



Capacity Demonstration Results

Planning Year 2022/23

Case No. U-20154

March 28, 2019

MPSC Staff

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Executive Summary

All Michigan load serving entities (LSE) required to file capacity demonstrations with the Michigan Public Service Commission (MPSC) for planning year 2022/23 pursuant to MCL 460.6w have filed all of the required information. Staff has audited the filings, contracts and other materials and finds that all Michigan LSEs have satisfied the capacity demonstration requirements and have procured appropriate levels of resources for planning year 2022/23.

Staff projects that the Midcontinent Independent System Operator, Inc. (MISO) Local Resource Zone (LRZ) 7 will have sufficient resources to meet its local clearing requirement (LCR) for the prompt planning year, 2019/20 and is projected to exceed its LCR by more than 1,300 MW in planning year 2022/23. While Staff projects slim margins with respect to the Planning Reserve Margin Requirement (PRMR) for LRZ 7 in the near-term, those slim margins are not a concern because of LRZ 7's ability to import capacity resources from other zones to meet the PRMR. Staff projects that LRZ 7 will have more than 700 MW of surplus capacity available, relative to its PRMR requirement in planning year 2022/23.

Staff projects that the Michigan portions of MISO LRZ 1 and MISO LRZ 2 have sufficient capacity resources to meet their respective requirements in the prompt year as well as the 2022/23 compliance year. Likewise, Staff projects that the southwest corner of Michigan located in the PJM Interconnection LLC (PJM) will have sufficient levels of resources available to meet PJM's requirements as well.

In this report, Staff includes two recommendations. The first recommendation is that the Commission approve minor changes to the reporting templates included as Appendix B. Staff also recommends that the Commission defer any decisions related to altering capacity demonstration requirements related to aggregated demand response resources until the conclusion of the stakeholder activities in MPSC Case No. U-20348.

Background

On May 17, 2018, the Commission directed all Michigan load-serving entities (LSEs) to file capacity demonstrations pursuant to Public Act 341 Section 6w. This report outlines the results of the capacity demonstrations filed for planning year 2022/23 as directed by the Commission in Case No. U-20154. The Commission ordered the electric utilities¹ to submit capacity demonstrations in Case No. U-20154 in accordance with the requirements established in the May 17, 2018 order² and September 13, 2018³ order in Case No. U-20154 for the 2022/23 planning year, to establish that the electric utility owns or has contractual rights to capacity sufficient to meet its capacity obligations as set by the Midcontinent Independent System Operator, Inc. (MISO), PJM Interconnection, LLC (PJM), or the Commission, as applicable, and as required by MCL 460.6w, on or before December 3, 2018. (5/17/18 Order, p 6.) The Commission ordered the alternative electric suppliers⁴ (AES), cooperatives⁵ and municipal utilities⁶ to submit capacity

¹ Alpena Power Company, Consumers Energy Company, DTE Electric Company, Indiana Michigan Power Company, Northern States Power Company-Wisconsin, Upper Michigan Energy Resources Corporation, Upper Peninsula Power Company, and Wisconsin Electric Power Company.

² <https://mi-psc.force.com/s/filing/a00t0000007NExgAAG/u201540004>, accessed 3/28/19.

³ <https://mi-psc.force.com/s/filing/a00t0000007NExgAAG/u201540004>, accessed 3/28/19.

⁴ AEP Energy, Inc., Calpine Energy Solutions, LLC, f/k/a Noble Americas Energy Solutions, LLC, CMS ERM Michigan LLC, Constellation Energy Services, Inc., f/k/a Integrys Energy Services Inc., Constellation NewEnergy, Inc., Dillon Power, LLC, Direct Energy Business, LLC, Direct Energy Services, LLC, EDF Energy Services, LLC, Eligo Energy MI, LLC, Energy Services Providers, Inc., d/b/a Michigan Gas & Electric, FirstEnergy Solutions, Interstate Gas Supply, Inc., d/b/a IGS Energy, Just Energy Solutions, Inc., f/k/a Commerce Energy Inc., Liberty Power Delaware, LLC, Liberty Power Holding, LLC, MidAmerican Energy Services, LLC, Nordic Energy Services, LLC, Plymouth Rock Energy, LLC, Powerone Corporation, Spartan Renewable Energy, Inc., Texas Retail Energy, LLC, U.P. Power Marketing, LLC, and Wolverine Power Marketing Cooperative, Inc.

⁵ Alger Delta Cooperative Electric Association, Bayfield Electric Cooperative, Inc., Cherryland Electric Cooperative, Cloverland Electric Cooperative, Great Lakes Energy Cooperative, Midwest Energy Cooperative, Ontonagon County Rural Electrification Association, Presque Isle Electric & Gas Co-op, Thumb Electric Cooperative, and TriCounty Electric Cooperative.

⁶ Village of Baraga, City of Bay City, City of Charlevoix, Chelsea Department of Electric & Water, Village of Clinton, Coldwater Board of Public Utilities, Croswell Municipal Light & Power Department, City of Crystal Falls, Daggett Electric Department, City of Dowagiac, City of Eaton Rapids, City of Escanaba, City of Gladstone, Grand Haven Board of Light & Power, City of Harbor Springs, City of Hart Hydro, Hillsdale Board of Public Utilities, Holland Board of Public Works, Village of L'Anse, Lansing Board of Water & Light, Lowell Light & Power, Marquette Board of Light & Power, Marshall Electric Department, Negaunee Department of Public Works, Newberry Water and Light Board, Niles Utilities Department, City of Norway, Village of Paw Paw, City of Petoskey, City of Portland, City of Sebewaing, City of South Haven, City of St. Louis, City of

demonstrations in Case No. U-20154 for the 2022/23 planning year on or before February 11, 2019. (Id. at 6.)

The May 17, 2018 order directed the Staff to hold a capacity demonstration technical conference during the summer of 2018 and to file a report on the results of the conference in Case No. U-20154 within 30 days of the date of the conference. The staff held the capacity demonstration technical conference on July 12, 2018 and filed a report on the results of the conference in Case No. U-20154 on August 9, 2018.⁷ Participants from 22 different stakeholders attended the technical conference. The Commission approved the report and recommendations from the technical conference in its September 13, 2018 order⁸ in Case No. U-20154, with the exception of those provisions related to a forward locational requirement. The Commission noted that the provisions related to a forward locational requirement are not applicable while the Commission's June 28, 2018 order in Case No. U-18444 is stayed.⁹

Pre-Demonstration Process

Pursuant to the Commission's previous direction in Case No. U-18197, Staff continued to seek technical assistance from MISO regarding Michigan LSE capacity demonstrations. MISO participated in the July 12, 2018 capacity demonstration technical conference that resulted in recommended improvements to Michigan's capacity demonstration process. Throughout 2018 and early 2019, Staff consulted with MISO regarding demand response in order to ensure that treatment of demand response in Michigan capacity demonstrations would align with the federal requirements. While this process is ongoing, MISO presented to Michigan stakeholders on demand response at a February 13, 2019 stakeholder meeting. As the capacity demonstration process continues, Staff will continue to closely monitor the federal requirements and continue to engage with MISO going forward.

Last year, Staff obtained written permission from all of the LSEs in Michigan for MISO to release peak load contribution (PLC) data for Michigan LSEs directly to the Michigan Public Service Commission (MPSC) Staff (Staff) in advance of the February capacity demonstration filing deadline. Staff appreciated the efforts of the LSEs to provide the written permission necessary and Staff appreciated MISO's efforts to provide the data. Because some of the smaller LSEs are combined with other LSEs and may not be a MISO market participant, sorting out the PLC

Stephenson, City of Sturgis, Traverse City Light & Power, Union City Electric Department, City of Wakefield, Wyandotte Department of Municipal Service, and Zeeland Board of Public Works.

⁷ <https://mi-psc.force.com/s/filing/a00t0000007WFEXAA4/u201540003>, accessed 3/28/19.

⁸ <https://mi-psc.force.com/s/filing/a00t0000007NExgAAG/u201540004>, accessed 3/28/19.

⁹ The Michigan Court of Appeals ruled that the MPSC did not have authority to impose an individual forward locational requirement for electric providers. The Commission has appealed this decision to the Michigan Supreme Court.

requirements from the data provided was difficult. Later in the process last year, Staff was able to request and view screen shots of the MISO Module E Capacity Tracking Tool (MECT) for many LSEs which showed the capacity obligations of each LSE. Because the auditing process of viewing the MECT screen shots went smoothly last year and was expected to take place again this year, Staff did not request that all LSEs provide written permission for Staff to obtain similar data directly from MISO, removing a level of redundancy from the process. The Staff appreciates the technical assistance provided by MISO throughout this process.

Last year, prior to the initial capacity demonstration filings, Staff offered to meet with any individual LSE to discuss the capacity demonstration requirements and review any prepared materials prior to the filing deadlines. Many LSEs took that opportunity last year and Staff found that the pre-filing consultations were helpful in resolving questions prior to filing. As such, Staff extended the same offer of pre-filing consultations this year, and met with several AESs, cooperatives and municipal utilities prior to the filing deadlines. Staff will continue to offer pre-filing consultations each year in order to resolve as many questions as possible, prior to the filing deadlines.

Capacity Demonstration Filings

On or before December 3, 2018, capacity demonstration filings were received from Northern States Power Company, Consumers Energy Company, Alpena Power Company, Upper Michigan Energy Resources Corporation (UMERC), Wisconsin Electric Power Company, Upper Peninsula Power Company (UPPCO), Indiana Michigan Power Company, and DTE Electric Company. Cloverland Electric Cooperative also filed its capacity demonstration on December 3. Several LSEs filed confidential information under seal as part of their demonstration. Staff reviewed the filings and reached out to individual LSEs with specific questions regarding their capacity demonstration. In addition, Staff held meetings with several LSEs and audited a limited number of contracts, focusing specifically on contracts that may not have already been reviewed by the Staff in prior proceedings. Best efforts to completely understand the filings and work through issues with all LSEs were undertaken. Staff worked with the LSEs, when necessary, to obtain additional information. Staff's review and auditing of the capacity demonstrations filed in December led to an amended capacity demonstration filed by UMERL on January 31, 2019. UPPCO also filed amended capacity demonstration information concurrent with its integrated resource plan, in Case No. U-20350 on February 12, 2019.

On or before February 11, 2019, capacity demonstration filings were received from Croswell Municipal Light and Power Department, Michigan Public Power Agency, WPPI Energy, City of Wakefield, City of Stephenson, City of Escanaba, Daggett Electric Department, Newberry Water and Light Board, Michigan South Central Power Agency, CMS ERM Michigan LLC, UP Power Marketing LLC, Constellation NewEnergy Inc., Just Energy Solutions, Direct Energy Business LLC, Calpine Energy Solutions LLC, FirstEnergy Solutions Corporation, Eligo Energy MI LLC, Bayfield Electric Cooperative Inc., and Wolverine Power Supply Cooperative. Following an initial audit of

the filings received in the docket on or before February 11, 2019, Staff contacted Thumb Electric Cooperative because it did not appear to have filed its own demonstration or been included with a combined LSE demonstration filing. Thumb Electric Cooperative remedied the oversight, filing its capacity demonstration on February 14, 2019. Staff confirms receipt of capacity demonstration filing information from, or on behalf of, all LSEs currently serving load in Michigan.

Several AESs filed letters in Case No. U-20154 indicating that they are currently not serving customers in Michigan.¹⁰ Staff confirms that all licensed AESs in Michigan have either filed capacity demonstrations or a letter indicating that they are not currently serving Michigan load.¹¹

Also, on February 11, 2019, Staff filed an expedited motion for protective order to govern the release, use, and disclosure of confidential and competitively sensitive information in this proceeding. On February 21, 2019, Wolverine Power Supply Cooperative filed a response in support of Staff's motion and on March 7, 2019, the Commission adopted a protective order that may be used by any electric provider in connection with the filing or provision of confidential information in Case No. U-20154. In the future, Staff will endeavor to seek a protective order earlier in the process in order to avoid requesting expedited treatment.

On February 13, 2019, Eligo Energy MI LLC submitted amended confidential exhibits. On February 14, 2019, Constellation NewEnergy Inc. submitted a confidential supplemental filing. On February 19, 2019, Direct Energy Business LLC submitted a confidential revised capacity demonstration. On February 21, 2019, Thumb Electric Cooperative filed an affidavit in support of its capacity demonstration. While these amended and supplemental filings were received after the filing deadline, they were made at Staff's request in response to Staff's audits and review of the material submitted.

Staff conducted an audit for each capacity demonstration filing received and requested additional information from the LSE if it was warranted. Staff reviewed all of the contracts submitted in the AES capacity demonstrations as well as the vast majority of the contracts submitted in municipal utility and cooperative capacity demonstrations prior to the issuance of this Staff report. Staff audits are substantially complete; however, Staff has requested to review an additional demand response contract from a particular LSE. The review of the outstanding contract will not impact the results contained within this report.

¹⁰ Direct Energy Services LLC, Liberty Power Holdings LLC, Liberty Power Delaware LLC, Nordic Energy Services LLC, Plymouth Rock Energy LLC, Interstate Gas Supply LLC, Dillon Power LLC, Energy International Power Marketing Corporation, MidAmerican Energy Services LLC, EDF Energy Services LLC, Texas Retail Energy LLC, Energy Services Providers Inc., and AEP Energy Inc.

¹¹ Constellation Energy Services, Inc. was an AES who requested voluntary relinquishment of their license during the 2022/23 capacity demonstration process. An order issued February 7, 2019 in Case No. U-13245 granted the license surrender, therefore no letter or demonstration was filed.

Overview of Zonal Adequacy

This Staff report is based upon the capacity demonstration filings in Case No. U-20154, as well as the results of Staff's review and subsequent audit of those filings, information gathered in consultation with LSEs, responses to data requests, and supplemental filings, as well as information provided by MISO. This report does not disclose any Critical Energy/Electric Infrastructure Information or other commercially sensitive information.

The primary concern regarding resource adequacy in Michigan is driven by the recent retirement of many of Michigan's older coal-fired generation units, and potential for future retirements, due in part to environmental regulations imposed by the United States Environmental Protection Agency, as well as age and economic considerations. The retirement of these resources significantly impacts the amount of in-state generation resources that can be utilized to meet projected peak demand requirements in coming years and could result in a possible capacity shortfall, depending on a host of variables and any import constraints.

In general, the primary focus of the Staff's analysis of the filings received in this proceeding has been MISO Local Resource Zone (LRZ or Zone) 7, which comprises the Lower Peninsula of Michigan (with the exception of the southwest corner, served by the Indiana Michigan Power Company (I&M), a PJM Regional Transmission Organization market participant). Staff is keenly interested in working with Michigan LSEs to address any potential reliability concerns in a proactive manner.

The term "capacity shortfall" when used in the context of the relative capacity position of a particular LRZ, has the potential to be misinterpreted. The manner in which this term is defined can yield a significant impact on the results, and how those results can be interpreted. Staff proposes that for the purposes of its analysis, the term "capacity surplus (shortfall)" means:

The expected total load forecast plus planning reserve margin requirements versus the total number of available planning resources located within a particular LRZ.

When defined in this manner, the capacity surplus or shortfall of a particular zone is equal to the difference between the total amount of megawatts (MW) (or in the case of Staff's analysis in this matter, Zonal Resource Credits (ZRC) that are owned or contractually obligated to a particular LSE, and its respective Planning Reserve Margin Requirement (PRMR)). For purposes of the calculation, the capacity resources must be physically located within LRZ 7. Provided that any shortfall experienced by a particular zone is less than the zonal Capacity Import Limit (CIL), as determined

by MISO in the Planning Year 2019-2020 Loss of Load Expectation Study Report¹² and the amount of resources in the zone is greater than the Local Clearing Requirement (LCR), the zone can theoretically meet its load and reserve obligations without violating the Loss of Load Expectation (LOLE) reliability criteria of one day of outage in 10 years due to an insufficient amount of resources. The MISO has a revised tariff¹³ effective March 30, 2019 that changes the definition of the LCR. The revised MISO tariff includes the following definitions:

Local Clearing Requirement (LCR): The minimum amount of Unforced Capacity for an LRZ that is required to meet its LOLE while fully using the Zonal Import Ability for such LRZ and accounting for controllable exports.

Zonal Import Ability (ZIA): The ability of an LRZ to import capacity from areas outside of that LRZ. Equal to an LRZ's base interchange plus the LRZ's incremental ability to import generation.

Capacity Import Limit (CIL): The amount of Planning Resources in MWs for an LRZ determined by the Transmission Provider that can be reliably imported into that LRZ.

For the purposes of this report, an LRZ can fall short of its PRMR if:

- The magnitude of the shortfall is less than the amount of resources that can physically be imported.
- The LRZ must have a specified amount of capacity resources, equal to or greater than the LCR, physically located within the LRZ in order to meet the LOLE reliability criterion.

The *only exception* to this condition would occur if there were not sufficient capacity resources available within the MISO footprint outside of the LRZ and available for import. In this specific case, even if the zonal capacity shortfall is less than the CIL, the LRZ could potentially not meet its capacity obligations due to an overall lack of available resources within the MISO footprint. In this scenario, where there is an insufficient amount of resources available within MISO's footprint to import into a particular LRZ to satisfy its respective PRMR, the statistical likelihood of a resource adequacy related outage would increase exponentially, depending on the severity of the shortage, such as an extended period of extremely hot weather in multiple regions of the country and/or significant unplanned generator or transmission outages.

¹² <https://cdn.misoenergy.org/2019%20LOLE%20Study%20Report285051.pdf>, accessed 3/19/19.

¹³ <https://cdn.misoenergy.org/Tariff%20-%20As%20Filed%20Version72596.pdf>, accessed 3/19/19.

A. MISO – Local Resource Zone 7

Figure 1 provides aggregated results for Zone 7.

Figure 1: U-20154 Results - LRZ 7 Capacity Position (ZRCs)

Line #		PY 2019/20	PY 2020/21	PY 2021/22	PY 2022/23
1	Planning Reserve Margin Requirements (PRMR)	21,976	21,915	21,853	21,792
2	Local Reliability Requirement (LRR)	25,023	24,815	24,608	24,401
3	Capacity Import Limit (CIL)	3,211	3,211	3,211	3,211
4	Zonal Import Ability (ZIA)	3,211	3,211	3,211	3,211
5	Local Clearing Requirement (LCR)	21,812	21,604	21,397	21,190
6	Total Owned	17,059	17,154	17,342	17,812
7	Total PPA Contracts	2,810	2,850	2,121	2,191
8	Total ZRC Contracts	543	597	553	705
9	Total Qualified Demand Response	1,168	1,291	1,413	1,550
10	Total Resources (Line 6 + Line 7 + Line 8 + Line 9)	21,580	21,891	21,428	22,258
11	LCR Demonstrated Position (Line 10 - Line 5)	-232	287	31	1,068
12	PRMR Demonstrated Capacity Position (Line 10 - Line 1)	-396	-24	-426	466
13	Net Undemonstrated Zone 7 Capacity	429	375	420	268
14	Anticipated LCR Position (Line 11 + Line 13)	197	662	450	1,336
15	Anticipated PRMR Capacity Position (Line 12 + Line 13)	33	352	-6	734
(1) PY 2019 PRMR from Preliminary Planning Resource Auction (PRA) Data. ¹⁴ PY 2020-2022 PRMR calculated using the peak demand forecast from the 2019-2020 MISO LOLE Study Report and multiplying by the coincidence factor (96%) and reserve margin (107.9%), interpolating as necessary.					
(2) PY 2019 LRR from Preliminary PRA Data. PY 2020-2022 LRR from the 2019-2020 MISO LOLE Study Report interpolated as necessary.					
(3) PY 2019 CIL from the 2019-2020 MISO LOLE Study Report, held constant at prompt year value per MISO recommendation.					
(4) PY 2019 ZIA from the MISO Preliminary PRA data.					
(6-10) Zone 7 resources included in capacity demonstrations sorted by resource type.					

¹⁴ https://cdn.misoenergy.org/2019_2020%20Final%20Preliminary%20PRA%20Data331136.pdf, accessed 3/26/19.

<i>(11) LCR position based on demonstrated resources only.</i>
<i>(12) PRMR position based on demonstrated resources only.</i>
<i>(13) Net Undemonstrated Zone 7 Capacity is Staff's attempt to reconcile the capacity demonstration resources with the MISO PRA. There are resources located in Zone 7 that Staff anticipates will be in the PRA that were not included in any capacity demonstration as well as a small amount of resources included in the capacity demonstration that Staff expects are no longer available due to recent events.</i>
<i>(14) LCR Position after accounting for undemonstrated Zone 7 Capacity.</i>
<i>(15) PRMR position after accounting for undemonstrated Zone 7 capacity. A negative value means the Zone will need to import resources to meet its requirement. A positive value means the Zone may import resources based on economics but will not need to in order to meet its PRMR.</i>

On April 13, 2018, MISO published a summary of the annual Planning Resource Auction (PRA) results for the 2018/19 planning year.¹⁵ The PRA is a residual market for LSEs who do not have sufficient generation resources or purchased power agreements to satisfy their capacity obligations. An LSE may obtain capacity resources to meet its PRMR through ownership either within or outside the LRZ, participation in the PRA, or through bilateral contracts.

Of particular interest to Staff is the LCR. The LCR is defined as the amount of planning resources required within a particular zone in order to meet the 1 day in 10 years LOLE criteria. Staff recognizes the importance of a particular LRZ meeting its LCR. Failure to do so would violate the Federal Energy Regulatory Commission (FERC)-approved North American Electric Reliability Corporation reliability standards and the MISO LOLE process, and it could also place a financial burden on certain rate-payers within the Zone. As indicated by line 11 of Figure 1, Staff's findings in this matter indicate that LRZ 7 would fall short of meeting its LCR by 232 ZRCs in 2019 *when only demonstrated resources are considered*. It is important to note that demonstrations filed in December of 2018 and February of 2019 included voluntary updates for the 2019/20 planning year from the majority of the LSEs; however, these updates were not required and the data for the interim years was not provided by all LSEs. Staff appreciates the efforts made by LSEs to provide updated capacity resource data for the prompt planning years as well as the interim years as it allows Staff to use that data for updated zonal resource adequacy projections. Capacity demonstrations for the fourth year forward, planning year 2022/23, is required by the statute and all LSEs complied with providing demonstrations for planning year 2022/23. Data and supporting evidence for planning year 2022/23 was scrutinized by Staff for compliance purposes.

There are several reasons why the projection on line 11 shows that LRZ 7 would fall short of meeting its LCR by 232 ZRCs in 2019 when only demonstrated resources are considered. The first reason is not all LSEs provided updated capacity demonstration data and supporting evidence

¹⁵ <https://cdn.misoenergy.org/2018-19%20PRA%20Results173180.pdf>, accessed 3/19/19.

for the prompt planning year because it is not required by the law. Updates to previously filed capacity demonstrations, for a subset of LSEs in the zone, are not captured in the projection included in Line 11. The second reason is that any changes in actual 2019 PRMR requirements, or unforced capacity (UCAP) ratings of LRZ 7 resources for 2019 in the MISO market occurring after the demonstrations were filed, will have a direct impact on this relative position. The third reason is that there is a measurable amount of existing capacity resources located in LRZ 7, including resources owned by independent power producers and demand response aggregators, that were not included in prompt year capacity demonstration filings from Michigan LSEs. Based upon independent information that Staff has gathered, Staff projects that an additional 429 ZRCs in LRZ 7, beyond what has been demonstrated for LRZ 7, will be available for the prompt year (line 13). Staff anticipates LRZ 7 will exceed its LCR by approximately 197 ZRCs (line 14) for the 2019/20 planning year.

Line 12 of Figure 1 outlines the capacity position of LRZ 7 relative to the PRMR. Based on Staff's analysis of LSE filings in this docket, when only demonstrated generation resources physically located within LRZ 7 are considered, there is an expected shortfall of approximately 396 ZRCs in the 2019/20 planning year with respect to the PRMR. Therefore, Staff would expect at least 396 ZRCs either to be imported into LRZ 7 which is well below the Zone's CIL and the Zone's ZIA, both of which are 3,211 ZRCs, or to be purchased from LRZ 7 resources not included in LSE capacity demonstrations in the 2019/20 MISO PRA. Line 13 lists Staff's estimated amount of net undemonstrated LRZ 7 capacity and may not be all inclusive. With the inclusion of the resources in line 13, Staff expects that LRZ 7 would meet its planning year 2019/20 PRMR without importing any ZRCs. While Staff projects that LRZ 7 could meet its prompt-year PRMR without imports, it is possible that some amount of imports may occur in the PRA based upon the relative economics. As a point of reference, the 2018/19 MISO PRA results¹⁶ indicate that LRZ 7 imported 320 ZRCs even though only 85 ZRCs would have been required for the zone to meet its PRMR.

Hypothetically, if a particular MISO LRZ was projected to experience a capacity shortfall that approached the magnitude of its CIL or its ZIA, it would cause concern amongst the stakeholders with responsibilities regarding resource adequacy. Since the process by which the planning reserve margin is calculated is a probabilistic determination, even if the capacity shortfall exceeded the CIL or ZIA, it would not necessarily mean that the LRZ in question would experience a loss of load event. The probability of such a loss of load event, however, would exceed the generally accepted criteria that govern the resource adequacy planning process.

¹⁶ <https://cdn.misoenergy.org/2018-19%20PRA%20Results173180.pdf>, accessed 3/21/19.

Significant Changes in 2019 for MISO Local Resource Zone 7

1. Capacity Requirement Changes

Increased LRR

The Local Reliability Requirement (LRR) represents the amount of resources required for a particular zone to meet the 1 day in 10 years loss of load standard when modeled as an island (no imports). LRZ 7 had an LRR of 24,545 ZRCs in the 2018 MISO LOLE Study Report. The 2019 MISO LOLE Study Report showed the LRR in LRZ 7 increasing to 24,845 ZRCs, this number further increased to 25,023 ZRCs in the preliminary 2019/20 PRA Data.

Decreased CIL / ZIA

The LCR is the difference between the LRR and the ZIA. The ZIA is defined as the ability of an LRZ to import capacity from areas outside of that LRZ. It is equal to an LRZ's base interchange plus the LRZ's incremental ability to import generation. This is the first year that MISO has published ZIA values in its LOLE report. The ZIA is defined differently than the CIL, however, they are the same number for LRZ 7 this year. The 2019 CIL/ZIA is 3,211 - compared to 3,785 in 2018.

Increased LCR

The LCR represents the minimum amount of resources that must be located within a specific zone for that zone to meet the reliability standard. The combined effect of an increasing LRR and decreasing CIL/ZIA has resulted in a relatively significant increase in LCR.

The figure below includes data from annual MISO LOLE study reports for LRZ 7. The MISO 2019 LOLE study reports the lowest CIL and highest LCR projected for LRZ 7 of the last seven years.

Figure 2: Annual MISO LOLE Report Data

Source	LRR	CIL	LCR (ZRCs)
MISO 2013 LOLE Report	25,305	4,576	20,729
MISO 2014 LOLE Report	24,815	3,884	20,931
MISO 2015 LOLE Report	24,710	3,813	20,897
MISO 2016 LOLE Report	24,715	3,813	21,309
MISO 2017 LOLE Report	24,654	3,320	21,334
MISO 2018 LOLE Report	24,545	3,785	20,760
MISO 2019 LOLE Report	24,845	3,211	21,634

The figure above shows that these capacity requirements have moved around over time. Changes in these requirements potentially have economic and reliability

impacts and will continue to be monitored. The Final Preliminary PRA Data¹⁷ shows a slight increase in the LRR (25,023 ZRC) and the LCR (21,812 ZRC) compared to the 2019 LOLE Report.

2. Capacity Resource Changes

In addition to expected variation in generating units unforced capacity from year to year, there were a few other noteworthy resource changes this year as compared to last year's filing.

Ludington Upgrades

The Ludington Pumped Storage facility consists of six reversible turbines jointly owned by DTE Electric and Consumers Energy. Upgrades at Ludington Pump Station are continuing as planned with each turbine overhaul increasing the facility's capacity by approximately 50 ZRCs and taking approximately one year to complete. The entire upgrade should be complete in 2020.

Increased Utility Demand Response Programs

Three LRZ 7 LSEs disclosed in their respective capacity demonstration filings new or increasing Demand Response (DR) programs for their retail customers. 191 MW of new or increased DR programs were reported by these LSEs in LRZ 7 for the prompt planning year, compared to last year.

Demand Response Aggregation

This is the first year that Staff was aware of aggregated DR in LRZ 7. During the auditing process of LSE prompt-year ZRC transfers in the MISO MECT, Staff observed ZRC transfers of aggregated DR for the first time. Forward ZRC contracts were the likely vehicle for procuring the aggregated DR resources. Forward ZRC contracts typically specify the zone from which the ZRCs will be sourced, however, they do not specify whether those ZRCs will come from supply-side or demand-side resources. Transparency issues related to aggregated DR in the wholesale market are currently being discussed in a stakeholder process as ordered by the Commission on November 21, 2018 in Case No. U-20348.

Filer City Upgrades Removed

The T.E.S. Filer City Station's planned conversion from coal (and other solid fuels) to natural gas would have increased the facility's capacity by ~157 ZRCs. These

¹⁷ https://cdn.misoenergy.org/2019_2020%20Final%20Preliminary%20PRA%20Data331136.pdf, accessed 3/26/19.

ZRCs were included in previous capacity demonstrations and planned to be available in planning year 2019. This conversion is no longer happening and was appropriately removed from this year's demonstration by Consumers Energy.

B. MISO – Local Resource Zone 2 (MI Upper Peninsula)

MISO's LRZ 2 encompasses almost the entire Upper Peninsula (UP) of Michigan and northern and eastern Wisconsin. MISO does not define MW capacity imports or export limits between states within the boundaries of the same MISO LRZ. However, MISO does define that LRZ 2 has a CIL of 1,713 ZRCs for planning year 2019/20. Considering this, the combination of data supplied by the UP LSEs in their filings for the purposes of determining a net capacity position, as Staff did in its analysis of LRZ 7, is not applicable to LRZ 2 because it is located in both Michigan and Wisconsin.

As discussed in previous Reliability Assessments, MISO determined that there are limitations to the transmission system in the UP that require the availability of the Presque Isle Power Plant (PIPP) to reliably serve all of the load in the UP until such time as additional generation and/or transmission in the UP are constructed. The PIPP is owned and operated by Wisconsin Electric Power Company (WEPCo) and is subject to the Amended and Restated Settlement Agreement (ARSA). Under the ARSA, WEPCo has agreed to operate the PIPP according to prudent utility practice, and provide safe, reliable, and adequate electric service to all of WEPCo's Michigan customers.

On January 30, 2017, UMERL filed an application requesting approval of a certificate of necessity to build two reciprocating internal combustion engine (RICE) electric generation facilities in Michigan's UP. UMERL also requested approval of certificates of public convenience and necessity, along with approval of a Retail Large Curtailable Special Contract between WEC Energy Group, Inc., and Tilden Mining Company L.C. On October 25, 2017, the Commission issued an order approving construction of the proposed RICE units and the Retail Large Curtailable Special Contract. UMERL is projecting that the new RICE units will become operational in the second quarter of 2019.

In its capacity demonstration, UPPCO discussed recent events impacting its two fuel oil powered generators in the UP. The total UCAP rating for these facilities in 2019/20 is reported to be 50.9 MWs. The Company reported that its Gladstone oil-fired combustion turbine unit failed a bore-scope inspection in July 2018, causing the unit to be placed into indefinite outage until the unit could be repaired or retired. The Company reported in its integrated resource plan, Case No. U-20350, that it has since made repairs to the unit. The Company also reported that its Portage oil-fired combustion turbine experienced a mechanical failure in late November 2018, causing the unit to be placed into an indefinite outage. At the time of its capacity demonstration filing, UPPCO reported that investigations into the root cause of the failure, and the economic value related to retiring or returning the Portage unit to service were under evaluation. In Case No. U-20350,

UPPCO reported plans to retire the Portage unit and includes a long-term capacity plan that would include new solar resources and new natural-gas fired resources in the UP.

American Transmission Company LLC (ATC) owns and operates the two 138 kV transmission circuits that electronically connect the Upper Peninsula and Lower Peninsula of Michigan. Each of the two circuits consists of three cables. On April 1, 2018, the two transmission circuits tripped offline. The Coast Guard led an investigation into the possibility that a passing vessel caused damage to the electric cables which resulted in the two circuits tripping off-line. ATC conducted an underwater inspection of the submarine cables. As of May 1, 2018, one of the two circuits between the Upper Peninsula and Lower Peninsula of Michigan has been restored. There was no transmission connection between the Upper and Lower Peninsula for a short time. ATC was able to maintain system reliability for a short period, given the anticipated electric load, while one of the two circuits was reconfigured and energized.

Following the failure of the electric cable, ATC was granted approval by MISO on December 6, 2018 to replace the cables in the Straits of Mackinac, subject to approval by all regulatory siting requirements for \$105 Million. Several state agencies have been working with Enbridge Inc and ATC on an underground tunnel located at the Straits to house Enbridge's pipeline and potentially the electric transmission cables. Construction is expected to take seven to 10 years.

As a result of the reliability concerns in the Eastern UP, ATC and Cloverland Electric Cooperative are working on a short-term solution that includes portable generators, emergency operations plans, load management discussions, and more extensive monitoring of the transmission lines in the Eastern UP. Cloverland Electric Cooperative has discussed plans for a long-term solution as well.

The 2018 Organization of MISO States (OMS)-MISO Survey results indicate an installed capacity surplus of up to 200 MW in the 2019/20 planning year for LRZ 2.¹⁸ Notwithstanding the localized reliability issues in the UP, the results of the OMS-MISO Survey indicate that LRZ 2 is projected to have an adequate supply of capacity resources to meet its PRMR for the 2019/20 planning year. The pending capacity replacements planned by UMERL and UPPCO, and the plans by Cloverland Electric Cooperative and ATC to mitigate the loss of the cable at the Straits, will also have a positive impact on the resource adequacy of the region.

C. MISO – Local Resource Zone 1 (Western tip of MI Upper Peninsula)

A very small fraction of Michigan's UP load is located in LRZ 1. Northern States Power, Bayfield Electric Cooperative, and the City of Wakefield municipal utility have less than a total of

¹⁸<https://cdn.misoenergy.org/20180711%20RASC%20Item%2003d%20OMS%20MISO%20Survey243534.pdf>, accessed 3/22/19.

30 MW in MISO LRZ 1. The 2018 OMS-MISO Survey results indicate an installed capacity surplus of approximately 1,500 MW for the 2019 planning year and a similar capacity surplus projected for 2023.¹⁹ LRZ 1 is projected to have an adequate supply of capacity resources to meet its PRMR for the 2019/20 planning year, as well as the next several planning years, at this time.

D. PJM – Indiana Michigan Power Company

PJM Interconnection LLC (PJM) has a mandatory forward capacity market for LSEs in its service territory. LSEs in the PJM service territory meet their capacity obligations either through participation in PJM's Reliability Pricing Model (RPM) Base Residual Auction (BRA) or through PJM's Fixed Resource Requirement (FRR) capacity plan. The capacity demonstration process and requirements approved by the Commission in Case No. U-20154²⁰ allow PJM LSEs to file an amended capacity demonstration two weeks after the completion of the PJM RPM BRA.

Indiana Michigan Power Company's (I&M) capacity demonstration filed in Case No. U-20154 indicates that the Company plans to continue with the PJM FRR option that allows them to opt out of participation in the PJM competitive capacity market.²¹ I&M discusses PJM's FRR requirements in its capacity demonstration filing.

PJM requires all FRR entities to show they are meeting their capacity reserve requirements by supplying PJM with an FRR plan three years in advance of the delivery year. AEP's most recent FRR plan was filed on April 6, 2018.²²

Indiana Michigan Power Company's capacity demonstration indicates that it has already satisfied PJM's requirements for planning years 2019/20 through 2021/22 and that it expects to meet PJM's requirements for planning year 2022/23. I&M reports that its expectation to meet the PJM requirements for the 2022/23 planning year is due to PJM resources in July 2019, though I&M notes that the outcome of a pending decision related to its Rockport facility could impact I&M's capacity plan going forward.

¹⁹ 2018 OMS-MISO Survey Results released in June, 2018, <https://cdn.misoenergy.org/20180711%20RASC%20Item%2003d%20OMS%20MISO%20Survey243534.pdf>, accessed 3/14/18.

²⁰ <https://mi-psc.force.com/s/filing/a00t0000007NExgAAG/u201540004>, accessed 3/14/18.

²¹ Indiana Michigan Power Company is an electric operating company of American Electric Power Company, Inc. (AEP). I&M is a wholly owned subsidiary of AEP and is operated as a single utility in the American Electric Power System (AEP System).

²² Indiana Michigan Power Company's capacity demonstration filing in Case No. U-20154, 12/3/18, p. 3.

Currently, pending before the United States District Court for the Southern District of Ohio is a Supplemental Motion and Memorandum in Support of Fifth Modification of Consent Decree “Motion” in the Court related to the Rockport Plant. The pending motion has been fully briefed and is awaiting ruling on by the Court. The Motion, if granted, would change the Consent Decree provisions applicable to Rockport Plant and, therefore, may substantially impact I&M’s resource plans in 2023. For that reason, I&M will supplement this filing for the PJM Planning Year (PY) 2022/23 data that may be impacted by this Motion once clarification is known.²³

Indiana Michigan Power Company further indicates that the RPM BRA auction results are scheduled to be posted in August 2019 and I&M will update its filing in early September 2019 assuming there are no further schedule changes by PJM.

Figure 3: Indiana Michigan Power Company Capacity Demonstration Summary

Item	PY 2019/20	PY 2020/21	PY 2021/22	PY 2022/23
Total Planning Reserve Margin (expected reserves), UCAP MW	4,632	4,339	4,325	-
Total Company Owned Generation, MW	4,166	4,053	3,993	-
Total Demand Response Resources (treated as capacity), UCAP MW	400	251	304	-
Total PPA, UCAP MW	271	225	223	-
Total Planning Resources, MW	4,836	4,528	4,520	-
UCAP Surplus / (Shortfall), MW	204	189	195	-

Staff will continue to monitor I&M’s capacity plans in its amended capacity demonstration filings expected later this year, as well as its integrated resource plan filing expected to be filed in Indiana by July 1, 2019. I&M’s integrated resource plan will be filed with the MPSC within 45 days of its filing in Indiana. In addition to I&M’s capacity demonstration, Staff also reviewed information for approximately 231.9 MW of cooperative and municipal utility obligations in the Michigan portion of PJM’s territory for planning year 2022/23.

²³ Indiana Michigan Power Company’s capacity demonstration filing in Case No. U-20154, 12/3/18, p. 1.

A review of FERC's Summer 2018 Energy Market and Reliability Assessment²⁴ reveals that PJM was expected to have more than 5 GW of excess capacity last year. In addition, the FERC reported that "PJM is phasing in its Capacity Performance; the program now encompasses 80 percent of the total capacity requirement. After one more transition year, 100 percent of resources must meet the Capacity Performance rules in delivery year 2020/21."²⁵ FERC notes that so far, there have been no shortage conditions to trigger an assessment of penalties or rewards under its Capacity Performance rules.

Based upon its review, Staff expects that the LSEs in the Michigan portion of PJM will continue to meet the PJM capacity obligations in part due to new information included within individual capacity demonstrations and due in part to the current level of surplus capacity in the PJM market. With such an abundance of reserve resources, if I&M were to encounter an unanticipated shortfall in the immediate future, it is anticipated that it could easily be accommodated through the procurement of some amount of these reserve resources. As market conditions may change over time, Staff will continue to monitor the resource adequacy of the PJM region overall as well as the capacity plans of Michigan LSE's located within the PJM territory. Staff will continue to monitor I&M's capacity plans specifically, both in amended capacity demonstration filings expected later this year, as well as its pending integrated resource plan to be filed in Indiana and Michigan later this year.

LSE Capacity Demonstration Results (PY 2022/23)

The Staff appreciates the time and effort made by all Michigan LSEs to comply with the provisions of MCL 460.6w, as well as to comply with the questions, audits, contract reviews, and requests for additional information made by Staff throughout this process. The LSE Capacity Demonstration Results are reported for planning year 2022/23 because, following the initial capacity demonstration which covered four years, only the fourth year forward is required for compliance. As previously described in its September 15, 2017 order in Case No. U-18197, the Commission requested a table be included in this report that identifies the capacity by type for each individual electric provider without revealing the identity of any specific electric provider. The requested table with a breakdown for each electric provider that filed a capacity demonstration is included as Appendix A. In addition to the breakdown by individual supplier, Staff reports the following aggregate results in Figure 4 below.

²⁴ <https://www.ferc.gov/market-oversight/reports-analyses/mkt-views/2018/05-17-18-A-3.pdf?csrt=17428207314763057696>, accessed 3/14/18.

²⁵ <https://www.ferc.gov/market-oversight/reports-analyses/mkt-views/2018/05-17-18-A-3.pdf?csrt=17428207314763057696>, p. 12, accessed 3/14/18.

Figure 4: Resource Breakdown (%) by Supplier Type
Planning Year 2022/23

Supplier Type	Owned	DR	Contract - PPA	Contract - ZRC	Auction
Muni/Co-Op Aggregate	80.0%	0.4%	12.1%	7.2%	0.3%
AES Aggregate	15.9%	0.2%	5.0%	78.9%	0.0%
Utility Aggregate	79.1%	8.8%	12.1%	0.0%	0.0%

As shown in Figure 4, all supplier types are showing an increase in DR resources for planning year 2022/23 compared to the 2021/22 demonstration filings. The utilities and AESs are both showing a decrease in forward ZRC contracts, however the municipal utilities and cooperatives in aggregate are showing a slight increase in the percentage of forward ZRC contracts for planning year 2022/23 compared to last year's filings.

1. Demand Response

Utility DR Programs

As part of its analysis in this matter, Staff reviewed the LSEs' DR programs as an optional source of effective capacity. A reduction in demand through DR programs could potentially offset a portion of an LSE's current capacity needs. LSEs can utilize interruptible DR during critical peak times to quickly respond to bulk electric system needs and potentially delay future capital investment in new generation. Behavioral DR programs allow the utility to lower their peak demand forecast, thus avoiding the need for some costly supply side resources.

Demand response is expected to play a prominent role in LSEs' upcoming integrated resource plan filings, where DR is required to be considered along with traditional supply side resources for meeting capacity needs. Public Act 341 of 2016 directed Staff to complete a statewide study of DR potential in Michigan, and the State of Michigan Demand Response Potential Study²⁶ was issued on September 29, 2017. In addition, the Commission approved Michigan Integrated Resource Planning Parameters on November 21, 2017 in Case No. U-18418 and they include provisions regarding including DR options in future integrated resource plans.

By planning year 2022/23, Consumers Energy is forecasting increased DR levels to support capacity through the expansion of existing programs. The DR levels assumed in

²⁶https://www.michigan.gov/documents/mpsc/State_of_Michigan_-_Demand_Response_Potential_Report_-_Final_29sep2017_602435_7.pdf, accessed 3/22/19.

Consumers Energy's Integrated Resource Plan are reflected in its capacity demonstration filing. DTE Electric has a forecasted growth in three of its DR programs; Dynamic Peak Pricing, Programable Controllable Thermostat, and Bring Your Own Device. Finally, Wolverine Power Supply Cooperative Inc. has new DR resources starting in planning year 2019/22 continuing through planning year 2022/23. Staff will continue to monitor these plans for, and the use of, DR in Michigan for the foreseeable future.

Aggregated DR in the Wholesale Market

Pursuant to a Commission Order in Case No. U-18369, the Commission affirmed that AESs may offer DR programs to their customers through a curtailment service provider (CSP) or third-party aggregator. (9/15/17 Order, p. 5, 9-10). The Commission made this determination in the context of finding that the Commission will continue to review DR programs offered by AESs as part of the capacity demonstration process. During the review of AES capacity demonstrations and contracts for planning year 2022/23, Staff's analysis did not indicate that any AES customer load is participating in DR Aggregation with a CSP or third-party aggregator. Likewise, Staff did not find evidence of any LSE procuring aggregated DR on a four-year forward basis and including those aggregated DR resources within its capacity demonstration filing.

However, as mentioned previously in this report, it is possible for parties to enter into forward ZRC contracts that don't specify details regarding the source of those ZRCs. ZRC contracts are commonly used in the MISO region and allowable for forward capacity demonstrations for Michigan LSEs, however, they lack some details that would be useful in developing zonal resource adequacy projections. Staff will continue to monitor aggregated DR in the wholesale market in Michigan, utilizing all available sources of information. Transparency issues related to aggregated DR in the wholesale market are currently being discussed in a stakeholder process as ordered by the Commission on November 21, 2018 in Case No. U-20348. A Staff report on aggregated DR will be filed in Case No. U-20348 on or before May 30, 2019.

2. ZRC Contracts

Last year, Staff recommended that forward ZRC contracts to be utilized for capacity demonstration purposes specify delivery of the ZRCs in the MISO MECT prior to the applicable PRA auction. All new forward ZRC contracts were audited by Staff this year, and all complied with Staff's requested delivery terms, allowing Staff to audit the ZRC transfers each year prior to the PRA. Figure 4 indicates a slight decrease in the percentage of ZRC contracts utilized this year by the utilities and the AESs, and a slight increase in the amount utilized by the aggregate of municipal utilities and cooperatives.

An important thing to note is that ZRCs are defined in MISO's tariff and are created in the prompt year when UCAP for supply-side and demand-side resources are converted into ZRCs in the MISO MECT. ZRCs for any year further out than the prompt year are projected and don't

become “real” ZRCs until the prompt year. ZRCs are fungible products that can be sold or transferred many times. The characteristics of ZRCs allow for them to be easily traded and tracked within the MISO MECT. MISO has a view into the source of ZRCs and transfers of those ZRCs that occur prior to the PRA in the prompt year, and those ZRC transfers are audited by Staff as a secondary check on the ZRC contracts utilized in the capacity demonstrations.

At this point in time, the overall amount of ZRC contracts included in capacity demonstration filings do not impact Staff’s ability to continue to make forward resource adequacy projections on a zonal basis. Staff will continue to monitor and audit ZRC contracts and ZRC transfers within the MECT going forward.

3. AES Load Switching

As discussed earlier in the report, Eligo Energy MI, LLC, Constellation NewEnergy Inc. and Direct Energy Business, LLC filed either amended or supplemental capacity demonstration information after the filing deadline and after consultation with Staff. Similar to last year, Staff requested that any AES who experienced load switching during this time provide a signed affidavit confirming the increase or reduction in their load compared to the PLC data provided by the utility with their capacity demonstration that contained the amount of load switching for each planning year. Each supplier picking up additional load provided a copy of its affidavit confirming new load to the supplier that was losing the load to include in both suppliers’ demonstrations. The supplemental filings made by these AESs were a result of continued load switching after the original filing date.

Eligo Energy MI, LLC filed a public cover letter in this case explaining that Eligo Energy has already transferred or was in the process of transferring at the time of the filing, all of its Michigan customers to other AESs. Additionally, they stated that one of their customers expressed interest in returning to the incumbent utility. Staff has since verified that all of Eligo Energy’s Michigan customers have been transferred to another AES or to the incumbent utility.

4. LSE Compliance with Capacity Demonstration Requirements

All LSEs that filed capacity demonstrations in Case No. U-20154 have met the requisite levels of planning resources for planning year 2022/23. Staff highlights a few issues that it will continue to monitor in the next section.

Outstanding Issues

Eligo Energy did not enter into forward ZRC contracts for planning year 2022/23 as Eligo will have no Michigan load going forward. Staff has verified that all load that has switched from Eligo Energy to the other AESs has been demonstrated for. Eligo Energy’s customer that is returning to the incumbent utility has not been demonstrated for, however, that undemonstrated load is a fraction of one MW. Staff has confirmed that the utility in question has excess capacity secured for the 2022/23 planning year and it also did not plan to utilize the allowable 5% PRA

purchases when it filed its demonstration. The surplus capacity included in this utility's previously filed capacity demonstration provides evidence that it already has capacity available to serve this customer. Staff does not recommend that a show-cause case be opened for Eligo Energy to show why its customers should not be assessed the state reliability mechanism (SRM) charge, because Eligo Energy will no longer have customers in Michigan to assess the SRM charge to starting in June of 2019.

On March 31, 2018, FirstEnergy Solutions Corp. (FES), who was granted an Alternative Electric Supplier license on January 8, 2002, filed a voluntary petition for relief pursuant to Chapter 11 of Title 11 of the United States Code. Concurrent with the March 31st filing, FES filed with the bankruptcy court, a number of first day motions pursuant to which it sought authorization to continue operating in the normal course of business. Each of these motions were granted after hearing by the Bankruptcy Court. FES has continued to serve its Michigan customer base under a business as usual scenario and has filed a sufficient capacity demonstration in this case. In January 2019, it was announced that FES and a substantial majority of its creditors (in amount) reached agreement on the terms of a Restructuring Support Agreement (RSA) that contemplates the Company's emergence from Chapter 11 protection in 2019 with continued ownership and operation of its retail and wholesale load-serving business (subject to a variety of conditions). The RSA sets out certain milestones for completing the FES restructuring including filing the Plan of Reorganization and the Disclosure Statement by February 8, 2019. The initial milestone for the effective date of the Plan of Reorganization that allows the Company to emerge from Chapter 11 is September 15, 2019, which date shall automatically extend to October 31, 2019 in the event that the only remaining conditions precedent to the Plan Effective Date are regulatory approvals.

Staff Recommendations

To continue streamlining the demonstration process going forward, Staff has taken into consideration the continued feedback of all electric providers and makes the following recommendations:

Reporting Templates

For planning year 2022/23, the Commission adopted updated capacity demonstration reporting templates as recommended by Staff. The updates individualized the reporting templating for each type of electric provider (incumbent utility, municipality, cooperative and AES). The reporting template was separated into two forms: the Long Form and the Short Form. Staff continues to work with LSEs to improve the reporting templates and recommends adding additional line items capturing any applicable customer load switching and PRA purchases to Exhibit 2 and Exhibit 5 of both reporting templates attached as Appendix B. Staff recommends that the Commission approve the use of these updated templates for capacity demonstration filings going forward and direct Staff to post the updated templates on the MPSC website.

DR Aggregation in the Wholesale Market

Transparency issues related to aggregated DR in the wholesale market are currently being discussed in a stakeholder process as ordered by the Commission on November 21, 2018 in Case No. U-20348. A Staff report on aggregated DR will be filed in Case No. U-20348 on or before May 30, 2019. Staff notes that the Commission directed the Staff to determine whether any changes to the capacity demonstration would be warranted related to DR aggregation and Staff will continue the stakeholder process and make any of those recommendations in Case No. U-20348. Staff recommends that the Commission defer any decisions related to changes to the capacity demonstration requirements related to aggregated DR until the completion of the stakeholder activities and Staff report in Case No. U-20348.

Appendix A

Figure 5: Planning Year 2022/23 Resource Breakdown (%) by Individual Supplier²⁷

	Owned	DR	Contract - PPA	Contract - ZRC	Auction
Supplier 1	48%	52%	0%	0%	0%
Supplier 2	67%	0%	0%	33%	0%
Supplier 3	0%	0%	100%	0%	0%
Supplier 4	0%	0%	0%	100%	0%
Supplier 5	76%	9%	15%	0%	0%
Supplier 6	0%	0%	78%	22%	0%
Supplier 7	83%	0%	8%	9%	0%
Supplier 8	0%	0%	100%	0%	0%
Supplier 9	0%	0%	0%	100%	0%
Supplier 10	0%	0%	100%	0%	0%
Supplier 11	0%	0%	0%	100%	0%
Supplier 12	31%	0%	69%	0%	0%
Supplier 13	95%	1%	4%	0%	0%
Supplier 14	95%	1%	4%	0%	0%
Supplier 15	0%	0%	100%	0%	0%
Supplier 16	100%	0%	0%	0%	0%
Supplier 17	0%	0%	0%	100%	0%
Supplier 18	92%	7%	1%	0%	0%
Supplier 19	0%	0%	100%	0%	0%
Supplier 20	11%	8%	81%	0%	0%
Supplier 21	0%	0%	0%	100%	0%
Supplier 22	0%	0%	100%	0%	0%
Supplier 23	0%	0%	0%	100%	0%
Supplier 24	0%	0%	0%	100%	0%
Supplier 25	95%	1%	4%	0%	0%
Supplier 26	68%	9%	23%	0%	0%
Supplier 27	57%	0%	14%	24%	5%
Supplier 28	32%	33%	35%	0%	0%

²⁷ Suppliers (municipal and cooperative electric utilities) that combined their capacity resources are shown as one supplier in the above figure. The total number of suppliers may vary from year to year based on changes to which suppliers combine their capacity demonstrations as well as new suppliers or suppliers no longer serving load in Michigan.

Appendix B

Utility Bundled Service Peak Demand for Michigan MISO LRZ 7									
Actual and Forecast (MW) - Excluding Transmission Losses									
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
Line		Sample Calc.	PY 2016-17	PY 2017-18	PY 2018-19	PY 2019-20	PY 2020-21	PY 2021-22	PY 2022-23
			Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast
Peak Demand (MW)									
1	Service Territory	12,345							
2	Choice, Coincident to Service Territory	1,234							
3	Bundled (line 1 - line 2)	11,111	0	0	0	0	0	0	0
Coincident to MISO Sys.Peak Demand (MW)									
4	Service Territory	12,098							
5	Choice, Coincident to Service Territory	1,209							
6	Bundled (line 4 - line 5)	10,889	0	0	0	0	0	0	0

Utility Bundled Service Peak Demand for Michigan MISO LRZ 2									
Actual and Forecast (MW) - Excluding Transmission Losses									
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
Line		Sample Calc.	PY 2016-17	PY 2017-18	PY 2018-19	PY 2019-20	PY 2020-21	PY 2021-22	PY 2022-23
			Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast
Peak Demand (MW)									
1	Service Territory	12,345							
2	Choice, Coincident to Service Territory	1,234							
3	Bundled (line 1 - line 2)	11,111	0	0	0	0	0	0	0
Coincident to MISO Sys.Peak Demand (MW)									
4	Service Territory	12,098							
5	Choice, Coincident to Service Territory	1,209							
6	Bundled (line 4 - line 5)	10,889	0	0	0	0	0	0	0

Utility Bundled Service Peak Demand for Michigan MISO LRZ 1

Actual and Forecast (MW) - Excluding Transmission Losses

Line	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
		Sample Calc.	PY 2016-17	PY 2017-18	PY 2018-19	PY 2019-20	PY 2020-21	PY 2021-22	PY 2022-23
			Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast
Peak Demand (MW)									
1	Service Territory	12,345							
2	Choice, Coincident to Service Territory	1,234							
3	Bundled (line 1 - line 2)	11,111	0	0	0	0	0	0	0
Coincident to MISO Sys. Peak Demand (MW)									
4	Service Territory	12,098							
5	Choice, Coincident to Service Territory	1,209							
6	Bundled (line 4 - line 5)	10,889	0	0	0	0	0	0	0

Utility Bundled Service Peak Demand for Michigan PJM

Actual and Forecast (MW) - Excluding Transmission Losses

Line	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
		Sample Calc.	PY 2016-17	PY 2017-18	PY 2018-19	PY 2019-20	PY 2020-21	PY 2021-22	PY 2022-23
			Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast
Peak Demand (MW)									
1	Service Territory	12,345							
2	Choice, Coincident to Service Territory	1,234							
3	Bundled (line 1 - line 2)	11,111	0	0	0	0	0	0	0
Coincident to PJM Sys. Peak Demand (MW)									
4	Service Territory	12,098							
5	Choice, Coincident to Service Territory	1,209							
6	Bundled (line 4 - line 5)	10,889	0	0	0	0	0	0	0

* Totals carry to Exhibit 2.

* Provide actual values where available.

* Assume current proportions of Bundled service and Choice service throughout the forecast period unless there is a known change in electric service provider.

* Do not adjust for Load Modifying Resources or Demand Response Programs. Those adjustments will be accounted for in Exhibit 2.

Planning Reserve Margin Requirements and Planning Resources to be Acquired (ZRC)

Line	(a)	(b)	(c)	(d)	(e)
	Sample Calc.	PY 2019-2020	PY 2020-2021	PY 2021-2022	PY 2022-2023
1	Forecasted Bundled (or AES) Non-Coincident Peak Demand, MW (from Ex. 1)	11,111	-	-	-
2	Internal Demand Response Programs that are applied as an adjustment to the Peak forecast, MW	11			
3	Adjusted Forecasted Bundled (or AES) Non-Coincident Peak Demand, MW (line 1 - line 2)	11,100	-	-	-
4	Load Diversity Factor coincident to MISO, %	98.00%			
5	Adjusted Forecasted Bundled (or AES) Coincident Peak Demand, MW (line 3 x line 4)	10,878	-	-	-
6	Transmission Losses, %	2.80%			
7	Planning Reserve Margin % UCAP Basis	7.10%	7.90%	8.00%	8.00%
8	Total Planning Reserve Margin Requirement, ZRC ((line 5) x (1 + line 6) x (1 + line 7))	11,977	-	-	-
9	Company Owned, In-State, Non-Intermittent, ZRC	8,890	-	-	-
10	Company Owned, Out-of-State, Non-Intermittent, ZRC	120	-	-	-
11	Company Owned, In-State, Non-Intermittent (BTMG), ZRC	660	-	-	-
12	Company Owned, Out-of-State, Non-Intermittent (BTMG), ZRC	100	-	-	-
13	Company Owned, In-State, Intermittent, ZRC	20	-	-	-
14	Company Owned, Out-of-State, Intermittent, ZRC	40	-	-	-
15	Company Owned, In-State, Intermittent (BTMG), ZRC	60	-	-	-
16	Company Owned, Out-of-State, Intermittent (BTMG), ZRC	80	-	-	-
17	Total Company Owned Generation, ZRC (sum of lines 9-16)	9,970	-	-	-
18	Total Load Modifying Resources, Treated as Capacity, ZRC (from Ex. 4)	-	-	-	-
19	PPA, In-State, Non-Intermittent, ZRC	100	-	-	-
20	PPA, Out-of-State, Non-Intermittent, ZRC	200	-	-	-
21	PPA, In-State, Non-Intermittent (BTMG), ZRC	26	-	-	-
22	PPA, Out-of-State, Non-Intermittent (BTMG), ZRC	6	-	-	-
23	PPA, In-State, Intermittent, ZRC	1,200	-	-	-
24	PPA, Out-of-State, Intermittent, ZRC	40	-	-	-
25	PPA, In-State, Intermittent (BTMG), ZRC	60	-	-	-
26	PPA, Out-of-State, Intermittent (BTMG), ZRC	-	-	-	-
27	Other Forward Capacity Contract, ZRC - In-State	200	-	-	-
28	Other Forward Capacity Contract, ZRC - Out-of-State	100	-	-	-
29	Total PPA, ZRC (sum of lines 19-28)	1,932	-	-	-
30	Net Load Switching (from Ex. 5)	-	-	-	-
31	Planned Auction Purchases (from Ex. 5)	75	-	-	-
32	Total Planning Resources, ZRC (line 17 + line 18 + line 29 + line 30 + line 31)	11,977	-	-	-
33	UCAP Surplus/(Shortfall), MW (line 32 - line 8)	0	-	-	-

Demand Response - Capacity Resources

(a)	(b)	(c)	(d)	(e)
	Demand Response Program Name	Demand Response Program (MW)	Credit Transmission Losses and PRM <small>UCAP</small>	Total ZRC per Program Name
PY 2019-UCAP				-
				-
				-
				-
				-
				-
				-
Total Demand Response - Capacity Resources PY 2019-2020 (ZRC)				-
PY 2020-UCAP				-
				-
				-
				-
				-
				-
				-
Total Demand Response - Capacity Resources PY 2020-2021 (ZRC)				-
PY 2021-UCAP				-
				-
				-
				-
				-
				-
				-
Total Demand Response - Capacity Resources PY 2021-2022 (ZRC)				-
PY 2022-UCAP				-
				-
				-
				-
				-
				-
				-
Total Demand Response - Capacity Resources PY 2022-2023 (ZRC)				-

Company Owned Electric Generation Resources

Line	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)
	Electric Generation Unit Name	Fuel or Renewable Type	Location of Resource: LRZ 1, LRZ 2, LRZ 7, PJM, Other	Located in Michigan (Y/N)	If outside of MI, Contracted Trans Service (Y/N)	Intermittent Resource (Y/N)	BTMG (Y/N)	P.A. 295 Resource (Y/N)	2019	2020	2021	2022	2019	2020	2021	2022
1																
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65								Company Owned, In-State, Non-Intermittent, ZRC	-	-	-	-	-	-	-	-
66								Company Owned, Out-of-State, Non-Intermittent, ZRC	-	-	-	-	-	-	-	-
67								Company Owned, In-State, Non-Intermittent (BTMG), ZRC	-	-	-	-	-	-	-	-
68								Company Owned, Out-of-State, Non-Intermittent (BTMG), ZRC	-	-	-	-	-	-	-	-
69								Company Owned, In-State, Intermittent, ZRC	-	-	-	-	-	-	-	-
70								Company Owned, Out-of-State, Intermittent, ZRC	-	-	-	-	-	-	-	-
71								Company Owned, In-State, Intermittent (BTMG), ZRC	-	-	-	-	-	-	-	-
72								Company Owned, Out-of-State, Intermittent (BTMG), ZRC	-	-	-	-	-	-	-	-
73								Total Company Owned Generation, ZRC (sum of lines 1-64)	-	-	-	-	-	-	-	-
								CHECK	-	-	-	-	-	-	-	-

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Case No: _____
 Utility: _____
 Date: _____
 Exhibit 1: PRMR by Zone

Total Planning Reserve Margin Requirement (PRMR) for Michigan by Zone
Actual and Forecast (MW)

Line	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
		Sample Calc.	PY 2016-17	PY 2017-18	PY 2018-19	PY 2019-20	PY 2020-21	PY 2021-22	PY 2022-23
			Actual	Actual	Actual	Forecast	Forecast	Forecast	Forecast
	Zone								
1	MISO LRZ 1	0							
2	MISO LRZ 2	100							
3	MISO LRZ 7	50							
4	PJM	0							
5	Total	150	0	0	0	0	0	0	0

* Totals carry to Exhibit 2.
 * PRMR is synonymous with Peak Load Contribution (PLC) and should include transmission losses and planning reserve margin percentage.
 * Provide actual values where available.
 * Do not adjust for Load Modifying Resources or Demand Response Programs. Those adjustments will be accounted for in Exhibit 2.

Planning Reserve Margin Requirements and Planning Resources (ZRC)

Line	(a)	(b)	(c)	(d)	(e)
	Sample Calc.	PY 2019-2020	PY 2020-2021	PY 2021-2022	PY 2022-2023
1	Total Planning Reserve Margin Requirement, UCAP MW	150	0	0	0
2	Company Owned, In-State, Non-Intermittent, ZRC	80	-	-	-
3	Company Owned, Out-of-State, Non-Intermittent, ZRC	-	-	-	-
4	Company Owned, In-State, Non-Intermittent (BTMG), ZRC	-	-	-	-
5	Company Owned, Out-of-State, Non-Intermittent (BTMG), ZRC	-	-	-	-
6	Company Owned, In-State, Intermittent, ZRC	-	-	-	-
7	Company Owned, Out-of-State, Intermittent, ZRC	-	-	-	-
8	Company Owned, In-State, Intermittent (BTMG), ZRC	-	-	-	-
9	Company Owned, Out-of-State, Intermittent (BTMG), ZRC	-	-	-	-
10	Total Company Owned Generation, ZRC (sum of lines 2-9) (from Ex. 4)	80	-	-	-
11	Total Load Modifying Resources, Treated as Capacity, ZRC (from Ex. 3)	10	-	-	-
12	PPA, In-State, Non-Intermittent, ZRC	-	-	-	-
13	PPA, Out-of-State, Non-Intermittent, ZRC	-	-	-	-
14	PPA, In-State, Non-Intermittent (BTMG), ZRC	-	-	-	-
15	PPA, Out-of-State, Non-Intermittent (BTMG), ZRC	-	-	-	-
16	PPA, In-State, Intermittent, ZRC	-	-	-	-
17	PPA, Out-of-State, Intermittent, ZRC	-	-	-	-
18	PPA, In-State, Intermittent (BTMG), ZRC	-	-	-	-
19	PPA, Out-of-State, Intermittent (BTMG), ZRC	-	-	-	-
20	Other Forward Capacity Contract, ZRC - In-State	15	-	-	-
21	Other Forward Capacity Contract, ZRC - Out-of-State	50	-	-	-
22	Total PPA, ZRC (sum of lines 12-21) (from Ex. 5)	65	-	-	-
23	Net Load Switching (from Ex. 5)	(10)	-	-	-
24	Planned Auction Purchases (from Ex. 5)	5	-	-	-
25	Total Planning Resources, ZRC (line 10 + line 11 + line 22 + line 23 + line 24)	150	-	-	-
26	UCAP Surplus/(Shortfall), MW (line 25 - line 1)	0	0	0	0

Demand Response - Capacity Resources

(a)	(b)	(c)	(d)	(e)
	Demand Response Program Name	Demand Response Program (MW)	Credit Transmission Losses and PRM <small>UCAP</small>	Total ZRC per Program Name
PY 2019-UCAP				-
				-
				-
				-
				-
				-
				-
Total Demand Response - Capacity Resources PY 2019-2020 (ZRC)				-
PY 2020-UCAP				-
				-
				-
				-
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				-
Total Demand Response - Capacity Resources PY 2020-2021 (ZRC)				-
PY 2021-UCAP				-
				-
				-
				-
				-
				-
				-
Total Demand Response - Capacity Resources PY 2021-2022 (ZRC)				-
PY 2022-UCAP				-
				-
				-
				-
				-
				-
				-
Total Demand Response - Capacity Resources PY 2022-2023 (ZRC)				-

Company Owned Electric Generation Resources

Line	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)
	Electric Generation Unit Name	Fuel or Renewable Type	Location of Resource: LRZ 1, LRZ 2, LRZ 7, PJM, Other	Located in Michigan (Y/N)	If outside of MI, Contracted Trans Service (Y/N)	Intermittent Resource (Y/N)	BTMG (Y/N)	P.A. 295 Resource (Y/N)	2019	2020	2021	2022	2019	2020	2021	2022
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65								Company Owned, In-State, Non-Intermittent, ZRC	-	-	-	-	-	-	-	-
66								Company Owned, Out-of-State, Non-Intermittent, ZRC	-	-	-	-	-	-	-	-
67								Company Owned, In-State, Non-Intermittent (BTMG), ZRC	-	-	-	-	-	-	-	-
68								Company Owned, Out-of-State, Non-Intermittent (BTMG), ZRC	-	-	-	-	-	-	-	-
69								Company Owned, In-State, Intermittent, ZRC	-	-	-	-	-	-	-	-
70								Company Owned, Out-of-State, Intermittent, ZRC	-	-	-	-	-	-	-	-
71								Company Owned, In-State, Intermittent (BTMG), ZRC	-	-	-	-	-	-	-	-
72								Company Owned, Out-of-State, Intermittent (BTMG), ZRC	-	-	-	-	-	-	-	-
73								Total Company Owned Generation, ZRC (sum of lines 1-64)	-	-	-	-	-	-	-	-
								CHECK	-	-	-	-	-	-	-	-

[illegible]