

A large, light gray sunburst graphic is positioned on the left side of the slide, partially behind the main title. It consists of numerous triangular rays of varying lengths radiating from a central point.

2016/2017 Planning Resource Auction Results

April 15, 2016

Revised 4/15/2016 to Include Total Offer Submitted by Zone on Slide 8

Executive Summary

- MISO Region has adequate resources to meet its Planning Reserve Margin Requirement of 135,483 MW
 - Zone 1 cleared at \$19.72/MW-day
 - Zones 2-7 cleared at \$72.00/MW-day
 - Zones 8-10 cleared at \$2.99/MW-day
- Implemented FERC's Order in Docket ER16-833-000 that modified Reference Levels, Capacity Import Limits (CILs) and Local Clearing Requirements (LCRs)
- Regional generation supply is consistent with the 2015 MISO OMS Survey

Auction Inputs and Considerations

- MISO's Resource Adequacy construct combines regional and local criteria to achieve a least-cost solution for the region subject to the following:
 - MISO-wide reserve margin requirements
 - Zonal capacity requirements (Local Clearing Requirement)
 - Zonal transmission limitations (Capacity Import/Export Limits)
 - Sub-Regional contractual limitations such as between MISO's South and Central/North Regions
- The MISO-wide reserve margin requirement is shared among the zones, and zones may import capacity to meet this requirement
- Multiple options exist for Load Serving Entities to demonstrate Resource Adequacy:
 - Submit a Fixed Resource Adequacy Plan
 - Utilize bilateral contracts with another resource owner
 - Participate in the Planning Resource Auction
- The Independent Market Monitor reviews the auction results for physical and economic withholding

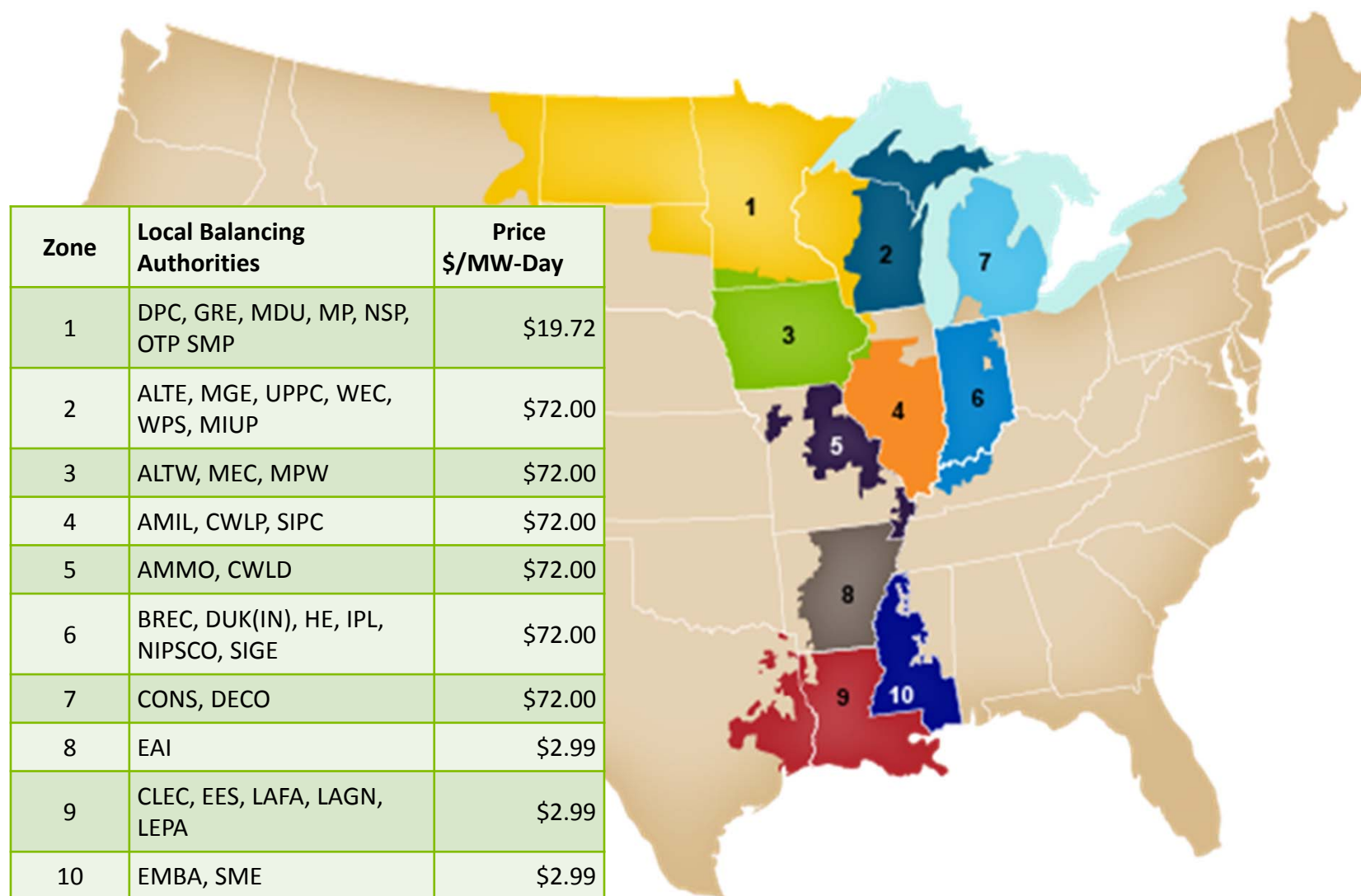
Changes since PRA 2015/2016

- Tariff revisions approved in FERC Docket No. ER16-833-000 implemented, including increased CILs, decreased LCRs, and reduced Initial Reference Level to \$0/MW-day
- Sub-Regional Export Constraint in the South to Midwest direction modified to reflect the Settlement Agreement
- LRZ 10 for the State of Mississippi established – No impact
- Other minor changes:
 - EPA RICE-NESHAP* regulations, which likely led to some additional retirements incremental to our OMS survey results
 - Allocation of Zonal Deliverability Benefit revised – pending FERC decision
 - Suspended units required to participate in the PRA – No impact

Auction Output and Settlements

- Key outputs from the auction are:
 - A commitment of capacity to the MISO region, including performance obligations and
 - The capacity price (Auction Clearing Price) for each Zone
- This price drives the settlements process
 - Load pays the Auction Clearing Price for the Zone in which it is physically located
 - Cleared capacity is paid the Auction Clearing Price for the Zone where it is physically located
 - External Resources are paid the price of the Zone where their firm transmission service crosses into MISO

2016/2017 Auction Clearing Price Overview



Auction Clearing Prices

\$/MW-day

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9	Zone 10
2014-2015 ACP*	\$3.29	\$16.75	\$16.75	\$16.75	\$16.75	\$16.75	\$16.75	\$16.44	\$16.44	N/A
2015-2016 ACP*	\$3.48	\$3.48	\$3.48	\$150.00	\$3.48	\$3.48	\$3.48	\$3.29	\$3.29	N/A
2016-2017 ACP*	\$19.72	\$72.00	\$72.00	\$72.00	\$72.00	\$72.00	\$72.00	\$2.99	\$2.99	\$2.99
<i>Conduct Threshold</i>	<i>\$25.80</i>	<i>\$26.06</i>	<i>\$25.52</i>	<i>\$25.93</i>	<i>\$26.42</i>	<i>\$25.85</i>	<i>\$25.98</i>	<i>\$24.76</i>	<i>\$25.12</i>	<i>\$24.60</i>
<i>Cost of New Entry</i>	<i>\$258.00</i>	<i>\$260.58</i>	<i>\$255.15</i>	<i>\$259.26</i>	<i>\$264.19</i>	<i>\$258.47</i>	<i>\$259.81</i>	<i>\$247.56</i>	<i>\$251.21</i>	<i>\$246.05</i>

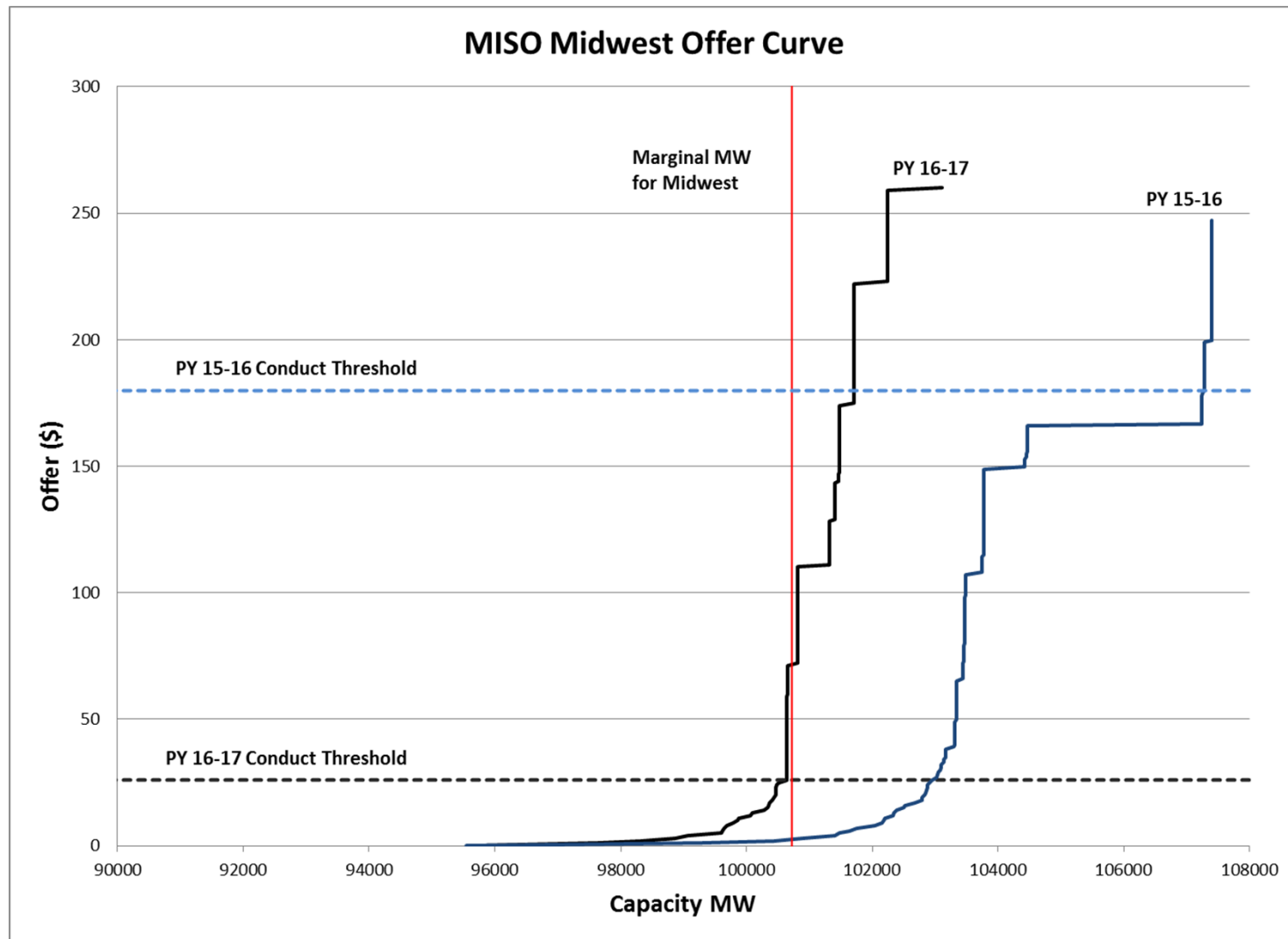
- Conduct Threshold is 10% of Cost of New Entry (CONE) for each Zone
- Conduct Threshold is \$0 for a Generation Resource with a Facility Specific Reference Level

* Auction Clearing Price

2016/2017 Planning Resource Auction Results

Local Resource Zone	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8	Z9	Z10	System
PRMR	18,185	13,589	9,879	10,375	8,518	18,750	22,406	8,178	20,713	4,891	135,483
Total Offer Submitted (Including FRAP)	19,430	14,903	10,138	11,371	7,926	18,398	21,615	10,587	20,257	6,899	141,524
FRAP	14,252	12,063	501	910	0	4,338	1,393	318	577	1,641	35,995
ZRC Offer Cleared	4,522	2,840	9,636	8,242	7,927	14,060	20,141	9,676	17,934	4,511	99,488
Total Committed (Offer Cleared + FRAP)	18,775	14,903	10,138	9,152	7,927	18,398	21,534	9,995	18,511	6,151	135,483
LCR	15,918	12,986	8,715	5,476	5,026	13,698	20,851	6,270	17,477	3,978	N/A
CIL	3,436	1,609	1,886	6,323	4,837	5,610	3,521	3,527	4,490	2,653	N/A
Import	0	0	0	1,224	592	352	872	0	2,202	0	5,240
CEL	590	2,996	1,598	7,379	896	2,544	4,541	2,074	1,261	1,857	N/A
Export	590	1,315	258	0	0	0	0	1,817	0	1,260	5,240
ACP (\$/MW-Day)	\$19.72	\$72.00	\$72.00	\$72.00	\$72.00	\$72.00	\$72.00	\$2.99	\$2.99	\$2.99	N/A

Midwest Offer Curve 2015/2016 vs. 2016/2017



Next Steps

- Detailed results review at May 5 RASC
- Posting of PRA offer data 30 days after PRA conclusion – May 13

Acronyms

- ACP - Auction Clearing Price (\$/MW-Day)
- CEL - Capacity Export Limit (MW)
- CIL - Capacity Import Limit (MW)
- FRAP - Fixed Resource Adequacy Plan (MW)
- LCR - Local Clearing Requirement (MW)
- LRZ - Local Resource Zone
- PRA - Planning Resource Auction
- PRM - Planning Reserve Margin (%)
- PRMR - Planning Reserve Margin Requirement (MW)
- SREC – Sub-Regional Export Constraint
- SRIC – Sub-Regional Import Constraint

References

- Sub-Regional Export and Import Constraints discussed at the Supply Adequacy Working Group (SAWG)
 - October 29, 2015
 - December 3, 2015
 - February 4, 2016