996:

- Bank Strategy for the Russian Electricity Sector. Developed a policy paper outlining current industry problems and necessary policies, and recommending World Bank strategy.
- Russian Electric Power Industry Restructuring. Participated in work to develop recommendations to the Russian Government on electric power industry restructuring.
- Russian Electric Power Sector Update. Led project to review developments in sector restructuring, regulation, demand, supply, tariffs, and investment.
- Russian Coal Industry Restructuring. Analyzed Russian and export coal markets and developed forecasts of future demand for Russian coal.
- World Bank/IEA Electricity Options Study for the G-7. Analyzed mid- and long-term electric power demand and efficiency prospects and developed forecasts.
- Russian Energy Pricing and Taxation. Developed recommendations for liberalizing energy markets, eliminating subsidies and restructuring tariffs for all energy resources.

Other consulting assignments in Russia, 1991–1994:

- Project leader for start-up phase of the joint Russian-American Electric Power Alternatives Study on power sector development and investment; also participated in a project on electric power restructuring.
- Advised the US Agency For International Development on the establishment of energy industry technical assistance programs in Russia.
- Advised on projects pertaining to Russian energy policy and the transition to a market economy in the energy industries, for the Institute for Energy Research of the Russian Academy of Sciences.
- Presented seminars on the structure, economics, planning, and regulation of the energy and electric power industries in the US, for various Russian clients.

DECISION FOCUS INC., Mountain View, CA, 1983–1992
Senior Associate, 1985-1992.

- For the Electric Power Research Institute, led projects to develop decision-analytic methodologies and models for evaluating long term fuel and electric power contracting and procurement strategies. Applied the methodologies and models in numerous case studies, and presented several workshops and training sessions on the approaches.
- Analyzed long-term and short-term natural gas supply decisions for a large California gas distribution company following gas industry unbundling and restructuring.
- Analyzed long term coal and rail alternatives for a midwest electric utility, including alternative coal supply regions, suppliers and contract structures; spot/contract mix; rail arrangements; power purchases; conversion to gas.
- Evaluated bulk power purchase alternatives and strategies for a New Jersey electric utility.
- Performed a financial and economic analysis of a proposed hydroelectric project.
- For a natural gas pipeline company serving the Northeastern US, forecasted long-term natural gas supply and transportation volumes. Developed a forecasting system for staff use.
- Analyzed potential benefits of diversification of suppliers for a natural gas pipeline company.
- Evaluated uranium contracting strategies for an electric utility.
- Analyzed telecommunications services markets under deregulation, developed and implemented a pricing strategy model. Evaluated potential responses of residential and business customers to changes in the client's and competitors' telecommunications services and prices.
- Analyzed coal contract terms and supplier diversification strategies for an eastern electric utility.
- Analyzed oil and natural gas contracting strategies for an electric utility.

TESTIMONY AND AFFIDAVITS

ANR Storage Company, Federal Energy Regulatory Commission Docket No. RP12-479, Prepared Answering Testimony on behalf of the Joint Intervenor Group, April 2, 2013; Prepared Cross-answering Testimony, May 15, 2013; testimony at hearings, September 4, 2013.

In the Matter of the Application of The Dayton Power and Light Company for Approval of its Market Rate Offer, Public Utilities Commission of Ohio Case No. 12-426-EL-SSO: Direct Testimony on Behalf of the Office of the Ohio Consumers' Counsel, March 5, 2013; deposition, March 11, 2013.

PJM Interconnection, L.L.C., Federal Energy Regulatory Commission Docket No. ER13-535 (Minimum Offer Price Rule), Affidavit in Support of the Protest and Comments of the Joint Consumer Advocates, December 28, 2012.

In the Matter of the Application of Ohio Edison Company, et al for Authority to Provide for a Standard Service Offer in the Form of an Electric Security Plan, Public Utilities Commission of Ohio Case No. 12-1230-EL-SSO: Direct Testimony on Behalf of the Office of the Ohio Consumers' Counsel, May 21, 2012; deposition, May 30, 2012; testimony at hearings, June 5, 2012.

PJM Interconnection, L.L.C., Federal Energy Regulatory Commission Docket No. ER12-513, Affidavit in Support of Protest of the Joint Consumer Advocates and Demand Response Supporters (changes to RPM), December 22, 2011.

People of the State of Illinois *ex rel.* Leon A. Greenblatt, III v Commonwealth Edison Company, Circuit Court of Cook County, Illinois, deposition, September 22, 2011; interrogatory, Feb. 22, 2011.

In the Matter of the Application of Union Electric Company for Authority to Continue the Transfer of Functional Control of Its Transmission System to the Midwest Independent Transmission System Operator, Inc., Missouri PSC Case No. EO-2011-0128, Testimony in hearings, February 9, 2012; Rebuttal Testimony and Response to Commission Questions On Behalf Of The Missouri Joint Municipal Electric Utility Commission, September 14, 2011.

PJM Interconnection, L.L.C., and PJM Power Providers Group v. PJM Interconnection, L.L.C., Federal Energy Regulatory Commission Docket Nos. ER11-2875 and EL11-20 (Minimum Offer Price Rule), Affidavit in Support of Protest of New Jersey Division of Rate Counsel, March 4, 2011, and Affidavit in Support of Request for Rehearing and for Expedited Consideration of New Jersey Division of Rate Counsel, May 12, 2011.

PJM Interconnection, L.L.C., Federal Energy Regulatory Commission Docket No. ER11-2288 (Demand response "saturation" issue), Affidavit in Support of Protest and Comments of the Joint Consumer Advocates, December 23, 2010.

North American Electric Reliability Corporation, Federal Energy Regulatory Commission Docket No. RM10-10, Comments on Proposed Reliability Standard BAL-502-RFC-02: Planning Resource Adequacy Analysis, Assessment and Documentation, December 23, 2010.

In the Matter of the Reliability Pricing Model and the 2013/2014 Delivery Year Base Residual Auction Results, Maryland Public Service Commission Administrative Docket PC22, Comments and Responses to Questions On Behalf of Southern Maryland Electric Cooperative, October 15, 2010.

PJM Interconnection, L.L.C., Federal Energy Regulatory Commission Docket No. ER09-1063-004 (PJM compliance filing on pricing during operating reserve shortages): Affidavit In Support of Comments and Protest of the Pennsylvania Public Utility Commission, July 30, 2010.

ISO New England, Inc. and New England Power Pool, Federal Energy Regulatory Commission Docket No. ER10-787-000 on Forward Capacity Market Revisions: Direct Testimony On Behalf Of The Connecticut Department of Public Utility Control, March 30, 2010; Direct Testimony in Support of First Brief of the Joint Filing Supporters, July 1, 2010; Supplemental Testimony in Support of Second Brief of the Joint Filing Supporters, September 1, 2010.

PJM Interconnection, L.L.C., Federal Energy Regulatory Commission Docket No. ER09-412-006: Affidavit In Support of Protest of Indicated Consumer Interests, January 19, 2010.

In the Matter of the Application of Ohio Edison Company, et al for Approval of a Market Rate Offer to Conduct a Competitive Bidding Process for Standard Service Offer Electric Generation Supply, Public Utilities Commission of Ohio Case No. 09-906-EL-SSO: Direct Testimony on Behalf of the Office of the Ohio Consumers' Counsel, December 7, 2009; deposition, December 10, 2009, testimony at hearings, December 22, 2009.

Application of PATH Allegheny Virginia Transmission Corporation for Certificates of Public Convenience and Necessity to Construct Facilities: 765 kV Transmission Line through Loudon, Frederick and Clarke Counties, Virginia State Corporation Commission Case No. PUE-2009-00043: Direct Testimony on Behalf of Commission Staff, December 8, 2009.

PJM Interconnection, L.L.C., Federal Energy Regulatory Commission Docket No. ER09-412-000: Affidavit On Proposed Changes to the Reliability Pricing Model On Behalf Of RPM Load Group, January 9, 2009; Reply Affidavit, January 26, 2009.

PJM Interconnection, L.L.C., Federal Energy Regulatory Commission Docket No. ER09-412-000: Affidavit In Support of the Protest Regarding Load Forecast To Be Used in May 2009 RPM Auction, January 9, 2009.

Maryland Public Service Commission et al v. PJM Interconnection, L.L.C., Federal Energy Regulatory Commission Docket No. EL08-67-000: Affidavit in Support Complaint of the RPM Buyers, May 30, 2008; Supplemental Affidavit, July 28, 2008.

PJM Interconnection, L.L.C., Federal Energy Regulatory Commission Docket No. ER08-516: Affidavit On PJM's Proposed Change To RPM Parameters On Behalf Of RPM Buyers, March 6, 2008.

PJM Interconnection, L.L.C., Reliability Pricing Model Compliance Filing, Federal Energy Regulatory Commission Docket Nos. ER05-1410 and EL05-148: Affidavit Addressing RPM Compliance Filing Issues on Behalf of the Public Power Association of New Jersey, October 15, 2007.

TXU Energy Retail Company LP v. Leprino Foods Company, Inc., US District Court for the Northern District of California, Case No. C01-20289: Testimony at trial, November 15-29, 2006; Deposition, April 7, 2006; Expert Report on Behalf of Leprino Foods Company, March 10, 2006.

Gas Transmission Northwest Corporation, Federal Energy Regulation Commission Docket No. RP06-407: Reply Affidavit, October 26, 2006; Affidavit on Behalf of the Canadian Association of Petroleum Producers, October 18, 2006.

PJM Interconnection, L.L.C., Reliability Pricing Model, Federal Energy Regulatory Commission Docket Nos. ER05-1410 and EL05-148: Supplemental Affidavit on Technical Conference Issues, June 22, 2006; Supplemental Affidavit Addressing Paper Hearing Topics, June 2, 2006; Affidavit on Behalf of the Public Power Association of New Jersey, October 19, 2005.

Maritimes & Northeast Pipeline, L.L.C., Federal Energy Regulatory Commission Docket No. RP04-360-000: Prepared Cross Answering Testimony, March 11, 2005; Prepared Direct and Answering Testimony on Behalf of Firm Shipper Group, February 11, 2005.

Dynegy Marketing and Trade v. Multiut Corporation, US District Court of the Northern District of Illinois, Case. No. 02 C 7446: Deposition, September 1, 2005; Expert Report in response to Defendant's counterclaims, March 21, 2005; Expert Report on damages, October 15, 2004.

Application of Pacific Gas and Electric Company, California Public Utilities Commission proceeding A.04-03-021: Prepared Testimony, Policy for Throughput-Based Backbone Rates, on behalf of Pacific Gas and Electric Company, May 21, 2004.

Gas Market Activities, California Public Utilities Commission Order Instituting Investigation I.02-11-040: Testimony at hearings, July, 2004; Prepared Testimony, Comparison of Incentives Under Gas Procurement Incentive Mechanisms, on behalf of Pacific Gas and Electric Company, December 10, 2003.

Application of Red Lake Gas Storage, L.P., Federal Energy Regulatory Commission Docket No. CP02-420, Affidavit in support of application for market-based rates for a proposed merchant gas storage facility, March 3, 2003.

Application of Pacific Gas and Electric Company, California Public Utilities Commission proceeding A.01-10-011: Testimony at hearings, April 1-2, 2003; Rebuttal Testimony, March 24, 2003; Prepared Testimony, Performance of the Gas Accord Market Structure, on behalf of Pacific Gas and Electric Company, January 13, 2003.

Application of Wild Goose Storage, Inc., California Public Utilities Commission proceeding A.01-06-029: Testimony at hearings, November, 2001; Prepared testimony regarding policies for backbone expansion and tolls, and potential ratepayer benefits of new storage, on behalf of Pacific Gas and Electric Company, October 24, 2001.

Public Utilities Commission of the State of California v. El Paso Natural Gas Co., Federal Energy Regulatory Commission Docket No. RP00-241: Testimony at hearings, May-June, 2001; Prepared Testimony on behalf of Pacific Gas and Electric Company, May 8, 2001.

Application of Pacific Gas and Electric Company, California Public Utilities Commission proceeding A.99-09-053: Prepared testimony regarding market power consequences of divestiture of hydroelectric assets, December 5, 2000.

San Diego Gas & Electric Company, *et al*, Federal Energy Regulatory Commission Docket No. EL00-95: Prepared testimony regarding proposed price mitigation measures on behalf of Pacific Gas and Electric Company, November 22, 2000.

Application of Harbor Cogeneration Company, Federal Energy Regulatory Commission Docket No. ER99-1248: Affidavit in support of application for market-based rates for energy, capacity and ancillary services, December 1998.

Application of and Complaint of Residential Electric, Incorporated vs. Public Service Company of New Mexico, New Mexico Public Utility Commission Case Nos. 2867 and 2868: Testimony at hearings, November, 1998; Direct Testimony on behalf of Public Service Company of New Mexico on retail access issues, November, 1998.

Management audit of Public Service Electric and Gas' restructuring proposal for the New Jersey Board of Public Utilities: Prepared testimony on reliability and basic generation service, March 1998.

PUBLISHED ARTICLES

Forward Capacity Market CONEfusion, Electricity Journal Vol. 23 Issue 9, November 2010.

Reconsidering Resource Adequacy (Part 2): Capacity Planning for the Smart Grid, Public Utilities Fortnightly, May 2010.

Reconsidering Resource Adequacy (Part 1): Has the One-Day-in-Ten-Years Criterion Outlived Its Usefulness? Public Utilities Fortnightly, April 2010.

A Hard Look at Incentive Mechanisms for Natural Gas Procurement, with K. Costello, National Regulatory Research Institute Report No. 06-15, November 2006.

Natural Gas Procurement: A Hard Look at Incentive Mechanisms, with K. Costello, Public Utilities Fortnightly, February 2006, p. 42.

After the Gas Bubble: An Economic Evaluation of the Recent National Petroleum Council Study, with K. Costello and H. Huntington, Energy Journal Vol. 26 No. 2 (2005).

High Natural Gas Prices in California 2000-2001: Causes and Lessons, Journal of Industry, Competition and Trade, vol. 2:1/2, November 2002.

Restructuring the Electric Power Industry: Past Problems, Future Directions, Natural Resources and Environment, ABA Section of Environment, Energy and Resources, Volume 16 No. 4, Spring, 2002.

Scarcity, Market Power, Price Spikes, and Price Caps, Electricity Journal, November, 2000.

The New York ISO's Market Power Screens, Thresholds, and Mitigation: Why It Is Not A Model For Other Market Monitors, Electricity Journal, August/September 2000.

ISOs: A Grid-by-Grid Comparison, Public Utilities Fortnightly, January 1, 1998.

Economic Policy in the Natural Monopoly Industries in Russia: History and Prospects (with V. Capelik), Voprosi Ekonomiki, November 1995.

Meeting Russia's Electric Power Needs: Uncertainty, Risk and Economic Reform, Financial and Business News, April 1993.

Russian Energy Policy through the Eyes of an American Economist, Energeticheskoye Stroitelstvo, December 1992, p 2.

Fuel Contracting Under Uncertainty, with R. B. Fancher and H. A. Mueller, IEEE Transactions on Power Systems, February, 1986, p. 26-33.

OTHER ARTICLES, REPORTS AND PRESENTATIONS

Panel on centralized capacity market design going forward, Centralized Capacity Markets in Regional Transmission Organizations and Independent System Operators, Docket No. AD13-7, September 25, 2013.

Economics of Planning for Resource Adequacy, NARUC Summer Meetings, Denver, Colorado, July 21, 2013.

The Increasing Need for Flexible Resources: Considerations for Forward Procurement, EUCI conference on Fast and Flexi-Ramp Resources, Chicago, Illinois, April 23-24, 2013.

Panel on RPM Issues: Long Term Vision and Recommendations for Now, Organization of PJM States, Inc. Spring Strategy Meeting, April 3, 2013.

Comments On: The Economic Ramifications of Resource Adequacy Whitepaper, peer review of whitepaper prepared for EISPC and NARUC, March 24, 2013.

Resource Adequacy: Criteria, Constructs, Emerging Issues, Coal Finance 2013, Institute for Policy Integrity, NYU School of Law, March 19, 2013.

Panel Discussion – Alternative Models and Best Practices in Other Regions, Long-Term Resource Adequacy Summit, California Public Utilities Commission and California ISO, San Francisco, California, February 26, 2013.

Fundamental Capacity Market Design Choices: How Far Forward? How Locational? EUCI Capacity Markets Conference, October 3, 2012.

One Day in Ten Years? Economics of Resource Adequacy, Mid-America Regulatory Conference Annual Meeting, June 12, 2012.

Reliability and Economics: Separate Realities? Harvard Electricity Policy Group Sixty-Fifth Plenary Session, December 1, 2011.

National Regulatory Research Institute Teleseminar: The Economics of Resource Adequacy Planning: Should Reserve Margins Be About More Than Keeping the Lights On?, panelist, September 15, 2011.

Improving RTO-Operated Wholesale Electricity Markets: Recommendations for Market Reforms, American Public Power Association Symposium, panelist, January 13, 2011.

Shortage Pricing Issues, panelist, Organization of PJM States, Inc. Sixth Annual Meeting, October 8, 2010.

National Regulatory Research Institute Teleseminar: Forecasting Natural Gas Prices, panelist, July 28, 2010.

Comments on the NARUC-Initiated Report: Analysis of the Social, Economic and Environmental Effects of Maintaining Oil and Gas Exploration Moratoria On and Beneath Federal Lands (February 15, 2010) submitted to NARUC on June 22, 2010.

Forward Capacity Market CONEfusion, Advanced Workshop in Regulation and Competition, 29th Annual Eastern Conference of the Center for Research in Regulated Industries, Rutgers University, May 21, 2010.

One Day in Ten Years? Resource Adequacy for the Smart Grid, revised draft November 2009.

Approaches to Local Resource Adequacy, presented at Electric Utility Consultants' Smart Capacity Markets Conference, November 9, 2009.

One Day in Ten Years? Resource Adequacy for the Smarter Grid, Advanced Workshop in Regulation and Competition, 28th Annual Eastern Conference of the Center for Research in Regulated Industries, Rutgers University, May 15, 2009.

Resource Adequacy in Restructured Electricity Markets: Initial Results of PJM's Reliability Pricing Model (RPM), Advanced Workshop in Regulation and Competition, 27th Annual Eastern Conference of the Center for Research in Regulated Industries, Rutgers University, May 15, 2008.

Statement at Federal Energy Regulatory Commission technical conference, Capacity Markets in Regions with Organized Electric Markets, Docket No. AD08-4-000, May 7, 2008.

Raising the Stakes on Capacity Incentives: PJM's Reliability Pricing Model (RPM), presentation at the University of California Energy Institute's 13th Annual POWER Research Conference, Berkeley, California, March 21, 2008.

Raising the Stakes on Capacity Incentives: PJM's Reliability Pricing Model (RPM), report prepared for the American Public Power Association, March 14, 2008.

Comments on GTN's Request for Market-Based Rates for Interruptible Transportation, presentation at technical conference in Federal Energy Regulatory Commission Docket No. RP06-407, September 26-27, 2006 on behalf of Canadian Association of Petroleum Producers.

Comments on Policies to Encourage Natural Gas Infrastructure, and Supplemental Comments on Market-Based Rates Policy For New Natural Gas Storage, State of the Natural Gas Industry

Conference, Federal Energy Regulatory Commission Docket No. AD05-14, October 12 and 26, 2005.

After the Gas Bubble: A Critique of the Modeling and Policy Evaluation Contained in the National Petroleum Council's 2003 Natural Gas Study, with K. Costello and H. Huntington, presented at the 24th Annual North American Conference of the USAEE/IAEE, July 2004.

Comments on the Pipeline Capacity Reserve Concept, State of the Natural Gas Industry Conference, Federal Energy Regulatory Commission Docket No. PL04-17, October 21, 2004.

Southwest Natural Gas Market and the Need for Storage, Federal Energy Regulatory Commission's Southwestern Gas Storage Technical Conference, docket AD03-11, August 2003.

Assessing Market Power in Power Markets: the "Pivotal Supplier" Approach and Variants, presented at Electric Utility Consultants' Ancillary Services Conference, November 1, 2001.

Scarcity and Price Mitigation in Western Power Markets, presented at Electric Utility Consultants' conference: What To Expect In Western Power Markets This Summer (conference chair), May 1-2, 2001.

Market Power: Definition, Detection, Mitigation, pre-conference workshop, with Scott Harvey, January 24, 2001.

Market Monitoring in the U.S.: Evolution and Current Issues, presented at the Association of Power Exchanges' APEx 2000 Conference, October 25, 2000.

Ancillary Services and Market Power, presented at the Electric Utility Consultants' Ancillary Services Conference (New Business Opportunities in Competitive Ancillary Services Markets), Sept. 14, 2000.

Market Monitoring Workshop, presented to RTO West Market Monitoring Work Group, June 2000.

Screens and Thresholds Used In Market Monitoring, presented at the Conference on RTOs and Market Monitoring, Edison Electric Institute and Energy Daily, May 19, 2000.

The Regional Transmission Organization's Role in Market Monitoring, report for the Edison Electric Institute attached to their comments on the FERC's NOPR on RTOs, August, 1999.

The Independent System Operator's Mission and Role in Reliability, presented at the Electric Utility Consultants' Conference on ISOs and Transmission Pricing, March 1998.

Independent System Operators and Their Role in Maintaining Reliability in a Restructured Electric Power Industry, ICF Resources for the U. S. Department of Energy, 1997.

Rail Transport in the Russian Federation, Diagnostic Analysis and Policy Recommendations, with V. Capelik and others, IRIS Market Environment Project, 1995.

Telecommunications in the Russian Federation: Diagnostic Analysis and Policy Recommendations, with E. Whitlock and V. Capelik, IRIS Market Environment Project, 1995.

Russian Natural Gas Industry: Diagnostic Analysis and Policy Recommendations, with I. Sorokin and V. Eskin, IRIS Market Environment Project, 1995.

Russian Electric Power Industry: Diagnostic Analysis and Policy Recommendations, with I. Sorokin, IRIS Market Environment Project, 1995.

PROFESSIONAL ASSOCIATIONS

United States Association for Energy Economics

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