

MA/PJM Scarcity Pricing Proposals: High Level Comparison

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Monitoring Analytics

MA and PJM Approaches

Basic Mechanics		
	MMU Proposal	PJM Proposal
Mechanics	<ol style="list-style-type: none"> 1) ORDC 2) Penalty Factors Drive Dispatch in and of Scarcity 3) Cooptimization of energy and reserves 4) Opportunity cost paid to reserves based on LMP 5) Opportunity cost paid to reserves specific to each unit's actual opportunity cost 6) Increases and maintains LMP during Scarcity 7) Prices signals/compensation/marginal incentives consistent with dispatch solution 8) Max price of \$1,000: Relaxes the constraint, set price equal to offer cap 9) One reserve target (for now): Sync 10) \$1,000 Penalty Factor(s). 	<ol style="list-style-type: none"> 1) Same 2) Same 3) Same 4) Same 5) Opportunity cost paid to each reserve is the highest opportunity cost incurred in the reserve region, with the exception of Tier 1 reserves. 6) Same 7) Same 8) Max price \$2,700: Binds the constraint, forces penalty factor(s) to directly affect price 9) Sync and Primary targets 10) Two \$850 Penalty Factors

MA and PJM Approaches

Price Level in Shortage/Scarcity	
MMU Proposal	PJM Proposal
<ol style="list-style-type: none"> 1) Max price during Scarcity is \$1,000 2) Compatible with \$1,000 DA and RT offer cap 3) Sufficient to attract resources, including DR, needed to meet reliability requirements 4) Assumes PJM planning has arranged sufficient resources to meet reliability requirements at prices up to \$1,000 5) \$1,000 price during scarcity is compliant with Order 719. 	<ol style="list-style-type: none"> 1) Max price during scarcity is \$2,700 2) Can exceed \$1,000 offer caps. 3) Requires changes in DA offer caps/market rules 4) Assumes \$1,000 is not sufficient to attract enough resources for reliability.

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RPM Scarcity Revenue Offset		
	MMU Proposal	PJM Proposal
RT Offset	<ol style="list-style-type: none"> 1) RPM payments are scarcity revenues 2) RPM resources are not paid scarcity revenues until scarcity revenues exceed the RPM capacity payment for the delivery year. 	<ol style="list-style-type: none"> 1) No immediate offset. Scarcity Revenues included only in the three year average historical Energy and Ancillary Service Offset. Affects the CONE unit and unit ACR.
RT Offset Benefits/Issues	<ol style="list-style-type: none"> 1) Prevents double collection of scarcity revenue. 2) Does not reduce net CONE and incentive for new entry. 3) Allows for direct offset to customers affected by real time scarcity prices. 	<ol style="list-style-type: none"> 1) Long lag between scarcity and impact on RPM price. Creates volatility in RPM prices. 2) Hard to predict RPM prices. Disincentive for new entry. 3) Mismatch between loads that pay scarcity and receive any offset.

MA and PJM Approaches

Treatment of emergency actions: Voltage Reduction and Manual Load Dump		
	MMU Proposal	PJM Proposal
Mechanism	<ol style="list-style-type: none">1) Shift the ORDC curve to account for emergency actions (tighten constraint).2) Prevents scarcity price collapse	<ol style="list-style-type: none">1) Unclear2) Prevents scarcity price collapse

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Treatment of emergency resources: Emergency DR		
	MMU Proposal	PJM Proposal
Emergency DR	<ol style="list-style-type: none">1) Emergency DR cannot set prices without metering.2) Emergency DR does not meet the definition of a marginal resource without a specific location and dispatch.3) Emergency DR is paid as capacity to reflect the fact that DR will not use capacity when needed by those paying for it.	<ol style="list-style-type: none">1) Emergency DR can set price.

MA and PJM Approaches

Treatment of emergency resources: Emergency Purchases		
	MMU Proposal	PJM Proposal
Emergency Power Purchases	<ol style="list-style-type: none">1) Retain rule that Emergency Power Purchases cannot set price.2) Avoid potential market power issues	<ol style="list-style-type: none">1) Emergency Power Purchases can set price.

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Treatment of emergency resources: Tier 2 Commitments		
	MMU Proposal	PJM Proposal
Tier 2 Commitments	<ol style="list-style-type: none"> 1) Retain hour ahead Tier 2 market, with single clearing price. 2) Retain use of Tier 2 commitments in 5 minute optimization, with true up of opportunity cost. 3) Additional within-hour Tier 2 commitments valued according to actual opportunity cost. 	<ol style="list-style-type: none"> 1) Eliminate hour ahead Tier 2 market. 2) Replace market with non-market look ahead commitments for a subset of units, no set price. 3) Pricing of all Tier 2 resources based on hourly integrated max opportunity cost in reliability region.