Illinois MISO Zone 4
Resource Adequacy: Defining the Problem

MISO Competitive Retail Solutions Task Team
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Defining the Terms of the Discussion
Price Formation

• Framing document did not define the problem
• MISO Issue Statement identified two issues:
  – Price Formation
  – Timing

• Price Formation: According to the October, 2015 Issue Statement, price should
  – “efficiently recognize the marginal reliability value of incremental capacity relative to the regional and zonal planning requirement.”
  – Have “modest year-to-year volatility.”
Defining the Terms of the Discussion
Price Formation

• Price Formation
  • Evidence of marginal reliability *value* of incremental capacity lacking
  • Evidence of the *need* for incremental capacity, or *need* “relative to the regional and zonal planning requirement,” lacking
  • PRA Volatility: Except for 2015-16 Zone 4, limited volatility
    PJM RPM: Substantial volatility. See IIEC Presentation.
    Effect of market concentration in Zone 4 on volatility. See next slide.
    Role of the vertical demand curve
Market Concentration in Zone 4 Caused Volatility

• December 2013: Dynegy purchases around 3,000 MW of Zone 4 generation assets from Ameren Corp.

• Dynegy now controls 6,100 MW in Zone 4

• Around 7,400 MW of Zone 4 UCAP is non-Dynegy
Defining the Terms of the Discussion
Price Formation

• Recent FERC comments on Price Formation in MISO PRA:
  “We disagree with the Market Monitor’s claim that the MISO resource adequacy plan is 
producing unreasonable market outcomes ... Based on the supply and demand 
conditions in the 2013/2014 Planning Resource Auction, whose results are part of the 
record in this proceeding, we do not consider the clearing prices in this auction to be 
unreasonable, nor do we consider the results of this auction to be an indication that the 
auction clearing prices are not providing accurate information on the value of reliability. 
The record in this proceeding provides no evidence of insufficient resource development 
where it is needed to ensure reliability.” [addressing proposals for a sloped demand 
curve for MISO region]. Order on Rehearing, Docket No. ER11-4081-001, para. 155 (Nov. 
20, 2015)

• The search for a “solution” appears to assume that capacity prices 
are “too low” despite lack of evidence to support this conclusion.

• Exelon proposals would raise Reference Price to $260/MW-day, 
potentially increasing prices ten fold.

• Generator desire for more revenue should not be the basis for 
radical changes in the PRA to increase capacity prices for Illinois.
Defining the Terms of the Discussion
Timing

- October, 2015: MISO identified “Timing” as an obstacle to needed new resource investment
  - Evidence of the need for new resource investment lacking
  - Evidence linking new resource investment to the PRA lacking
  - Evidence on the various conditions associated with new investment lacking
- Factors affecting investment in new resources include:
  - conditions of scarcity or surplus
  - demand growth or contraction;
  - energy markets and prices;
  - bilateral contracts and long term purchase power agreements;
  - financial requirements
### Dynegy Capacity in the 2016/2017 Planning Year

<table>
<thead>
<tr>
<th></th>
<th>~MWs</th>
<th>Price ($/MW-day)</th>
<th>~Revenue (in $MM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MISO UCAP</td>
<td>6,100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exports to PJM - CP</td>
<td>730</td>
<td>$134.00</td>
<td>$35</td>
</tr>
<tr>
<td>Exports to PJM - Base</td>
<td>137</td>
<td>$59.37</td>
<td>$3</td>
</tr>
<tr>
<td>Bilateral Sales</td>
<td>913</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wholesale Sales</td>
<td>460</td>
<td>$125.61</td>
<td>$140</td>
</tr>
<tr>
<td>Retail Sales</td>
<td>1,680</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sold to Date</td>
<td>3,920</td>
<td></td>
<td>$178</td>
</tr>
<tr>
<td>Uncommitted Capacity</td>
<td>2,180</td>
<td></td>
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</tr>
</tbody>
</table>
Defining the Terms of the Discussion
Timing

• Recent FERC Comments on Timing in regard to the MISO PRA:

“Most capacity in MISO is obtained via long-term bilateral arrangements. Among other processes, it is during the negotiations and planning for these long-term commitments, that various resources and transmission options are considered – not during a two-month forward period. ... Despite Capacity Suppliers’ assertions, MISO has featured ongoing merchant entry and the development of utility-owned resources. The flaw in Capacity Suppliers’ argument is the premise that the annual capacity auction is the primary mechanism for LSEs to adjust their resource planning for significant changes. Based on the history of resource planning in MISO, this assumption is incorrect.” Order on Rehearing, Docket No. ER11-4081-001, para. 145 (Nov. 20, 2015)
Defining the Problem

- Presentations to the Task Team have failed to provide data or analysis to show that the PRA as constructed will result in insufficient resources.
- The framing document did not define the problem.
- It appears that the driving force is generator desire for more revenue, yet there is no evidence of cost, revenue shortfalls, or need for new resource investment.
- It is unreasonable to assume a “solution” is needed when the problem has not been described or supported by data or analysis.
Current Resources in MISO and Zone 4 Are More Than Adequate

PRA Surplus in Zone 4 Increased Under FERC December 31, 2015 Order

(all values in MW)

<table>
<thead>
<tr>
<th>Description</th>
<th>15/16</th>
<th>16/17</th>
<th>Change</th>
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<tbody>
<tr>
<td>a. Total Requirement in Zone 4</td>
<td>11,982</td>
<td>12,021</td>
<td>+39</td>
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<tr>
<td>b. Capacity Import Limit</td>
<td>3,130</td>
<td>4,328</td>
<td>6,425*</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>+1,198 +3,295</td>
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<tr>
<td>c. Local Clearing Requirement (a-b)</td>
<td>8,852</td>
<td>7,693</td>
<td>5,060*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-1,159 -3,792</td>
</tr>
<tr>
<td>d. Total Supply in Zone 4</td>
<td>12,944</td>
<td>12,945</td>
<td>0</td>
</tr>
<tr>
<td>e. Total Supply Net of Exports</td>
<td>11,994</td>
<td>11,122</td>
<td>-872</td>
</tr>
<tr>
<td>f. Surplus excl. Exports (e-c)</td>
<td>3,142</td>
<td>3,428</td>
<td>6,062</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>+286 +2,920</td>
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<tr>
<td>g. Surplus incl. Exports (d-c)</td>
<td>4,092</td>
<td>5,251</td>
<td>7,885</td>
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<td></td>
<td></td>
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<td>+1,159 +3,793</td>
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*Source: LOLE Feb. 19, 2016 Meeting Presentation: FERC Dec. 31 Order Local Requirements
**Gray values were changed pursuant to 12/31/15 FERC Order, Docket Nos. EL15-70 et al.
Future Resource Adequacy in MISO and Zone 4

- FERC December 31, 2015 Order results in recognition of all resources available to serve Zone 4, revealing a large surplus (see previous slide).
- Organization of MISO States (OMS) June, 2015 Survey confirmed that “the MISO region has sufficient resources to meet its regional resources requirement.” It projected a regional surplus of 1.7 to 2.3 GW in 2016 “with the first potential regional shortfall appearing in 2020.”
- OMS Survey: Zones 4 and 5 (Illinois and Missouri) together have a 0.7 GW surplus for 2016, and a continued projected surplus of 0.9 to 1.1 GW in 2020 (low certainty resources).
- MISO continues to refine OMS Survey; 2016 results scheduled for release in July.
- Illinois Energy Roadmap Report indicates Illinois will continue to be a net exporter of power under 12 of 16 possible future scenarios.


Illinois Energy Roadmap evaluates “how the development of new electric generation (natural gas and renewables) and the maintenance of existing non-fossil generation, expansion of transmission systems, and increased utilization of energy efficiency can be combined to support Illinois’ economic vitality, meet current and future environmental requirements, and maintain regional grid stability.”

Based on the premise that “energy market conditions can vary dramatically over time,” requiring analysis of several potential outcomes.

Currently ongoing process, stakeholders may submit written comments and participate in regional stakeholder meetings on March 16 and March 18. 
(https://sites.google.com/site/illinoisenergyroadmap)
• Models 16 possible scenarios using MarSi approach, considering market fundamentals:
  – Fuel
  – Available Generation, Transmission
  – Demand
• Data sources include EIA, NYMEX, FERC, NERC, EPA, DOE, NOAA, NRC, NREL.
• Addresses effect of *announced* generation retirements in Illinois; Clinton nuclear station retirement modeled.
• Includes projections of electricity exports and imports.
Illinois Roadmap and Modeling

• Brings together Illinois state agencies addressing energy: Governor’s Office, ICC, IPA, IEPA, IPCB

• “Seeks to bolster State and regional energy planning by facilitating stakeholder and inter-agency discussions and related activities concerning:

  (1) the future direction of the energy sector in the State and region, with emphasis on the electric power sector as well as natural gas supply and transport; and,

  (2) optimize how energy efficiency and renewable energy fit into the vision for the future.”
State Options for Resource Adequacy

- Most MISO states have state level resource adequacy planning.
- Higher capacity price in PJM insufficient to satisfy concerns about resource adequacy.
- PJM states New Jersey and Maryland’s legislative/regulatory efforts to support new local generation currently before the U.S. Supreme Court.
- State legislative and regulatory options to address resource adequacy to become clearer after U.S. Supreme Court decision in Hughes v. Talen Energy Marketing.
Illinois Regulatory Authority
Over Electricity Policy

• Illinois Commerce Commission: Energy efficiency and demand response programs and budgets

• Illinois Power Agency: Directs LSEs (e.g. Ameren Illinois) to procure energy and capacity

• Illinois Environmental Protection Agency to propose State Implementation Plan under CPP

• Illinois Pollution Control Board: Can grant hardship variances from environmental rules
Illinois Power Agency
Final 2016 Procurement Plan

- Filed as approved Feb. 22, 2016 in Ill. Commerce Comm’n Docket No. 15-0541
- Only 26% of Ameren capacity procured through the PRA for default customers
- Capacity Hedging Strategy for Ameren Illinois electric load (p. 123):

<table>
<thead>
<tr>
<th>June 2016-May 2017 (Upcoming Delivery Year)</th>
<th>June 2017-May 2018</th>
<th>June 2018-May 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>50% RFP in Sep. 2015 50% MISO PRA*</td>
<td>75% RFP in fall 2016 25% MISO PRA**</td>
<td>25% RFP in fall 2016 50% RFP in fall 2017 25% MISO PRA***</td>
</tr>
</tbody>
</table>

*, **, ***: MISO Auctions expected to clear in respective years
Reasons for Caution

- No data or analysis showing resource scarcity in Illinois
- No data or analysis to support the notion that the PRA results are unreasonable and that higher prices are appropriate
- No data or analysis showing that a forward PRA is a key factor to incent new generation
Risks

• Higher prices with no obligation to invest in environmental controls or new generation
• Distorting effect of market fundamentals such as supply and demand
• Isolating Zone 4, depriving Illinois of the benefits of MISO membership
• Isolating Zone 4, distorting the regional MISO market by restricting market participation
There Are Ways to Address Resource Adequacy

- PRA
- OMS Survey
- Market prices as indicators of available resources
- NERA
- Energy Information Agency (EIA)
- Illinois Energy Roadmap
- Illinois Environmental Protection Agency
- Clean Power Plan Implementation – Role of EPA, States, DOE, and FERC
- State legislative or regulatory action
Conclusion

Base action on verified data and analysis. Specify the problem to be solved. Do no harm. Do not rush.

Thank you

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