



## Comment

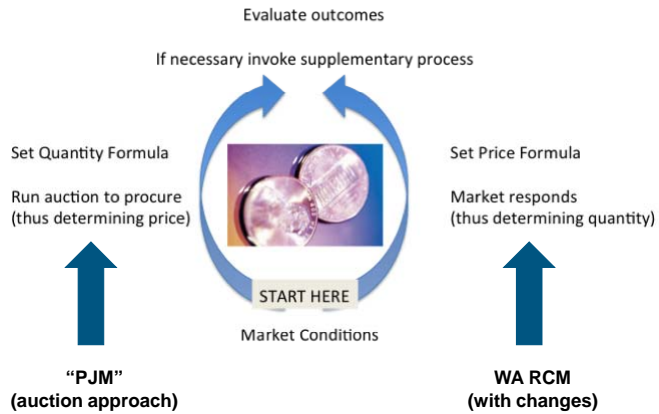
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- Seems to be much confusion on how to estimate the cost of "excess"
- Brendan used a marginal value and represented it as applicable to all excess → not correct
  - Marginal value will approach MRCP as excess → zero
  - Brendan's 100x estimate is closer to 3x than 100x
- ERA used an estimate that does not reflect contracting and RCP formula impacts
  - Reduces impact by about 50%
- No one seems to be using an estimate that can be linked to a "how do we make sure that the hypothetical world can actually happen" concept
- There is no point in estimating a counterfactual that is pure fiction

## Two basic choices: both are valid if implemented well

- Desirable characteristics:

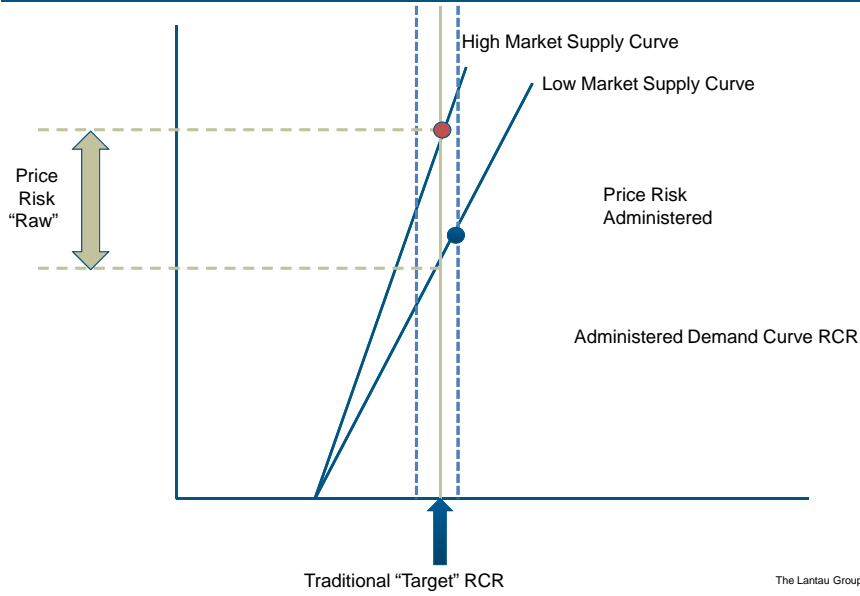
- Market-based
- Self-correcting
- Puts risk where it can be managed
- Incentivises desirable behaviours
- Compatible with longer-term market developments/evolution options



## Complexity of Capacity Markets with Auction Components

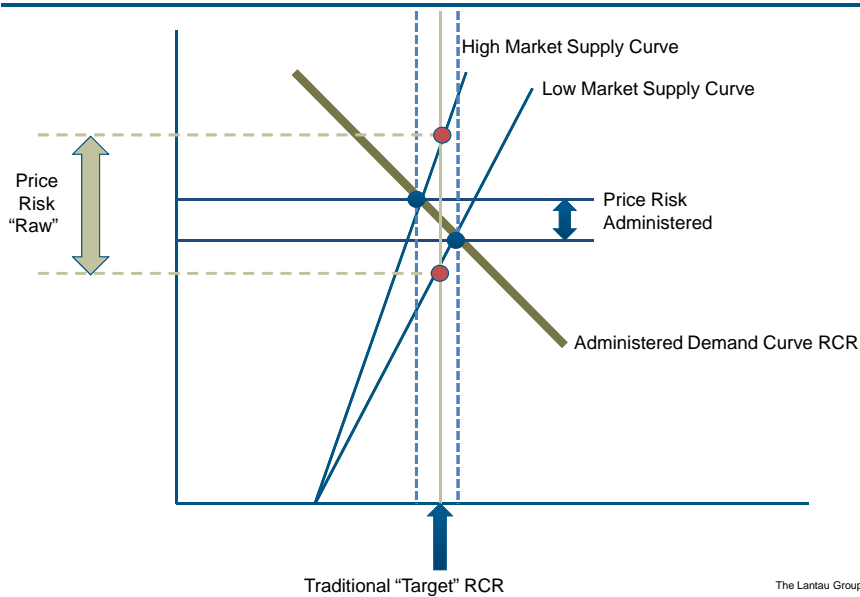
PJM	NYISO	ISO-NE
<ul style="list-style-type: none"> <li>• One year commitment 3 years forward</li> <li>• Sloped VRR curve in RPM auction</li> <li>• Locational market clearing</li> <li>• Energy and AS margins for marginal new unit accounted for in setting demand curve</li> <li>• UCAP product with penalties/bonuses based on performance relative to EFORD during peak hours.</li> <li>• Bids subject to significant mitigation for seller and buyer market power.</li> </ul>	<ul style="list-style-type: none"> <li>• Seasonal and monthly auctions for prompt period</li> <li>• Administrative demand curve in spot auction</li> <li>• NYC and LI requirements</li> <li>• Energy and AS margins for marginal new unit accounted for in setting demand curve</li> <li>• UCAP product with availability determined by EFORD metric</li> <li>• FERC proceeding underway to review market design, which currently only applies to divested units in NYC</li> </ul>	<ul style="list-style-type: none"> <li>• One year commitment 3 years forward</li> <li>• Descending clock auction with vertical demand curve</li> <li>• Locational market clearing</li> <li>• Ex post PER adjustment                             <ul style="list-style-type: none"> <li>• Based on earnings of a 22,000 Btu/Kwh unit</li> <li>• Rolling average for 12 months prior to delivery.</li> </ul> </li> <li>• Availability metric based on performance in critical hours</li> <li>• Bid and payments not mitigated for new units; existing units subject to mitigation measures</li> </ul>

Variable Resource Requirement has emerged as one of the more effective ways to yield reasonable solutions to the zero/infinity problem



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The "variable resource requirement" (VRR) or "demand" curve involves a change in approach to resource adequacy and reliability standards

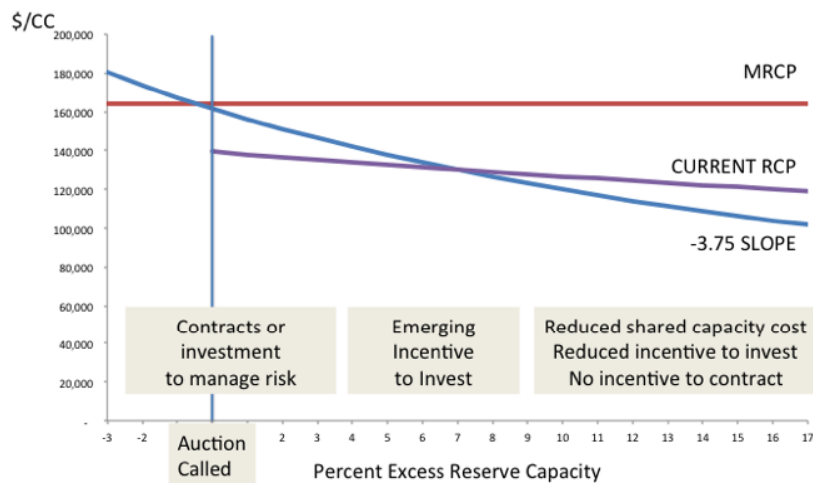


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## Proposal for the RCM

- Retain the RCM and recognise that it can be an effective market-based mechanism, but that it requires several significant adjustments.
- Steepen the slope factor in the RCP formula to -3.75
- Increase the maximum RCP to 110% of the MRCP (or build in a 10% margin within the MRCP)
- Use 97% of the RCR as the basis for the RCP formula (so that the RCP is 110% of the MRCP at 97% of the RCR, and is equal to the MRCP at the RCR).
  - Note that a supplemental auction would still be called if the CCs fall below the RCR. Under such situation, any uncontracted CCs procured through the IMO would be sold at up to 110% of the RCP, per the formula.
- Implement the refunds + rebate (recycling) regime as discussed

## Proposed structure



## What to compare the current regime to?

Assumes 15% ERC

Assumed average contract price (as % of MRCP)	Proposed @50% Contracting		Existing @50% Contracting		90% @ contract price; 10% at MRCP (No Excess)
90%	\$759,681,867		\$809,460,769		\$791,682,892
85%	\$738,584,823		\$787,711,239		\$752,533,738
80%	\$717,487,779		\$765,961,709		\$713,384,584

The "No Excess" case is a control case in which, essentially, a spigot control concept is applied so that only the precise amount of reserve capacity is included (Zero Excess) – but the cost is in accordance with the contract price assumption, a contract level (90%) assumption and the MRCP

The "Existing" case incorporates the current RCP formula and 50% contracting

The "Proposed" case incorporates the steeper slope, 97% offset and a +3% adjustment upwards to account for "lost" refund regime revenue

In all cases, and across a wide range of assumptions, when contracting is at 50%, the "no excess" case is always more expensive than the existing case – the reason is simple – there is no contracting incentive, so a significant amount of RCP risk (including MRCP resets) already flows through to capacity resource providers.

## What to compare the current regime to?

Assumes 3% ERC

Assumed average contract price (as % of MRCP)	Proposed @50% Contracting	Proposed @90% Contracting	Existing @50% Contracting	Existing @90% Contracting	90% @ contract price; 10% at MRCP (No Excess)
90%	\$805,504,940	\$806,193,823	\$772,002,735	\$798,017,707	\$791,682,892
85%	\$784,407,896	\$768,219,144	\$750,253,205	\$758,868,553	\$752,533,738
80%	\$763,310,852	\$730,244,465	\$728,503,675	\$719,719,399	\$713,384,584

The Existing RCM has no clear contracting incentive unless contracts are available at prices less than or equal to 80% of the MRCP – otherwise, Market Customers are always better off not contracting

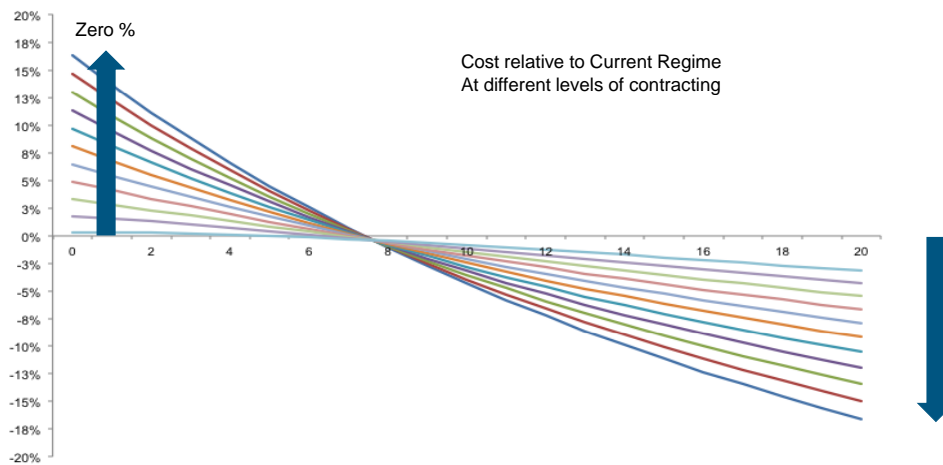
While the proposed regime is slightly more expensive than a hypothetical "perfect" regime, there is no magical way to achieve the perfect hypothetical regime without a mechanism

The small differences (less than 2 percent) between the cost of the proposed mechanism and the hypothetical seems well within reasonable bounds for a self-correcting market-based mechanism

Alternatively – and more usefully -- what is the cost to the market of one more capacity credit, for a given contract position

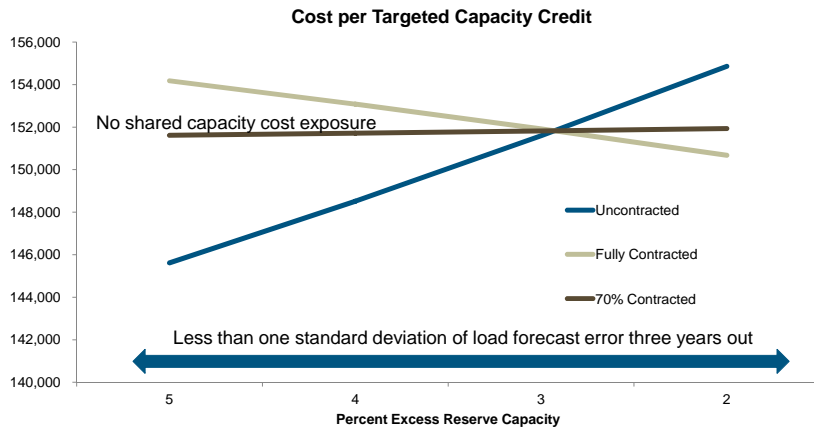
Contract Level	13.8% ERC	13.9% ERC	Delta Cost	Credits 13.8	Credits 13.9	Delta Credits	Cost per Credit
PROPOSD 50%	763,125,626	\$762,831,400	(294,226)	6,041	6046	5	(58,845)
CURRENT 50%	806,070,455	806,355,709	285,254	6041	6046	5	51,902
PROPOSD 0%	668,124,212	667,176,401	(947,811)	6,041	6046	5	(189,562)
CURRENT 0%	739,484,020	739,484,020	0	6041	6046	5	0
PROPOSD 100%	858,127,039	858,486,399	359,360	6,041	6046	5	71,872
CURRENT 100%	872,656,889	873,227,399	570,510	6041	6046	5	114,101

Proposal produces simple, hedge-able results with incentives for investment when needed, as well as stronger disincentives when excess exists



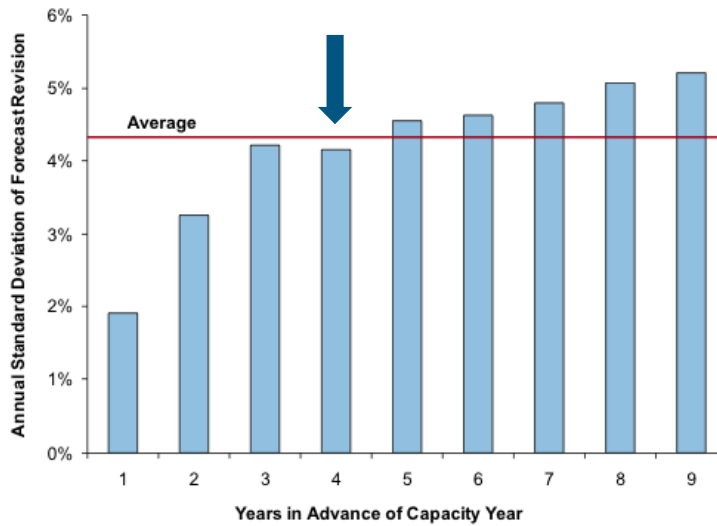
Assumes bilateral contracts available at, on average, 90% of the MRCP

Proposal provides a clear risk management structure



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Forward load forecast risk is substantial (circa 4% three years out)



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Efficiency	Competition	Discrimination	Cost	Usage
1	2	3	4	5
Y	Y	Y	Y	0

Y = promote  
O = neutral  
X = conflict