

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

ISO New England Inc. and New England Power Pool)	Docket No. ER10-787-000
New England Power Generators Association, Inc.)	
)	
v.)	Docket No. EL10-50-000
)	
ISO New England Inc.)	
PSEG Energy Resources & Trade LLC, <i>et al.</i>)	
)	
v.)	Docket No. EL10-57-000
)	
ISO New England Inc.)	

*SUPPLEMENTARY TESTIMONY OF DAVID L. MCADAMS PH. D.
ON BEHALF OF NEW ENGLAND POWER GENERATORS ASSOCIATION*

SEPTEMBER 1, 2010

1 *PART ONE: INTRODUCTION*

2 Q PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.

3 A My name is David McAdams. I am Associate Professor of Business Administration and
4 Economics at Duke University. My business address is Fuqua School of Business, Duke
5 University, Durham, NC 27708.

6 Q IS THIS YOUR FIRST TESTIMONY IN THIS PROCEEDING?

7 A No, I previously provided written testimony in this proceeding on July 1st, 2010. I refer
8 readers to that prior testimony, especially for the definition of terms—such as “stand-
9 alone economic cost,” “lowest-cost resource,” “uniform-price auction,” and “truthful
10 bidding”—and for background discussion.¹

11 Q WHAT IS THE PURPOSE OF YOUR TESTIMONY HERE?

12 A In my previous testimony, I established the basic soundness of the revised Alternative
13 Price Rule (“APR”) outlined by ISO-NE staff in a June, 15 2010 presentation (“June
14 APR”). Bob Ethier *et al.*, Draft Response to FERC Order of April 23, 2010 (June 15,
15 2010) (“ISO-NE Response”), [http://www.iso-ne.com/pubs/pubcomm/pres_spchs/2010/
16 final_prop_fcm_rev6_15_10.pdf](http://www.iso-ne.com/pubs/pubcomm/pres_spchs/2010/final_prop_fcm_rev6_15_10.pdf). ISO-NE subsequently updated the June APR in its
17 Opening Brief filed on July 1 (“July APR”).² The External Market Monitor reached a
18 similar conclusion in its July testimony: “Overall, we find the ISO-NE’s revised proposal
19 largely satisfies the concerns that we had identified in our March 15 comments and we

¹ *Testimony of David L. McAdams on Behalf of New England Power Generators Association*, NEPGA Exhibit 4 to Opening Brief of the New England Power Generators Association, Inc. (“McAdams Test.”).

² In addition, I referred to the “Historic APR” which was in effect for the first three FCAs and the “February APR” which was proposed by ISO-NE in February, *ISO New England Inc.*, Docket No. ER10-787-000, Various Revisions to FCM Rules Related to FCM Redesign (Feb. 22, 2010) (“FCM Revision”), and preliminary adopted by the Commission in April, *ISO New England Inc.*, 131 FERC ¶ 61,065 (“Hearing Order”), *order on reh’g and clarification*, 132 FERC ¶ 61,122 (2010).

1 commend ISO-NE on its broad effort to address the complex and controversial issues
2 associated with the [Forward Capacity Market (“FCM”)] reform.”³

3 In this testimony, I will demonstrate the basic *unsoundness* of the February APR.
4 In the record of this proceeding, there is broad recognition that the February APR is
5 flawed. In its Hearing Order, the Commission indicated that the February APR rules “fail
6 to fully adjust for the effect of out-of-market (“OOM”) investment on the capacity
7 price.”⁴ Lengthy, detailed, and compelling critiques are also provided in the March 15
8 comments of Dr. David Patton, the External Market Monitor, and in the testimony of Mr.
9 Robert Stoddard and Dr. Roy Shanker on behalf of NEPGA. However, load interests
10 took the surprising position in their July filings that the Commission ought not replace the
11 February APR with another rule, despite the February APR’s manifest flaws. At least
12 from load’s perspective, then, the February APR remains “on the table.”

13 This makes it all the more important to convey *how poorly* the February APR is
14 likely to perform whereas, by contrast, the July APR will produce an economically sound
15 result. My testimony here will establish a stark contrast. Switching from the February
16 APR to the July APR is not a matter of tweaking a few details, or adjusting a few dials, to
17 optimize the performance of an already well-performing machine. Much is at stake.
18 Indeed, given its fundamental flaws, reforming the February APR is essential to allow for
19 the *possibility* of robust market-driven entry and exit in the FCM.

20 In addition, I will comment on a few other related topics. In particular, I will (i)
21 discuss how to resolve a significant flaw in ISO-NE’s proposed rule regarding when to

³ *ISO New England Inc.*, Docket No. ER10-787-000, Comments of Potomac Economics. Ltd. for the Commission’s Paper Hearing on Revisions to the New England Forward Capacity Market Rules at 3 (filed July 1, 2010).

⁴ Hearing Order at P 85.

1 retire a resource's designation as OOM and (ii) critique two recent proposals by ISO-NE
2 and by load to intensify the mitigation of seller-side market power.

3 Q PLEASE SUMMARIZE THE MAIN POINTS OF THIS SUPPLEMENTARY
4 TESTIMONY.

5 A In the course of my testimony here, I will establish eight main points.

6 *First, the July APR does not discourage efficient OOM entry.* If there were no
7 OOM entry (and truthful bidding), the Forward Capacity Auction ("FCA") under the July
8 APR would induce the lowest-cost new resources to enter the market when new entry is
9 needed. However, it is possible that the lowest-cost new resources are not the most
10 efficient, if high-cost resources provide unpriced benefits to load. Inducing such high-
11 cost resources to commit to enter before the auction can increase overall welfare. Despite
12 states' protestations to the contrary, the July APR does *not* discourage such efficient
13 OOM entry.

14 *Second, the February APR encourages high-cost OOM entry.* The February APR
15 fails to adequately address the price-suppressing effect of OOM. In particular, load
16 stands to benefit by suppressing prices when inducing high-cost resources to enter the
17 market that would not otherwise have cleared in the FCA. By contrast, OOM entry by
18 lowest-cost resources (that would have cleared in-merit) has no effect on the auction
19 price. Thus, the February APR perversely skews load's out-of-market procurement
20 decisions to favor high-cost resources.

21 *Third, the February APR sows the seeds of a vicious cycle that could undermine*
22 *the basic functioning of the FCM.* States such as Connecticut have clearly articulated

1 their vision of the future of the FCM, a future *without* a robust market alternative to state-
2 sponsored bilateral contracts:

3 CT DPUC states that given recent economic and environmental
4 developments, most, if not all, new generation resources in New
5 England will be backed by multi-year bilateral contracts that pay
6 developers independently from the FCM. CT DPUC argues that
7 because the APR was designed assuming the FCM revenue
8 streams would be sufficient to stimulate new investment, and
9 because this assumption no longer holds true, the Rule Changes to
10 the APR are just and reasonable.⁵

11 As long as most resources are backed by long-term contracts or, more precisely, as long
12 as most *new* resources are backed by long-term contracts signed *before* the FCA, the
13 auction will neither identify the lowest-cost resources needed to meet the Net ICR, nor
14 generate any meaningful signal about the marginal social value of adequacy reserve
15 capacity. Indeed, as long as the flow of new entry is dominated by resources that are
16 already committed to enter, regardless of FCA outcomes, auction prices could be so
17 suppressed as to force new resources to seek OOM contracts as the only viable means of
18 entry.

19 *Fourth*, this vicious cycle is unnecessary, since much of the putative efficiency
20 benefits of OOM entry could be achieved by auction-based entry. The states have argued
21 that, given current market and non-market conditions, new resources in the FCM need to
22 sign long-term contracts to be viable. In particular, one of their main arguments is that
23 new resources are presently unable to obtain financing without a long-term contract in
24 place:

⁵ Hearing Order at P 60.

1 CT DPUC argues that financial markets have demanded bilateral
2 contracts in order to finance new generating facilities.⁶

3 Yet load cannot plausibly blame financial markets for the waves of load-sponsored OOM
4 that have flooded the FCM in recent years. Even if capital were sufficiently skittish to
5 demand long-term contracts, such skittishness does not provide any rationale for signing
6 long-term contracts *before* the auction. Quite the contrary, sources of capital might well
7 prefer to wait until *after* the auction has reduced uncertainty by identifying the lowest-
8 cost resources needed to meet the Net ICR, before committing to fund a new project.
9 And, if all resources were to wait until after the auction to sign long-term contracts (or
10 remain as merchant resources, if that were preferred), then the auction could “do its
11 work” of identifying and employing the lowest-cost resources needed to meet the Net
12 ICR. For this reason, there is hope that auction-based new entry—even if not all
13 “merchant” new entry in the purest sense—could rebound and thrive in the future, if only
14 load’s perverse incentive to sponsor high-cost OOM could itself be eliminated.

15 *Fifth, the price-suppressing effect of high-cost OOM needs to be mitigated.* Some
16 high-cost OOM resources may be procured for reasons other than price suppression.⁷
17 Regardless of intent, however, all high-cost OOM entry suppresses present and future
18 auction prices. If left unmitigated, this price-suppressing effect will dampen merchant
19 resources’ expectations about future auction prices, potentially triggering the same sort of
20 vicious cycle *as if* such OOM had been procured with the intent to suppress prices and
21 destroy the long-term viability of the auction market.

⁶ *Id.*

⁷ As I will discuss, it may be efficient to procure some new resources outside of the auction. Further, some OOM might be procured by entities having no incentive to suppress the auction price.

1 Sixth, the July APR still does not fully correct for the price-suppressing effect of
2 high-cost OOM. A problem remains with the July APR’s rule specifying when OOM-
3 designated resources stop being treated as OOM by the auction rules. (As shorthand, I
4 will refer to this as the “*OOM-removal rule*” since it specifies when resources are
5 removed from the OOM tally.) In its Hearing Order, the Commission recognized a
6 potentially serious problem with the February APR’s OOM-removal rule, which specifies
7 that “no OOM resource that first clears after the third FCA would be considered [as
8 OOM] in more than six subsequent FCAs (for a total of seven FCAs).”⁸ This rule creates
9 the following “possible loophole in the application of the APR”:

10 [U]nless such effects are adequately considered, an entity that
11 represents a sufficiently large share of ISO-NE load could avoid
12 mitigation in future years (and, in principle, indefinitely into the
13 future) by investing in sufficient OOM capacity so as to eliminate
14 the need for new capacity.⁹

15 ISO-NE proposed a new OOM-removal rule as part of its July APR. Rather than
16 automatically removing resources from the OOM tally after seven FCAs, the July APR
17 would remove resources from the OOM tally *on the basis of seniority*, on a one-for-one
18 basis whenever load growth and/or resource retirements decrease excess supply.
19 Unfortunately, as I will illustrate with a simple example, this rule again leaves an opening
20 for load to simply and effectively suppress the auction price paid to existing capacity.
21 Further, such price suppression is only effective when load sponsors *high-cost* new
22 resources that would not have otherwise cleared in the auction. Thus, the July APR
23 continues to provide load with a perverse incentive to procure high-cost OOM resources.

⁸ Hearing Order at P 78.

⁹ *Id.* at 83.

1 Seventh, there is a simple and intuitive way to fix the July APR's OOM-removal
2 rule, so that load enjoys no extra benefit (and incurs no extra cost) when procuring high-
3 cost resources outside of the auction. Suppose that, rather than removing resources from
4 the OOM tally on the basis of seniority as under the July APR, when load growth and/or
5 resource retirements reduce excess supply, we were to remove resources from the OOM
6 tally on the basis of cost, with the cheapest OOM resources removed first. Such a rule
7 removes each resource from the OOM tally *when it would have cleared* in the FCA
8 (holding in-merit participation fixed in all auctions). Under this rule, load no longer gets
9 any price-suppressing benefit from inducing high-cost resources to enter the market as
10 OOM. Thus, load will only have an incentive to contract with such high-cost resources
11 when load is *itself* willing to bear the incremental cost of inducing such resources to enter
12 the market when new capacity is not needed, or when there are lower-cost alternatives to
13 meet the demand for new capacity.

14 *Finally*, I will discuss the principles of proper market power mitigation, and how
15 those principles have been misapplied in two recent proposals to increase the mitigation
16 of suppliers' bids. In particular, I will demonstrate that ISO-NE's proposal to lower the
17 threshold price for all Dynamic De-list Bids to \$1/KW-month and load's proposal (put
18 forth by Professor Seth Blumsack) to mitigate competitive offers from resources
19 possessing structural market power will needlessly *create* inefficiencies in the FCM.

20 Q HOW IS THE REST OF THIS TESTIMONY ORGANIZED?

21 A Part Two develops background, including a discussion of states' request for proposal
22 ("RFP") processes for new capacity and of the putative efficiency benefits of out-of-
23 market procurement of new resources. Part Three establishes flaws inherent in the

1 February APR that will disrupt the efficient functioning of the capacity market. Part Four
2 considers the July APR further, including a discussion of one area in which the July APR
3 needs to be improved. Part Five concludes with a discussion of market-power mitigation.

4 *PART TWO: BACKGROUND – MARKETS AND ALTERNATIVES*

5 Q WHAT IS THE PURPOSE OF THIS PART OF YOUR TESTIMONY?

6 A In this section, I will discuss the potential efficiency advantages and disadvantages of two
7 polar modes by which transactions can be organized—(i) “market exchange” and (ii)
8 “bilateral exchange”—as well as (iii) “mixed exchange” allowing both market-based and
9 bilateral transactions to occur side by side. My reading of the Commission’s market-
10 design guidance is that it envisions the FCM as one that promotes mixed exchange, in
11 which the most efficient merchant resources are induced to enter the market through an
12 auction (market exchange) *while at the same time* load is permitted to self-supply and
13 otherwise sponsor new entry (bilateral exchange) should doing so be most efficient.

14 I support this vision of a mixed-exchange market, as it allows for the efficient
15 deployment of merchant resources while not foreclosing the potential benefits of bilateral
16 contracting. However, there is a danger with mixed-exchange markets that one mode of
17 exchange may inefficiently “crowd out” the other. In Part Three, I will show that the
18 February APR dangerously skews transactions in favor of bilateral exchange, so much so
19 that it is likely to undermine the basic functioning of the auction market. Fortunately, in
20 Part Four, I will then show that the July APR (once slightly modified) restores balance to
21 the FCM, establishing a more level playing field that will encourage market exchange
22 when market exchange is most efficient, or bilateral exchange when bilateral exchange is
23 most efficient.

1 Q WHAT DO YOU MEAN BY “MARKET EXCHANGE”?

2 A A “market” is an institution that brings all buyers and sellers together to facilitate trade.¹⁰

3 For example, in a farmer’s market, farmers display their products side by side at a
4 specified time and place. This allows buyers to compare products and prices more easily,

5 inducing greater competition while at the same time reducing transaction costs.

6 Similarly, the FCA is an auction market that implicitly compares all offers by qualified
7 resources when assigning capacity supply obligations. “Market exchange” refers to trade
8 that is facilitated by a market.

9 Q WHAT DO YOU MEAN BY “BILATERAL EXCHANGE”?

10 A “Bilateral exchange” is trade that is not facilitated by a market. Without a market to
11 bring players together, buyers and sellers must find each other and then decide whether to
12 strike a deal without knowing what terms of trade would have been offered by those they
13 have not yet negotiated with.¹¹

14 Q WHAT DO YOU MEAN BY “MIXED EXCHANGE”?

15 A Under “mixed exchange,” some buyers and sellers transact through a market, while
16 others transact through bilateral contracts negotiated outside of that market.

¹⁰ Separately, the term “market” is also used to refer to a collection of buyers and sellers whose (real and potential) interactions determine the price, production, and consumption of a product, e.g., the “market for real-estate” or the FCM.

¹¹ In my testimony here, I largely abstract from the complex reality of how the terms of “bilateral exchange” are determined (or would be determined, absent a robust market alternative) in the FCM, treating such exchange as if proceeding via bilateral or multilateral contract negotiations. In fact, third-parties such as state legislatures can be instrumental to provide inducements (e.g., tax breaks) that *effectively* commit targeted resources to enter before the auction, even if no “contract” is signed.

1 Q SEVERAL STATES HAVE MANDATED “COMPETITIVE RFP” PROCESSES TO
2 PROCURE NEW RESOURCES. ARE THESE EXAMPLES OF “MARKETS,” IN
3 THE SENSE JUST DEFINED?

4 A Unfortunately, no. Several states have conducted RFP processes for the procurement of
5 new resources. For example, Connecticut’s Energy Independence Act and
6 Massachusetts’ Green Communities Act each mandated an RFP to procure new
7 resources. These RFPs are *not* “markets,” as I will use that term in this testimony, since
8 they prohibit participation by existing resources and hence do not bring together *all*
9 buyers and sellers. By contrast, the FCA is designed to encourage participation by all
10 potential sources of adequacy reserve capacity.

11 Another key difference is that the FCA is organized and run by an independent
12 third party charged with the long-run efficiency of the regional market, while state
13 authorities have a direct interest in market outcomes that lower the cost of adequacy
14 reserves.¹²

15 Q EXCLUDING EXISTING RESOURCES RAISES THE COST OF RESOURCES
16 PROCURED THROUGH AN RFP. WHY WOULD STATES DO THAT?

17 A There are many possible reasons why a state might exclude existing resources. For
18 instance, if the state’s policy objective is to increase the installed base of some particular
19 type of energy resource—such as wind—then it is natural to restrict participation to new
20 resources of that type. On the other hand, it is also possible that some states may have

¹² Sufficiently foresighted state authorities would also seek to maximize the long-run efficiency of the energy market in their state, as doing so provides long-term benefits to consumers. However, as Professor Kalt notes in his testimony, it is natural for elected officials to focus more on short-run benefits to energy consumers, as opposed to long-run efficiency concerns. *Testimony of Joseph P. Kalt on Behalf of New England Power Generators Association*, NEPGA Exhibit 6 at 4:20-5:9.

1 had an ulterior motive to manipulate payments made in the FCA. Indeed, this is not a
2 matter of speculation, given the *public* findings of the Connecticut DPUC:

3 The Connecticut legislature mandated that the Department issue an
4 RFP to procure new or incremental capacity to reduce the impact
5 of FMCCs [Federally Mandated Congestion Charges] on
6 Connecticut ratepayers.¹³

7 [E]ven if the contracted capacity is a small portion of the supply
8 meeting Connecticut's requirements, these contracted resources are
9 expected to lower the market clearing price and therefore reduce
10 costs to all load.¹⁴

11 By restricting participation to new resources only, Connecticut decreased the need for
12 new capacity to be procured in future auctions and hence suppressed the price paid to
13 existing resources, now and in the future. By contrast, if existing resources were allowed
14 to compete on an equal footing with new resources, then such an RFP would have no
15 price-suppressing effect.

16 Q WHAT POTENTIAL ADVANTAGES DOES MARKET EXCHANGE HAVE OVER
17 BILATERAL EXCHANGE?

18 A Market exchange can offer several sorts of advantages over bilateral exchange. *First*, the
19 market serves as a coordinating device that lowers search costs. Lower search costs
20 translate into greater participation, by both buyers and sellers. In the context of the FCM,
21 absent the exercise of market power, the FCA provides a low-cost mechanism by which
22 new resources can determine whether and when to enter the market. This expands the

¹³ *DPUC Investigation of Measures to Reduce Federally Mandated Congestion Charges (Long Term Measures)*, CT DPUC Docket No. 05-07-14PH02, Second Interim Decision, at P 2 (Nov. 16, 2006), available at <http://www.dpuc.state.ct.us/dockhist.nsf/8e6fc37a54110e3e852576190052b64d/7e7c37d2ff13354a85257323007814af?OpenDocument>.

¹⁴ *DPUC Review of Energy Independence Act Capacity Contracts*, DPUC Docket No. 07-04-24, Decision at 34 (Aug. 22, 2007), available at <http://www.dpuc.state.ct.us/FINALDEC.NSF/0d1e102026cb64d98525644800691cfe/bb19bc5f456023468525733f006a64d3?OpenDocument>.

1 universe of potential supply and makes it possible for the lowest-cost resources to be used
2 to meet the Net ICR. *Second*, since competing market offers are easily compared—in the
3 FCA, the auction mechanism itself compares offers without requiring bidders to observe
4 all bids—market exchange tends to exhibit increased competition. Increased
5 competition, in turn, increases the likelihood of an efficient outcome in which the lowest-
6 cost resources are used to meet the Net ICR. *Third*, markets offer transparency; this is
7 especially true of auction markets such as the FCA, in which all bids are observable by a
8 market monitor and the rules of the game are set by an impartial third-party. *Finally*, by
9 not allowing players to make customized offers to specific counter-parties, a *uniform-*
10 *price* auction market limits players' ability to exercise their market power. Namely,
11 while players with market power may be able to influence the market-clearing price in
12 the auction, they cannot price discriminate in the manner that is possible with a bilateral
13 contract.¹⁵

14 Q ARE THESE POTENTIAL ADVANTAGES OF MARKET EXCHANGE RELEVANT
15 IN THE FCM?

16 A As discussed above, market exchange presents several advantages in the context of the
17 FCM, including:

18 (1) Greater participation.

19 (2) Increased competition.

20 (3) Transparency.

¹⁵ Players may still negotiate bilateral contracts in parallel with the auction, but the fact that players have the *option* to participate in a well-functioning auction market limits the scope of price discrimination that can be implemented through such contracts.

1 (4) No unit-specific price discrimination.¹⁶

2 The benefits of greater participation, increased competition, and transparency are well
3 understood and appreciated. Less obvious, but also potentially important, is the fact that
4 market exchange limits players' ability to price discriminate by customizing contractual
5 terms on a unit-by-unit basis. Such unit-specific price discrimination in the FCM will
6 tend to create inefficiencies *in addition to* those created by the exercise of market power
7 in the FCA.¹⁷ Indeed, as I will argue in Part Three, a potentially serious drawback of
8 bilateral exchange in the FCM—should it be unchecked by the option to participate in a
9 well-functioning auction market—is that price discrimination in bilateral negotiations
10 may lead to inefficiencies in which *self-supply by load* is inefficiently favored.
11 Unchecked bilateral exchange could therefore lead to inefficient vertical integration of
12 the adequacy reserve market, as load favors its own resources over the lowest-cost
13 resources.

14 Q WHAT POTENTIAL ADVANTAGES DOES BILATERAL EXCHANGE HAVE
15 OVER MARKET EXCHANGE?

16 A Bilateral exchange can offer several sorts of potential benefits over market exchange, in
17 certain circumstances.¹⁸ I will focus here on two specific potential benefits of long-term

¹⁶ Contracting with new resources outside of the FCA has the effect of enabling load to practice a different sort of price discrimination as well, paying existing resources a low price while covering new resources' higher costs of new entry. I use the term "unit-specific price discrimination" to distinguish these two sorts of price discrimination.

¹⁷ Economics textbooks routinely emphasize that monopoly price discrimination can be more efficient than monopoly uniform pricing. The reason is that having the option to price discriminate may induce the monopolist to (efficiently) increase the quantity sold. However, in the context of the FCM, load already has an incentive to induce excess supply. Thus, the beneficial "quantity effect" of price discrimination is not relevant in the FCM. See Part Three for a detailed discussion.

¹⁸ Many of the theoretically-possible benefits of bilateral exchange—not fully enumerated here—seem implausible in the context of the FCM. For instance, architects devote significant time and energy when preparing a bid for a home renovation. By soliciting quotes and negotiating with only a few architects, home-owners sacrifice competition but gain architects' attention and effort in preparing a quality bid. Such bid-preparation costs appear to

1 contracts in the FCM that I have seen mentioned in the record: “hedging” and
2 “encouraging green power.”

3 Q PLEASE ELABORATE, FIRST, BY COMMENTING ON THE POTENTIAL
4 BENEFITS OF “ENCOURAGING GREEN POWER”?

5 A In their legal briefs, the states have argued that they have a public-policy interest in
6 encouraging wind and other “green resources” to enter the market, and that such
7 resources would be unable to clear in the auction market without having already secured
8 a long-term contract. If indeed green power is systematically more expensive than the
9 resources that would otherwise clear in the FCA, then green resources typically will not
10 clear in-merit in the FCA, even if states are willing to pay a premium for such resources.

11 Load’s inability to express its willingness to pay extra for green resources is
12 potentially a limitation of the uniform-price auction format used in the FCA. For
13 example, suppose that the customers of a particular load-serving entity (“LSE”) would be
14 willing to pay more for power that is generated by green resources. Bilateral contracts
15 can provide a means for load to induce such resources to enter the market, even when
16 they are too expensive to have cleared in the auction. (Although such capacity is not
17 among the lowest-cost resources in the market, it could be efficient if it creates unpriced
18 benefits to the LSE that sponsors it.) Further, contracting *before* the FCA is essential to
19 enjoy any such efficiency benefit of encouraging green power to enter the FCM.

be insignificant in the FCM. Indeed, since the FCM rules have effectively reduced the product to a commodity measured in the auction only by price, many of the customizable terms of a bilateral power contract are not in play, significantly reducing bid-preparation costs.

1 Q DOES THIS MEAN THAT OOM SHOULD NOT BE MITIGATED, WHEN IT CAN
2 BE JUSTIFIED ON THE BASIS OF A VALID POLICY OR BUSINESS OBJECTIVE?

3 A No, not at all. The reasoning of my previous answer *only* supports the notion that load
4 should be *allowed to sponsor* OOM, by signing long-term contracts before the auction
5 with resources for which it is willing to pay a premium. However, as far as I am aware,
6 no party to this proceeding is suggesting that states or other load interests not be allowed
7 to sponsor OOM to achieve their own policy objectives. (Indeed, as far as I am aware, no
8 party is proposing *any* restrictions on OOM sponsorship, despite its potential to disrupt
9 the proper functioning of the FCM.)

10 The debate here is merely about what should happen if load decides to bypass the
11 market so as to induce entry by resources that are not among the lowest-cost resources
12 available to satisfy the Net ICR.¹⁹ Should such entry be permitted to undercut the long-
13 term sustainability of the market by artificially lowering the price paid to other resources?
14 Or should load bear the incremental cost associated with procuring a resource that is
15 more costly than others that would have been available to satisfy the Net ICR?

16 The answer is clear, if what one cares about is the efficiency of the FCM. Load
17 should bear the incremental cost associated with out-of-market procurement of high-cost
18 resources since, when it bears this extra cost, load has an economic incentive to sponsor
19 such resources only when such resources provide enough extra benefits to load to be
20 efficient despite their higher cost.

¹⁹ Load does not bear any extra cost when bypassing the market to induce *lowest-cost* resources to enter, under either the February APR or the July APR. Such resources will demand payment equal to the expected price paid to new resources in the FCA (minus a risk premium, if the auction price is uncertain and the resource in question is risk averse). By signing a “contract for differences” with such resources, load will then receive an expected auction payment equal to (or greater than) the contract price that it pays, for no net expected loss.

1 Q WHAT ABOUT RESOURCES THAT ARE NOT PROCURED WITH THE INTENT
2 OF SUPPRESSING AUCTION PRICES?

3 A Some resources may be procured outside of the auction market *without the intent* of
4 manipulating auction prices. For example, a small LSE that commits before the auction
5 to self-supply does not stand to gain from the price-suppressing effect of that
6 commitment. Load's expert Mr. James Wilson has argued that the price-suppressing
7 effect of OOM entry should not be mitigated, if such entry was not an intentional exercise
8 of market power.²⁰ Such arguments are beside the point. The price-suppressing effect of
9 OOM entry needs to be mitigated in order to preserve the viability of market exchange in
10 the FCM, regardless of intent.

11 Q NEXT, PLEASE COMMENT ON THE POTENTIAL BENEFITS OF "HEDGING."

12 A Long-term bilateral contracts can allow new resources to reduce financial risk. However,
13 OOM contracts are by definition signed *before* the auction, and contracts signed just *after*
14 the auction would also allow resources to hedge most of that risk. Thus, it is unclear
15 what (if any) hedging benefit new resources enjoy by signing an OOM contract. Further,
16 while long-term contracts allow new resources to hedge their risk, they do so by
17 transferring that risk onto load.

18 Q WHAT IS WRONG WITH TRANSFERRING FINANCIAL RISK ONTO LOAD?

19 A Ultimately, load's financial risk is likely to be passed through to rate-payers, who are
20 themselves not in a position to diversify that risk. As Professor Milgrom notes in his

²⁰ *ISO New England Inc.*, Docket Nos. ER10-787-000, *et al.*, The Joint Filing Supporters' First Brief, Exhibit DPUC-3, Direct Testimony of James F. Wilson on Behalf of First Brief of the Joint Filing Supporters at 10:4-14 (July 1, 2010).

1 testimony, “[s]uch a transfer assigns the financial risk narrowly and inflexibly onto just
2 New England utility consumers, which is inefficient and unnecessary.”²¹

3 Q ARE OOM CONTRACTS EVEN NECESSARY TO TRANSFER FINANCIAL RISK
4 FROM NEW RESOURCES ONTO LOAD?

5 A Suppose for the moment that a new resource would like to transfer its financial risk onto
6 load, and that load is willing to bear that risk. Load’s argument in favor of OOM
7 contracts depends on the implicit assumption that such contracts are necessary to achieve
8 such a transfer of financial risk. In fact, alternative approaches exist to transfer such risk
9 *without* suppressing auction prices. In particular, long-term contracts signed *after* the
10 auction can also transfer onto load all financial risk associated with uncertain future
11 market conditions. Further, unlike OOM contracts, contracts signed after the auction will
12 not suppress auction prices or otherwise introduce inefficiencies into the FCM. (See the
13 next Q&A for more discussion of this point.).

14 From the perspective of transferring financial risk, the only difference between
15 long-term contracts signed before versus after the auction is that those signed before the
16 auction also allow new resources to transfer the risk that *today’s auction price* may be
17 higher or lower than expected. However, as long as the FCM has substantial excess
18 supply—as it does today—the auction price is very likely to be close to the price floor.
19 Indeed, as long as the FCM continues to be flooded with OOM capacity, there is no
20 “hedging” rationale whatsoever for OOM contracts. All financial risks that can be
21 transferred onto load by OOM contracts could also be transferred onto load by long-term
22 contracts signed after the auction. Furthermore, long-term contracts signed after the

²¹ *Testimony of Paul R. Milgrom, Ph.D. on Behalf of New England Power Generators Association, NEPGA Exhibit 5 (“Milgrom Test.”) at 6:20-22.*

1 auction provide several efficiency benefits, relative to OOM contracts signed before the
2 auction.

3 Q WHAT ARE THE EFFICIENCY BENEFITS OF WAITING UNTIL *AFTER* THE
4 AUCTION TO SIGN BILATERAL CONTRACTS?

5 A If new resources wait until after the auction to sign long-term contracts, the auction can
6 serve to identify the lowest-cost resources available to meet the Net ICR. Signing
7 contracts before the FCA that guarantee a long-term return effectively selects “who wins”
8 the auction, since any bidder with such a contract in hand will be willing to enter the
9 FCM regardless of the auction price. Thus, the practice of signing pre-auction contracts
10 has the tendency to thrust load into the role of “gatekeeper to the FCM.”

11 By contrast, if load were to wait until after the auction to negotiate long-term
12 contracts with newly-entering resources, load would have no incentive to favor high-cost
13 resources *per se*. Indeed, load’s negotiations with any such new resources would be
14 anchored primarily by the revenues that such resources can expect in spot energy markets
15 should they fail to reach a long-term agreement. In particular, new resources having
16 lower costs will expect to emerge from such negotiations more profitable on a going-
17 forward basis, compared to high-cost resources. Consequently, low-cost resources will
18 be willing to accept lower FCA payments to enter the market and hence bid less—
19 reflecting their stand-alone economic cost—to be efficiently selected by the FCA.

20 Q ARE YOU SUGGESTING OR PROPOSING THAT LONG-TERM CONTRACTS BE
21 SIGNED ONLY AFTER THE AUCTION?

22 A No, not at all. My goal here has been just to probe the putative efficiency benefits of
23 long-term contracts signed before the auction that create OOM and artificially suppress

1 prices in the FCM. Even if such OOM contracts provide no efficiency advantages over
2 those signed after the auction, there remains a powerful rationale for new resources to
3 sign OOM contracts so long as load is actively suppressing auction prices. Further,
4 forbidding such contracts would be unwise in today's load-distorted market environment.

5 Q WHAT IS THE RATIONALE FOR OOM CONTRACTS THAT REMAINS, EVEN IF
6 SUCH CONTRACTS PROVIDE NO EFFICIENCY BENEFITS?

7 A Quite simply, OOM contracts allow new resources to avoid having to face the prospect of
8 artificially-suppressed auction prices. Once a resource has committed to enter the FCM
9 via the auction, it loses all leverage in its negotiation with load over a long-term contract.
10 Consequently, a new resource that has already committed to enter in the auction can only
11 expect to receive a long-term contract that reflects the revenues that it can henceforth
12 receive as a merchant resource. In other words, new resources cannot expect to be
13 subsidized unless they contract with load before the auction, when they retain the
14 leverage and credible threat of not entering the FCM.

15 Thus, OOM contracting need not provide any efficiency benefit in order to thrive
16 in the FCM. Indeed, as more resources sign OOM contracts and the auction price is
17 further artificially suppressed, even more resources become compelled to sign OOM
18 contracts themselves in order to justify entry into the FCM.

19 Q OVERALL, WHAT IS MOST EFFICIENT IN THE CONTEXT OF THE FCM:
20 MARKET EXCHANGE, BILATERAL EXCHANGE, OR MIXED EXCHANGE?

21 A There is no simple answer. As discussed above, market exchange provides several
22 powerful advantages over bilateral exchange, but bilateral exchange might also offer
23 important advantages in some circumstances, for some transactions. Further, it is easy to

1 imagine that these benefits might change over time in response to changing
2 circumstances, tilting the efficiency balance for some transactions from market exchange
3 to bilateral exchange, or vice versa. For instance, states that are currently willing to pay a
4 premium to induce “green” resources to enter the FCM might change that stance if a
5 national carbon tax were imposed that gave such units a cost advantage that states felt
6 was appropriate. (If so, states would prefer to let the auction do its work of determining
7 the least-cost way to satisfy the Net ICR, taking the carbon tax into account.)

8 Bearing that in mind, my judgment is that the FCA should be designed with an
9 eye to induce market exchange when market exchange is most efficient, and to induce
10 bilateral exchange when bilateral exchange is most efficient.

11 Unfortunately, the design of the February APR is fundamentally flawed, so
12 dangerously skewed against market exchange that market-based entry could be
13 essentially foreclosed even when market exchange is most efficient (see Part Three).
14 Fortunately, the July APR restores more balance to the FCM, allowing for the possibility
15 that market exchange will thrive when market exchange is most efficient while *not*
16 disadvantaging bilateral exchange when bilateral exchange is most efficient (see Part
17 Four).

18 *PART THREE: THE FEBRUARY APR UNDERMINES MARKET EXCHANGE*

19 Q WHAT IS THE PURPOSE OF THIS PART OF YOUR TESTIMONY?

20 A In this part of my testimony, I will discuss why the design of the February APR
21 encourages bilateral exchange to displace market exchange, even when market exchange
22 would be more efficient. In particular, the February APR gives load both the ability and
23 the interest to displace efficient auction-based new entry with inefficient OOM capacity.
24 Near the end of Part Four, I will return to this point and discuss (i) why the July APR

1 only *partially* corrects this concern and (ii) how this concern can be resolved by a further
2 refinement of the rule specifying *which* OOM resources to carry forward.

3 Q WHY WOULD LOAD INTERESTS EVER HAVE AN INCENTIVE TO SPONSOR
4 *INEFFICIENT* OOM CAPACITY?

5 A There are potentially two distinct reasons why load could have an incentive to sponsor
6 inefficient OOM. *First*, the February APR only partially corrects for the effect of OOM
7 on the auction price and, further, the February APR provides load with a loophole to
8 evade even this partial corrective. Thus, load has an incentive to sponsor OOM entry
9 because of its price-suppressing effect in the auction. Indeed, since low-cost OOM
10 entry—which would have cleared in the FCA with or without out-of-market support—
11 has no effect on the market-clearing auction price (see the next Q&A), load’s incentive is
12 specifically, and perversely, to induce OOM entry by resources that are *more* costly than
13 other resources that were also available.

14 *Second* and more subtly, suppose that the auction price were so suppressed—
15 perhaps due to the first effect described above—so as to foreclose auction-based entry as
16 a feasible option for merchant resources. In that scenario, signing a bilateral contract
17 with load becomes the only practical way by which to enter the FCM. Unfortunately,
18 without a well-functioning auction market to check their oligopsony power, load-serving
19 entities in such a scenario would have an incentive to exert their market power through
20 price discrimination that, among other negative effects, inefficiently favors self-supply.
21 (I will discuss this point later.)

1 Q WHY DOES LOW-COST OOM ENTRY NOT HAVE ANY EFFECT ON THE
2 AUCTION PRICE?

3 A By signing long-term contracts that effectively commit new resources to enter the FCM
4 before the auction, load induces these resources to bid zero in the auction. If these new
5 OOM resources are among the lowest-cost resources, the market-clearing price in the
6 auction will be the same as if they had not signed any contract. So, sponsoring low-cost
7 OOM resources brings no price-suppressing benefit. On the other hand, the presence of
8 high-cost OOM lowers the market-clearing price by displacing other, less-costly
9 resources that would have set the auction price.

10 Q WHY DOESN'T THE FEBRUARY APR FULLY CORRECT FOR THE EFFECT OF
11 OOM ON THE AUCTION PRICE?

12 A The February APR is only triggered when there is need for new capacity, after
13 subtracting (i) OOM resources that entered in the current or previous six FCAs and (ii)
14 resources whose de-list bids were rejected for reliability reasons. Such a formulation
15 leaves two significant gaps. *First*, the presence of OOM can suppress the auction price
16 when there is no need for new capacity, but this price-suppression is uncorrected by the
17 February APR. *Second*, again under the February APR, OOM resources lose their OOM
18 status after seven years and are counted among the “in-merit” resources that determine
19 whether or not the APR is triggered. This “seven-year loophole” creates an opportunity
20 for load to suppress the auction price both permanently and dramatically.

21 In particular, suppose that load sponsors a stream of enough OOM so as to have
22 excess capacity sufficient to cover seven years of load growth and retirements. Such a
23 scheme would avoid triggering the APR now or anytime in the future, guaranteeing very

1 low auction prices now and forever. This would have the two-fold effect of (i)
2 eliminating the auction market as a feasible avenue for merchant entry into the FCM and
3 (ii) elevating load to the status of “gatekeeper to the FCM,” since the only remaining
4 avenue for entry into the FCM would be a bilateral contract with load.

5 Q WHAT’S WRONG WITH LOAD SERVING AS “GATEKEEPER” TO THE FCM, AS
6 LONG AS THE NET ICR IS SATISFIED?

7 A If the auction price paid to reserve capacity is consistently suppressed by load’s OOM
8 sponsorship, the auction will not provide sufficient incentive for the lowest-cost merchant
9 resources to enter when new entry is needed. Indeed, a new entrant’s only option to
10 cover its costs of new entry will be to approach load in hopes of securing a long-term
11 contract. Load has a strong incentive to sign enough such contracts so that the Net ICR
12 remains satisfied—if the FCM were to require merchant new entry, then the price that
13 load pays in the FCA on all of its net demand would increase to reflect the cost of new
14 entry. So, it is reasonable to expect that the Net ICR will typically be met (with a
15 surplus) under such a “load as gatekeeper” model.

16 Unfortunately, there are several reasons to be concerned that the resources
17 procured under such a gatekeeper model will be inefficient, i.e., they will *not* minimize
18 the total economic cost of satisfying the Net ICR. *First*, in order for load to permanently
19 avoid triggering the February APR, it needs to induce sufficient OOM entry for there to
20 be an excess supply of several years’ worth of load growth and retirements. *Second* and
21 less obvious, load’s market power in bilateral negotiations with capacity resources will
22 tend to cause load to be systematically biased not to procure the lowest-cost resources
23 available to meet the Net ICR.

1 On the other hand, if the *auction* were to serve as gatekeeper to the FCM—
2 namely, if load were not permitted to sign long-term contracts with capacity until *after*
3 the auction, so that all resources would be “merchant” resources at the time of the
4 auction—then the resources procured to meet the Net ICR would be (absent unmitigated
5 supply-side market power) those that minimize total economic cost.

6 Q WHY WOULD LOAD, AS GATEKEEPER TO THE FCM, *SYSTEMATICALLY* FAIL
7 TO PROCURE THE LOWEST-COST RESOURCES TO MEET THE NET ICR?

8 A There are two related reasons why load, as gatekeeper, will tend to systematically fail to
9 procure the least-cost resources: “inefficient price discrimination” and “inefficient
10 vertical integration.”

11 Q WHAT DO YOU MEAN BY “INEFFICIENT PRICE DISCRIMINATION”?

12 A When resources negotiate with load in hopes of profitably entering the FCM, the
13 negotiated price that each resource receives will *not* be a uniform price. Resources that
14 are known to have lower costs will require less inducement to enter, putting load in a
15 stronger bargaining position that allows load to pay such resources a lower price. More
16 subtly, the likelihood that load will reach an agreement with a particular resource depends
17 on the extent of load’s *uncertainty* about that resource’s cost. Further, this “uncertainty
18 effect” tends to skew entry in favor of resources having better-known costs.

19 To illustrate the uncertainty effect and why it skews entry toward those resources
20 having better-known costs, consider the following example. Suppose that load needs to
21 induce one of two potential new resources to enter the FCM, in order to ensure that the
22 auction price remains suppressed. Load knows that one of these resources has a cost of
23 new entry equal to \$10/KW-month. Another resource is more of a mystery. This

1 resource knows its own cost of new entry, but from load's perspective this cost is
2 uniformly distributed from \$8/KW-month to \$12/KW-month. As can be easily shown,
3 load minimizes its expected procurement cost by offering this mystery resource a take-it-
4 or-leave-it price of \$9/KW-month. When this resource's true cost is between \$9/KW-
5 month and \$10/KW-month, load rationally procures the needed capacity from the higher-
6 cost \$10/KW-month resource. This inefficiency of price discrimination arises from the
7 presence of *private information*. Capacity resources will never voluntarily reveal their
8 true cost of new entry to load,²² and this lack of complete information makes efficient
9 trades less likely to materialize, especially when there is substantial private information.²³
10 At the same time, resources whose cost is very well known to load have no bargaining
11 leverage in their bilateral negotiations. Whereas such resources would have typically
12 earned a positive return in the auction—as long as they were part of the efficient mix,
13 with cost less than the auction clearing price—they will expect load to exert its market
14 power and extract much (or all) of that surplus via a customized bilateral contract.

15 Q WHAT DO YOU MEAN BY “INEFFICIENT VERTICAL INTEGRATION”?

16 A Should load become gatekeeper to the FCM, load has an incentive to favor self-supply
17 over more efficient resources that are not self-supplied. The reason is simple. Load
18 enjoys all surplus created by entry of a self-supplied resource, but extracts only some of

²² David L. McAdams, *Discounts for Qualified Buyers Only*, Working Paper (2010), http://faculty.fuqua.duke.edu/~dm121/papers/mcadams_sticker.pdf (considering a setting in which it is feasible for buyers to reveal information about their willingness to pay to a monopolist (or equivalently, for sellers to reveal information about their costs to a monopolist)). Buyers strictly prefer for disclosure to be more costly.

²³ See Roger Myerson & Mark Satterthwaite, *Efficient Mechanisms for Bilateral Trading*, 29 J. of Econ. Theory 265 (1983) (A highly influential paper cited when Myerson won the Nobel Prize in 2007. As I discussed in my initial testimony, perhaps the greatest triumph of auction theory is in showing how auctions (such as the FCA) can overcome such inefficiencies due to the presence of private information.).

1 those gains when another resource enters the market (if that resource earns a profit).²⁴

2 This bias in favor of self-supply will tend to have the effect of inducing inefficient
3 vertical integration of the market.

4 Q THE PREVIOUS TWO Q&A'S SUPPOSED THAT LOAD WOULD EMPLOY A
5 *HYPOTHETICAL* MULTILATERAL NEGOTIATION PROCESS TO PROCURE
6 CAPACITY, WERE IT TO BECOME "GATEKEEPER TO THE FCM." IS THIS
7 APPROPRIATE?

8 A At present, load interests (especially the states) are not yet *firmly* established as
9 gatekeepers to the FCM. Indeed, as I have argued, this proceeding has the potential to
10 uproot load's growing control of the market and restore the possibility of robust auction-
11 based entry and exit in the FCM.

12 Consequently, the procedures that load employs now to procure out-of-market
13 new entry have little bearing on what sort of processes load is likely to employ in the
14 future, should it become firmly established as gatekeeper. Fortunately, economic theory
15 provides sufficient guidance to forecast with some confidence the qualitative features of
16 the economic *incentives* that load would face, were it firmly established as gatekeeper to
17 the FCM. In particular, load would have an incentive not to conduct a uniform-price
18 auction such as the FCA. Rather, load would have a strong incentive to conduct the sort
19 of discriminatory, multi-lateral negotiation process assumed in my previous two Q&As.

²⁴ Further, whenever load has uncertainty about a resource's cost, that resource must be allowed to earn a profit when it enters the market. For example, in my previous numerical example, the "mystery resource" is paid the profitable price of \$9/KW-month whenever its cost is between \$8/KW-month and \$9/KW-month.

1 Q CAN YOU PLEASE SUMMARIZE THE MAIN POINTS THAT YOU HAVE MADE
2 IN THIS PART OF YOUR TESTIMONY?

3 A My testimony here has developed two main themes.

4 *First*, under the February APR, the health of the auction market is fragile and
5 subject to effective—and potentially very destructive—manipulation by load via the entry
6 of inefficient OOM resources. Load has an incentive to induce such inefficient OOM
7 resources to enter because the February APR only partially corrects for the effect of
8 OOM on the auction price. Further, even this partial corrective can be evaded should
9 load engage in a strategy of inducing a sufficiently large *excess* supply of OOM to enter.
10 If this evasive, loophole-exploiting strategy is followed, load can *forever* suppress the
11 auction price, which benefits load, because it then avoids paying all other, non-OOM
12 capacity resources the efficient market-clearing price.

13 *Second*, preserving a well-functioning auction market is essential to avoid an
14 alternative scenario in which load serves as “gatekeeper” to the FCM. In such a scenario,
15 load’s exercise of its oligopsony power will tend to lead to an inefficient deployment of
16 resources to satisfy the Net ICR. In particular, load has an incentive to self-supply even
17 when other sorts of resources are more efficient, leading to an inefficient vertical
18 integration of the resource adequacy market.

19 *PART FOUR: THE JULY APR CAN RESTORE MARKET EXCHANGE, WHILE NOT*
20 *FORECLOSING EFFICIENT BILATERAL EXCHANGE*

21 Q WHAT IS THE PURPOSE OF THIS PART OF YOUR TESTIMONY?

22 A In this part of my testimony, I will argue that the APR reforms embodied in the July APR
23 represent significant progress toward addressing the concerns with the February APR that

1 I raised in Part Three. I will also discuss the importance of a further refinement of the
2 July APR, especially in regard to the rule that determines what OOM is carried forward.

3 Q PREVIOUSLY, YOU ARGUED THAT LOAD HAS AN INTEREST IN
4 UNDERMINING THE AUCTION MARKET UNDER THE FEBRUARY APR. IS
5 THIS STILL TRUE UNDER THE JULY APR?

6 A Unfortunately, yes. Load-serving entities with market power stand to gain if the auction
7 market is foreclosed as a feasible option for merchant new entry (though they stand to
8 gain *less* under the July APR). The reason is simple: If new entrants are forced to
9 contract with load in order to justify the cost of new entry, then load can extract much of
10 the benefits of that new entry at the contracting stage. In the auction market, LSEs have
11 market power but their ability to exploit that market power is much more limited. In
12 particular, by its very design as a uniform-price auction, the auction market does not
13 allow LSEs to price discriminate.

14 Q DOES THIS MEAN THAT THE FLAWS THAT ARE INHERENT IN THE
15 FEBRUARY APR ALSO PLAGUE THE JULY APR?

16 A No, not nearly to the same extent. My argument against the February APR had two
17 distinct parts. *First*, load has the ability and incentive to suppress the price that it pays in
18 the auction, by inducing inefficient entry by OOM resources. *Second*, should load
19 sponsor so much OOM entry as to effectively foreclose the auction market, then load's
20 bilateral negotiations with capacity resources will tend to induce an inefficient mix of
21 resources to satisfy the Net ICR.

22 There is no way to avoid the possibility that *if* the auction market were foreclosed
23 and hence incapable of attracting merchant new entry, load would have an incentive to

1 inefficiently price discriminate at the contracting stage (the second point above).
2 However, this sort of inefficiency can only arise if load has already sponsored so much
3 inefficient OOM as to disrupt the proper functioning of the FCA (the first point above).

4 Under the February APR, load enjoys a benefit when sponsoring inefficient
5 OOM, since it pays a lower auction price on the rest of its net capacity purchased in the
6 auction. Thus, it is entirely plausible that load would find it in its short-term best interest
7 to sponsor inefficient OOM entry, *even without* accounting for the long-term benefit that
8 it might enjoy from foreclosing the auction market and being elevated to “gatekeeper”
9 status.

10 Under the July APR, load is still *capable* of undermining the auction market as a
11 legitimate avenue for merchant new entry, should they choose to sponsor a sufficiently
12 large wave of inefficient OOM resources. However, unlike the February APR—under
13 which load enjoyed the benefit of suppressing auction prices when sponsoring a large
14 enough wave of OOM—the July APR makes such a strategy more costly. In particular,
15 if load-sponsored OOM were to dominate the flow of new resources, load would incur
16 the incremental cost associated with inducing inefficient OOM to enter the market. Thus,
17 as long as the benefits of dominating the FCM as “gatekeeper” are sufficiently small,
18 there is hope that load interests will choose not to incur the short-term losses necessary to
19 undermine the auction market as a legitimate avenue for merchant new entry.

20 In this sense, the July APR allows for a robust market alternative by which
21 merchant resources can enter the FCM. However, there is no certainty that market
22 exchange will thrive under the July APR. Load is still capable of flooding the FCM with

1 inefficient OOM—though at greater cost—in which case the FCA would still fail to
2 function as a credible market alternative to bilateral contracts.

3 Q HOW DOES THE JULY APR MAKE IT COSTLY FOR LOAD TO UNDERMINE
4 THE FCA BY SPONSORING INEFFICIENT OOM RESOURCES?

5 A First of all, let me clarify that the July APR does not *unambiguously* reduce load's
6 incentive to sponsor OOM. By design, the July APR allows load to freely manipulate the
7 “FCA clearing price” paid to new resources, by sponsoring more or less OOM entry. In
8 other words, an incentive remains to sponsor inefficient OOM in order to lower the price
9 paid to new resources. However, also by design, such OOM entry has no effect on the
10 price paid to existing resources. In particular, if the flow of new resources is dominated
11 by OOM entry, then such OOM entry will only affect the price paid to those very
12 resources. Consequently, load has substantially less incentive to “stack the margin” with
13 OOM under the July APR than under the February APR.

14 Q DOES THE JULY APR DISCOURAGE LOAD FROM SPONSORING OOM WHEN
15 SUCH BILATERAL CONTRACTING IS EFFICIENT?

16 A No. If, for some reason, sponsoring OOM before the auction is more efficient than
17 waiting until just after the FCA to sign long-term contracts, then the July APR creates
18 just the right incentives to encourage such efficient bilateral contracting.

19 To be more precise, suppose that bilateral contracting were generally more
20 efficient than contracting through the auction, so that most (or all) new entry were
21 sponsored by load. Under the July APR, sponsoring OOM only suppresses the auction
22 price paid to new resources and hence provides no price-suppression benefit to load. On
23 the other hand, load must pay these resources at least the *maximum* of (i) the expected

1 value of the FCA clearing price that they could get in the auction and (ii) their cost of
2 new entry, in order to induce them to agree to an out-of-market contract.

3 For low-cost OOM resources that would have won in the auction anyway, load
4 has to pay just the FCA clearing price, which it would have paid anyway if it had allowed
5 those resources to bid in the auction as merchant resources. On the other hand, for high-
6 cost resources that would not have been selected to enter by the auction, load must pay
7 those resources' cost, which exceeds the FCA clearing price. Without any price-
8 suppression benefit, load only gets a short-term benefit from such OOM sponsorship if it
9 genuinely prefers for that resource to enter the market over an alternative, merchant
10 entrant. In particular, load will have a short-term incentive to sponsor high-cost OOM
11 resources only if load enjoys some benefit from such high-cost resources that exceeds the
12 premium (cost – FCA clearing price) that it must pay to induce them to enter. In other
13 words, load has an incentive to induce high-cost resources to enter as OOM exactly when
14 such entry can be justified on efficiency grounds.

15 Q DOES THE JULY APR CLOSE THE “LOOPHOLE” THAT YOU MENTIONED IN
16 PART THREE?

17 A Yes, but only partly. ISO-NE proposed in its July brief to replace the current system in
18 which OOM is automatically retired after seven years, with a new approach by which
19 OOM is retired on the basis of seniority in the market:

20 The quantity of new OOM capacity clearing in an FCA will be
21 added to a running tally of past OOM capacity that will be carried
22 forward. The tally will be decreased each year by load growth and
23 resource retirements. . . . Reductions in the tally would be applied
24 first to the oldest OOM resources²⁵

²⁵ *ISO New England Inc.*, Docket Nos. ER10-787-000, *et al.*, Opening Brief of the New England Power Generators Association, Inc. (July 1, 2010) at 18-19.

1 Under this proposed approach, the APR will be triggered whenever the accumulated
2 supply of OOM resources exceeds the accumulated demand for new resources created by
3 load growth and resource retirements. Thus, it will no longer be possible to “game” the
4 auction in the way described in Part Three. However, the resulting APR price when the
5 APR is triggered will be *systematically lower* than what it would have been absent
6 inefficient OOM entry. Consequently, under this proposed rule, the July APR continues
7 to fail to fully correct for the effect of OOM on the auction price.

8 Q PLEASE ELABORATE. WHY DOES THE JULY APR STILL NOT FULLY
9 CORRECT FOR THE EFFECT OF OOM ON THE AUCTION PRICE?

10 A A simple example helps to illustrate this point. Imagine that there are ten units that could
11 potentially enter, having cost \$1/KW-month, \$2/KW-month, . . . , \$10/KW-month, and
12 these costs are commonly known. Further, imagine that just one of these units is needed
13 in year #1, two will be needed in year #2 and so on until all ten units are needed in year
14 #10. Absent any OOM entry, the cheapest T resources would serve the market in each
15 year $T=1, \dots, 10$ and be paid a market-clearing price of $\$T+1/\text{KW-month}$.²⁶

16 Imagine now that load were to sponsor the \$10/KW-month unit in year #1 as
17 OOM. In year #1, this unit would bid \$0/KW-month and be paid a FCA clearing price of
18 \$1/KW-month under the July APR. However, since this unit is OOM, the APR price
19 paid to all existing resources would be \$2/KW-month, as it would have been absent
20 OOM entry. However, consider what happens in year #2. The \$1/KW-month unit enters
21 to serve the increased load and is paid the FCA clearing price of \$2/KW-month. Under

²⁶ The cheapest resource not needed in period T has cost $\$T+1/\text{KW-month}$ and will drop out at that price. Although demand first equals supply at price $\$T+1/\text{KW-month}$, the FCA specifies that the descending clock will continue until the next unit drops out. However, this makes no difference in this example as the remaining bidders will, in any bidding equilibrium, stop the descending clock at price $\$T+1/\text{KW-month}$ rather than let it fall to $\$T/\text{KW-month}$.

1 my understanding of ISO-NE's July APR proposal—which eliminates the oldest OOM
2 resources first from the carried forward tally—the \$10/KW-month unit's OOM status is
3 retired so that *the July APR is not triggered*. Thus, existing resources receive the
4 depressed price of \$2/KW-month, instead of the \$3/KW-month price that they would
5 have received absent OOM entry. This price-suppressing effect can be very long-lived:
6 in every year $T=2, \dots, 9$, existing resources will receive a price of $\$T/\text{KW-month}$
7 instead of the unsuppressed price of $\$(T+1)/\text{KW-month}$.

8 Indeed, the price-suppressing effect of OOM entry under the July APR is greatest
9 the *more* inefficient the OOM resources that are induced to enter. To see this in the
10 example, imagine that load had sponsored the \$3/KW-month resource at time $T=1$,
11 instead of the \$10/KW-month resource. Doing so would suppress the APR price paid to
12 existing resources at time $T=2$ (from \$3/KW-month to \$2/KW-month) but would not
13 suppress the APR price in any later period. Fundamentally, the reason why load has an
14 incentive in this example to sponsor more-inefficient resources is that *only inefficient*
15 *OOM suppresses the APR price*. In year $T=3$ and afterward, the \$3/KW-month unit is
16 part of the efficient mix and hence has no price-suppressing impact.

17 Q CAN THE JULY APR BE FURTHER REFINED TO RESOLVE THIS CONCERN?

18 A Yes and, fortunately, the fix is simple and intuitive. Rather than automatically removing
19 OOM resources from the OOM tally in response to load growth or resource retirement,
20 remove OOM resources from the OOM tally *when they would have entered efficiently as*
21 *merchant resources*. More precisely, remove each OOM resource from the OOM tally in
22 the first period in which the APR price exceeds its stand-alone cost of new entry (where

1 the APR price is determined by mitigating the bids of all resources currently in the OOM
2 tally).

3 This simple rule completely corrects for the effect of OOM entry on the APR
4 price, as it essentially “re-creates” how the market would have evolved had all resources
5 lacked access to out-of-market subsidies. For instance, in the example above, the
6 inefficient \$10/KW-month unit would remain classified as OOM throughout years #1-#9,
7 when its unmitigated presence would otherwise have suppressed the price paid to existing
8 resources. After that, when the \$10/KW-month unit would have entered the market even
9 on a merchant basis, there is no need for further mitigation and this resource can (and
10 should) be removed from the OOM tally.

11 *PART FIVE: PROPER MITIGATION OF SELLER-SIDE MARKET POWER*

12 Q WHAT IS THE PURPOSE OF THIS PART OF YOUR TESTIMONY?

13 A In this part of my testimony, I will critique two of the proposals now on the table to
14 mitigate seller-side market power. Proper mitigation of market power seeks to stop those
15 with market power from exercising that power so as to create inefficiencies in the market,
16 while *at the same time* seeking to minimize the inefficiencies created by market
17 mitigation itself. Viewed from this perspective, ISO-NE’s proposal to lower the
18 threshold price for Dynamic De-list Bids to \$1/KW-month is improper, as is load’s
19 proposal (put forth by Professor Blumsack) to mitigate even *competitive* offers from
20 resources possessing structural market power.

21 Q WHAT DO YOU MEAN BY “PROPER” MARKET-POWER MITIGATION?

22 A Market power mitigation restricts the options available to (some or all) market
23 participants. *Proper* market power mitigation seeks to maximize the *net* economic
24 benefit of such restrictions, bearing in mind their economic costs. The economic benefit

1 of market power mitigation is that all those with market power who are subject to
2 mitigation will have less ability and/or incentive to distort market outcomes. The
3 economic costs of market power mitigation, by contrast, can come in various forms.
4 *First, unequal mitigation*—that is not equally applied to all market participants having
5 market power—can potentially induce more inefficient market outcomes than if there
6 were no mitigation at all.²⁷ *Second, overly-broad mitigation*—that is applied even to
7 market participants without market power—imposes an unnecessary regulatory burden.
8 *Third, overly-restrictive mitigation*—that stops (or disincentivizes) market participants
9 from behaving as they would in a competitive market—needlessly creates inefficiencies
10 in market outcomes.

11 Q OTHER NEPGA EXPERTS DISCUSS THE HARMFUL EFFECTS OF *UNEQUAL*
12 MITIGATION IN THE FCM. DO YOU AFFIRM THEIR ANALYSIS?

13 A Yes, I do. NEPGA’s other experts have stressed the important point that there is unequal
14 market power mitigation in the FCM, with sellers mitigated much more intensively than
15 buyers. Indeed, some of the biggest issues at stake in this proceeding—from APR reform
16 to the treatment of “Historic OOM”—are linked to the deeper question of whether the
17 price-suppressing effects of buyers’ past and future actions should be corrected.²⁸

²⁷ In some (but not all) circumstances, players’ market power can “cancel out” if left equally unmitigated. For instance, consider a hypothetical market with one buyer (“monopsonist”) having demand $D(p) = 20 - p$ and one seller (“monopolist”) having supply $S(p) = p$. If both are left unhindered to exercise their market power, all “renegotiation-proof” transactions are efficient and involve the trade of ten units. (A renegotiation-proof outcome is one that cannot be mutually improved upon. For example, consider an outcome in which 9 units are traded at a total price of \$99, i.e. \$11 per unit. Both the buyer and seller would be strictly better off agreeing to trade 9.5 units at a total price of \$104, i.e., \$10 per unit for the additional half unit. Thus, 9 units at \$99 is not a renegotiation-proof transaction.) By contrast, if just one of the two players is mitigated, the other will distort the market through the unilateral exercise of its market power.

²⁸ The fact that buyers are bold enough to suggest that the price-suppressing effects of their actions should not be corrected provides ample proof of unequal market-power mitigation in the FCM. No seller would dare suggest that its unilateral or concerted manipulation of market prices should go uncorrected.

1 If Historic OOM resources are henceforth treated as existing, as ISO-NE
2 proposes, then the (long-lasting and going-forward) price-suppressing effects of load's
3 *past* actions will be left uncorrected. In his written testimony, Professor Milgrom has
4 discussed why correcting the price-suppressing effect of past market manipulation is
5 essential, and especially so in the FCM:

6 By following a predictable policy of mitigating market power as
7 quickly and completely as reasonably possible the regulator can
8 achieve two kinds of benefits. First, it both corrects the market
9 prices today to competitive levels and promotes a belief among
10 market participants that future prices will be more nearly-free from
11 manipulations. . . . Second, maintaining such a policy promotes
12 the expectation that the ill-gotten gains from market manipulations
13 will be small, because the benefits of long-term market
14 manipulations will be cut short.²⁹

15 I agree with this assessment.

16 Similarly, if the February APR is allowed to stand, as load proposes, or if the
17 flawed OOM-removal rule of the July APR is not corrected (see Part Four of this
18 testimony), the price-suppressing effect of load's *future* actions will be left uncorrected.

19 Q WHAT MARKET POWER MITIGATION PROPOSALS, IN SPECIFIC, WILL YOU
20 CONSIDER HERE?

21 A My focus here will be to show that market power mitigation measures recently proposed
22 by ISO-NE and by load are seriously flawed, as they are overly broad and/or overly
23 restrictive. I will focus on two specific proposals. *First*, ISO-NE has proposed to lower
24 the threshold for Dynamic De-List Bids to \$1/KW-month. Such proposed mitigation is
25 both overly-broad, as it applies even to bidders without market power, and overly-
26 restrictive, as it imposes costs and otherwise constrains bidders who seek to bid their

²⁹ Milgrom Test. at 13:9–17.

1 costs truthfully but have stand-alone economic costs in excess of the \$1/KW-month
2 threshold. *Second*, load's expert Professor Blumsack has proposed that "cost-based
3 screens . . . are necessary but not sufficient in preventing the exercise of market power in
4 the FCA" by those bidders who are pivotal to satisfy zonal reliability requirements.³⁰
5 Such mitigation is overly-restrictive, as it precludes bidders having market power from
6 behaving as if in a competitive market.

7 Q WHY IS ISO-NE'S PROPOSED \$1/KW-MONTH THRESHOLD FOR DYNAMIC
8 DELIST BIDS BOTH OVERLY BROAD AND OVERLY RESTRICTIVE?

9 A Under this proposal, any resource interested in delisting at a price greater than \$1/KW-
10 month must submit to a Static De-List Bid review. In his testimony, Mr. Stoddard has
11 provided evidence that this threshold is likely to be binding on a number of existing
12 resources, whose true stand-alone economic cost is greater than \$1/KW-month.³¹
13 Furthermore, as I understand it, ISO-NE's proposal *includes no safe harbors* to protect
14 bidders who lack market power from the burdens associated with this regulatory review.

15 If bid review were perfect, costless and quick, such mitigation would impose little
16 regulatory burden on bidders. Unfortunately, Static De-List Bid review is neither perfect
17 nor costless nor quick. The process is cumbersome and requires bidders to commit to a
18 Static De-List Bid months before the auction, foreclosing bidders' flexibility to modify
19 their bid to reflect changing costs or new opportunities that may arise in the months
20 preceding the auction. Further, the market monitor conducting a Static De-List Bid
21 review does not have all relevant information about bidders' economic costs and,

³⁰ Blumsack Test. at 7:14-16.

³¹ See *Supplemental Testimony of Robert B. Stoddard on Behalf of New England Power Generators Association*, NEPGA Exhibit 9 at 27:9-30:20.

1 especially, about the alternative opportunities available to each resource. Should the
2 market monitor incorrectly estimate a supplier's true cost, the monitor could reject a
3 Static De-List Bid that reflects that supplier's true cost and thereby *create* market
4 inefficiencies.

5 This "mistaken mitigation problem" has an important *asymmetrical impact* on
6 bidders lacking market power. Consider a bidder who lacks market power and would, if
7 given the opportunity, submit a truthful bid that reflects its actual cost. If the market
8 monitor *over-estimates* this bidder's true cost, the bidder will be permitted to submit a
9 wider range of bids. However, since by presumption the bidder in question lacks market
10 power, it will choose to bid truthfully—exactly the same as if the market monitor had
11 correctly estimated its cost. On the other hand, if the market monitor *under-estimates* this
12 bidder's true cost, mitigation will force it to remain in the FCM even at prices at which
13 exit would have been efficient. As a final step in this chain of reasoning, suppose that the
14 market monitor sometimes under-estimates and sometimes over-estimates this bidder's
15 true cost, but that the market monitor's cost estimates are unbiased. Since over-estimates
16 have no impact on market outcomes, while under-estimates force the bidder to remain in
17 the market even when exit is efficient, mitigating bidders who lack market power
18 needlessly and unquestionably creates inefficiencies.

19 Since some competitive resources are not permitted to exit when exit is efficient,
20 one effect of such overly-broad mitigation is to decrease the efficiency of the current mix
21 of resources used to meet the Net ICR. Further, resources will require a larger upfront
22 payment to enter the market, if they anticipate the possibility of not being allowed to exit

1 once exit is efficient. In this way, the barriers to exit created by overly-broad mitigation
2 can in turn create a significant barrier to *entry*, when new entry is needed.

3 So far, I have argued that ISO-NE's proposed \$1/KW-month threshold for
4 Dynamic De-List Bids ought not to be applied to bidders who lack market power, since
5 such a mitigation strategy needlessly creates inefficiencies in the market *even if* the
6 monitor's cost estimates are unbiased. In fact, many suppliers are concerned that these
7 cost estimates are systematically biased downwards. As Mr. Stoddard notes in his
8 testimony, the cost estimates used to evaluate Static De-List Bid proposals "[exclude]
9 cost categories that many suppliers consider to be going-forward or opportunity
10 costs" ³² If so, any efficiency benefit from reducing the exercise of market power
11 could be overwhelmed by the inefficiencies created from the regulatory barriers to exit
12 created by such biased mitigation.

13 Q PLEASE DESCRIBE PROFESSOR BLUMSACK'S PROPOSAL IN MORE DETAIL.

14 A Professor Blumsack, in his July testimony on behalf of the Joint Filing Supporters, makes
15 the remarkable claim that, in some circumstances, even truthful bidding in the FCA needs
16 to be mitigated:

17 [S]uppliers do not necessarily need to submit de-list bids at
18 uncompetitive price levels in order to manipulate the FCA through
19 the triggering of a Capacity Zone. Thus, cost-based screens by the
20 ISO-NE Internal Market Monitor . . . are necessary but not
21 sufficient in preventing the exercise of market power in the FCA. ³³

³² Stoddard Test. at 39:6-8.

³³ Blumsack Test. at 7:12-16.

1 The suggestion, apparently, is that a supplier ought to be required to bid less than its true
2 cost for resources that are required for reliability, if truthful bidding would trigger a zonal
3 separation that benefits that supplier.

4 Q PROFESSOR BLUMSACK'S PROPOSED MITIGATION ONLY APPLIES TO
5 THOSE WITH STRUCTURAL MARKET POWER, WHO WOULD TRIGGER
6 ZONAL SEPARATION WERE THEY TO BID TRUTHFULLY. WHY IS THAT
7 OVERLY-RESTRICTIVE?

8 A Such a suggestion is deeply confused, as it conflates *having* market power with
9 *exercising* market power. To see the point, consider a monopolist that, for some reason,
10 behaves *as if* in a perfectly competitive market. One would say that this monopolist has
11 market power but fails to exercise it. In much the same way, consider a large supplier in
12 the FCA who bids *as if* all of its resources have been divested to bid competitively. Such
13 competitive resources will bid truthfully and no sensible regulatory regime would stop
14 them from doing so. Thus, any suggestion that suppliers with market power should not
15 be allowed to bid truthfully is as strange and misguided as a suggestion that a monopolist
16 should not be allowed to charge the same price that would prevail in a competitive
17 market.

18 Q PLEASE SUMMARIZE YOUR ARGUMENT IN THIS SECTION.

19 A All market participants always ought to be allowed to submit truthful, competitive bids.
20 This is one of the most basic principles of proper market-power mitigation, but it has
21 received short shrift in two of the most recent proposals to mitigate seller-side market
22 power. Indeed, in their exuberance to restrict suppliers' ability to bid freely in the
23 FCA—regardless of whether that supplier has or is exercising market power—both ISO-

1 NE's proposal to lower the threshold for Dynamic De-List Bids to \$1/KW-month and
2 Professor Blumsack's proposal to mitigate competitive bids when such bids would cause
3 a zonal separation are likely to *create* needless inefficiencies in the market.

4 Q DOES THIS CONCLUDE YOUR TESTIMONY?

5 A Yes.

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

ISO New England Inc. and New England Power Pool)	Docket No. ER10-787-000
New England Power Generators Association, Inc.)	
)	
v.)	Docket No. EL10-50-000
)	
ISO New England Inc.)	
PSEG Energy Resources & Trade LLC, <i>et al.</i>)	
)	
v.)	Docket No. EL10-57-000
)	
ISO New England Inc.)	

I, David L. McAdams, being duly sworn, depose and state that the contents of the foregoing supplementary testimony on behalf of the New England Power Generators Association is true, correct, accurate and complete to the best of my knowledge, information, and belief.

David McAdams

SUBSCRIBED AND SWORN to before me this ____ day of August 2010.

(Notary Public)

My commission expires: _____