

U-18197 Capacity Demonstration Technical Conference II

AGENDA

- 10:30 a.m. MPSC Staff
- 11:30 a.m. – 12:45 p.m. Break for lunch – on your own
- 12:45 p.m. Constellation NewEnergy
- 1:45 p.m. Energy Michigan
- 3:15 p.m. – 3:30 p.m. Break
- 3:30 p.m. DTE Electric
- 5:00 p.m. Adjourn

MPSC Staff
10:30 a.m.

SRM Capacity Demonstration

Eric Stocking
MPSC Staff

June 29, 2017



Commission Order

- June 15, 2017 Order in U-18197
- Threshold Questions
 - Schedule – Consistent with statutory language, or adjusted?
 - Commission found that the schedule laid out in Section 6w(8) should be implemented.
 - Uniform methodology for capacity demonstration?
 - Commission found that a uniform methodology for capacity demonstration should be applied to all types of providers and all service territories.

- Threshold Questions
 - Locational Requirement
 - Commission found that a locational requirement is required under Section 6w and that a locational requirement applicable to individual LSEs is allowed.
 - At the same time, the Commission is not convinced that allocating a proportional share of the LCR among individual LSEs is the most equitable or reasonable allocation at this time.
 - Commission directs Staff to work with MISO and other parties to explore an equitable manner for allocating the LCR among LSEs

Guiding Factors

- There is almost inevitably a need for new capacity supplies in the state to meet the LCR in the near and the long term, and to maintain local resource adequacy.
- It is reasonable to allow for imports from outside the Zone to expand the pool of capacity resources and potentially lower costs so long as transmission is available and the overall LCR and PRMR can be met over time to protect reliability in the state.

Guiding Factors

- Uncertainty in load forecasts, generator performance, transmission limits, and other factors can affect the local reliability requirement and LCR calculations by MISO over time; these factors present the risk of potentially over- or under-procuring local capacity supplies, depending on the design and allocation of the capacity obligations.

Guiding Factors

- Customers and providers should be able to make informed decisions about their options as the state transitions to new requirements.
- Customers of all LSEs should contribute to the state's capacity needs based on objective criteria and should be given a level playing field to the extent possible.

Capacity Demonstration Process

- Fall 2017 - Open one combined docket for all LSE's capacity demonstrations. Docket will include filing requirements for LSEs to prove their demonstrations (contracts, signed affidavits, etc.).
- December 1, 2017 - Utilities file their demonstrations for 2018-2021.
- February 9, 2018 – AESs, Munis, Co-Ops file their demonstrations for 2018-2021.
- Staff reviews demonstrations and initiates a separate proceeding for any LSE that does not provide a satisfactory capacity demonstration for any year (2018-2021).
- Parties that wish to dispute the Staff's findings may do so through the formal complaint process.

Capacity Demonstration Process

- Fall 2018 - Open one combined docket for all LSE's capacity demonstrations with filing requirements similar to previous year.
- December 1, 2018 – Utilities provide demonstration for 2022 for compliance review and include updates on intermediate years (2019, 2020, 2021), for informational purposes only.
- February 11, 2019 – AESs, Munis, Co-Ops provide demonstrations for 2022 for compliance review and include updates on intermediate years (2019, 2020, 2021), for informational purposes only.
- Open separate docket based on Staff recommendation for LSEs that are short capacity in 2022. Parties that wish to dispute the Staff's findings may do so through the formal complaint process.
- Process repeats following this general timeline every year.

Locational Requirement

- From U-18197 June 15, 2017 Order:
 - Locational requirement is required under Section 6w and that a locational requirement applicable to individual LSEs is allowed.
 - Staff to work with MISO and other parties to explore an equitable manner for allocating the locational requirement among LSEs.

Two Approaches Identified in the Order

1. Phase-in requirements over time.
2. Identify the incremental capacity needed (shortfall) over time.

Staff's Interpretation of June 15, 2017 Order

- Based on the language included in the Order, and considering the two approaches outlined, Staff offers the following slides as an example of how these approaches could be interpreted.

U-18197 Filing Data

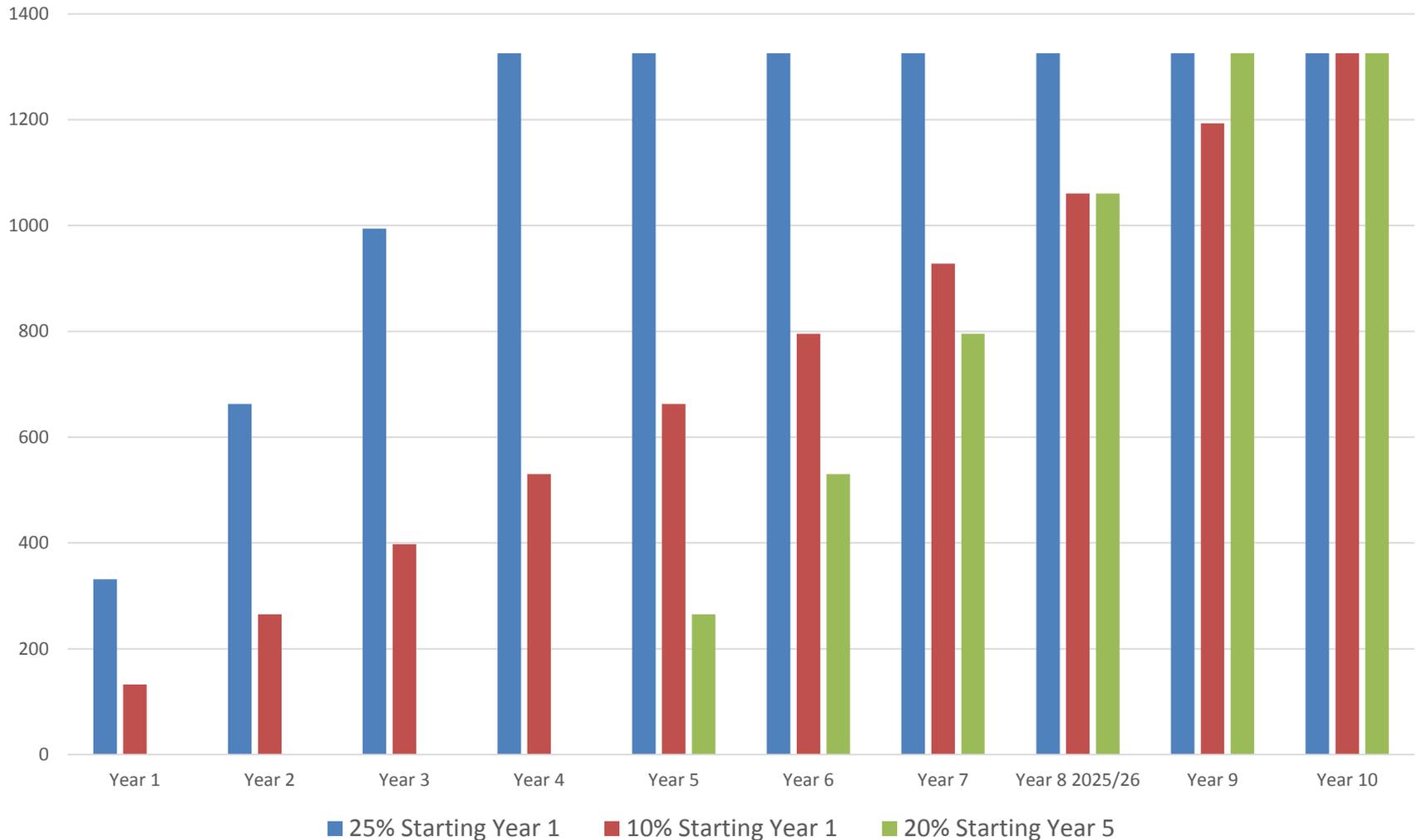
1 PRMR	22295	2017/18 MISO PRA Result
2 LCR	21109	2017/18 MISO PRA Result
3 LCR Percent of PRMR	94.7%	[2/1]
4 Total 2025 LRZ 7 Resources	18621.8	U-18197 Filing + Retirements
5 LRZ 7 2025 Shortage	2487.2	[2-4]

U-18197 Filing Data Cont.

	PRMR Share	% of PRMR	Pro Rata Share of LCR
DTE	10818	48.52%	10243
Consumers	7926	35.55%	7504
Wolverine	905	4.06%	857
Muni's	1246	5.59%	1180
AES's	1400	6.28%	1326
TOTAL	22295	100%	21109

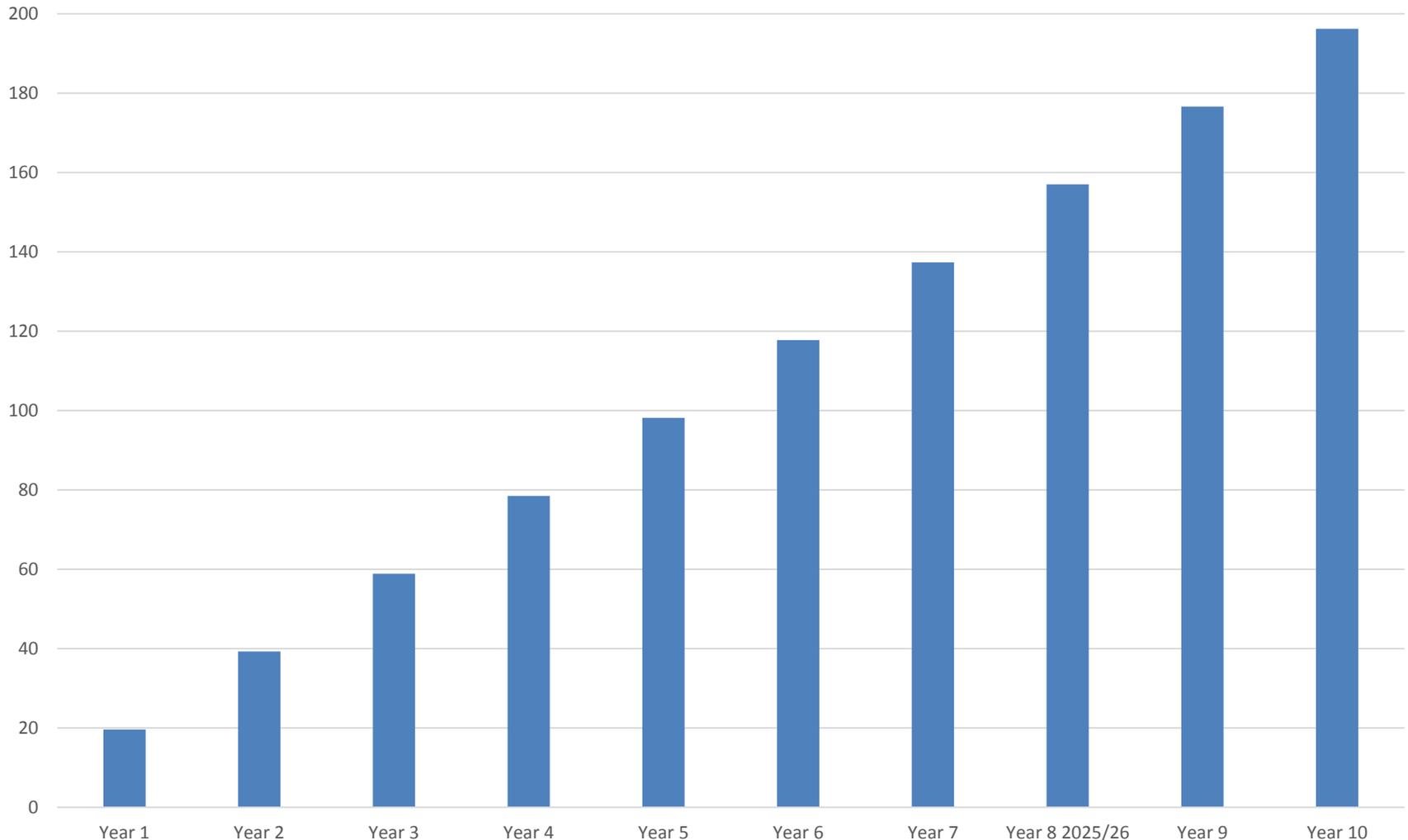
Approach 1: Phase-in Over Time

AES Requirements (Aggregate)



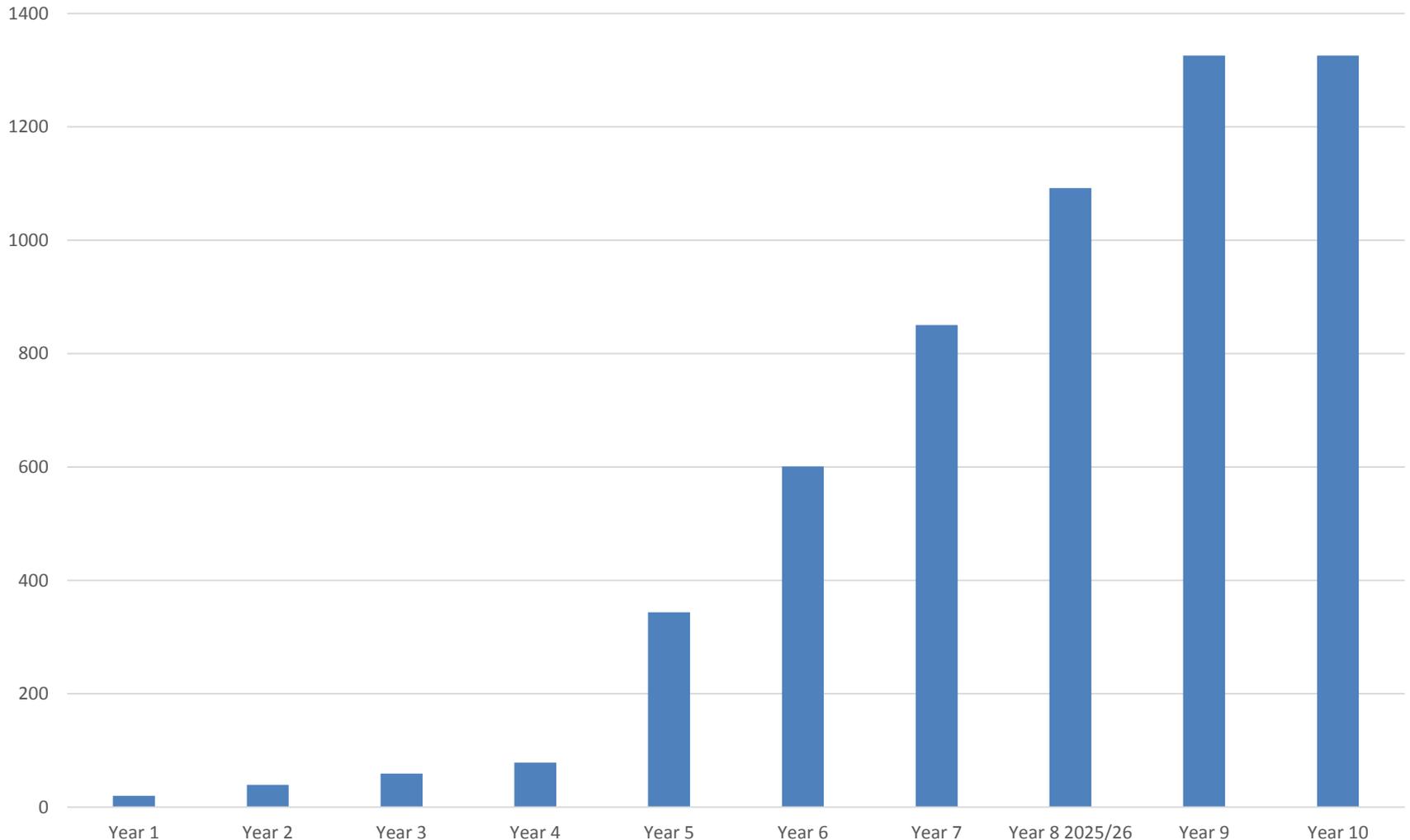
*For discussion purposes only. This information represents the Staff's interpretation of the language in the Commission's June 15 Order. As such, it should not be construed as a Staff recommendation or position.

Approach 2: Proportional Share of Incremental Capacity Needed



*For discussion purposes only. This information represents the Staff's interpretation of the language in the Commission's June 15 Order. As such, it should not be construed as a Staff recommendation or position.

Hybrid of Approach 1 & 2 - Proportional Share of Shortage + 20% per Year Phase-in Starting Year 5



*For discussion purposes only. This information represents the Staff's interpretation of the language in the Commission's June 15 Order. As such, it should not be construed as a Staff recommendation or position.

Demand Response

- DR does not appear to be expressly prohibited by the utility ROA tariffs or previous MPSC Orders.
- DR resources used to satisfy the capacity obligation must be qualified subject to the provisions of the MISO tariff.
- Any Party that feels there is a significant barrier to an AES meeting it's capacity obligation through some amount of DR resources, let us know.

Purchase ZRCs in MISO PRA

- Staff generally agrees that an LSE should be allowed to plan to purchase up to 5% of its PRMR in the auction.
 - Allows for flexibility in accounting for variations in load, resource UCAP rating, etc.
- PRA should continue to function as a residual procurement/clearing mechanism for prompt year requirements.

Next Steps

- Written Position Summary
 - July 6th by Noon
- July 10 – Technical Conference IV
 - Originally planned to identify areas of consensus/disagreement
 - Identify any middle ground?
 - Suggestions? How to make the best use of our time?

Next Steps

- August 1 – Staff Report and Recommendations filed regarding the accomplishments achieved during the technical conference
- August 15 – Comments on Staff Report & Recommendations
- August 30 – Reply comments
- September 28 – Order for establishment of the capacity demonstration process

Questions?

Eric Stocking

(517) 284-8245

stockinge@michigan.gov



Exelon / Constellation

NewEnergy

12:45 p.m.

Michigan Capacity Demonstration Process – an AES view

June 29, 2017



AGENDA

1. Zone 7 Capacity

- The plain language of the statute should be followed to allow all qualified MISO capacity resources to participate, and a state-mandated LCR obligation should not be imposed. At a minimum an LCR obligation should not be required for at least five years

2. Acceptable Forms of Forward Capacity

- In approving forward-year capacity MPSC should recognize wholesale market contracting customs in MISO

3. Capacity Demonstration Process and Billing

- Billing should flow through AES, and the MPSC should allow flexibility in the capacity demonstrations to reflect customer movement between suppliers

4. Confidentiality and Other Legal Concerns

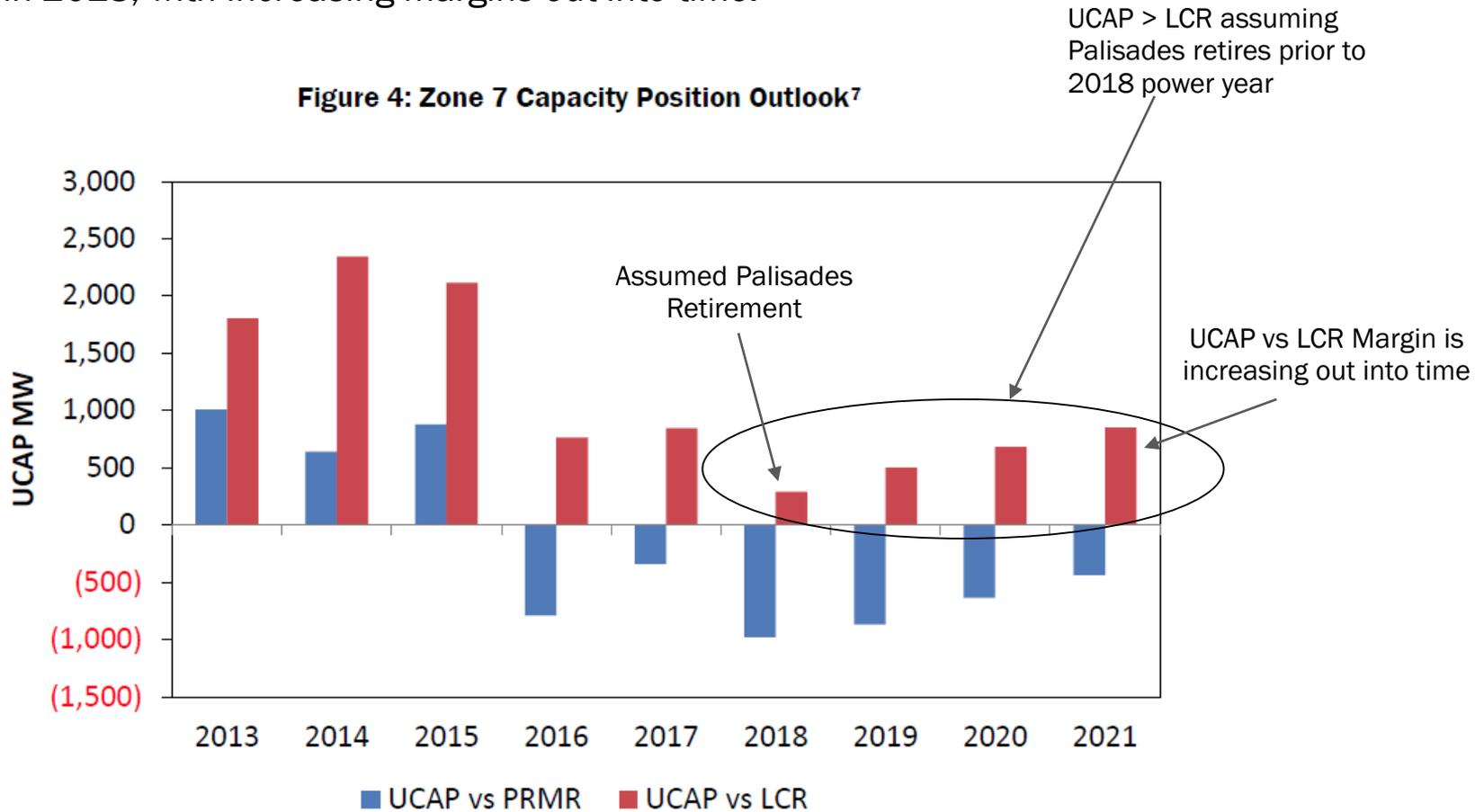
5. Questions / Other Issues

Zone 7 Capacity Summary

- Based on Consumers Energy testimony, Zone 7 has enough capacity to meet its Local Capacity Requirement (LCR) for the next four power years (through May 2022) even if Palisades retires
- The Zone 7 price could clear near CONE in the next Planning Resource Auction (PRA) if in-state capacity is removed from the market, but this is not related to out-of-state capacity purchases as all available Zone 7 resources can participate in the PRA
- Consumers and DTE own, have purchased, or plan to purchase almost all of the available Zone 7 capacity for the next four power years
- Placing a locational requirement on Alternative Electric Suppliers (AES) during these four years means that suppliers will be forced to purchase this capacity from Consumers and DTE, but these purchases will not increase reliability
- A locational requirement for AES could be determined starting with the fifth power year (June 2022) based upon future utility decisions:
 - Utilities (and munis/co-ops) submit capacity and load plans in 2019 which reflect their decisions about how much Zone 7 capacity to own/purchase
 - If the Zone 7 capacity contained in these plans is insufficient to meet the LCR for the entire zone, then AES would be responsible for procuring the remainder.

Consumers' Energy Supply Plan Suggests Zone 7 Has Enough Capacity to Meet LCR For The Next Four Years

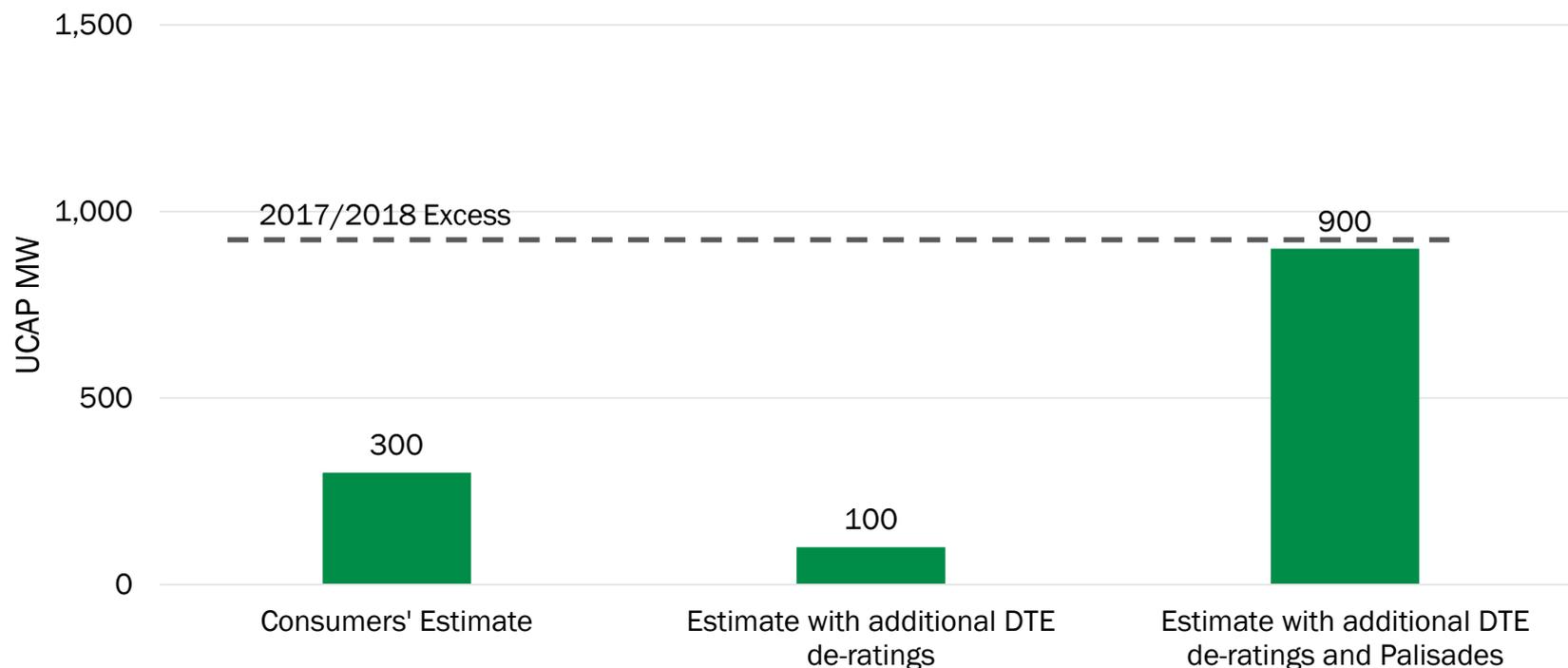
- The Consumer Energy's supply plan filing in the current MPSC Electric Supply Reliability proceeding (U-18197) demonstrates that MISO Zone 7 has enough in-zone capacity over the next 4 years to meet MISO LCR requirements even if the Palisades nuclear unit retires as planned in 2018, with increasing margins out into time:



There May Be a Temporal Tightening of Zone 7 Capacity in 2018 if Palisades Retires and DTE Units are De-Rated

- DTE's supply plan suggests that DTE's St. Clair units may have a UCAP derating in 2018 which is largely restored in 2019
- With the derating and other Consumers and DTE projected changes, there may be little to no Zone 7 excess supply in 2018 if Palisades retires
- If there is no excess supply, Zone 7 could clear at CONE (\$260/MWD) in the 2018 PRA
- This is not related to out of state capacity purchases as all available in-state resources can participate in the PRA

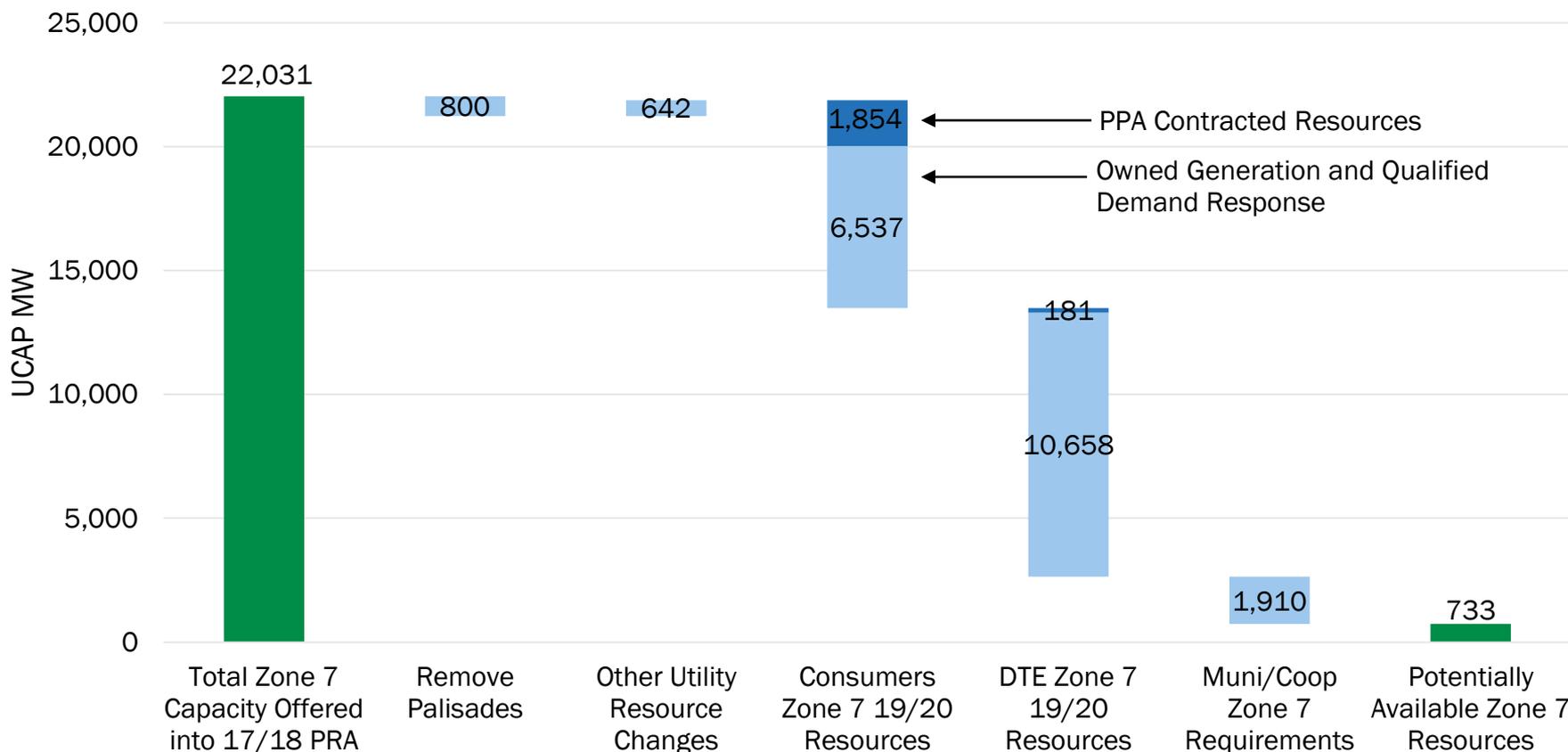
Estimated 2018/19 Zone 7 Excess Supply Over LCR



Consumers and DTE Own or Purchase Almost All Available Zone 7 Capacity

- The reliability supply plans filed by the utilities in Zone 7 suggest that they own or plan to purchase almost all Zone 7 capacity:

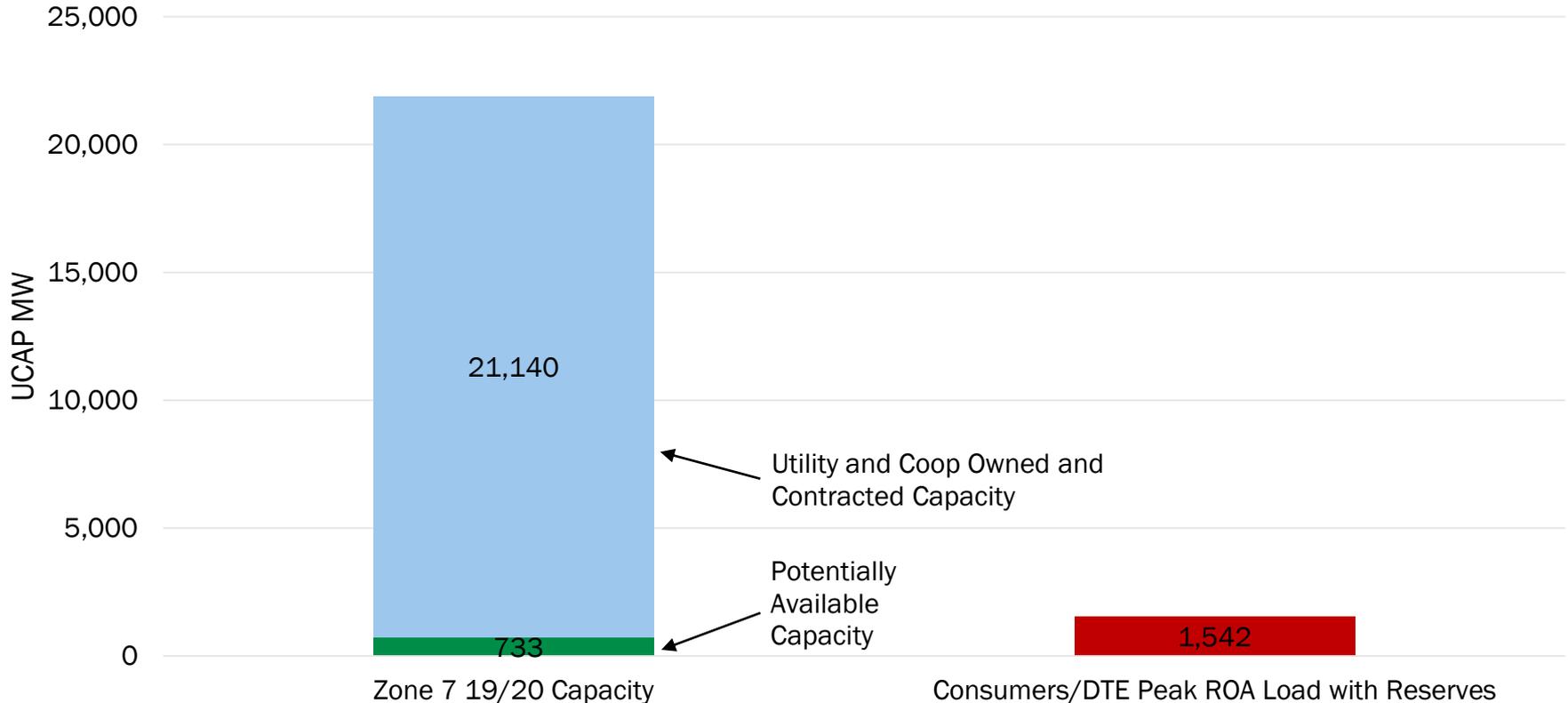
Estimated 2019-20 Zone 7 Resources Available Based on Utility Reliability Plans



If Retail Providers are Required to Purchase Only In-State Capacity, They Must Purchase From Consumers or DTE

- Therefore, without the utility supply, there is insufficient Zone 7 capacity left for retail providers to use as self-supply for Michigan Retail Open Access (ROA) load
- Further, the owners of the potentially available capacity would understand this supply situation and would have an incentive to price their supply very high (e.g., at a slight discount to the utility capacity)

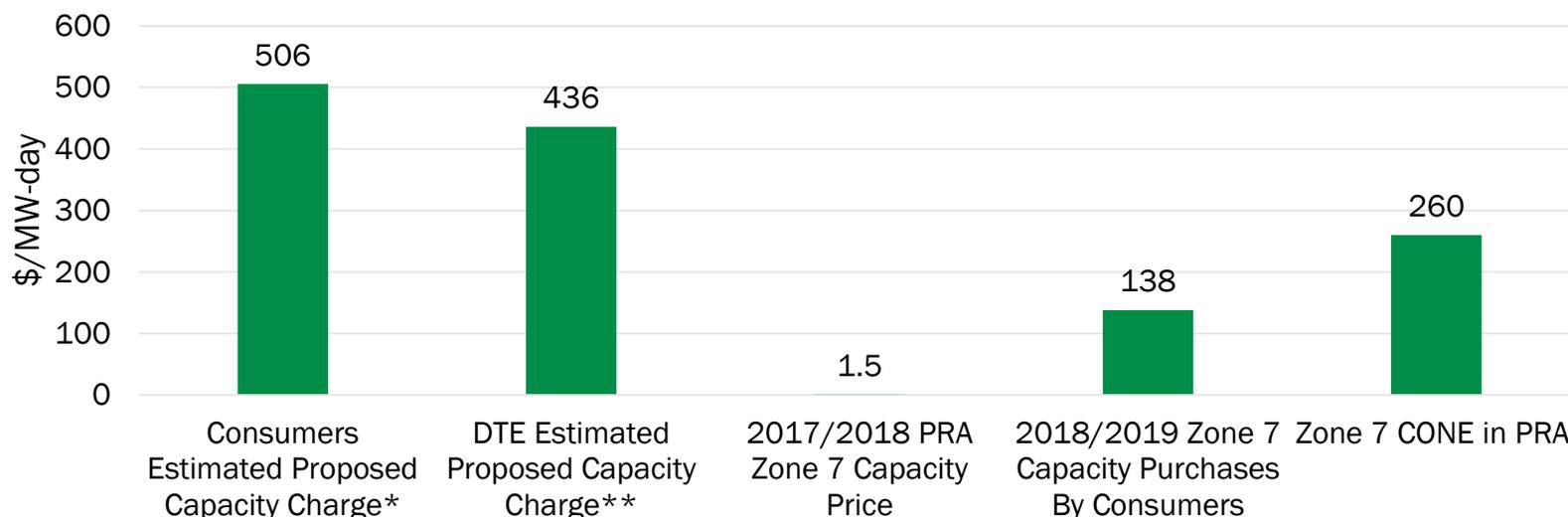
Estimated 2019-20 Zone 7 Resources Available Versus Forecasted ROA Reliability Requirement



Given Choices the Utilities Have Already Made, There Should Be No AES LCR for the Next Four Years

- If retail providers can self-supply from any owned or contracted MISO Planning Resource (i.e. MISO eligible capacity), it will preserve competition, reduce customer costs, and maintain reliability
- The maximum that retail providers/ROA customers will have to pay in the PRA for such capacity is the Zone 7 CONE which is still a fraction of what Consumers and DTE are proposing to charge, but capacity may also be available at a lower price providing additional savings to customers:
 - With out of state capacity purchases, AES will have to pay the difference between the Zone 7 capacity price and the zonal price of the capacity purchased in the PRM
 - AES will still have the incentive to purchase any remaining Zone 7 capacity to reduce this capacity basis risk

Potential Capacity Price Under Zonal Requirement



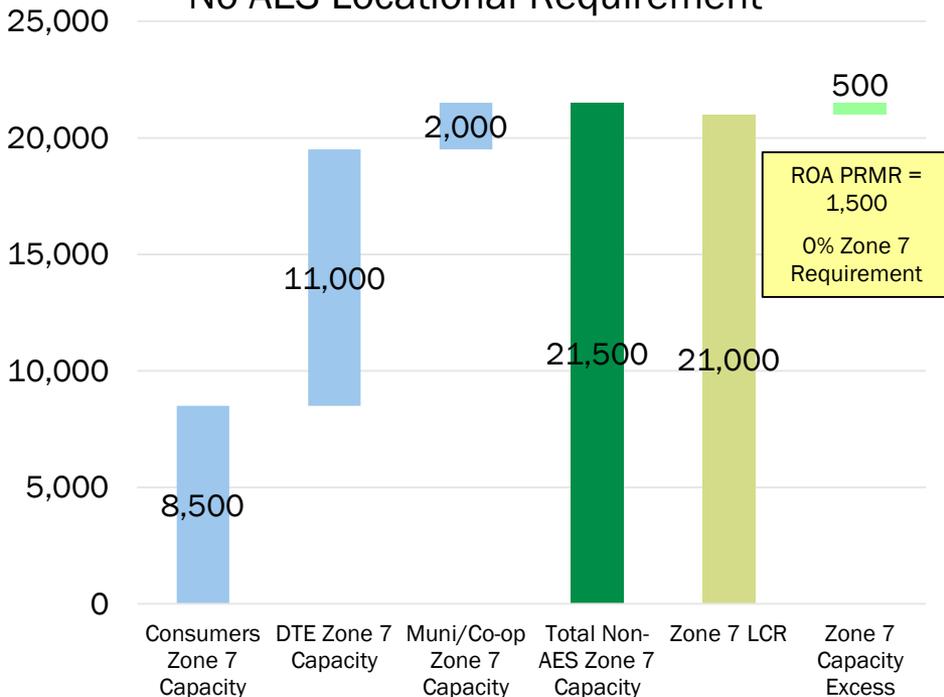
* Capacity charge for Consumers based on Section 6w filing capacity costs of \$1.55B divided by Consumers 2019-20 UCAP of 8,395 MW

** Capacity charge for DTE based on Section 6w filing capacity costs of \$1.726B divided by DTE 2019-20 UCAP of 10,839 MW

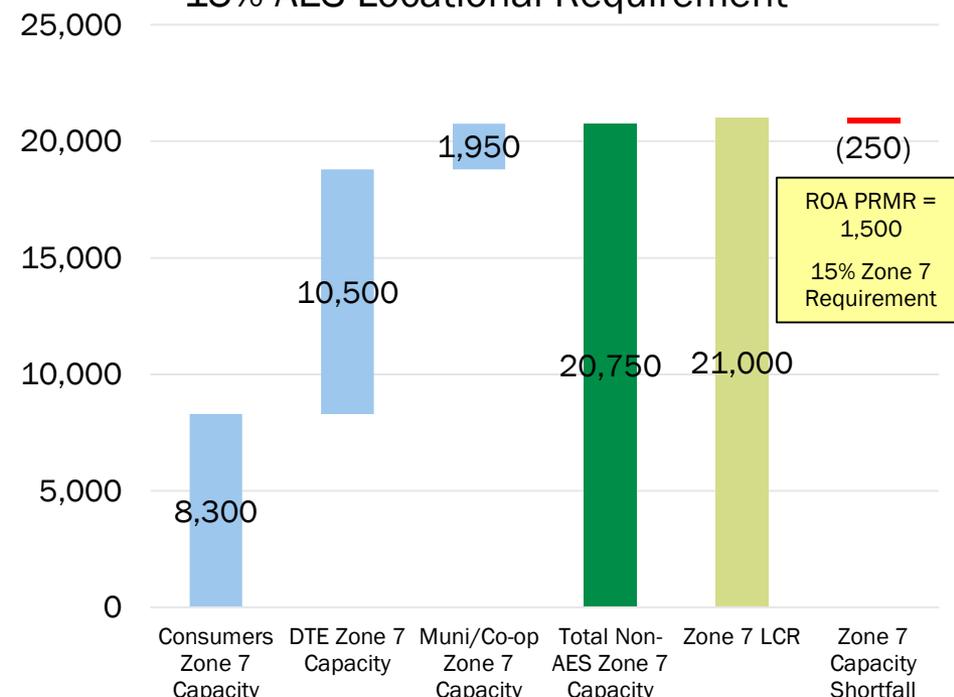
Depending on Future Utility Choices, an LCR for AES Could Start in the Fifth Power Year (June 2022)

- A forward looking in-state LCR requirement for AES providers could be determined based on filed utility (and muni/co-op) capacity plans and LCR forecasts:
 - If the utilities choose to own/purchase enough Zone 7 capacity to meet the LCR of the entire zone, then the AES LCR would be zero (AES will still effectively purchase any excess local capacity at the market price in the PRA)
 - However if there is a shortfall, the AES LCR requirement would be based on the ratio of this shortfall to forecasted AES PRMR:

Illustrative 2022/23 Zone 7 Capacity*
No AES Locational Requirement



Illustrative 2022/23 Zone 7 Capacity*
15% AES Locational Requirement



* 2022-23 data assumed released during 2019

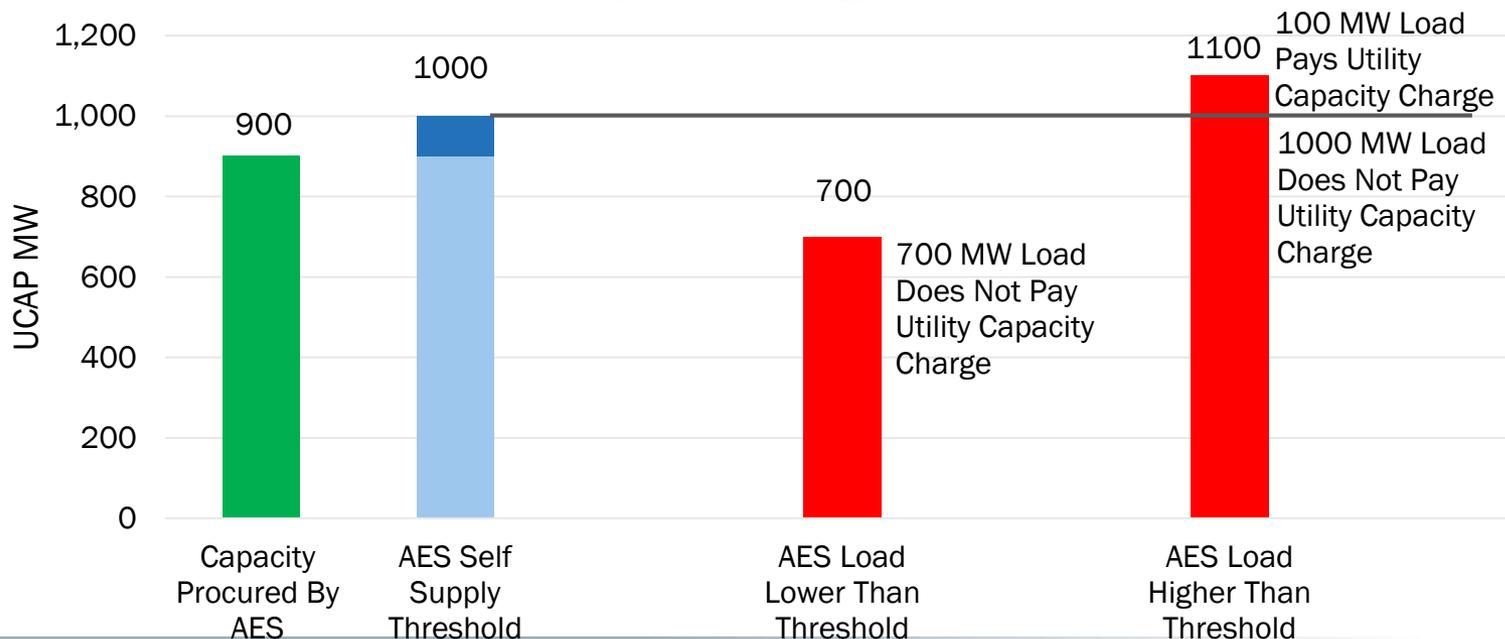
The Commission Must Recognize MISO Wholesale Contracting Practices for Forward Capacity

- In approving contracted capacity for the self-supply demonstration, the MPSC should defer to wholesale contracting customs in MISO for capacity
 - The ZRC construct under MISO's FERC tariff was designed to create a flexible and fungible capacity product to facilitate wholesale transactions
- The vast majority of bilateral capacity transactions for forward-year ZRC's are entered into pursuant to an industry standard master agreement (e.g., the EEI Master Agreement or ISDA Master Agreement w/ Power Annex) using a confirm developed by the EEI drafting committee
 - The confirms specify the Zone that a ZRC will come from, but not a specific resource as most generators are selling capacity from a portfolio of assets
- At delivery in the forward year the ZRCs are tied to a specific resource
 - Prior to the capacity auction for each planning year, generators convert their installed capacity to ZRCs. Capacity sellers then initiate a ZRC transfer in MISO's capacity tracking system (the MECT) to deliver the capacity. Each ZRC is linked to a specific Planning Resource and that information can be tracked in the MECT system
- Commission should show the same deference to the contracting customs for demand side capacity resources that can qualify for ZRCs under the MISO Tariff
 - In Order to encourage the development of demand side resources in Michigan the Commission should allow AES flexibility to update a capacity demonstration and add demand side capacity for self-supply purposes within the 4-year window
- The Commission should provide clarity soon as multi-million dollar contractual decisions are not being made due to uncertainty

Capacity Demonstration Methodology

- On a confidential basis, in the initial determination in 2018, AES shows how much capacity they own or have contracted for in the next four delivery years (after 2018 the demonstration is for one year, four years out).
- Before each planning year, the MPSC will determine “Self-Supply Threshold” for each AES for the prompt year. This threshold equals the self supply amount divided by 0.9 (10% of total load requirement can be procured in PRA to allow for short-term purchases, weatherization, load balancing and peak load changes).
- AES are required to meet 100% of their load obligations but can serve up to 110% before being charged the SRM. If PRMR of AES load turns out to be above this cap (110% of load), then excess amount would have to pay the utility capacity charge
- This flexibility is necessary to accommodate load changes between AES involving existing ROA load. As long as a shopping queue exists it has no impact on the utilities’ obligations to serve the 90% of load not on ROA.

Capacity Methodology Example



Billing SRM and Customer Switching

- The utility's SRM tariff should give AES customers the option to consent to allow their AES to opt-in to be billed directly by the utility for the SRM.
 - This option will facilitate the ability of an AES to be billed directly by the utility for the SRM and will allow the AES the flexibility to manage and price capacity at a portfolio level for all its customers, comparable to how utilities manage and price capacity for their customers.
- Any customer who does not consent to utility-to-AES billing will be billed the SRM directly by the utility, and the utility, not the AES, will be responsible for the customer's capacity.
 - The customer consent for their AES to be billed will be incorporated into the terms and conditions of the customer contract and indicated to the utility via an EDI flag.
 - Any customer account without this flag would be billed the SRM charge by the utility.



Capacity Obligations at MISO

- The SRM should be billed to AES on a monthly basis but an AESs' exposure to the SRM does not change from the original threshold determination regardless of load variation and switching throughout the year.
- For the amount of load that has consented to capacity being managed by its AES, the AES will be responsible purchasing ZRCs in the PRA for that load
- The utility will maintain responsibility to supply capacity to any AES customer not consenting
- For the percentage of an AES's load that exceeds the AES's self supply threshold for the upcoming planning year at the time of the February filing, the utility will bill the AES for that SRM-exposed portion of load at a price equal to the SRM price minus the PRA clearing price.
- Switching between AESs will be governed by contracts between the AESs and their customers.

Confidentiality and Other Legal Issues

- The Commission's existing filing procedures for voluntary energy supply reliability plans works.
 - Procedure has worked for nearly 20 years
 - A single docket wherein all electric providers submit their plans to the Commission
 - Providers may submit their filing on a confidential basis under seal
 - Commission Staff review and analyze the filings and issue a report
- The Commission's existing filing procedures will likewise work for mandatory capacity demonstrations under Act 341.
 - Section 6w(8) of Act 341 requires annual capacity demonstration filings
 - Section 6w(8)(b) of Act 341 requires AESs to "demonstrate to the commission" that the AES "owns or has contractual rights to sufficient capacity to meet its capacity obligations . . . " Demonstration is to the Commission, not to other parties
 - Nothing in Act 341 requires annual capacity demonstrations to be in contested cases; Legislature specified where it wanted contested case process (*Expressio Unius Exclusio Alterius*)
 - Filed information is confidential, commercially-sensitive information that should not be subject to discovery or disclosure to competitors
 - MPSC Staff is capable of reviewing capacity demonstrations for compliance with Commission's requirements and reporting findings to Commission
 - Commission then issues an order based on the Staff's report and filed demonstrations requiring payment of a capacity charge for AES load, recommending to the Attorney General that a suit be brought (munis. and co-ops), or requiring audits and reporting, etc. (electric utilities). Section 6w(8)(b)(i) - (iii).

QUESTIONS?

Energy Michigan
1:45 p.m.

**Proposed Solution to Meeting
a Local Capacity Obligation
Under MPSC Ruling**

**MPSC Staff
Technical Conference
29 June 2017**

Energy Michigan

Today

- I. Principles of Proposed Solution
- II. Situation Factors & Boundary Conditions
- III. Proposal for Meeting Local Capacity Obligation
- IV. Advantages & Disadvantages
- V. Realistic Example

Not Today

- *Neither conceding nor addressing legal issues.*
- *Not addressing other implementation issues, although recognizing the ties.*

I. Principles of Proposed Solution

- **Holistic and integrated.**
 - **Implementable.**
 - **Recognize purpose of LCR.**
 - **No harm to any party.**
 - **Preserve Electric Choice:**
 - a. **continued access** to reasonably market-priced electric products,
 - b. **continued freedom** to contract with customers,
 - c. **continued ability** to assess future risk.
- Not
- *opponents pick & choose*
 - *require complex new systems*
 - *surpass MISO requirements*
 - *zero sum game*
 - *kill Electric Choice*
 - *priced out of market*
 - *interference with customer contracts*
 - *create unquantifiable future events*

II. Situation Factors & Boundary Conditions

A. PA 341 is not perfect.

B. MISO uses all resources to serve all load.

C. “Capacity” is the speed of energy conversion.

D. MISO buys all capacity and sells all capacity.

E. Two laws – not one – govern setting the price of the SRM charge.

F. Satisfying the local obligation should be forward looking.

II. Situation Factors & Boundary Conditions (continued)

A. PA 341 is not perfect.

B. MISO uses all resources to serve all load.

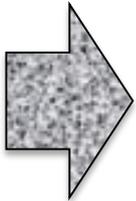
1. *Who owns which resources where doesn't affect reliability.*

2. *Customer switching does not affect reliability.*

3. *“Our resources serve our load” – obsolete since 2005.*

4. *All customers in MISO and in a zone receive the same reliability (provided no binding transmission constraints).*

5. *Excess capacity in one zone supplies other zones, but does not increase the reliability of its locational zone.*



II. Situation Factors & Boundary Conditions

(continued)

C. “Capacity” is the speed of energy conversion.

- 
1. *Capacity is an electric attribute of a physical resource, not the resource itself. A mega-Watt is a speed rating.*
 2. *“Capacity related” is not always equivalent to “fixed costs.”*
 3. *A Zonal Resource Credit is the capacity product that MISO purchases. ZRC = 1 MW.*
 4. *1 ZRC from a nuclear unit = 1 ZRC from Honda generator.*

II. Situation Factors & Boundary Conditions

(continued)

D. MISO buys all capacity and sells all capacity (one exception).

1. *Satisfaction of MISO's capacity requirements is done with money, not with ZRCs. (one exception)*

2. *An LSE pays the Auction Clearing Price for its forecast peak.*

3. *Owner of ZRC has the right to:*

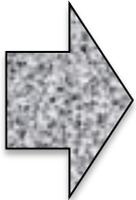
a. *Specify the price of the ZRC offered into the Auction.*

b. *Receive the Auction Clearing Price if the ZRC clears.*

4. *Thus, an LSE who owns ZRCs can financially offset the cost of satisfying its capacity obligations to MISO.*

- *pays ACP*
- *receives ACP* } *net 0*

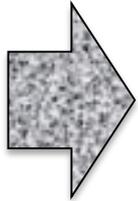
5. *Whether a utility or AES buys a contract for ZRCs or pays the auction price does not affect supply, demand or reliability.*



II. Situation Factors & Boundary Conditions

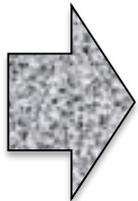
(continued)

E. Two laws – not one – govern setting the price of the SRM charge.



1. *PA 341 – MCL 460.6w(3)(A) & (B).*
2. *Cost of Service – MCL 460.11(1).*

F. Satisfying the local obligation should be forward looking.



1. *Utilities say they will use auction or build new.*
2. *Allocation of historical embedded costs to EC customers would result in zero allocation under COS law.*
3. *EC customers have already paid about \$550 M for current resources – which provided no services to EC customers – via stranded cost and securitization.*

-	<i>CE</i>	<i>\$122 M</i>	} ~ \$550 M
-	<i>DTE</i>	<i>\$429 M</i>	

III. Proposal for Meeting Local Capacity Obligation

- *What Qualifies?*
- *What's the Charge?*
- *Who Pays?*
- *Use of Auction*

III. Proposal for Meeting Local Capacity Obligation

(continued)

What Qualifies?

New

The “LCR charge” will be based only on the new resources built within Zone 7. Excludes purchase of existing resources in zone.

C of N

For a new resource to be included in determining the “LCR charge,” it must go through the Certificate of Necessity process and be approved by the MPSC in that process.

CONE

The “cost of capacity” will be the MISO Cost of New Entry. This is a visible number, vetted by MISO and stakeholders, and approved by the FERC, that represents the cost of the capacity product that satisfies MISO’s requirements.

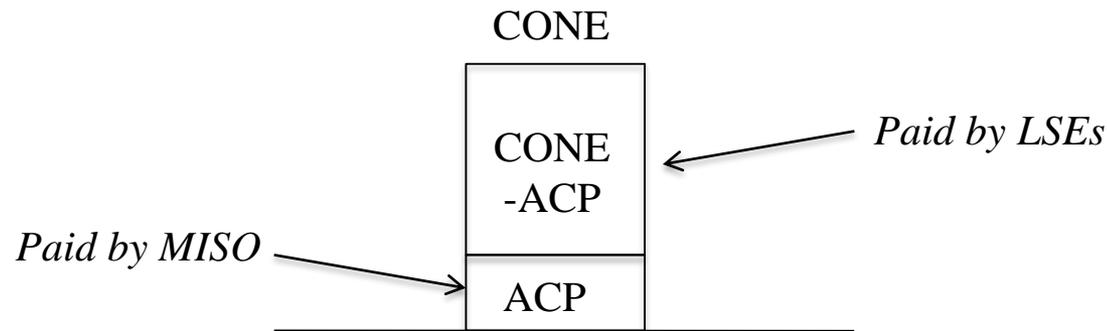
III. Proposal for Meeting Local Capacity Obligation

(continued)

What's the Charge?

Difference The “LCR charge” will be the difference between the MISO zonal Auction Clearing Price and the Cost of New Entry.

Guarantee Therefore, the utility will be guaranteed the CONE price.



Charge “LCR Charge” per MW of LCR % of PRMR =

$$\frac{\text{MW ZRC rating of new resource} \times (\$ \text{ zonal annual CONE per MW} - \text{zonal ACP})}{\text{MW Total PRMR of the local distribution area} \times \text{LCR}\%}$$

III. Proposal for Meeting Local Capacity Obligation

(continued)

Who Pays?

LCR %

The “LCR charge” will be applied to the LCR percentage of PRMR of each LSE within the distribution area of the local utility building the new resource.

Share

Thus, all LSEs within the distribution area of the utility building the new resource will share in the cost of the new resource, pro-rata according to their respective PRMR. *(example follows)*

Own

LSEs (other than builder) who own or have contractual rights to capacity within the zone will subtract that portion from their allocated share.

Without the CRS that was denied by the FERC, an [AES still has to pay MISO to satisfy](#) all of its PRMR capacity requirements to MISO.

Sharing the cost of new resources in the zone is an additional expense.

III. Proposal for Meeting Local Capacity Obligation

(continued)

Use of Auction

*All
can use
auction*

Having satisfied the local capacity obligation, all AESs can use “*any resource that . . . [MISO] . . . allows to meet the capacity obligation of the electric provider*” to demonstrate capacity. [6w.(6)]

This includes the MISO auction, which utilities have asserted is allowed under PA 341 and which they intend to use.

*Same
wording*

“ . . . each *electric utility* demonstrate . . . the electric utility owns or has contractual rights to sufficient capacity to meet its capacity obligations as set by [MISO], or commission, as applicable.” [6w.(8)(A)]

“ . . . each *alternative electric supplier* . . . demonstrate . . . the alternative electric supplier . . . owns or has contractual rights to sufficient capacity to meet its capacity obligations as set by [MISO], or commission, as applicable. [6w.(8)(B)]



same wording – same demonstration – same eligible resources

IV. Advantages & Disadvantages

Advantages

Maintains LCR: The cost sharing *maintains the current quantity of local resources – which is ample.* Zone 7 is a no-growth area.

Thus, as present resources are *retired and replaced,* sufficient LCR resources are maintained. All LSEs pay a share of the capacity value of the new resources, according to benefits received.

Follows COS: The proposal harmonizes the cost-of-service statute with PA 341 because AESs pay only for services they receive.

Utilities assert they do not have capacity to provide for ROA customers and that *any services will either be from new resources or the MISO auction,* which AESs can access on their own.

Visible Price: CONE is a visible cost of *the capacity product* that MISO has determined meets its capacity requirements. Eliminates arguing over allocations, embedded nuclear costs, etc.

Utility Freedom: Utility is free to build any type of generation. Only the *cost of the pure capacity attribute gets into the SRM.* Utility retains the value of low energy costs, ancillary services revenue, etc.

IV. Advantages & Disadvantages

(continued)

Solves Customer Switching: Present MISO customer switching involves the transfer of a customer's PLC priced at ACP from the old supplier to the new. SRM switching can [follow the same method](#), using the "LCR charge" instead of the ACP.

Simplifies Duration: CONE is an [annualized charge](#), continuing for the life of the asset. Eliminates "30-year duration" issue.

Simplifies "Return to Service": Eliminates need for changes in return-to-service rules. There is no longer a "before" or "after" demonstration-of-capacity issue because the AES is always (a) paying its share of cost of LCR provided by the utility and (b) paying its capacity obligation to MISO through either ZRCs submitted or the annual auction.

Eliminates "Interruptible" Discrimination: Utility and AESs pay pro-rata proportion, so customers of both should receive the same zonal reliability.

IV. Advantages & Disadvantages

(continued)

Eliminates Discrimination: All LSEs in the utility service area pay for the benefits of new resources that meet the zonal LCR. All LSEs receive the same reliability.

Follows Used-and-Useful Principle: Utility is paid for new plant in service. Does not collect money in advance without any commensurate costs. Customers do not pay for zero benefits.

Allows Regulatory Review: In Michigan, a utility is free to build or not build resources – regulation governs only the recovery of costs. The Certificate of Necessity process provides a [review of the prudent investment in new resources](#), preventing the utility from overbuilding and collecting excessive SRM charges.

Incremental Pricing is Transferrable: SRM charge for failure to demonstrate capacity can use the same incremental cost-of-service elements and evidence. Would run for only 3 years.

IV. Advantages & Disadvantages

(continued)

Disadvantages & Responses

Q. What if there is no capacity?

A. A common question.

- 1. MISO uses all to serve all.** Thus, when a customer moves from one supplier to another, the capacity used for the customer still exists in the market place. No additional capacity is needed, only a change in financial responsibility.
- 2. *Something is working, even if we don't understand why.*** MISO has been underreporting future capacity for 10 years. There is a large amount of capacity under development in MISO. In the past, it was excluded from survey results, but starting this year, some of it is included. There is no longer a projected shortage. MISO/OMS shows 20% + reserve margins through 2022.
- 3. Low growth means no surprises.** Michigan is a no-growth area and MISO is a very low growth region. Consequently, there is not going to be a need for a large amount of additional capacity that is unanticipated.

V. Realistic Example

Scenario

IF:

- 94.7% Zone 7 LCR percent.
- 8,300 MW ~ CE service area PRMR.

- \$94,900 Zone 7 CONE, \$ per MW-year.
- \$548 Zone 7 ACP, \$ per MW-year, = $\$1.50 \times 365$ days.

- 400 MW AES #1 PRMR.
- 300 MW AES #2 PRMR. Owns 100 MW within Zone 7.

THEN:

- 7,860 MW Service area share of LCR, = $8300 \times 94.7\%$.
- 379 MW AES #1 share of LCR, = $400 \times 94.7\%$
- 184 MW AES #2 share of LCR, = $(300 \times 94.7\%) - 100$.

- Suppose CE builds a new ~ 350 MW (ZRC rating) plant to replace a retiring unit.

V. Realistic Example (continued)

Results

- Suppose CE builds a new 350 MW plant to replace a retiring unit.
- Then
“LCR charge” = $350 \times (94,900 - 548) / 7,860 = \underline{\$4,201}$ per MW.

AES #1 owes utility \$1,592,179 annually for its 379 MW share.
= $\$4201 \times 379$ MW

AES #2 owes utility \$772,984 annually for its 184 MW share.
= $\$4201 \times 184$ MW

ZRC Credit

MW credit = MW new resource x (LCR AES / LCR area)

For AES #1 = $350 \text{ MW} \times (379 / 7860) = 350 \times 4.82\% = 16.9 \text{ MW}$

For AES #2 = $350 \text{ MW} \times (184 / 7860) = 350 \times 2.34\% = 8.2 \text{ MW}$

- With the LCR covered, and MISO buying all capacity, whether the utility or an AES pays MISO the ACP for capacity does not affect reliability. So the utility and the AES can use any resource to demonstrate capacity, including the MISO auction. Same ability for both.

DTE Energy

3:30 p.m.



DTE Energy®

**PA 341 Capacity Demonstration
Technical Conference**

6-29-2017



Agenda

Introduction

Capacity Obligations

- Capacity Demonstrations
- Local Capacity Requirement and potential exemption
- Recommended Data for Capacity Demonstrations

Other Considerations

Resource Accreditation

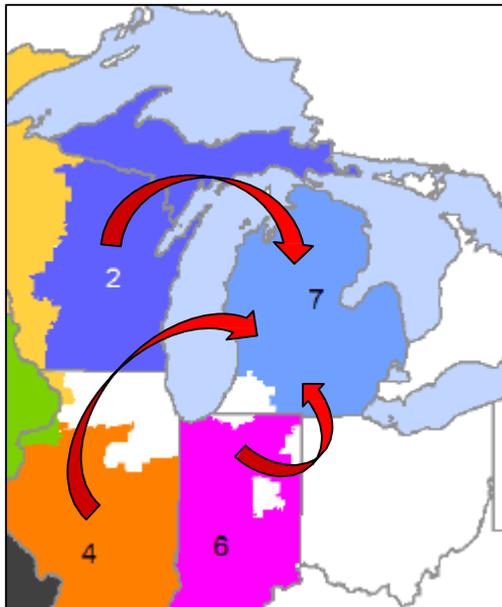
- Generation Resources
- Demand Resources
- Energy Efficiency Resources

Questions

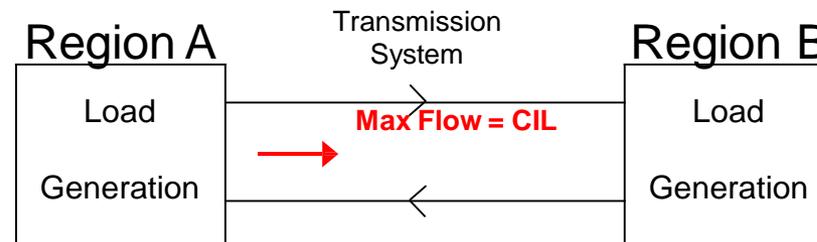
Locational capacity requirements ensure that adequate generation is physically located in specific regions to meet reliability requirements

Locational Resource Adequacy and Reliability

- Locational requirements were created to “ensure that sufficient qualified Planning Resources can be relied upon to meet Load within each portion of the MISO region”¹ and “encourage parties to develop or retain the proper amount of Planning Resources in the right locations within the MISO Region to ensure reliability”²



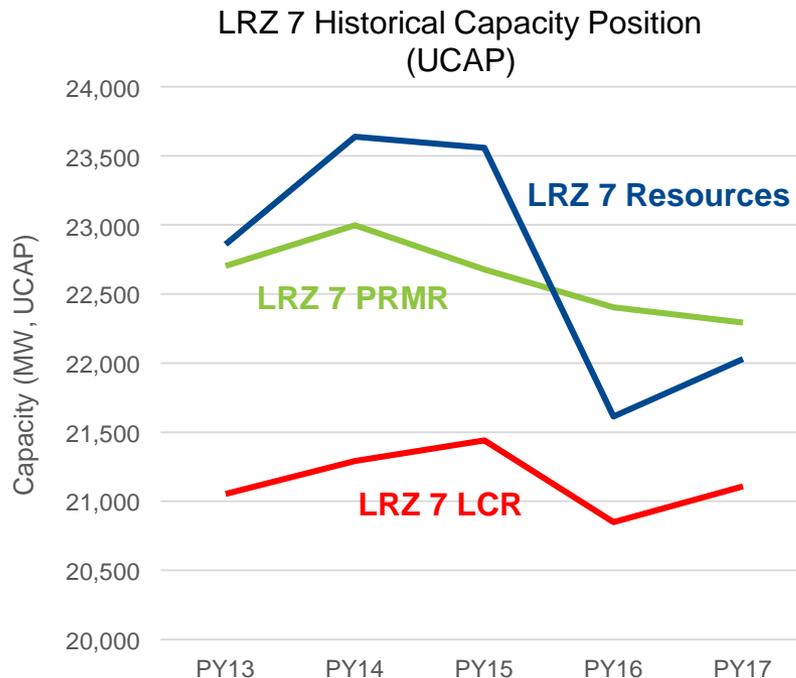
- Physical constraints limit the amount of power that can be imported from other regions to meet local demand and maintain reliability



- Local Clearing Requirement: “the minimum amount of UCAP that is physically located within a LRZ that is required to meet the Loss of Load Expectation while fully utilizing the CIL (Capacity Import Limit) for such LRZ”³
- Falling short of the LCR results in higher probability of firm load shed (above federal standards) for all customers**

1. Docket No. ER11-4081 Transmittal Letter, p. 7, July 20, 2011
 2. Docket No. ER11-4081 Transmittal Letter, p. 8, July 20, 2011
 3. MISO OATT 36.0.0 (page 81)

Without action, it is likely that LRZ 7 will not have sufficient local resources to meet acceptable reliability levels

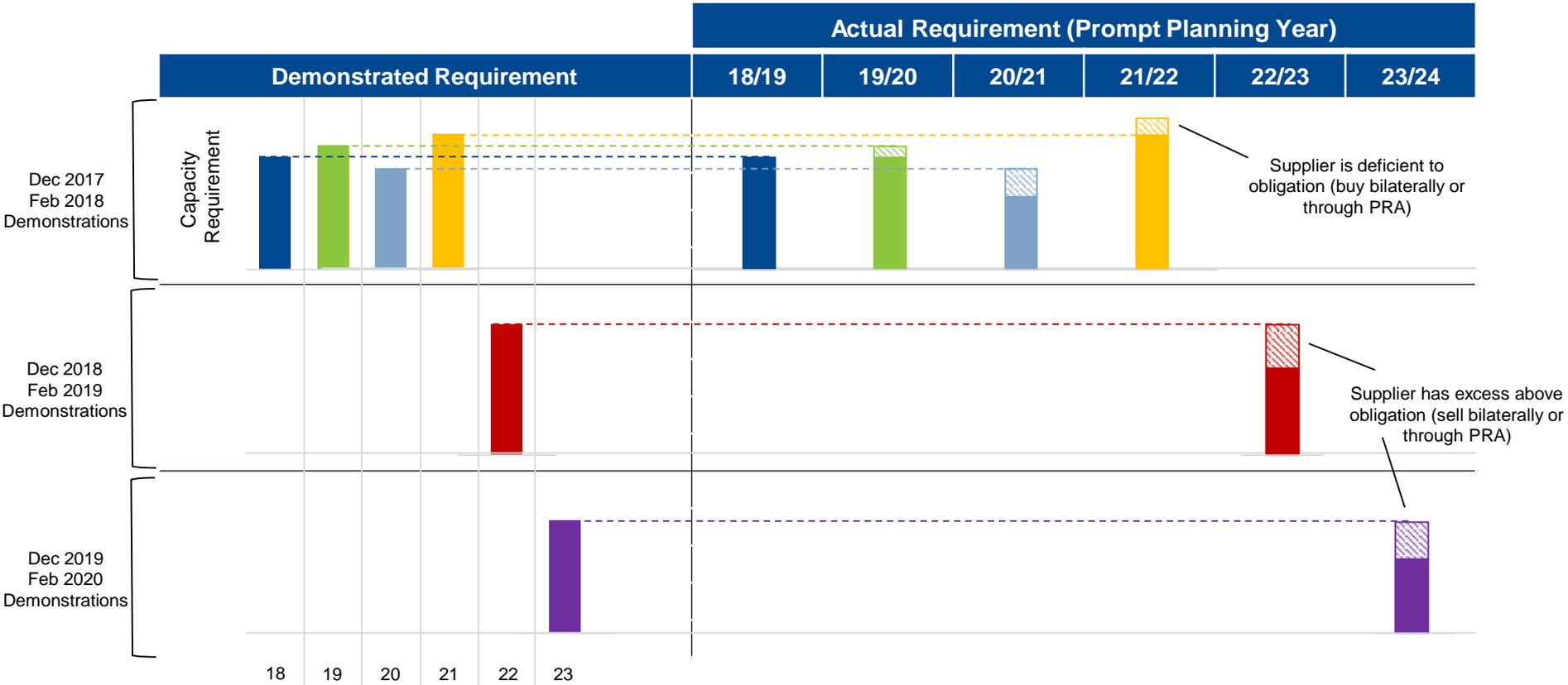


- Decreasing capacity resources have caused LRZ7 to rely on imports (fall short of its Planning Reserve Margin Requirement) in recent years
- MISO's 2017 OMS Survey indicates shortages to the LRZ7 PRMR continue to worsen
 - 700-1000 MW shortage (ICAP) in PY18/19
 - 1,100-1,500 MW shortage (ICAP) in PY22/23
- It is likely that LRZ 7 will not have sufficient local resources to meet acceptable reliability levels due to retirement of significant amounts capacity, declining performance¹ of older units, and new resource uncertainty
 - Worsening unit performance is ignored in MISO's PRMR calculations

To support electric reliability in Michigan, suppliers should be required to demonstrate 100% of their capacity obligation including 100% of their Load Ratio Share of Local Resources in all capacity demonstration years



- Calculation of capacity requirement should mirror current process (utilize EDC forecast, allocate PLCs¹, approval by AESs² and MPSC by January 15th)
- 100% of capacity obligation should be demonstrated for initial 4 years and annually thereafter for each year 4 years forward
- No re-demonstrations of load should be required, leaving any shortage/excess in the actual planning year to be managed at the supplier's discretion; however, all **proposed** generation resources should meet annual predefined progress milestones.



1. PLC – Peak Load Contribution
 2. AES – Alternative Energy Supplier

DTE is open to a Local Clearing Requirement exemption for existing long-term (20+ year) capacity agreements executed prior to MISO's Zonal construct in 2013

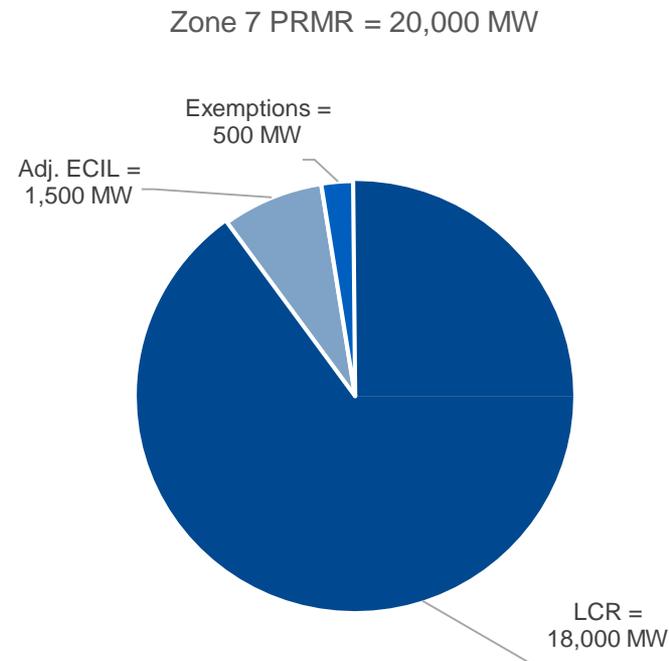
- DTE is open to an exemption for suppliers that prudently planned for their long-term capacity needs prior to the MISO Zonal construct
 - Recommend exempting from the LRS of LCR obligation any long-term (term ≥ 20 years) agreements with non-local resources that were executed prior to the implementation of MISO's Zonal Resource Adequacy in 2013
- DTE proposes utilizing an Adjusted "Effective Capacity Import Limit" (ECIL) for non-exempt suppliers which has exempt imports netted out

Example

PRMR_{Z7} = 20,000 MW
 Zone 7 LCR = 18,000 MW

ECIL = 20,000 – 18,000 = 2,000 MW
 Exempted Resources = 500 MW

Adjusted ECIL = 2,000 – 500 = 1,500 MW



Suppliers' capacity demonstrations should be limited by their Load Ratio Share of the Adjusted Effective Capacity Import Limit

- All suppliers should be obligated to meet their Load Ratio Share (LRS) of the Local Clearing Requirement in order to ensure grid reliability in Michigan

Example

PRMR_{Z7} = 20,000 MW
 Zone 7 LCR = 18,000 MW

ECIL = 20,000 – 18,000 = 2,000 MW
 Exempted Resources = 500 MW

Adjusted ECIL = 2,000 – 500 = 1,500 MW

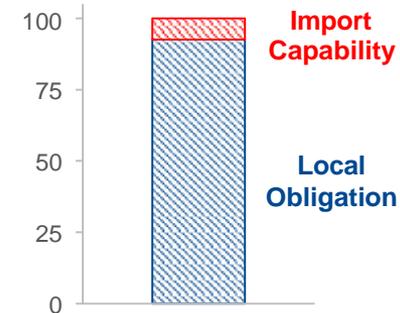
PRMR_{Supplier} = 100 MW

$$\text{LRS} = \frac{100 \text{ MW}}{20,000 \text{ MW}} = 0.5\%$$

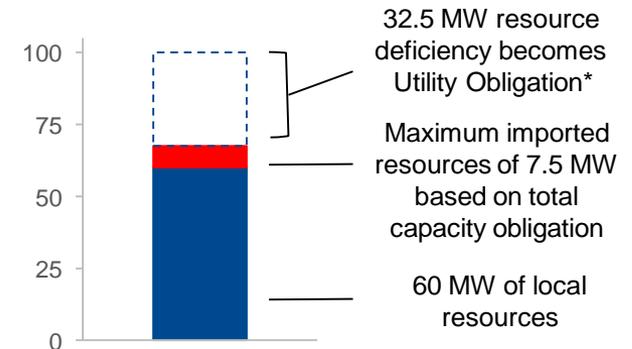
Adjusted ECIL Share = 1,500 × 0.5% = 7.5 MW
 Local Obligation = 100 – 7.5 = 92.5 MW

Adjusted ECIL =
 Import Capability =
 7.5 MW

Local Obligation =
 92.5 MW



60 MW Local
 40 MW Imported



*32.5 MW of non-local capacity not qualified in SRM Capacity Demonstration can be sold by supplier in MISO's PRA

Published MISO values and EDC¹ demand forecast data should be used to calculate capacity obligations for the demonstration period

- MISO annually calculates zonal capacity obligations (PRMR² and LCR³) through their LOLE Study process

		Planning Year						
Input		18/19	19/20	20/21	21/22	22/23	23/24	
Dec 2017 Feb 2018 Demonstrations	Zonal Peak Demand (Submitted by EDC, Nov 2017)	✓	Utilize EDC Forecast					
	Local Reliability Requirement (LRR) (2018 LOLE)	✓ ↔	Interpolate	↔	✓ →	Extrapolate		
	CIL (2018 LOLE)	✓	Hold Constant Until Change				✓	
	PRM (UCAP) (2018 LOLE)	✓ ↔	Interpolate	↔	✓ →	Extrapolate		
	Zonal Coincidence Factor (Published by MISO 11/2016)	Use most current report (may get updated annually)						
Dec 2018 Feb 2019 Demonstrations	Zonal Peak Demand (Submitted by EDC, Nov 2018)		✓			EDC Forecast		
	Local Reliability Requirement (LRR) (2019 LOLE)		✓		✓	Extrapolate		
	CIL (2019 LOLE)		✓			2018 LOLE	✓	
	PRM (UCAP) (2019 LOLE)		✓		✓ →	Extrapolate		
	Zonal Coincidence Factor (Published by MISO 2018)					Most current		
Dec 2019 Feb 2020 Demonstrations	Zonal Peak Demand (Submitted by EDC, Nov 2019)			✓			EDC Forecast	
	Local Reliability Requirement (LRR) (2020 LOLE)			✓		✓ →	Extrapolate	
	CIL (2020 LOLE)			✓			2019 LOLE	
	PRM (UCAP) (2020 LOLE)			✓		✓ →	Extrapolate	
	Zonal Coincidence Factor (Published by MISO 2019)						Most current	

✓ - Value Calculated for PY

1. EDC – Electric Distribution Company
2. PRMR – Planning Reserve Margin Requirement

3. LCR – Local Clearing Requirement (=LRR-CIL)
4. Peak Load Contribution

Other considerations that need to be incorporated into the capacity demonstration process

- Deadline for Retail Access Customers to notify utilities that they will not be returning to Full Service or initiating Utility Capacity Service for the initial 4 year SRM period and annually thereafter for each year 4 years forward
- Deadline for MPSC to notify utilities of capacity obligations from AESs. DTE recommends mid February to allow utilities an opportunity to provide resources in a FRAP if available.
- What happens to capacity obligation of Retail Access Customers that were previously accounted for in a successful capacity demonstrate by an AES that later goes out of business?
- DTE suggests that all capacity demonstrations be transparent with the exception of pricing information
- Capacity obligations move to new suppliers as customers move
 - MISO Settlement Process accounts for customer switching within a Planning Year with PLC process

Generation Resources should meet minimum accreditation requirements in order to be utilized in capacity demonstrations



		Accreditation Requirements	
Generation Resources	Existing <small>(All Planning Resources must meet current MISO requirements)</small>	Proposed	
<i>Owned Resources</i>	<ul style="list-style-type: none"> Signed GIA¹ Current year UCAP² according to MISO rules (receive this credit going forward unless upgrade is shown using “Proposed” criteria) 	<ul style="list-style-type: none"> Generator Interconnection: Impact Study and Facilities Study Agreement, GIA Air Permit Application and approval Executed contract/purchase agreement for equipment or services (i.e., turbine, generator, engineering/construction, etc.) 	
<i>Purchase Power Agreements/Bilaterals</i>	<ul style="list-style-type: none"> Signed contract with unit specific firm capacity for term \geq duration of demonstration period <ul style="list-style-type: none"> No financial out clauses Current year UCAP² according to MISO rules (receive this credit going forward) 	<ul style="list-style-type: none"> Generator Interconnection: Impact Study and Facilities Study Agreement, GIA Air Permit Application and approval Executed contract/purchase agreement for equipment or services (i.e., turbine, generator, engineering/construction, etc.) Signed contract with unit specific firm capacity for term \geq duration of demonstration period <ul style="list-style-type: none"> No financial out clauses 	

- All **proposed** generation resources should meet annual progress milestones with predefined deadlines.
- If annual milestones are not met, the equivalent MW capacity requirement/customers shall be charged for capacity by the utility starting with the next Planning Year

1. GIA – Generator Interconnection Agreement
 2. UCAP – Unforced Capacity

Demand Resources should meet minimum accreditation requirements in order to be utilized in capacity demonstrations



Demand Resources	Accreditation Requirements	
	Existing <small>(All Planning Resources must meet current MISO requirements)</small>	Proposed
	<ul style="list-style-type: none"> • Current MISO DR requirements <ul style="list-style-type: none"> ○ Includes state documentation, previous performance/test data, etc. • Demand Reduction Capability forecasts • Load Control Method, duration, and availability • Emergency Operation Procedure and Communication Plan¹ • M&V Methodology² 	<ul style="list-style-type: none"> • DR Capability Plan (includes officer affidavit, program description, customer agreements, key assumptions, vendor contracts, and equipment purchase agreements as applicable) • Emergency Operation Procedure and Communication Plan¹ • M&V Methodology²

- The total amount of DR utilized in capacity demonstrations shall not exceed the achievable potential amount of DR determined by the state by customer class (industrial, commercial, residential)
- All **proposed** demand resources should meet annual progress milestones with predefined deadlines.
- If annual milestones are not met, the equivalent MW capacity requirement/customers shall be charged for capacity by the utility starting with the next Planning Year

1. "All DR owners should provide a procedure document detailing the steps followed to implement the demand reduction", MISO BPM-011-r16 Resource Adequacy, page 57
 2. Measurement and Verification Methodology, as detailed in MISO OATT Attachment TT

Energy Efficiency Resources should meet minimum accreditation requirements in order to be utilized in capacity demonstrations



Accreditation Requirements		
Energy Efficiency Resources ^{1,2}	Existing <small>(All Planning Resources must meet current MISO requirements)</small>	Proposed
	<ul style="list-style-type: none"> • Current MISO EE requirements (installed measures that achieve permanent energy reduction not reflected in forecasts) • M&V Methodology³ <ul style="list-style-type: none"> ○ Includes site surveys, demand and energy requirements, equipment specifications and purchases, metering of key variables, data analyses, calculations, and quality assurance procedures 	<ul style="list-style-type: none"> • EE Capability Plan (includes officer affidavit, program description, and key assumptions) • M&V Methodology³ <ul style="list-style-type: none"> ○ Includes site surveys, demand and energy requirements, equipment specifications and purchases, metering of key variables, data analyses, calculations, and quality assurance procedures

- MPSC approved PA 342 EE Plans qualify as capacity but are treated as an offset to load rather than a resource
- All **proposed** energy efficiency resources should meet annual progress milestones with predefined deadlines.
- If annual milestones are not met, the equivalent MW capacity requirement/customers shall be charged for capacity by the utility starting with the next Planning Year

1. Example (provided by MISO) of EE Resources: efficient lighting, appliance, or air conditioning installations, building insulation or process improvements, and permanent load shifts not based on pricing

2. EE Resources installed prior to a given Planning Year are eligible for the next Planning Year and the three subsequent Planning Years

3. Measurement and Verification Methodology, as detailed in MISO OATT Attachment UU

Questions



Appendix A

MISO Average EFORd

