Public Policy and Energy Markets: Order 1000, NY Energy Highway, and Beyond



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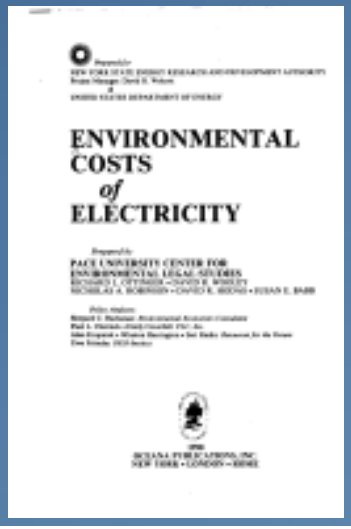
Our Mission

The mission of the Pace Energy and Climate Center is to reduce the environmental, social, and human health burdens of today's predominant forms of electricity production and consumption and to promote climate change solutions. Our multi-disciplinary team aims to accelerate the world's transition to clean, efficient and renewable energy alternatives.


ENVIRONMENTAL
COSTS
of
ELECTRICITY

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How we pursue that mission

- We provide analysis of the social and environmental costs and benefits of electricity and fuel production alternatives, including their impact on climate change.
- We propose market mechanisms and regulatory structures that will stimulate investment in energy efficiency, renewable energy and clean distributed generation technologies.
- We explore ways to break down the regulatory and market barriers that add cost, uncertainty and delay to the implementation of clean energy technologies.
- We train the next generation of sustainable energy advocates by actively involving student interns in all our work.

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Order 1000
(Regional)

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Order 1000 establishes three key requirements re regional transmission*

1. Each "transmission provider" must "participate in a regional transmission planning process that produces a regional transmission plan and complies with existing Order No. 890 transmission planning principles." [Para. 68]

2. These processes must "provide all stakeholders the opportunity to provide input into what they believe are **transmission needs driven by Public Policy Requirements** [PPRs], rather than the ... transmission provider planning only for its own needs or the needs of its native load customers." [Para. 203]

3. Transmission providers **"have an affirmative obligation ... to evaluate alternatives [including transmission and non-transmission alternatives] that may meet the needs of the region more efficiently or cost-effectively [than a transmission provider's proposed transmission solutions]**," para. 80; and to give non-transmission alternatives "comparable consideration." [Para. 155]

* http://www.scotthemplinglaw.com/files/pdf/ppr_order_1000-state_planning_hempling0612.pdf

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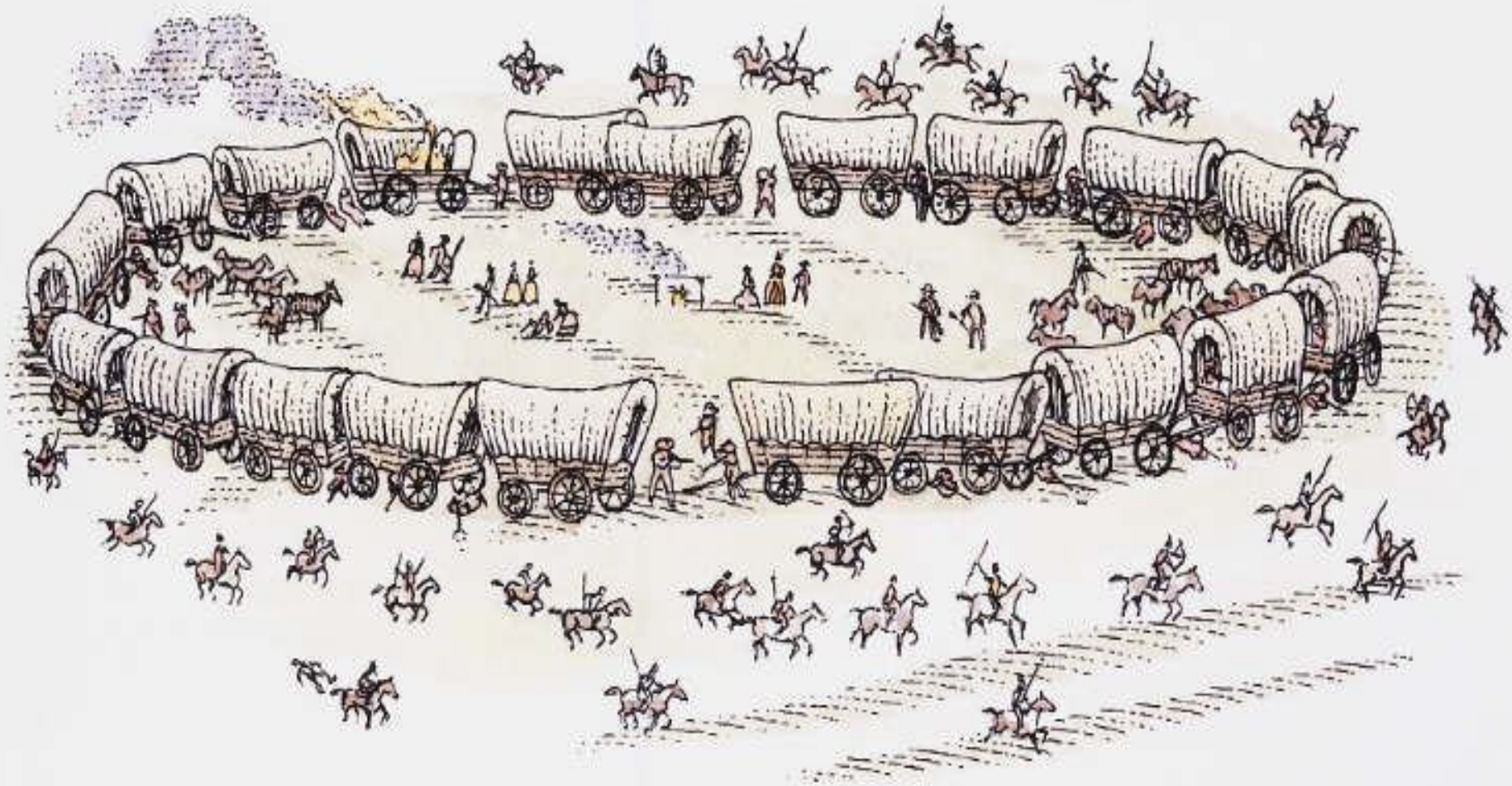
Order 1000
(Inter-regional)



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Why do we need O-1000?

- **If we had perfect markets with no externalities and perfect knowledge shared by all participants, then we would not need O-1000. . .but we have none of those things, so we need the Order.**

- **Public vs. Private Interests:** In society when there is the possibility of deviation between an entity's own pecuniary self-interest and the statutorily defined public interest—we regulate.

- **Balancing jurisdictional obligations:** RTOs and Utilities are inherently focused on serving the needs of their native load, without interregional coordination requirements suboptimal outcomes may result.

- **Prudence principle:** RTOs must ensure that any project that seeks cost-recovery is the "survivor" of an objective, thorough comparison of *all* possible solutions, including NTAs; O-1000 adds to this process the requirement to also consider and accommodate PPRs in the planning process.

- FERC has recognized that current market structures fail to bridge these divides; Order 1000 will help begin to fill these gaps.

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NY Energy Highway Proposal

- *Energy Efficiency in the NYISO Capacity Markets**

Northeast Energy Efficiency Partnerships (NEEP)

Conservation Services Group (CSG)

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* http://www.nyenergyhighway.com/Content/documents/53.pdf

Why Energy Efficiency?

- **Consumer benefits:** As a least cost and least risk resource, energy efficiency can put direct downward pressure on capacity prices.

- **Environmental benefits:** As a zero emissions resource that need not purchase emissions allowances or incur other emissions control costs, increased penetration of EE that would result if it were fairly compensated would improve air quality and reduce the compliance costs of the state's supply mix—costs that are ultimately borne by load.

- **Reliability benefits:** Along with demand response, EE projects—particularly when installed in targeted load pockets—can improve reliability by reducing congestion and strain on transmission and distribution infrastructure.

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Status Quo is a Market Failure

- **Current market rules discriminatory:** A downward adjusted load forecast does not equate to comparable/adequate "compensation" for EE.

- **Inconsistent with Neighboring RTOs:** Both ISO-NE and PJM—at the direction and encouragement of FERC—allow EE to participate on equal footing with generation and DR in their capacity markets.

- **Denies ratepayers full benefits of public programs:** Ensuring EE projects are eligible to be appropriately compensated for the capacity value they provide will stretch finite public dollars across more projects.

- **Eligibility does not mean special treatment:** For EE to participate in capacity markets, it must meet a higher level of EM&V, and face penalties for nonperformance. . .just like other capacity resources. Other RTOs have such protocols in place.

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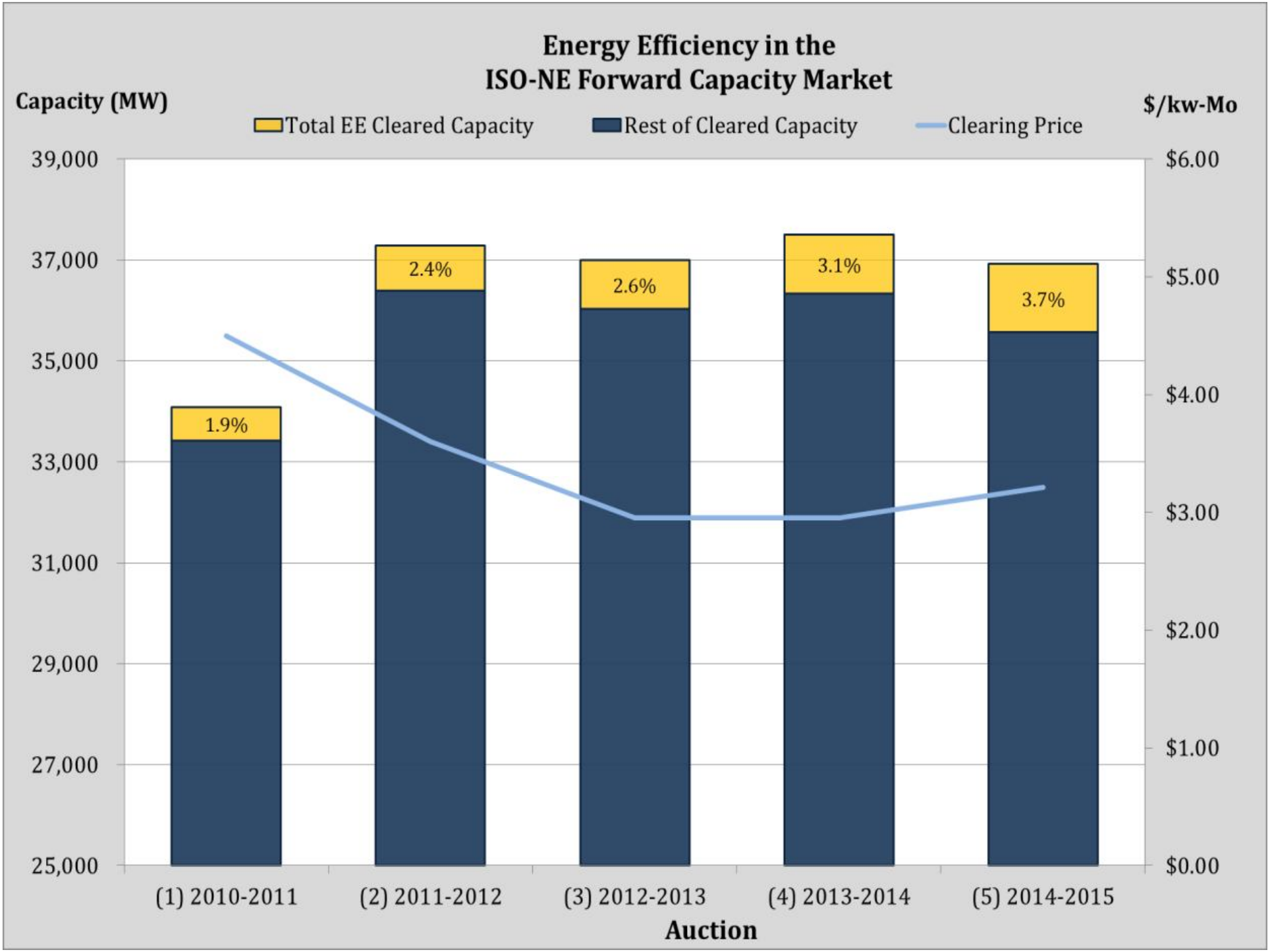
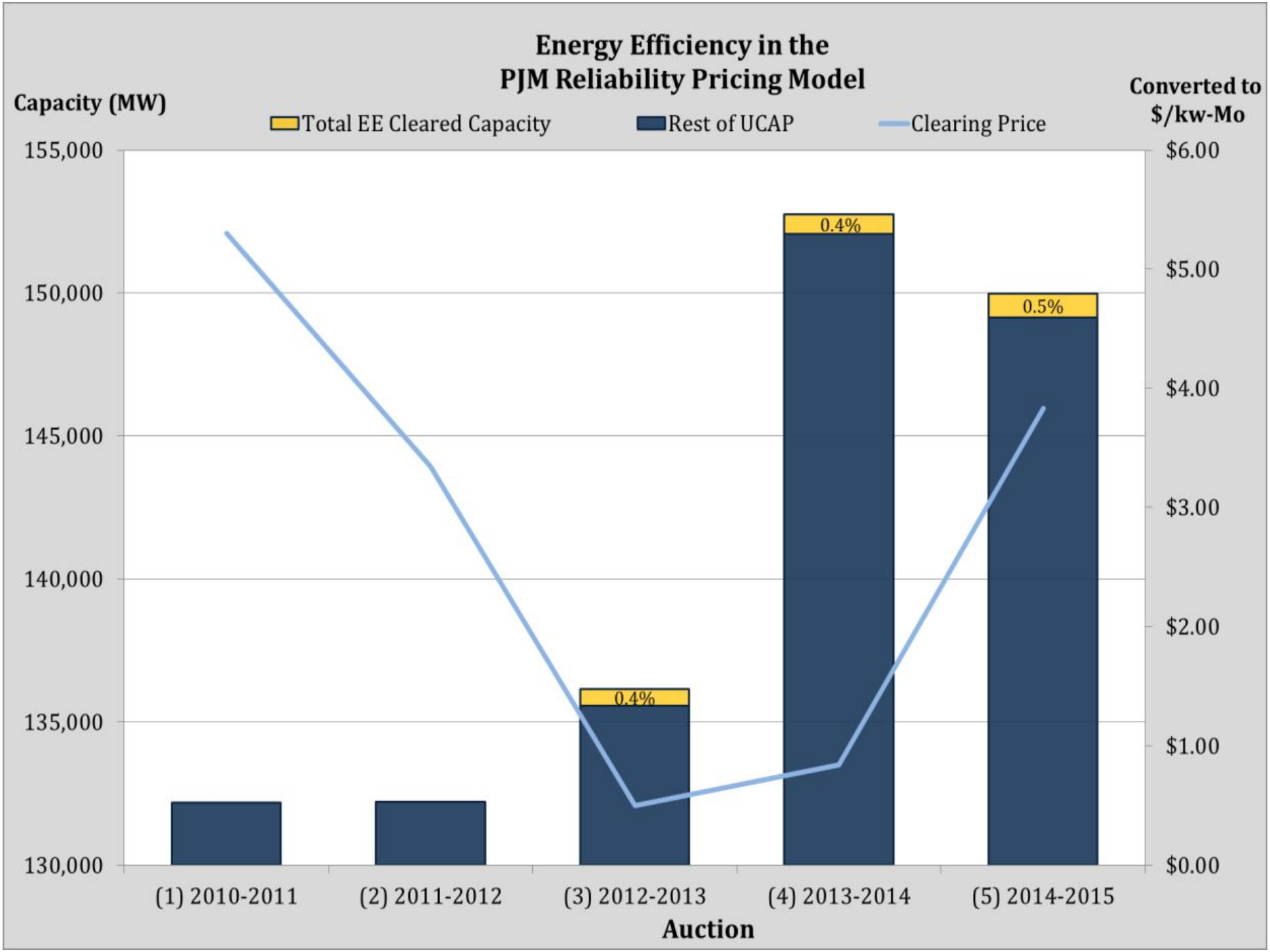

Energy Efficiency in the
ISO-NE Forward Capacity Market
Capacity (MW)
$/kw-Mo
Total EE Cleared Capacity
Rest of Cleared Capacity
Clearing Price
39,000
37,000
35,000
33,000
31,000
29,000
27,000
25,000
$6.00
$5.00
$4.00
$3.00
$2.00
$1.00
$0.00
1.9%
2.4%
2.6%
3.1%
3.7%
(1) 2010-2011
(2) 2011-2012
(3) 2012-2013
(4) 2013-2014
(5) 2014-2015
Auction


Energy Efficiency in the
PJM Reliability Pricing Model
Capacity (MW)
Converted to $/kw-Mo
Total EE Cleared Capacity
Rest of UCAP
Clearing Price
155,000
150,000
145,000
140,000
135,000
130,000
$6.00
$5.00
$4.00
$3.00
$2.00
$1.00
$0.00
0.4%
0.5%
0.4%
(1) 2010-2011
(2) 2011-2012
(3) 2012-2013
(4) 2013-2014
(5) 2014-2015
Auction

ISO-NE Forward Capacity Market

Auction	NICR [2]	Total Resources Cleared (TRC) [2]	Total EE Cleared [1]	EE as a % of TRC	New EE as a % of Total EE [1]	Clearing Price ($/kw-Mo) [2]	Estimate of Yearly Payments	
							TRC	EE
(1) 2010-2011	32,305	34,077	654	1.9%	41%	$4.50	$ 1,840,158,000	$ 35,316,000
(2) 2011-2012	32,528	37,283	890	2.4%	26%	$3.60	$ 1,405,209,600	$ 38,448,000
(3) 2012-2013	31,965	36,996	974	2.6%	21%	$2.95	$ 1,131,561,000	$ 34,479,600
(4) 2013-2014	32,127	37,501	1,166	3.1%	20%	$2.95	$ 1,137,295,800	$ 41,276,400
(5) 2014-2015	33,200	36,918	1,354	3.7%	16%	$3.21	$ 1,278,864,000	$ 52,156,080

PJM Reliability Pricing Model

Auction	UCAP [3]	Total EE Cleared [3]	EE as a % of UCAP	% of EE Cleared at Auction [3]	Clearing Price		Estimate of Yearly Payments	
					($/MW-day) [3]	Converted ($/kw-Mo)	UCAP	EE
(1) 2010-2011	132,191	-	0%	-	$ 174.29	$ 5.30	$ 8,409,411,019	-
(2) 2011-2012	132,222	-	0%	-	$ 110.00	$ 3.35	$ 5,308,693,225	-
(3) 2012-2013	136,144	568.9	0.4%	87%	$ 16.46	$ 0.50	$ 817,936,534	$ 3,417,894
(4) 2013-2014	152,743	679.4	0.4%	90%	$ 27.73	$ 0.84	$ 1,545,983,674	$ 6,876,513
(5) 2014-2015	149,975	822.1	0.5%	99%	$ 125.99	$ 3.83	$ 6,896,789,045	$ 37,805,378

Notes:

NICR, UCAP and Total EE Cleared are all shown in MWs.

NICR= Net Installed Capacity Requirements

UCAP= Unforced Capacity, the total resources cleared at auction

Effective Payment Rate in ISO-NE is in $/kw-Mo and in PJM the rate is in $/MW-day. "Converted" column shows the converted equivalent. In the figures, both markets are shown in $/kw-Mo.

"Estimate of Yearly Payments" is a calculation made by multiplying the payment rate or clearing price by the total resources cleared at auction

Sources:

[1] "Energy Efficiency in the ISO-New England Planning Process ". 2011 ISO New England Inc. http://neep.org/uploads/EMV%20Forum/ISONE_Winkler_PPT.pdf

[2] Forward Capacity Market Total Flow Diagrams in ISO-NE's FCM Calender and Auction Results
http://www.iso-ne.com/markets/othrmkts_data/fcm/cal_results/index.html

[3] RPM Base Residual Auction Reports:
2010/2011 RPM Base Residual Auction Report, February 1, 2008.
2011/2012 RPM Base Residual Auction Report, May 15, 2008.f
2012/2013 RPM Base Residual Auction Report (PJM DOCS #540109) May 15, 2009.
2013/2014 RPM Base Residual Auction Report (PJM DOCS #592585), June 6, 2010.
2014/2015 RPM Base Residual Auction Report (PJM DOCS #645284) May 13, 2011.
http://www.pjm.com/markets-and-operations/rpm/rpm-auction-user-info.aspx#Item07

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Conclusions

- Order 1000 is the next logical step in the evolution of grid planning, and we can comply in a manner that benefits society while not undermining the markets.

- The Energy Highway and State Energy Plan will be directly impacted by how NY complies with O-1000.

- With so many aspects of our energy system in need of upgrades, NY has an unprecedented opportunity to take a comprehensive rather than piecemeal approach to its energy future. Any and all paths forward on those initiatives must include robust, long-term support for energy efficiency to complement other investments.

- Cooperation—like energy efficiency—is much cheaper and more cost-effective than alternatives.

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What kind of grid will they inherit?

Efficient Markets AND sound Public Policy will be essential to their sustainable energy future.

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