STATE OF MICHIGAN

MICHIGAN OFFICE OF ADMINISTRATIVE HEARINGS AND RULES

FOR THE MICHIGAN PUBLIC SERVICE COMMISSION

* * * * *

In the matter of the application of	)	
UPPER PENINSULA POWER COMPANY	)	Case No. U-20350
for approval of its integrated resource plan	)	
pursuant to MCL 460.6t and for other relief.	)	

NOTICE OF PROPOSAL FOR DECISION

The attached Proposal for Decision is being issued and served on all parties of record in the above matter on October 3, 2019.

Exceptions, if any, must be filed with the Michigan Public Service Commission, 7109 West Saginaw, Lansing, Michigan 48917, and served on all other parties of record on or before October 22, 2019, or within such further period as may be authorized for filing exceptions. If exceptions are filed, replies thereto may be filed on or before November 5, 2019.

At the expiration of the period for filing exceptions, an Order of the Commission will be issued in conformity with the attached Proposal for Decision and will become effective unless exceptions are filed seasonably or unless the Proposal for Decision is reviewed by action of the Commission. To be seasonably filed, exceptions must reach the Commission on or before the date they are due.

MICHIGAN OFFICE OF ADMINISTRATIVE HEARINGS AND RULES
For the Michigan Public Service Commission

Martin D. Snider
Digitally signed by: Martin D. Snider
DN: CN = Martin D. Snider email = sniderm@michigan.gov C = US O = MOAHR OU = MOAHR - PSC
Date: 2019.10.03 11:46:08 -04'00'

Martin D. Snider
Administrative Law Judge

October 3, 2019
Lansing, Michigan

STATE OF MICHIGAN

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PROPOSAL FOR DECISION

I.

PROCEDURAL HISTORY

On August 28, 2018 the Michigan Public Service Commission (Commission) is its order in U-15986 and U-18461 established a December 14, 2018 filing date for the Upper Peninsula Power Company's (UPPCO) first Integrated Resource Plan (IRP). In November 2018, UPPCO's Portage facilities suffered an unforeseen fire resulting in a catastrophic facility failure. Subsequently on December 3, 2018 UPPCO filed a motion with the Commission in which it requested an extension of UPPCO's IRP filing date until February 12, 2019. On December 6, 2018, the Commission issued an order granting UPPCO's request.

On February 12, 2019 pursuant to MCL 460.6t of Act 341, UPPCO filed its Integrated Resource Plan (IRP) application and testimony and exhibits of witnesses Gradon R. Haehnel, Andrew McNeally, Eric W. Stocking and David R. Tripp, and a motion for a protective order with the Commission.

On February 15, 2019 the Commission's Executive Secretary issued the Notice of Hearing for this matter.

On February 26, 2019 Citizens Against Rate Excess (CARE) filed a Petition to Intervene.

On March 7, 2019 Verso Corporation (Verso) and Circle Power LLC (Circle Power), filed Petitions for Intervention.

On March 8, 2019 the Association of Businesses Advocating Tariff Equity (ABATE) filed a Petition for Intervention and Michigan Attorney General Dana Nessel (AG) filed a Notice of Intervention.

On March 15, 2019 Administrative Law Judge (ALJ) Sharon L. Feldman convened a prehearing during which all of the petitions to intervene were granted, and the parties mutually agreed to a filing schedule, discovery dates and dates for cross examination. Also, on March 15, 2019 ALJ Feldman issued a Scheduling Memo which memorialized the matters agreed to during the pre-hearing.

On March 22, 2019 ALJ Feldman reassigned this matter to ALJ Martin D. Snider. On March 27, 2019 ALJ Snider, without objection from any party, issued a protective order governing the use and disposition of the parties' non-public, confidential information.

On March 29, 2019 UPPCO filed supplemental testimony and exhibits for witnesses Gradon R. Haehnel and Debashis Bose.

On June 6, 2019 UPPCO filed supplemental testimony and exhibits for witness David R. Tripp.

On May 4 and May 9, 2019 public comments were filed (U-20350-0078 and U-20350-0083, respectively).

On May 17, 2019 the MPSC Commissioners and members of the MPSC Staff convened a public hearing on this matter at the campus of Bay de Noc Community College in Escanaba, Michigan. During the public hearing the Commissioners received feedback and comments from concerned UPPCO residential and business customers regarding UPPCO's IRP application.

On June 14, 2019, pursuant to MCL 460.6t(1)(c), the Michigan Department of Environment, Great Lakes, and Energy's (EGLE) filed its Advisory Opinion on UPPCO's IRP application. Also, on June 14, 2019 the following testimony and exhibits were filed:

- Commission's staff (Staff): Paul Proudfoot, Anna Schiller, Sarah A. Mullkoff, Olumide Makinde, Jonathan J. Decooman, Cody S. Matthews, Brad B. Banks, Fawzon B. Tiwana, Lisa M. Kindschy, Zachary C. Heidemann, Meredith A. Hadala, Robert F. Nichols II, CPA, and Jesse J. Harlow.
- CARE: Douglas B. Jester,
- ABATE: Amanda M. Alderson, and
- Circle Power: Christopher Moore.

On July 8, 2019, the following filings occurred:

- UPPCO filed the rebuttal testimony and exhibits of witnesses Gradon R. Haehnel, David R. Tripp, Eric W. Stocking and Wenxiong Huang.
- Circle Power filed the rebuttal testimony of Christopher Moore,
- ABATE filed the rebuttal testimony of Amanda M. Alderson, and
- Staff filed the rebuttal testimony and exhibit of Zachary C. Heidemann
- CARE and Verso filed letters stating that they would not file rebuttal testimony.

On July 17, 2019 ALJ Martin D. Snider convened a hearing on the date set aside for cross examination. During the hearing all parties agreed to waive cross examination and the parties bound in their respective witnesses' public and confidential testimony and exhibits. The record in this matter consists of 538 transcript pages and 112 exhibits. On

August 14, 2019, pursuant to the agreed upon schedule, UPPCO, Staff, AG, CARE, Circle Power and ABATE filed initial briefs. On August 29, 2019 Staff, UPPCO, CARE AG, ABATE and Circle Power filed Reply Briefs. ABATE also filed a Confidential Reply Brief.

II.

BACKGROUND

UPPCO is a small, investor-owned utility with approximately 52,000 customers located in the rural areas of Michigan's Upper Peninsula. On February 12, 2019 UPPCO filed the first application for Commission approval of its proposed IRP. The Michigan IRP process is governed by MCL 460.6t of Public Act 341 of 2016 (Act 341). Because UPPCO is a small electric utility with less than 1,000,000 customers it could have sought waivers from many of the Commission's filing requirements. However, UPPCO in its application did not seek from any waivers of the Commission's IRP filing requirements.

UPPCO indicated in its application that its IRP development process and proposed IRP were guided by its goal to develop an IRP that reflects the priorities and concerns of UPPCO customers. In order to achieve this goal UPPCO sought and obtained UPPCO customer stakeholder input and feedback through two sets of stakeholder engagement meetings. UPPCO residential customer feedback indicated that customers favored clean, renewable and locally sourced electric generation solutions. UPPCO's commercial customers also valued clean, renewable generation that balanced cost with long term sustainable solutions. UPPCO indicated in its application that its proposed IRP incorporates its residential and commercial customers objectives and ensures excellent reliability to its largely rural residential customers. UPPCO believes that its IRP adequately addressees its customers objectives by prioritizing the delivery of safe, clean, reliable, and efficient power to its customers at competitive costs.

Consistent with Act 341 UPPCO completed a comprehensive assessment of its capacity and energy needs guided by its customer planning objectives. This assessment was the foundation of UPPCO's IRP proposed courses of action (PCA). UPPCO's PCA includes the following proposed actions:

- Increasing UPPCO's energy waste reduction (EWR) goal to 1.5%.
- Moving certain existing hydroelectric generating facilities to "in front of the meter".
- Executing a 125 MW power purchase agreement for solar power (Solar PPA) with a financial compensation mechanism (FCM) for UPPCO.
- Retiring UPPCO's Portage combustion turbine (CT) and replacing it with a 20 MW natural gas reciprocating internal combustion engine (RICE) unit in the eastern portion of its service territory.
- Updating UPPCO's Public Utility Regulatory Policies Act (PURPA) avoided costs, established in U-18094.

UPPCO indicated in its application that it believes that Commission approval of its proposed PCA would:

- Substantially increase UPPCO's renewable power portfolio,
- Reduce the risk of price volatility due to market spikes,
- Reduce costs through competitive bidding,
- Improve reliability, and,
- Reduce future energy costs for all of UPPCO's customers.

UPPCO indicated in its application that Commission approval of UPPCO's PCA in this matter would allow UPPCO to continue its strategy to reduce residential customer rates consistent with its prior PSCR and depreciation case filings. UPPCO believes that its PCA is reasonable and prudent and would meet UPPCO's energy and capacity needs throughout the IRP planning period. UPPCO's IRP specifically requests Commission approval for the following:

- The Solar PPA as set forth in Confidential Exhibit A-31.
- The proposed FCM for the Solar PPA subject to rate recovery in UPPCO's next general rate case.
- The construction of a new 20 MW RICE unit in the eastern portion of the UPPCO's service territory as a replacement for the Portage CT unit.
- The retirement of the Portage CT unit and UPPCO's requested accounting treatment for the proceeds from the insurance payment following the catastrophic failure of the Portage CT.
- The proposed increase in EWR target savings to 1.5% subject to cost analysis and approval in UPPCO's EWR plan case.
- UPPCO's proposal to set its PURPA avoided cost rates at equivalent market-based avoided cost, as modified by Staff's proposal and accepted by UPPCO in its rebuttal.
- Other relief as set forth in UPPCO's Initial Brief and the record evidence.

Act 341; MCL 460.6t provides the legal framework and specific components for the Commission's regulated electric utility IRP process. MCL 460.6t provides that the Commission shall approve a proposed IRP if it determines the IRP is the most reasonable and prudent means of meeting the electric utility's energy and capacity needs. The Commission must consider the following factors and the balance among the factors, when reviewing a proposed IRP:

- Resource adequacy and capacity to serve anticipated peak electric load, applicable planning reserve margin, and local clearing requirement.
- Compliance with applicable state and federal environmental regulations.
- Competitive pricing.
- Reliability.
- Commodity price risks.

- Diversity of generation supply.

- Whether the proposed levels of peak load reduction and energy waste reduction are reasonable and cost effective. Exceeding the renewable energy resources and energy waste reduction goal in section 1 of the clean and renewable energy and energy waste reduction act, 2008 PA 295, MCL 460.1001, by a utility shall not, in and of itself, be grounds for determining that the proposed levels of peak load reduction, renewable energy, and energy waste reduction are not reasonable and cost effective.

MCL 460.6(t)(8)(a).

MCL 460.6t(8) and (5) provides that legal criteria which must be applied by the commission when considering whether or not to approve a utility's IRP.

> (8) The commission shall approve the integrated resource plan under subsection (7) if the commission determines all of the following:
>
> (a) The proposed integrated resource plan represents the ***<u>most reasonable and prudent means</u>*** of meeting the electric utility's energy and capacity needs. To determine whether the integrated resource plan is the most reasonable and prudent means of meeting energy and capacity needs, the commission shall consider whether the plan appropriately balances all of the following factors:
> (i) Resource adequacy and capacity to serve anticipated peak electric load, applicable planning reserve margin, and local clearing requirement.
> (ii) Compliance with applicable state and federal environmental regulations.
> (iii) Competitive pricing.
> (iv) Reliability.
> (v) Commodity price risks.
> (vi) Diversity of generation supply.
> (vii) Whether the proposed levels of peak load reduction and energy waste reduction are reasonable and cost effective. Exceeding the renewable energy resources and energy waste reduction goal in section 1 of the clean and renewable energy and energy waste reduction act, 2008 PA 295, MCL 460.1001, by a utility shall not, in and of itself, be grounds for determining that the proposed levels of peak load reduction, renewable energy, and energy waste reduction are not reasonable and cost effective.
>
> (b) To the extent practicable, the construction or investment in a new or existing capacity resource in this state is completed using a workforce

composed of residents of this state as determined by the commission. This subdivision does not apply to a capacity resource that is located in a county that lies on the border with another state.

(c) The plan meets the requirements of subsection (5).

MCL 460.6t(8) (emphasis added).

Additionally, subsection (5) of section 6t provides the following factors:

(5) An integrated resource plan shall include all of the following:

(a) A long-term forecast of the electric utility's sales and peak demand under various reasonable scenarios.

(b) The type of generation technology proposed for a generation facility contained in the plan and the proposed capacity of the generation facility, including projected fuel costs under various reasonable scenarios.

(c) Projected energy purchased or produced by the electric utility from a renewable energy resource. If the level of renewable energy purchased or produced is projected to drop over the planning periods set forth in subsection (3), the electric utility must demonstrate why the reduction is in the best interest of ratepayers.

(d) Details regarding the utility's plan to eliminate energy waste, including the total amount of energy waste reduction expected to be achieved annually, the cost of the plan, and the expected savings for its retail customers.

(e) An analysis of how the combined amounts of renewable energy and energy waste reduction achieved under the plan compare to the renewable energy resources and energy waste reduction goal provided in section 1 of the clean and renewable energy and energy waste reduction act, 2008 PA 295, MCL 460.1001. This analysis and comparison may include renewable energy and capacity in any form, including generating electricity from renewable energy systems for sale to retail customers or purchasing or otherwise acquiring renewable energy credits with or without associated renewable energy, allowed under section 27 of the clean and renewable energy and energy waste reduction act, 2008 PA 295, MCL 460.1027, as it existed before the effective date of the amendatory act that added this section.

(f) Projected load management and demand response savings for the electric utility and the projected costs for those programs.

(g) Projected energy and capacity purchased or produced by the electric utility from a cogeneration resource.

(h) An analysis of potential new or upgraded electric transmission options for the electric utility.

(i) Data regarding the utility's current generation portfolio, including the age, capacity factor, licensing status, and remaining estimated time of operation for each facility in the portfolio.

(j) Plans for meeting current and future capacity needs with the cost estimates for all proposed construction and major investments, including any transmission or distribution infrastructure that would be required to support the proposed construction or investment, and power purchase agreements.

(k) An analysis of the cost, capacity factor, and viability of all reasonable options available to meet projected energy and capacity needs, including, but not limited to, existing electric generation facilities in this state.

(l) Projected rate impact for the periods covered by the plan.

(m) How the utility will comply with all applicable state and federal environmental regulations, laws, and rules, and the projected costs of complying with those regulations, laws, and rules.

(n) A forecast of the utility's peak demand and details regarding the amount of peak demand reduction the utility expects to achieve and the actions the utility proposes to take in order to achieve that peak demand reduction.

(o) The projected long-term firm gas transportation contracts or natural gas storage the electric utility will hold to provide an adequate supply of natural gas to any new generation facility.

MCL 460.6t(5).

In summary, the Commission’s decision whether to approve or deny UPPCO’s IRP is whether or not the IRP represents the “most reasonable and prudent” means of meeting UPPCO’s energy and capacity needs. See MCL 460.6t(8)(a). UPPCO must also show its compliance with the filing requirements provided in Section 460.6t(5). The Commission’s orders in in U-18418, and U-18461 created additional IRP filing requirements commonly referred to as the Michigan Integrated Resource Planning Parameters (“MIRPP”).

III.

POSITION OF THE PARTIES

A. CARE

CARE indicated in its brief that it agrees with most of UPPCO's PCA. Specifically, CARE agrees with the following PCA proposals:

- Adding 125 MW of energy and capacity by entering a long-term PPA with a new solar generation facility located in Michigan's Upper Peninsula;
- Implementing UPPCO's PURPA avoided cost proposal as described in the IRP;
- Moving the Hoist and McClure hydroelectric generating units to "in front of the meter," meaning to an electrical location that will allow the capacity of these plants to be used for MISO resource adequacy;
- Increasing the Energy Waste Reduction (EWR) target percentage, but recommends that UPPCO work to achieve Staff's more ambitious proposed targets; and
- A Financial Compensation Mechanism (FCM) to incentivize UPPCO to use PPAs, but through a different structure and amount than UPPCO proposes.

Brief pp2-3.

CARE disagrees with UPPCO's proposal to replace its Portage generating Station with a new 20 MW RICE generating station. Additionally, CARE recommends that if the commission denies UPPCO's request to construct a new RICE plant that the Commission direct UPPCO to demonstrate the reasonableness and prudence of repairing the Portage Generating Station. Despite this objection, CARE recommends the Commission approve UPPCO's proposed accounting treatment of the Portage generation station insurance settlement. *Id*.

CARE opposes the proposed RICE plant for three reasons:

- CARE believes that UPPCO has sufficient capacity and does need a new generation facility;

- A new generation facility would increase UPPCO customer rates and reduce the customer benefits of the proposed Solar PPA; and

- UPPCO ratepayers would be responsible for a disproportionate share of transmission costs which should be shared by other UP utilities and their customers.

In its brief CARE recommends the Commission deny UPPCO's proposed RICE plant and direct UPPCO to initiate a study of transmission in the Upper Peninsula. Brief pp 21-25.

1. <u>UPPCO has no new capacity needs.</u>

CARE witness Jester testified that according to its PCA, UPPCO has 53 MW of excess zonal resource credits (ZRCs) for planning years 2022-23, 36 MW of excess ZRCs planning years 2023-24 and 2024-25, and 24 MW excess ZRCs for planning year 2025-26 and continuing until planning year 2030-31. According to witness Jester, UPPCO has a capacity surplus and does not need any new generation facilities. See 2 Tr 428; Brief p 23.

2. <u>UPPCO's Proposed RICE Plant would Increase customer costs and reduce the cost benefits of the proposed Solar PPA</u>

CARE witness Jester testified that UPPCO's proposed RICE plant's revenue requirements are more than double the projected avoided costs UPPCO's Business As Usual (BAU) study. Witness Jester testified that the BAU for the proposed 125 MW Solar PPA and the RICE plant has a higher cost per MWh than BAU with the proposed solar alone. Witness Jester testified that if the BAU with both solar and RICE has a projected lower levelized cost than BAU without those facilities, then the proposed RICE plant negates the cost benefits of the Solar PPA. 2 Tr 428-429; Brief p 23.

CARE argues in its brief that it does not feel that UPPCO has adequately demonstrated the proposed RICE unit's benefits on grid reliability and impact on UPPCO ratepayer benefits. CARE believes that UPPCO's is not the best entity to complete such an analysis. CARE rejects UPPCO witness Stocking testimony that the RICE plant would:

- Provide improved reliability to UPPCO's customers on the eastern end of its service territory;
- Provide load balancing generation needed because of the increasing prevalence on intermittent, renewable generation;
- Mitigate reliability issues by "alleviating potential voltage excursions and thermal loadings attributable to the limitations of the existing electric transmission infrastructure . . . .
- Mitigate certain contingent loss-of-load risks identified by ATC in the MISO MTEP 2018 process subsequent to the April 1, 2018 anchor strike in the Straits of Mackinac and in the MISO 2016 Michigan Exploratory Transmission study.(that dispatchable, natural gas-fired generating resources located in the region would provide reliability benefits that were comparable to the transmission alternatives that were studied); and
- Allow for collaboration with other Load Serving Entities or Independent Power Producers.

Brief pp 23-25

CARE indicated in its brief that CARE witness Jester, Staff witness Heidemann, and ABATE witness Alderson testified that UPPCO failed to adequately support its claims about the RICE's plant's transmission benefits. CARE recognizes UPPCO claims that the proposed RICE plant will lead to voltage support and relaxed transmission thermal limits in the eastern Upper Peninsula, but discounts those benefits because CARE believes that those benefits would accrue to both UPPCO and Cloverland Electric Cooperative but only UPPCO ratepayers would bear the costs. Brief pp 24-25.

CARE witness Jester testified that MISO, not UPPCO, should determine the proposed RICE plant grid reliability benefits because MISO does not have any potential transmission owner or operator conflicts of interest. Witness Jester also believes that UPPCO's proposal is flawed because UPPCO failed to compare its RICE plant proposal to any other reasonable alternatives, such as solar plus storage that is distributed across UPPCO's territory instead of located at one single facility. See 2 Tr 431.

CARE rejects UPPCO's rebuttal testimony regarding the costs and benefits of the proposed RICE plant. UPPCO presented two new RICE plant sensitivity analysis one with a 25% increase in capital costs, and one with a 10% decrease in capital costs. UPPCO claims that first analysis reduces the PCA savings by $652,413, and the second increases total PCA savings by approximately $260,965. In its brief CARE rejects UPPCO claims that customers still save between $1,474,376 and $2,387,754 (levelized) under the two updated sensitivity analysis because CARE believes that the new information provides no justification for eliminating BAU with Solar PPA potential savings and opting for the proposed RICE plant. Brief pp 24-25.

CARE indicated in its brief that it recommends the Commission approve UPPCO's proposal to retire its 14.3 MW 45-year-old, oil-fueled Portage combustion turbine plant, which has been shut down since the unit experienced catastrophic failure in November 2018. CARE recommends the Commission direct UPPCO that plant repairs may be disallowed in a rate case. CARE supports retiring the Portage facility and UPPCO's proposed treatment of the insurance proceeds, but CARE opposes the restarting the Portage plant because it feels UPPCO has not shown that doing so would provide any PCA value. Brief pp 26-27.

CARE witness Jester testified that if UPPCO retires the Portage Plant the proposed RICE plant is unnecessary for resource adequacy. 2 Tr 435. Witness Jester testified that because neither the Portage plant nor the proposed RIC plant are required to meet a capacity need UPPCO could neither reasonably incur costs to repair the Portage plant not to build the new RICE plant. *Id*. Witness Jester testified that the Portage plant adds no value to the PCA because it is "not efficient enough to be dispatched for energy production" and "is not located in electrical proximity to the proposed RICE unit and cannot be viewed as justified as an alternative to the RICE plant. CARE believes that UPPCO has presented no reasonable justification for continuing to operate the Portage plant. Brief p 26-27.

CARE indicated in its brief that it supports UPPCO's proposed accounting treatment of the Portage unit's insurance proceeds. CARE argues that because one third of the Portage insurance claim is contingent on repairing, rebuilding, or replacing the unit, the Commission should only consider the contingent amount of the insurance settlement in its economic evaluation of the RICE plant, and should not allow the contingent funds to be used to repair the Portage Generating Station if the RICE plant is not approved. Brief pp 27-28

B. <u>AG</u>

1. <u>Financial Compensation Mechanism</u>

The AG agrees with CARE witness Jester's recommendations regarding UPPCO's request for an FCM for UPPCO's proposed Solar Power Purchase Agreement. Brief p 6.

2. Proposed RICE Plant

The AG agrees with CARE and CARE witness Jester that the Commission should not approve UPPCO's proposal to construct and own an approximately 20 MW natural gas plant in the southeast end of its service territory in order to provide reliability benefits to its customers. Brief pp 6-7; 2 Tr p 40. The AG agrees with CARE witness Jester, that UPPCO will have sufficient capacity to meet its resource adequacy obligations to MISO without this plant and UPPCO has not provided a thorough analysis of the alternatives to address transmission support in the project area. 2 Tr p 428. The AG also agrees with ABATE witness Alderson's testimony that MPSC Staff "admits that the economic justification for the RICE unit is not convincing" and conclusion that "the Commission should not find that the RICE unit is the most reasonable and prudent means to meet UPPCO's power needs when it does not know the cost alternatives. 2 Tr 451. The Attorney General agrees with CARE and ABATE that the Commission should initiate an appropriate study of transmission Brief p 7; 2 Tr 432.

3. Energy Waste Reduction (EWR)

UPPCO proposes to increase the Energy Waste Reduction (EWR) to 1.5% of UPPCO's total electric load. 2 Tr p 39. This proposal exceeds the current statutory requirement of 1% savings and targets 1.14% savings for 2018 and 2019 planning years. 2 Tr p 39. The AG agrees with CARE expert witness Jester that the Commission approve UPPCO's EWR proposal because 1.5% annual first-year savings is achievable and cost-effective. The AG agrees with CARE witness Jester's testimony and recommendation on this issue. See Brief p 7.

4. Portage CT Retirement and Insurance Payment Credits, PURPA Avoided Cost Proposal, and Hydropower Capacity Upgrades

The AG agrees with CARE's recommendations regarding UPPCO's Portage CT retainment, Insurance Payment Credits, PURPA avoided costs and Hydro Capacity Upgrades. See Brief pp 7-8.

C. ABATE

ABATE argues in its brief that UPPCO failed to support its proposal to execute a long-term solar PPA with competent, material, and substantial evidence. ABATE recommends the Commission deny UPPCO's request to enter into a 125 MW, 25-year solar PPA, ABATE argues that the process by which UPPCO selected a 125 MW solar PPA was flawed and inconsistent with the:

- IRP requirements in Act 43;
- Commission's orders in U-18418, and U-18461; and
- Michigan Integrated Resource Planning Parameters (MIRPP)

Brief pp 9-12

1. Solar PPA Proposal

MCL 460.6t(6) requires a utility, prior to submitting its IRP to the Commission for review, to issue a request for proposal (RFP) for new supply-side generation capacity resources to be considered in its IRP proceeding. UPPCO witness Tripp testified that UPPCO complied with this RFP requirement through the contracted services of WSP. UPPCO witness Tripp testified that WSP is a worldwide professional services firm with experience in "designing solar facilities as wells as conducting solar project bids." See 2 Tr 162. After receiving WSP's recommendations UPPCO issued an RFP for procurement of ~20 MW of new solar photovoltaic (PV)generating capacity. See Exhibit

A-5, p 10. ABATE argues that UPPCO arbitrarily and unreasonably excluded all non-solar energy sources from the RFP process. Brief p 12. ABATE argues that the Act 341 IRP most reasonable and prudent standard required UPPCO, during the RFP process, to fully evaluate alternatives ranging from conventional or distributed generation, transmission or distribution, energy storage, and EWR or DR programs. See U-18418, Order, p 88 ABATE argues that because UPPCO did not evaluate any alternative other than solar ,the Commission must reject UPPCO's proposed solar PPA or require UPPCO to issue another RFP process that fully complies with Act 341 by incorporating all solar and non- solar capacity resource options. *Id.*

2. <u>RICE Unit Proposal</u>

ABATE also argues that the Commission must reject UPPCO's request to acquire a new 20 MW RICE unit, because proposal lacks evidentiary support and is plagued by flawed modeling assumptions. UPPCO witness Haehnel testified that UPPCO is seeking approval for the construction of a 20 MW RICE generating facility within MISO Load Resource Zone 2 before June 1, 2022. Brief pp 12-15; Also see 2 Tr 43. UPPCO witness Haehnel testified that like the UPPCO's solar PPA proposal UPPCO would pursue the proposal through the RFP process. *Id*. Witness Haehnel testified that the proposed RICE unit is UPPCO also submits that its proposed RICE unit is consistent with UPPCO's overall objectives and would improve reliability and operational flexibility. See 2 Tr 125.

UPPCO witness Stocking testified that the proposed RICE unit would alleviate future transmission system limitations; and would alleviate power quality issues experienced by large-energy users located in the eastern half of UPPCO's service area. See 2 Tr 142. ABATE argues that the two factors cited by witness Haehnel are not relevant to the Commission’s determination is of the lowest practical costs at which UPPCO can deliver reliable energy services to ratepayers. Brief p 14.

ABATE argues that it is not fundamentally opposed to UPPCO’s RICE unit proposal. ABATE would like more information regarding how UPPCO compared RICE unit costs and risks to alternatives, before ABATE may conclude that the RICE unit is the most reasonable and prudent means of meeting its energy and capacity needs, as required by Act 341. Brief pp 13-14. *See* MCL 460.6t(8)(a). ABATE argues that before the Commission may approval UPPCO’s RICE unit proposal the Commissions must have enough information to answer two key questions.

Did UPPCO examine all available options to meet its energy and capacity needs with an eye towards minimizing costs? and

Did UPPCO support its proposal with thorough, detailed, and meaningful evidence in a way that satisfies its burden of persuasion?

Brief pp 13-15.Also *See* U-16794 Order, p 13.

ABATE witness Alderson testified that UPPCO’s proposed 20 MW RICE unit would not provide a long-term net economic benefit to ratepayers as shown in UPPCO’s base case modeling See 2 Tr 463. Witness Alderson testified that her analysis revealed that, if market prices for capacity decrease, or the capacity factor of the unit decreases, the net cost to customers would increase *Id*. Witness Alderson testified that because UPPCO provided non-information regarding alternatives to the RICE plant she was not able to compart the costs benefits etc. of the RICE plant with other alternative. Witness Alderson testified that a transmission solution or a lower cost generating asset could potentially resolve the power reliability issues cited by UPPCO. *Id*. UPPCO witness Stocking testified that UPPCO did not consider non-RICE plant alternatives because, it relied upon the guidance provided by the B&V modeling in determining its PCA. UPPCO did not include the CT resource option in its PCA, nor did it provide the full revenue requirement analysis. 2 Tr 142 (emphasis added.). UPPCO, based on the B&V modeling, believes that the superior efficiency of the RICE unit is expected to provide additional benefits to UPPCO customers, when compared to a CT. 2 Tr 142. ABATE argues that UPPCO inappropriately relied upon a B&V report which failed to consider alternatives to the RICE plant proposal and believes that would be equally unreasonable for the Commission to approve UPPCO's RICE plant proposal which is not supported by competent, material, and substantial evidence on the whole record. Const. 1963, art. 6, § 28; *Attorney General v Pub. Serv Comm*., 165 Mich App 230, 235, 418 NW2d 660 (1987). ABATE argues that such a Commission order would be arbitrary, capricious, or unsupported by the evidence, courts will deem it unreasonable and, thus, unlawful. MCL 462.25; *In re Application of Consumers Energy Co. for Reconciliation of 2009 Costs*, 307 Mich App 32; 859 NW2d 216 (2014); *Associated Truck Lines, Inc v Michigan Pub Serv Comm*, 377 Mich 259, 279; 140 NW2d 515, 522 (1966). ABATE argues that UPPCO's has thus far failed to meet its evidentiary burden with regard to its RICE plant proposal and is unclear whether UPPCO can salvage its faulty proposal within the Act 341 IRP statutory time limits. Brief p 15.

3. <u>FCM Proposal</u>

ABATE argues that UPPCO has failed to show a present need for an FCM. UPPCO witness Haehnel testified that UPPCO is requesting an FCM because the IRP identifies several long-term supply resources, many of which require UPPCO to decide between utility asset ownership and contracting with a non-utility owner through a long-term PPA. See 2 Tr 58. ABATE argues that UPPCO has maintained its financial integrity prior to its IRP filing without the benefit of an FCM. Brief pp 15-16.

ABATE witness Alderson testified that she has four primary concerns with UPPCO's FCM proposal. Witness Alderson testified that if UPPCO's proposed 125 MW solar PPA, terms and condition does not include a minimum take-or-pay requirement then there is no debt equivalence corresponding to the PPA. UPPCO will have no obligation to pay a minimum amount in the future for power regardless of whether the power is delivered because there is no obligation to pay for supply in the event the resource fails to operate. Under this pricing structure, the PPA will not have a meaningful credit rating debt equivalence . UPPCO has not disclosed the terms of the PPA, because negotiations are ongoing. ABATE argues that unless UPPCO's final negotiated PPA includes take-or-pay provisions, an FCM is not warranted. Brief pp 15-17.

Exhibit AB-1 shows that UPPCO has relied heavily on long-term PPAs to provide energy and capacity to ratepayers since at least 2009. UPPCO has obtained between 55% and 90% of its total energy needs using PPAs in each year since 2009 without an FCM. UPPCO has not needed an FCM to mitigate any impact on its credit rating as a result of its current PPAs. ABATE argues that if the Commission determines that UPPCO's proposed solar PPA would negatively impact UPPCO's or its parent holding UPPCO, credit rating and increased costs to access capital should be mitigated, then the Commission should evaluate alternative methods for mitigation such as adjusting the approved capital structure or the approved ROE to account for the PPA expense. ABATE also argues that the Commission should thoroughly consider the impact of each alternative on UPPCO rate payers before making a determination regarding which method is the most reasonable*. Id*

ABATE finally argues that if the Commission approves an FCM, as proposed by UPPCO, it should reduce the rate requested because it is overstated. ABATE argues that UPPCO's requested FCM rate is based on the full value of the PPA contract rate expense, rather than only the debt like payments included in the PPA terms. UPPCO's requested FCM rate uses a 25% risk premium multiplier. ABATE argues that this overstates the rate because the PPA has no minimum payment obligation, and because UPPCO's parent holding UPPCO. Brief p 17.

D. <u>Circle Power</u>

Circle Power is a developer of renewable wind energy based in Michigan including wind projects in UPPCO's service territory. Circle Power wind facilities are certified as Qualifying Facilities (QFs) by the Federal Energy Regulatory Commission under the Public Utility Regulatory Policies Act of 1978 (PURPA). Act 341 provides that the Commission may only approve UPPCO's IRP if UPPCO demonstrates, that the IRP represents the "most reasonable and prudent" means to meet its energy and capacity needs. Circle Power argues that Commission's decision must be based on UPPCO's marketplace modeling of its existing marketplace and forecasting costs for various IRP scenarios. Circle Power argues that UPPCO's IRP modeling includes six or more fatal flaws which provide and inadequate factual foundation. Brief p 7. Circle Power argues that the following IRP flaws prevent the Commission from making its required Act 341 "most reasonable and prudent" finding:

- Modeling assumptions overstate the capital costs various technologies, including wind energy;

- The IRP uses an inaccurate capacity factor for wind generation that inappropriately skews the RFP process toward solar generation only;
- The 125 MW solar PPA is based on a flawed process, and UPPCO has failed to show that it will be in the best interests of rate payers;
- The LMP forecast is based on data that are not representative of UPPCO's marketplace;
- UPPCO incorrectly calculated the inflation-adjusted energy payment to QFs; and
- UPPCO's natural gas pricing assumptions understate the actual projected natural gas market costs.

Brief p 8.

Circle Power argues that UPPCO's incorrect modeling is the basis for UPPCO's incorrect PCA conclusions and weakened UPPCO's IRP to the point that the IRP does not provide an adequate factual foundation to support a Commission "most reasonable and prudent" finding and IRP approval required under MCL 460.6t(8)(a).

1. **IRP Modelling Assumptions Overstate Capital Costs of Technologies, Including Wind Energy Production**

Circle Power witness Moore testified that UPPCO's CAPEX inputs for its modelling of costs for photovoltaic solar and onshore wind were taken from the NREL 2017 ATB (Annual Technology Baseline) report. 2 Tr 501. Witness Moore testified that UPPCO included a 20% "uplift" which according to an UPPCO's discovery responses, was to allow it to better assess its full costs. See Brief p 9. 2 Tr 502.*Id.* at 502. Circle Power argues that the 20% uplift was for costs already included in the NREL report's definition of "CAPEX."

Circle power rejects UPPCO witness Huang's rebuttal testimony, that CAPEX costs in the NREL 2017 ATB report only included "Overnight Construction Costs,". Circle

Power argues that witness Huang and the IRP used the “CAPEX” number from the NREL 2017 ATB report tables and not only “Overnight Construction Costs”. Witness Moore testified that CAPEX expressly includes the “Financial Costs” cited by UPPCO as a basis for its 20% uplift. 2 Tr 502.

Circle Power argues that Staff’s witness Matthews expressed concerns regarding UPPCO’s addition of the 20% owner’s costs for both solar and wind CAPEX. 2 Tr 314. However, witness Matthews testified that the 20% uplift did not materially affect UPPCO’s modeling because the utility ran an RFP for the 125 MW of solar that resulted in lower LCOE than modeled by UPPCO based on NREL inputs. *Id.* at 315. Circle Power witness Moore testified that UPPCO’s RFP process did not correct this error therefore neither wind nor QF projects of other technologies were considered. Witness Moore testified that the decision to exclude non-solar projects was based on UPPCO’s modeling errors. See *2 Tr 507.* Circle power argues that the Commission should not treat UPPCO’s 20% uplift as a harmless error because UPPCO’s double counting applied to solar and non-solar projects. Brief p 10.

Circle Power argues that UPPCO’s IRP ignores the NREL 2017 ATB and NREL 2018 ATB reports which include projections for future *decreases* in onshore wind CAPEX costs for technology resource groups appropriate for the Upper Peninsula. Witness Moore testified that UPPCO’s modeling inexplicably shows an *i*ncreasing CAPEX cost curve for onshore wind in its capital cost assumptions. 2 Tr. 507.

Witness Moore testified the UPPCO modelling is flawed because is CAPEX cost assumptions are based on an onshore wind at a weighted average wind speed of 6.2 m/s as expected for the Upper Peninsula. Witness Moore testified that this assumption is flawed because it is:

- Based on 2015 installations that does not consider current and future technology improvements; and
- Ignores the existence of many Upper Peninsula sites with higher wind speeds than UPPCO's regional average of 6.2 m/s.

2 Tr 505–06

Witness Moore testified that unlike wind energy UPPCO did not apply the same modeling assumptions to solar energy. UPPCO's modeling includes a significantly declining future price curve for solar and ignores a decreasing future price curve for wind. 2 Tr 502. Witness Moore rejects UPPCO's claim that there is a more defined trend in solar installed cost reductions compared to wind given the less mature technology/market for wind. Witness Moore testified that wind technology has been deployed in Michigan for years and the overall market for wind is years, if not decades, older than that for solar. 2 Tr 502-503. Circle Power argues UPPCO's CAPEX modeling report is flawed because it:

- Incorrectly ties 2015 wind speeds at project sites to CAPEX numbers expected at those sites;
- Holds wind speed assumptions constant across its future CAPEX and LCOE projections
- Effectively ignores current and future technology innovations in the wind industry as shown and forecasted in the NREL reports relied upon by UPPCO

Id. at 502–03.

Circle Power argues that UPPCO's inclusion of a 20% uplift and its underestimation of the projected decrease in CAPEX costs and forecasted technological improvements, skewed UPPCO's IRP modeling away from wind energy. Circle Power argues that these actions resulted in an RFP process which UPPCO described as "solar-centric,”. Circle Power believes that process was in fact “solar-only”. Brief p 11; 2 Tr 507. Circle Power argues that UPPCO’s modeling errors and solar only RFP process have not produced modeling reliable enough to meet UPPCO’s burden to demonstrate that its IRP represents the most reasonable and prudent means of meeting its energy and capacity needs. Brief p 11.

2. UPPCO’s Modelling Assumptions Understated the Capacity Factor of Wind Generation

Circle Power argues that UPPCO’s capacity factor data is simplistic, inaccurate and inadequate.Witness Moore testified that UPPCO’s capacity factor is based on data from one operating wind project representing old technology from 2012. UPPCO used this data to predict current and future capacity over an entire region. 2 Tr 503–04.

Witness Moore testified that UPPCO’s capacity model is based on data from a 28 MW wind project located east of Escanaba built in 2012. This unit reported an actual capacity factor of 32.5% in 2016 and 33.5% in 2015. UPPCO’s second set of wind capacity data was taken from a NREL study, which found an average 33% capacity factor for Michigan’s on-shore wind projects based on an analysis of 10-minute wind power generation data over three years at 57 sites. *Id.* Based on data from these two sources UPPCO assumed a capacity factor of 34% for the purposes of modeling power generation from onshore wind installations. 2 Tr 503. UPPCO’s capacity factor remained unchanged throughout the period covered by UPPCO’s model.

Circle Power argues that the following updated capacity data for wind projects was not considered by UPPCO nor included in its modeling:

- According to Bloomberg New Energy Finance (BNEF), from 2012 to 2017, average turbine capacity sizes of wind projects worldwide have increased

37%—using larger rotors and increased hub-heights to create higher production capacity factors.

- According to BNEF, global onshore wind capacity factors increased 12% from 2012 to 2017.
- According to the U.S. Department of Energy ("DOE"), the average capacity factor among projects built from 2014 to 2016 was 42%, compared to an average of 31.5% among projects built from 2004 to 2011 or a 33% increase since 2004-2011 and a 79% increase since 1998-2001.

2 Tr 504

Witness Moore testified that increases in wind project capacity may be attributed to the following:

- Improvements in design engineering and manufacturing has led to increased hub heights and larger rotors.
- Turbines with larger rotors have higher capacity factors because the spinning blades sweep a larger area, resulting in increased wind energy capture.
- Because wind speed generally increases with altitude, increased hub heights provide access to higher wind speeds, which increases production and lowers the average cost of wind energy. Id.

Circle Power argues that if UPPCO's modeling incorporated the design and manufacturing improvements in current wind turbine technology, it's Escanaba wind project capacity factor data input would have been significantly higher. Witness Moore testified that Circle Power's Exhibit CP-4, Wind Capacity Factor Estimate provides a sample year NREL estimate of the wind resource at the Escanaba site, combined with the performance model for similarly sized turbines as those used at Escanaba to calculate an estimated capacity factor of 36%. *Id.* Witness Moore testified that if UPPCO's 2012 turbine data is replaced with a commercially available 2019 turbine data the capacity factor increases by almost 25% resulting in a capacity factor of 45%, which is an increase of nearly 25%. *Id.* Correcting this error reduces the estimated cost of wind-generated electricity in UPPCO's IRP model by approximately 25%. *Id.*

Witness Moore testified that UPPCO did not complete or consider a full analysis of the viability of wind projects in the Upper Peninsula such as the Wind Integration National Dataset (WIND) Toolkit, developed with funding from the DOE Office of Energy Efficiency and Renewable Energy, Wind and Water Power Technologies Office and through the collaborative efforts of NREL and 3TIER,. *Id.* at 505. The WIND Toolkit consists of a wind resource and a forecast data set. *Id.* This study provides potential *Land*-based and offshore wind power production sites and clearly shows a large subset of sites capable of producing capacity factors in the mid-40% range (as noted above) versus the UPPCO model's estimate of 34%. *Id.* at 500.

Circle Power argues that because UPPCO estimated an onshore wind capacity factor which overestimates the CAPEX costs wind energy was overpriced in the IRP, and UPPCO's IRP, improperly excluded wind energy from the RFP process and favored a solar centric IRP. *2 Tr* 497. Circle Power argues that because UPPCO's IRP is based on faulty capacity factor inputs and resulting exclusion of wind from the IRP process UPPCO has not shown that solar energy represents the most reasonable and prudent means to meet its needs. Brief p 14.

Circle Power argues that UPPCO ignored offers from wind QFs to provide energy at its avoided cost. Witness Moore testified that UPPCO's avoided cost proceeding in U-18094 set a price range for on-shore wind at or below 20 MW. 2 Tr 506; Brief p 14. Witness Moore testified that UPPCO avoided discussions with QF wind projects for over 5 years regarding PPAs at the avoided cost established in U-18094. Circle Power believes that terms of these QF wind projects were more competitive than the IRP solar and wind options modeling. Witness Moore testified that none of the proposals received by UPPCO in its solar RFP process for 20MW offered an energy cost below UPPCO's LMP Energy Rate Forecast the avoided cost rate set in U-18094. Circle Power argues that the onshore wind proposals submitted to UPPCO, and excluded from the IRP, were at least as competitive as the solar projects submitted in response to the solar RFP. 2 Tr 508.

Witness Moore testified that UPPCO using a flawed RFP process initially began negotiations with solar vendors at a 20 MW project size but ultimately UPPCO increased the RFP project size to 125MW. Circle Power argues that UPPCO never competitively solicited the additional 105 MW through non-solar QFs Id. Brief p 15.

Witness Moore testified that given Section 460.6t(8)(a)(vi)'s preference for a "diversity of generation supply," it would not be unreasonable to conclude that 20 MW wind projects initially proposed by UPPCO, might have had a lower LCOE if they were permitted the opportunity to scale up to 125 MW. 2 Tr 508;528.

Circle Power rejects UPPCO's offer in witness Haehnel' s rebuttal testimony to allow Circle Power's PPAs proposing to sell power at UPPCO's avoided costs to be considered by the Commission as "alternative proposals" submitted by Circle Power under MCL 460.6t(6):

> First, if Circle Power believes that UPPCO did not properly account for Circle Power's QF activity, the direct inclusion of Circle Power's proposed pricing will allow these options to be viewed in the record in comparison to the other components of UPPCO's PCA, including the final signed Solar PPA. Second, the inclusion of these alternative proposals should address

> Circle Power's concerns that UPPCO attempted to "bar wind from competing" in the IRP process.
>
> 2 Tr 106.

Circle Power argues that treating Circle Power's PPAs as an "alternative proposal" would not correct that UPPCO's flawed IRP modeling, RFP process and subsequently conclusions which disadvantaged QF wind power. Brief p 16.

Circle Power argues that UPPCO's IRP does not represent the "most reasonable and prudent" means of meeting its future energy needs because:

- It is based on a flawed study;
- Ignores known, concrete projects offering pricing at or below costs received in response to the utility's RFP process; and
- Inexplicably scaled up a 20 MW project to a 125 MW project on a bilateral basis without any further solicitation.

Circle Power argues that the above actions prevented Circle Power from providing lower-cost wind generation and prevented a diversity of generation supply as is required pursuant to MCL 460.6t. Brief p 17.

Circle Power argues that UPPCO incorrectly based its LMP forecast on zonal rather than nodal data, which is not representative of its marketplace, Brief p 17. Witness Moore testified that UPPCO's IRP zonal modeling uses the MISO Michigan hub zone which is outside UPPCO's service territory. 2 Tr 509. Witness Moore testified that UPPCO admitted in a discovery response, that the IRP LMP values were not based on forecasts developed and provided in U-18094. 2 Tr 510. U-18094 values were calculated at, the Integrated node, which is located in UPPCO's service territory. In response to a Staff question UPPCO clarified its IRP forecast was run as a zonal model, using the MISO Michigan hub (zone). *Id.* Witness Moore testified that the Michigan hub is not located in

UPPCO’s service territory and therefore is not an appropriate LMP forecast for UPPCO’s IRP. Because UPPCO’s avoided cost is based incorrectly on the Michigan hub LMP it understates UPPCO’s actual avoided costs of energy. 2 Tr 511–12.

Staff’s witness Makinde testified that UPPCO’s delivered fuel prices are reasonable and UPPCO’s energy price forecasts used in the PLEXOS model are reasonable and consistent. 2 Tr 281. Staff witness Heidemann testified that the energy prices used in UPPCO’s PLEXOS model using the Michigan hub are “likely an underprediction of the prices that the UPPCO will see in the future,” because “the Michigan hub is both geographically and electrically far away from UPPCO territory,” *id.* 2 Tr 351. Staff witness Makinde testified:

> The average and median difference between the two pricing nodes over a five-year period is $2.28 per MWh and $3.58 per MWh, respectively. To put this in perspective, the $2.28 per MWh difference is roughly 50% of the total price change in the average wholesale market price over the twenty-year time horizon.
>
> *Id.*

In its rebuttal testimony, UPPCO acknowledged this error and proposed a solution based on Staff witness Hedemann’s testimony. 2 Tr 138. UPPCO’s solution adjusted the LMP forecast by the historical median price differential value between the UPPCO’s Integrated node and the Michigan hub measured over the past five years. *Id.*; See Exhibit S-9.1. Circle Power argues that UPPCO’s LMP forecast solution was not supported by any evidence which shows that the median price differential measure over 5 years is an adequate method for forecasting LMP. Circle Power argues that UPPCO’s IRP LMP forecast error reducing the dependability of the IRP forecasts and prevents UPPCO from showing that the IRP modeling is the most reasonable and prudent.

Witness Moore testified that UPPCO incorrectly calculated the inflation-adjusted energy payment to QFs. 2 Tr 512. In a discovery response, UPPCO stated that its inflation assumption of 2.256 percent:

> was not directly utilized by the Plexos or PROMOD models; all modeling (inputs and outputs) was performed in 2017 real dollars and then discounted in CPWC [Cumulative Present Worth Calculation] per the WACC/discount rate of 7.467 percent directed by UPPCO.
>
> *Id.*

Witness Moore testified that unless subsequently adjusted for inflation, UPPCO's energy payments to QFs should be based on a nominal LMP forecast and UPPCO should have used the Real Discount Rate of 5.36% for their CPWC calculations rather than the 7.467 percent Nominal Discount Rate. Witness Moore testified that this price distinction is shown in Exhibit A-20. *2 Tr* 513. Witness Moore testified that UPPCO in its rebuttal testimony admitted this error, *see id.* 2 Tr 138–39 but did not indicate what impact the error has on the IRP.

Circle Power argues that UPPCO incorrectly based its natural gas price forecast on zonal rather than nodal data, UPPCO's IRP modeling used natural gas pricing assumption similar to its LMP forecasts. Witness Moore testified that UPPCO's natural price forecast is based on zonal (hub) prices which is not representative of UPPCO's actual market costs. 2 Tr 513. Circle Power argues that because the zonal prices were used in the IRP modeling for dispatch order and capacity factor of certain facilities—including, that of UPPCO's proposed RICE facility, the IRP is flawed. 2 Tr 513, 526. Brief p 20. Exhibit CP-11 shows that, fuel costs used in the IRP's modeling were $28.20 (2022) versus UPPCO's fuel costs of $37 (2018). *See* Exhibit CP-11. The 31% difference between hub costs and actual costs, shows that hub prices are not representative of

UPPCO's actual marketplace and may not be used in IRP models. 2 Tr 514. Witness Moore testified that because the capacity factor of the proposed RICE facility was based on its projected place in the dispatch order UPPCO's understated its natural gas price forecast. Witness Moore testified that this would affect the RICE facility operating hours overstate its capacity factor. A decrease in the RICE facility's capacity factor makes it a less preferred technology for IRP purposes. *Id*

3. <u>UPPCO Failed to Incorporate in Its Analysis Existing QF Projects It Was Aware of From the Start of its IRP Process</u>

Circle Power argues in its brief that Act 341 of 2016, Section 6t(5)(k) requires the utility to perform, "An analysis of the cost, capacity factor, and viability of all reasonable options available to meet projected energy and capacity needs, including but not limited to, existing electric generation facilities in this state." MCL 460.6t(5)(k). In U-18418 the Commission approved Integrated Resource Planning Parameters (MIRPP), See U-18418-0065, Order p 18. The MIRPP provides "[p]rior to and during the modeling process, the utilities shall take into account resources that include, but are not limited to small qualifying facilities (20 MW and under)." MIRPP". *Id.* Circle Power argues that UPPCO did not complete the Section 6t(5)(k) analysis nor take in account QFs 20 MW and under in its IRP.

Witness Moore testified that in 2013, UPPCO was contacted by Farm Wind Energy (FWE) regarding FWE's desire to provide power to UPPCO as a QF. 2 Tr 498. Circle Power believes that UPPCO ignored FWE even after Staff reminded UPPCO of its PURPA "obligation to purchase" *Id.*; See Exhibit CP-2. Exhibit Cp-3 is a January 3, 2017 letter sent by UPPCO to FWE in which UPPCO indicated that it intended to include QFs in the IRP process. Circle Power argues that UPPCO, ignored FWE, contrary to its

PURPA obligation and the requirements of Section 6t(5)(k), and never included FWE its IRP analysis. Brief p 22; 2Tr. 498.

After UPPCO was first informed of the FWE project in 2013 Circle Power informed UPPCO that it was partnering with FWE to consider expanding the FWE QF project. In November 2018, Circle Power informed UPPCO that the Houghton County QF project would be larger than previously proposed by FEW Exhibits CP-13 and CP-14 are requests distribution and interconnection of 19.2 MW. See Exhibits CP-13 and CP-14. Witness Moore testified that subsequent to these requests UPPCO ignored the project and excluded it from its IRP. 2 Tr 498.

Circle Power argues that in November 2018 UPPCO could have incorporated the Houghton County project into the IRP. Due to the November 2018 UPPCO Portage CT unit's failure, UPPCO requested and received Commission approval for a 60-day extension to file its IRP. 2 Tr 498–99. UPPCO then reran its IRP which included the Portage CT failure but excluded the FWE/Circle Power Houghton County QF project. 2 Tr. 499. Brief p 22.

UPPCO witness Haehnel testified that the updated July 2019 PPAs do not include the original 20 MW project (Scotia Wind) presented by Circle Power to UPPCO in November 2018. *2 Tr* 104–05. Scotia Wind withdrew its interconnection request previously filed with UPPCO and began to seek interconnection at the transmission level. *2 Tr 104-105.* Circle Power argues that *QFs*, do not have an obligation to interconnect at the distribution level or to interconnect directly with the utility to which they will sell their power. See 18 CFR § 292.303(c), (d) & (e). Brief p 23. Circle power argues that the withdrawal of the Scotia Wind interconnection application and request for interconnection at the transmission level does not mean that the November 2018 project proposal was not the same project Circle Power was pursuing during the pendency of UPPCO's IRP modeling. Brief p 23.

Circle Power argues that UPPCO has been and continues to be aware of its obligation to purchase power from QFs, including the Houghton County (aka Scotia Wind), FWE/Circle Power project but excluded it from its IRP analysis. Circle Power believes that UPPCO intentionally ignored this QF project which should have been included in UPPCO's IRP analysis. UPPCO's failure to consider this project was a violation of its PURA obligations and Section 6t and is not in the best interests of UPPCO ratepayers. Circle Power believes that UPPCO's actions render it unable to demonstrate that its IRP represents the "most reasonable and prudent" means of meeting its future power needs. Brief p 23.

Witness Moore testified that UPPCO also ignored and failed to analyze the impact of future QF development in its IRP modeling. 2 Tr 499. Circle Power argues that it believes that UPPCO was aware of the statewide interest in QF projects, due to Circle Power's participation in Commission proceedings which developed new standards for distribution interconnection, legally enforceable obligations under PURPA and QF interconnection. *Id.*

Circle Power believes that UPPCO excluded future QF development from its modeling due to an intentional bias against such development. UPPCO's IRP forecasts zero QF development without robust forecasting and is not supported by evidence of contemporaneous QF projects in UPPCO's service territory seeking *2 Tr* 500; *see, e.g.*, Exhibits CP-1 and CP-2.

Circle Power argues that UPPCO's failure to include future QF development in its forecasting, shows that UPPCO's IRP and PCA cannot meet the standards required for approval and are not in the best interest of ratepayers. 2 Tr. 525. Brief p 25.

4. <u>The Revisions to the Implementation of PURPA Violate PURPA</u>

In its rebuttal testimony, UPPCO adopted Staff witness Hadala's recommended changes to UPPCO's avoided energy payment structure adopted by the Commission in U-18094 (payments based on LMP at time of delivery or an average forecasted LMP value, at the QFs discretion) to a structure where payments over the first five years of the contract would be based on an average forecasted LMP and the payments over the remaining term of the contract would be based on actual prevailing LMP at delivery. 2 Tr 136. Witness Moore testified that Staff's proposal:

- Violates FERC's PURPA regulation 18 CFR § 292.304(d)(2)(ii);
- Is not commercially reasonable;
- Would render all QF projects located in UPPCO's service territory; unfinanceable; and
- Would be discriminatory against QFs.

2 Tr 534.

Witness Moore testified that PURPA requires rates for the purchase of energy from QFs must not discriminate against qualifying cogenerators or qualifying small power producers and that they be just and reasonable to the customers of the electric utility and in the public interest. See 16 USC § 824a-3(b); 18 CFR § 292.3049a)(1). If a utility is guaranteed a rate of return over the life of a project (typically twenty to thirty years), a short-term five or even ten-year fixed price contract provided to QFs must be considered discriminatory.

2 Tr 534–35.

Circle Power argues that neither UPPCO nor Staff witness Hadala provide evidence that the “five-year fixed rate offers price stability to QFs seeking to obtain financing for PURPA projects,” or that a 20-year fixed rate contract imposes risk to UPPCO’s customers. With an appropriate LMP forecast, there is little difference between providing a long-term contract to a QF project and using that same forecast to approve a utility’s own generation build. *2 Tr* 534.

The Commission found in U-18094 that UPPCO’s avoided cost of energy to be paid to QFs should be based, at the option of the QF, either on the Locational Marginal Pricing LM) at delivery or on UPPCO’s forecasted LMP and that “QFs should be permitted to opt for a contract term of five, 10, 15, or 20 years,.”. U-18094, Order at 9, 12.

Circle Power argues that Staff’s recommended UPPCO avoided energy cost payment would render QF projects in UPPCO’s service territory unfinanceable. 2 Tr 525. Circle Power believes that Staff’s recommendation would cut off QF development violate PURPA and would undermine the goal of MCL 460.6t(8)(a)(vi) to create a diversity of generation supply.

Staff witness Proudfoot testified that Staff’s review of UPPCO’s IRP faced challenges “due to the lack of data transparency of the source data, actual model inputs and model outputs.” 2 Tr 236, 518. In Staff’s Exhibit S-2.0 (their IRP Filing Requirements Checklist), Staff listed the following UPPCO IRP filing deficiencies:

- Failure to provide a thorough risk analysis of the preferred plan and the optimal plans for each of the scenarios specified in the Michigan Integrated Resource Planning Parameters (MIRPP);

- Failure to include delivered natural gas prices to existing and new utility-owned generating plants;

- Failure to project annual fuel costs under the various scenarios;

- Failure to provide the oil price forecasts under the various scenarios;

- Failure to project long-term firm gas transportation contracts or natural gas storage the utility will hold to provide an adequate supply of natural gas to any new and existing generation facility;

- Failure to identify and explain the basis for the forecasted price of energy, capacity, and fuels, and of peak demand and energy requirements, for each year of the analysis used in each scenario and sensitivity evaluated by the utility as part of the IRP process;

- Failure to provide an adequate analysis that contains an individualized cost estimate for electric resources that were considered, including renewable alternatives, such as solar, wind, or solar plus battery storage, and such cost estimates for all alternative proposals, solicited or unsolicited, received by the utility; and

- Failure to utilize adequate electricity market forecasts.

See Exhibit S-2.0.

Witness Moore testified that Staff also listed the following other deficiencies within the IRP Filing Requirements Checklist:

- Fuel: UPPCO's initial filing as well as its responses to Staff discovery requests revealed a failure to fulfil the section's requirements. Specifically, the following items were not fulfilled or were proven inadequate:

    - Delivered natural gas prices to existing and new utility-owned generation plants;

    - Projected annual fuel costs under the various scenarios;

    - Projected long-term firm gas transportation contracts or natural gas storage the utility will hold to provide an adequate supply of natural gas to any new and existing generation facility;

- Resource Screen: UPPCO's initial filing as well as its responses to Staff discovery requests revealed that UPPCO failed to perform an adequate resource screen of the utility's options of resources. Staff's questions and the direct testimony of Circle Power witness Moore have revealed that UPPCO's resource screen was superficial at best and lacked entirely in many areas. Specifically, these weaknesses included:
    - Materially incorrect assumptions of new generation technology and operating assumptions;
    - Materially incorrect assumptions of new generation development costs;
    - A material failure to include wind in the distributed generation resource screen;
- Proposed Course of Action: Failure in the PCA requirement to adequately estimate proposed capacity of the generation facilities, including projected fuel costs under various reasonable scenarios. This error was not addressed by Staff – as discussed further below.
- Exhibits and work papers: Among the many failures in this category, including significant errors in modeling assumptions, UPPCO failed to provide an actual analysis (as opposed to simplified assumptions with no basis) with an individualized cost estimate for electric resources that were considered, as well as include cost estimates for all alternative proposals (specifically from QF projects), solicited or unsolicited, received by the utility. This error was not addressed by Staff.
    - Additionally, Staff was not provided a license to the software packages (PLEXOS and PROMOD), which were the basis of the generation analysis and cost forecast modeling, nor was Staff given the data files and means of accessing this data – meaning no true audit of the assumptions was performed.

2 Tr. 519–21.

Circle Power argues that UPPCO's IRP errors negatively impact UPPCO's IRP and PCA, including the initial 3 years of this IRP, and the reliability of UPPCO's case for its IRP being the "most reasonable and prudent" means of meeting its energy and capacity needs, *Id.* at 522. Staff witness Proudfoot testified that UPPCO's responses and missing filing requirements impeded Staff's review of UPPCO's IRP. *Id.* Witness Moore testified that Circle Power believes that Staff lost time for its analysis, by spending time on correcting, interpreting and revising UPPCO's filings. *2 Tr* 522.

Circle Power argues that UPPCO's IRP failes to comply with relevant statutory and Commission IRP filing requirements and recommends the Commission set a precedent which does not allow a utility who has filed a substandard and inadequate IRP to burden Staff and intervenors with confusing follow-up information, to correct an inadequate IRP. Circle Power argues that the Commission should maintain the integrity of the IRP process and reject UPPCO's IRP filing. Brief p 30.

Circle Power argues that UPPCO's IRP deficiencies cannot be corrected in future IRP filings. Staff recommended that UPPCO file and request approval for finalized costs for the electric generation facilities included in its PCA pursuant to MCL 460.6t(12). See 2 Tr 213. Witness Moore testified that UPPCO's PCA is based on flawed assumptions, flawed models and produced flawed results. *id.*

Witness Moore testified that Staff's recommendation with respect to the 125 MW solar RFP, that UPPCO be directed to include all RFPs in future IRP filings as part of its initial filing at that time, cannot correct UPPCO's current IRP inadequacies and flaws. Circle Power argues that simply requiring UPPCO to do in the future what it did not do in its current IRP does not solve anything. UPPCO's flawed RFP selection, IRP and PCA should be rejected the Commission reevaluated, and, if necessary, re-run. 2 Tr 527. Witness Moore testified that UPPCO's RFPs should have followed the guidelines laid out in MCL 460.6t and be non-discriminatory towards QFs. *Id.* UPPCO's IRP should have requested Commission approval in its IRP and PCA for a renewable RFP and a RICE RFP after which UPPCO could move forward its solicitation process. *Id.*

Circle Power argues that there is no evidence that any of UPPCO's IRP flaws are offset or reasonably balanced by another, nor corrected absent UPPCO's completion of an accurate evaluation in a new IRP. Brief p 31. Circle Power argues that given all the IRP flaws pointed out by Staff and intervenors there is no reasonable analysis that could be used as a basis for the Commission's approval of UPPCO's PCA. 2 Tr 529, Brief p 31.

Circle Power argues in its brief that if the Commission recommends changes to UPPCO's IRP pursuant to MCL 460.6t(7), the Commission should direct UPPCO to include Circle Power's proposed QF projects. The Commission's decision would provide competitive pricing and diversity of generation supply (see MCL 460.6t(8)(a)(iii), (vi)). Circle Power believes that the Commission directed IRP changes should include the draft PPAs for Scotia Wind and Norton Wind submitted into the record by UPPCO as Exhibit A-35. Circle Power argues that it does not admit that it has the same obligations as UPPCO to show that its alternative proposal meets IRP statutory standards. See MCL 460.6t(6) Brief p 32.

Circle Power does not agree with UPPCO's rebuttal testimony at 2 Tr 103, that Circle Power was required to submit its alternative proposal in order for the proposal to be considered as part of the IRP process. Circle Power believes that UPPCO has the burden of showing that its proposed IRP, including its consideration or, non-consideration of Circle Power and other QF's propose projects, meets the statutory standards. Circle Power argues that UPPCO has failed to meet its various IRP burdens but if the Commission determines that it is possible to mitigate UPPCO's IRP flaws by including of

Circle Power's wind QFs in a final approved IRP, the Commission should do so. Brief p 32.

E. Staff

Staff argues in its Brief that UPPCO's IRP modeling complied with the Commission's MIRPP modeling and IRP filing requirements adopted in the Commission's orders in U-18418, and U-15896. See Exhibit A, p 2. Because UPPCO has less than 1 million customers, it is eligible for a waiver of Commission's filing requirements, review criteria, and approval standards under MCL 460.6t (3).[1] MCL 460.6t(4). Despite this, UPPCO chose not to submit a waiver. Staff Exhibit S-2.0 is a listing of the Commission's IRP filing requirements and Exhibit S-2.1 provides a listing of filing requirement that UPPCO's initial filing met as well as those filing requirements that were met in subsequent filings. See Exhibit s S-2.0 and S-2.1. 2 Tr 241-242.

Staff argues that because UPPCO could have requested a waiver of certain filing requirements the fact that UPPCO's initial IRP filing were not complete does not mean that UPPCO's IRP should be denied. 2 Tr 244. Staff witness Proudfoot testified that UPPCO should have filed a waiver no less than 60 days prior to filing its IRP, that UPPCO may file a waiver any time before this matter is closed, and the Commission may grant the waiver before issuing a final order in this matter. 2 Tr 236. UPPCO witness Schiller and Haehnel testified that UPPCO was aware that it could request a waiver of the Commission's IRP filing reequipment's but did not do so because UPPCO believes that its IRP filings comply with all required and recommended modeling scenarios, assumptions, inputs, and resources. 2 Tr 37 .

Staff argues in its Brief that despite UPPCO's initial IRP filing faults Staff recommends that the Commission use its authority under, MCL 460.6t(4), and issue an order which where appropriate, waives UPPCO's integrated resource plan filing requirements consistent with Staff's recommendation outlined in it is Brief. Staff indicated in its Brief that although UPPCO's initial IRP filings were incomplete Staff was able to obtain information from UPPCO through discovery requests, phone conversations, one-on-one meetings and former cases satisfy the initial filing requirements. Staff argues that any remaining IRP requirements that were not fulfilled did not impact UPPCO's PCA. See 2 Tr 235-236. Staff recommends that the Commission approve UPPCO's IRP, given UPPCO's eligibility for waivers from filing requirements and Staff's discovery requests and testimony, as well as the numerous positive aspects of the IRP and PCA.

Staff indicate in its Brief that UPPCO's operating assumptions used to model its proposed 20 MW RICE units and UPPCO's existing units are reasonable.

1. **<u>Heat Rates</u>**

UPPCO provided heat rates for its proposed 20 MW RICE unit in a workpaper that accompanied its application. In response to Staff discovery requests UPPCO provided assumed heat rates and other operating conditions for its existing thermal generation resources. See Exhibit S-5.3. Staff witness Jonathan DeCooman testified that Staff reviewed the documents provided, as well as UPPCO modifications. 2 Tr. 303-306.

No party filed direct or rebuttal testimony which disputes the heat rates provided by UPPCO for its existing and proposed 20 MW RICE unit. Staff recommends that the heat rates supplied by UPPCO be approved because they are appropriate and reasonable.

2. Capacity Factors

Staff witness DeCooman testified that UPPCO provided the components of the capacity factor in response to a Staff discovery request. Staff witness DeCooman reviewed UPPCO's capacity factors for select modeling and compared the capacity factors to publicly available capacity factor data by fuel source. See 2 Tr. 302-303.

Staff disagrees with Circle Power's witness Christopher Moore's rebuttal testimony that UPPCO's proposed RICE unit capacity factor modeling are unreasonable. See 2 Tr 525-526. Witness Moore testified that Staff found that UPPCO's capacity modeling lacked historical operational data for RICE generation units in Michigan's Upper Peninsula. Witness Moore PLEXOS modeling software uses a methodology which determines the capacity factor on a unit basis in each modeling run, indicating that this method is not useful because it is not based on national averages, nor historical averages. *Id.* Witness Moore testified that UPPCO's capacity factors for RICE generation resources are not only unreasonable, but "cannot be justified by comparing them to a national average." See 2 Tr. 525) Staff witness Heidemann testified that a simple average locational marginal price (LMP) may be less reflective of the capacity potential for RICE within UPPCO's portfolio. Witness Heidemann testified that PLEXOS is dynamic and designed to show the full potential of flexible resource like a RICE facility which can ramp up quickly in response to extreme spikes in the market. See 2 Tr 260. Staff believes that the PLEXOS modeling used by UPPCO was an appropriate means to determine UPPCO's future capacity based on a new and existing resources and UPPCO's use of the Michigan MISO hub is likely to under-predict the value of the proposed RICE generation facility. See 2 Tr 361.

Staff argues the Circle Power's witness Moore neither explained why UPPCO's RICE generation capacity factor modeling nor Staff's comparison of capacity factors to publicly available data on a national basis is flawed. Staff argues that UPPCO utilized the best available PLEXOS modeling and data to model a portfolio including RICE, to projected scenarios. Staff recommends that the Commission find that UPPCO's capacity factors for existing and proposed new generation units are reasonable.

Staff argues that UPPCO's PCA 125 MW solar request for proposal (RFP) would have been chosen despite high modeling inputs because its levelized cost is under the National Renewable Energy Laboratory (NREL).

Staff indicated in its Brief that UPPCO's PCA modeling inputs are high due to an additional 20% owner's cost. In its filing, UPPCO's modeling used a modified version of the NREL Annual Technology Base (ATB) for resource characteristics and costs. See Staff Exhibit S-6.0. UPPCO retained the consulting firm of Black and Veatch (B&V), to assist UPPCO with the preparation of its IRP. The B&V report used the NREL ATB as the basis for the costs, and then assumed an incremental 20% owner's cost applied to overnight capital cost (OCC) for each resource option. The B&V report explains the 20% owner's cost as a standard owner's cost rate that B&V applies to all projects based on its experience in related project See Brief p 12; Staff Exhibit S-6.1, 6.2.

Staff witness Matthews testified that Staff found that UPPCO's use of the 2017 NREL ATB was reasonable but questioned the addition of the 20% owners cost modification because addition is a duplication of what already included in NREL cost estimates. See 2 Tr 313-314

3. <u>Natural Gas Forecasts</u>

UPPCO provided natural gas price forecasts under the Business as Usual (BAU), Emerging Technology, and the High Market Price Sensitivities. Staff witness Mckinde testified that UPPCO provided additional information in discovery, regarding delivered natural gas prices for its existing and new utility owned generating plants. 2 Tr 280. UPPCO's long-term price forecast is based on an annual Henry Hub price forecast using publicly available natural gas data from the 2018 Energy Information Administration (EIA) Annual Energy Outlook. 2 Tr 281. Staff believes the projections of delivered fuel prices are reasonable and the methods used in developing the price forecasts are appropriate. Staff recommends that Commission approve UPPCO's natural gas forecasts. Brief p 13.

Circle Power witness Moore testified that the 20% uplift for owner's costs is unreasonable and not appropriate because the NREL ATB estimates already include owner's costs. See 2 Tr. 500. Staff witness Matthews agrees with Circle Power that including a 20% addition to the NREL ATB estimates resulted in artificially high modeling costs for renewable energy, but Staff argues that this did not materially affect the outcome of UPPCO's modeling. See 2 Tr. 315. Witness Matthews testified that despite the fact that UPPCO's modeling for renewables was artificially high, UPPCO's PCA 125 MW solar RFP would have been chosen because the solar RFP's levelized cost was under the NREL estimated cost. See 2 Tr. 315. Witness Matthews further testified that the 125 MW solar unit would provide the added benefit of improving UPPCO system reliability.

Staff recommends the Commission approve and accept UPPCO's capacity factors.

4. PSCR capacity and energy price forecasts are reasonable.

UPPCO witness Haehnel testified that Exhibit A-8 provides UPPCO's capacity and energy price forecast and an as part of its PSCR savings calculation. See 2 Tr 68a; Exhibit A-8. Exhibit A-10 to A-12 provides UPPCO's PSCR savings calculation for energy and capacity savings recovered through the PSCR. See Exhibits A-10 to A-12. UPPCO's PSCR savings would only result if UPPCO's plan is implemented and if energy and capacity are not purchased on market. Staff Witness Kindschy testified that UPPCO's proposal to move its Hoist and McClure hydro units in front of the meter, would result in only PSCR capacity savings because these resources currently provide energy to customers. 2 Tr 342.

UPPCO uses the LMPs from its most recent avoided cost calculation in accordance with the Public Utilities Regulatory Policy Act of 1978 (PURPA), and the Commission's order in U-18094. To assess this forecast, Staff compared these LMP price estimates with UPPCO's 2019 PSCR plan in U-20229. In its 2019 PSCR plan, UPPCO provides a forecast of purchases of energy from MISO as well as its short-term energy purchases.

Staff Witness Kindschy testified that Exhibit A-1 shows that UPPCO in U-20229, projected its short-term energy purchases to be $35.85/MWh in 2019 and $33.78/MWh in 2020. Exhibit A-1 also shows that UPPCO projects its purchases from MISO to be $41.37/MWh in 2019, and approximately $40/MWh and ending at $40.55/MWh in 2023. See 2 Tr 342-343. UPPCO uses LMP prices from its most recent PURPA case for the PSCR savings shown on Exhibit A-10. Witness Kindschy testified that is consistent with 5-year forecast provided in UPPCO's 2019 PSCR plan case. Staff concludes that

UPPCO's calculation of its energy related PSCR savings is reasonable and recommends the Commission adopt Staff's finding.

Staff witness Kindschy testified that UPPCOs PSCR savings calculation also includes capacity cost savings from capacity the UPPCO will not be required to purchase to meet its planning requirements. This savings consists of 50% of the Midwest Independent System Operator (MISO) Cost of New Entry (CONE) for the 2018-2019 planning year plus a risk premium. UPPCO's baseline 50% of CONE capacity savings amount is based on an independent forecast and UPPCO's recent experience with obtaining capacity. See 2 Tr. 343; Exhibit S-8.

Witness Kindschy testified that to allow for capacity price volatility UPPCO added a risk premium to its baseline amount. The risk premium is calculated by taking the difference between UPPCO's capacity contract from Dairyland in 2020/21 of $15,000/ZRC-year and the MISO Planning Resource Auction (PRA) clearing price. If UPPCO calculated the risk premium using the MISO PRA for 2018 and 2019 and the capacity contract rates for the same time period, then the risk premium would have been $26,350/MW-year in 2018 and $22,091.35/MW-year in 2019. (*Id.*) Witness Kindschy testified that Staff concluded that UPPCO's projected capacity price forecast used in the capacity savings calculation is reasonable given the risk of increased future capacity costs. UPPCO's proposed RICE unit and solar PPA should eliminate UPPCO's need to purchase ZRCs and/or capacity in the PRA. This would result in capacity savings through the PSCR process. See 2 Tr 344.

Staff recommends the Commission adopt and approve UPPCO's energy and capacity price PSCR savings forecasts.

Staff witness Heidemann testified that he believes UPPCO’s use of an energy price forecasting hourly zonal model is reasonable because sub- hourly simulations:

- Provide additional granularity and accuracy to pricing data, but are significantly more expensive than the hourly models; and
- Increase the computational time significantly without resulting in a different build plan or more accurate prediction of costs.

Witness Heidemann concluded that UPPCO’s use of a Michigan hub hourly zonal model was a reasonable model for determining UPPCO’s energy price forecasts. 2 Tr 351.

Witness Heidemann testified that UPPCO used the Michigan Hub as the pricing node for its PROMOD modeling to determine the energy price for UPPCO’s service territory. If UPPCO had separated the Michigan portion of MISO Resource Planning Zone 2 or used the Integrated Modal model it would produce a more useful market price forecast. Because the Michigan Hub is geographically and electrically farther away from UPPCO’s service territory energy price data is more than likely lower than UPPCO’s future energy prices*. Id.*

Witness Heidemann testified that Staff does not believe that UPPCO’s use of the Michigan Hub effected UPPCO’s IRP proposed action because UPPCO’s use of the Integrated Node as the energy price location would have only improved the PCA’s performance. 2 Tr 352. Additionally, if UPPCO’s PLEXOS capacity expansion model assumed an UPPCO and MISO modeling zone both zones are connected by transmission links with a set transmission limit. Staff believes UPPCO’s capacity expansion modeling assumptions are reasonable because the amount of UPPCO’s PCA generation additions is relatively small when compared to the total MISO Zone 2 generation. See 2 Tr 353; Brief p 17.

5. <u>IRP scenarios and sensitivities were proper and support the PCA.</u>

Witness Heidemann testified that UPPCO's initial IRP filings did not include all MIRPP scenarios and sensitivities. However, UPPCO in discovery responses provided enough information to enable Staff to assess whether UPPCO's IRP was the most reasonable and prudent means to meeting its energy requirements. Additionally, Staff concluded that given UPPCO's small size the Commission could grant UPPCO an Act 341 waiver from executing every scenario and sensitivity. 2 Tr 354.

UPPCO's IRP did not include three MIRPP required scenario and sensitivity modeling. UPPCO's IRP includes a 50% Renewable Portfolio Standard (RPS) scenario by 2030 which exceeds the MIRPP goal of 25% RPS by 2030. 2 Tr 353. Staff testified that UPPCO's proposed 50% RPS by 2030 exceeds the required MIRPP scenarios.

UPPCO's IRP did not include under its Business As Usual (BAU) model a 2.5% Energy Waste Resource (EWR). See Exhibit S-9.2. UPPCO indicated in a response to a Staff discovery request that it chose to have a 2.5% EWR as an available resource alternative for all BAU sensitivities so it did not include it under any BAU sensitivity.

UPPCO did not include a 50% load sensitivity because it concluded it was redundant. In a response to a Staff discovery request UPPCO indicated that including a 50% return of choice load sensitivity would be redundant because the 1.5% load growth sensitivity resulted in a larger load growth than the 50% return of choice load methodology. See 2 Tr 354. Witness Heidemann testified that Staff did not require UPPCO to perform this additional sensitivity because it would produce no meaningful results and would increase cost to rate payers. See 2 Tr 354. Staff's positions regarding MIRPP scenarios and sensitives are not opposed by any other party to this case.

6. <u>125 MW Solar PPA</u>

Witness Heidemann testified that UPPCO's PLEXOS modeling results show that the PCA without the proposed RICE unit is the lowest cost plan and confirms the affordability of UPPCO's proposed solar PPA. 2 Tr 355.

Witness Heidemann testified that three variables considered in UPPCO's PPA sensitivity analysis models (capital cost, solar capacity factor, and market capacity price) resulted in UPPCO customer savings and would provide substantial benefits with low risks to UPPCO customers. See 2 Tr 355; 2 Tr 359. UPPCO's B&V PLEXOS model shows the 125 Solar PPA is the lowest cost option despite the modeling undervaluing UPPCO's owned or contracted resources. 2 Tr 355.

CARE witness Jester agrees with Staff and CARE supports UPPCO proposed PPA. Witness Jester testified that according to UPPCO's B&V's PLEXOS model the solar PPA had the lowest levelized cost (2 Tr 41) and would allow UPPCO to hedge risks due to the renewable nature of the Solar PPA. See 2 Tr 411 and CARE Brief p.5.

ABATE does not support UPPCO's proposed Solar PPA because it believes that there is a high probability that the PPA would be a net cost to rate payers. In Exhibit AB-1 ABATE witness Alderson completed a sensitivity analysis which witness Alderson believes supports ABATE's position. See AB-1.

Witness Heidemann testified that Staff considered the capacity price forecast in ABATE's analysis and concluded that it was unreasonable because it uses the PRA capacity price as a starting point. 3 Tr 376. Witness Heidemann also testified that Staff found numerous errors in ABATE's calculations. After ABATE's errors are corrected the data shows that there are more cases in which the solar PPA is a benefit to customers. Cases where the PPA is a cost to customers are clustered near the breakeven point. Staff Heidemann after reviewing Staff and ABATE calculations concluded that there are more situations that show UPPCO customer benefits than rate payer liability. 2 Tr 377.

ABATE witness Alderson testified that UPPCO did not evaluate the risk of lower natural gas prices associated with UPPCO's 125 MW Solar PPA. Staff witness Heidemann testified that UPPCO's modeling did consider the risk of lower gas prices. UPPCO's B&V analysis ran a Monte Carlo risk analysis that shows the solar PPA is the least sensitive to natural gas price changes of any alternative plan. 2 Tr 374. In the B&V modeling when the natural gas price was altered, the solar PPA provided greater stability than UPPCO's current approach of purchasing natural gas on the market. 2 Tr 374.

Staff recommends the Commission find that UPPCO's proposed 125 MW solar PPA is part of the most reasonable and prudent plan for meeting UPPCO's energy needs from a transmission perspective. 2 TR 355. Brief p 18.

Staff recommends that UPPCO's future IRP modeling continue to use a chronological dispatch model with hour granularity. Witness Heidemann testified that chronological dispatch models better capture the interactions of non-dispatchable resources, traditional resources, and energy storage. 2 Tr 361. Staff also recommends that UPPCO use either a nodal model or a zonal model, with the UPPCO local balancing authority (LBA) as a separate modeling zone within MISO Zone 2. (*Id*.) Witness Heidemann testified that the use of a nodal model would:

- Allow UPPCO to capture the effects of congestion and transmission constraints;
- Properly value localized generation; and
- Would be less computationally expensive.

2 TR 362

A nodal model, however, would not capture congestion and would only value localized generation. (*Id*.) Staff also recommends that in future IRPs UPPCO provide a model license with input and output files; a non-executable model along with input and output files; and screen captures of all inputs as they appear in the model with input and output data in a readable electronic format with clearly identified sources. (*Id*.)

Staff recommends Commission approval of UPPCO's IRP transmission analysis for modeling purposes. Brief p 20.

7. <u>Stakeholder Engagement</u>

Staff witness Mullikoff testified that UPPCO's filing shows that UPPCO complied with the Commission's stakeholder engagement filing requirements. Witness Mullikoff testified that Staff recommends that UPPCO continue to involve and engage with stakeholders during the implementation of its PCA. 2 Tr 271. Neither UPPCO nor did any parties address this IRP requirement. Staff recommends the Commission find that UPPCO's stakeholder engagement was adequate. Brief p 20.

8. <u>Proposed 20 MW RICE Unit</u>

Staff recommends, pursuant to MCL 460.6t(6), that UPPCO's RFP soliciting responses for construction of up to 20 megawatts of reciprocating internal combustion engine (RICE) generation be found reasonable, UPPCO's Exhibit A-24 and witness Tripp provides details regarding the need for this new generation resource. Exhibit A-24 also includes UPPCO's RFP. Confidential Exhibit A-25 provides preliminary RICE unit costs. Exhibit A-8 provides updated cost information. Witness Tripp testified that UPPCO contracted for RFP services through WSP to act as an independent administrator for the RFP process to ensure an unbiased bidding process. 2 Tr 162-164.

Staff witness DeCooman testified that Staff reviewed UPPCO's RFP process filings and, verified that UPCCO's RFP complied with relevant sections of the Commission's IRP Filing Requirements. 2 Tr 297-299. Staff's initial review produced several questions. Those questions were subsequently addressed in UPPCO's discovery responses. Staff ultimately recommended the Commission grant waivers for UPPCO's deficient filing requirements and find UPPCO's RFP to be reasonable. See Exhibit S-5.2; 2 Tr 299.

ABATE witness Amanda Alderson in her rebuttal testimony testified that the Commission should not grant a waiver of certain RFP filing requirements related to UPPCO's proposed RICE generation. See 2 Tr 483. Witness Alderson testified that without the required power purchase agreement (PPA) option, the Commission cannot make an informed decision on whether the utility-owned proposal filed is the most reasonable and prudent means of meeting UPPCO's load obligations. Id.

Witness Alderson further states that Staff has not supported its valuing of the UPPCO's explanation for the lack of a PPA option over the cost differential between these two alternatives [utility owned vs. PPA]. Id. Staff recommends that the Commission grant UPPCO a waiver for these filing requirements and find that UPPCO's RFP for RICE generation is reasonable.

9. Regional Transmission and the RICE Unit

Staff argues in its Brief that Staff supports UPPCO's PCA transmission analysis and proposed RICE unit's potential to improve UPPCO's grid reliability and the ability of the RICE unit and proposed solar PPA to connect to UPPCO's existing transmission system. Staff argues that despite the fact that UPPCO's IRP fails to articulate a specific IRP Transmission Analysis filing requirement, this omission should not prevent Commission approval of UPPCO's PCA. Staff argues the entire record supports UPPCO's PCA. Brief p 22.

Staff witness Hiedemann testified that UPPCO met and communicated with the American Transmission UPPCO (ATC) regarding possible transmission solutions as required by the Commission's IRP filing requirements. See 2 Tr 366. However, witness Heidemann believes that UPPCO neither fully justified the need for new generation in light of existing transmission and system reliability, nor did UPPCO fully address interconnection issues. Witness Heidemann testified that after Staff completed a complete analysis of UPPCO's IRP filings Staff concluded that UPPCO's IRP PCA filings meets the filing requirement XII.

UPPCO's filing and testimony show that its IRP includes an analysis of interconnection issues. Witness Heidemann testified that Michigan's Upper Peninsula's transmission network has been extensively studied and no significant transmission changes have occurred during the past three years. 2 Tr 366. Each year ATC performs a ten-year assessment. A 2016 ATC study found that, any node within UPPCO's subzones could accommodate UPPCO's proposed 20 MW RICE generation unit. See 2 Tr 367. UPPCO's witness testimony includes an engineering level estimate of transmission interconnection costs for the RICE unit. Staff witness Heidemann testified that UPPCO's proposed RICE units project must be fully vetted through the MISO generation interconnection process before final costs can be determined. (*Id*.) Therefore, Staff determined that the interconnection of UPPCO's proposed RICE unit is feasible but, given the MISO review and resulting cost estimates, Staff does not recommend approval of the RICE unit interconnection costs. Brief p 23.

Witness Heidemann testified that UPPCO's proposed solar PPA has completed the third and final definitive planning phase and is waiting for ATC to finalize the interconnection agreement. 2 Tr 368. Because the solar PPA interconnection costs are fixed, and are recovered through the PPA contract price, Staff does not believe that an analysis of the PPA's feasibility and inter connection costs is necessary. *Id*.

Staff argues that UPPCO should have demonstrated compliance with filing requirement XII(e), by showing the RICE unit's ability to add to the reliability of the transmission grid,. Additionally, UPPCO should have referenced the recent transmission studies provided in Staff's initial testimony. Staff Exhibit S-9.11 provides two ATC studies; the MISO Michigan Phase II Study and the September 2016 Upper Peninsula Generation Integration Screening Study. See Exhibit S-9.11: 2 Tr 371. UPPCO addresses these studies in its rebuttal testimony. See 2 Tr 130. Staff does not believe that UPPCO's omission is a valid reason to reject UPPCO's IRP or PCA. Witness Heidemann testified that some of the information supporting the need for UPPCO's RICE plant includes critical energy infrastructure information (CEII). Because CEII information may only be reviewed after obtaining FERC approval, and no such approval has been obtained, Staff redacted the information. 2 Tr 369.

Staff argues that UPPCO's proposed RICE unit is necessary and would add reliability to the Upper Peninsula, specifically to the Inland Line, and would help mitigate risks, such as grid disruptions. Witness Heidemann testified that on April 1, 2018 a ship's anchor struck the Mackinaw straits line 5 and sliced 3 of ATC's 6 underwater power cables. 2 Tr 370. The cable network serving the Upper Peninsula consists of six cables making up 2 electrical circuits. The loss of one electrical circuit would jeopardize the Upper Peninsula's power grid. Staff argues that UPPCO's RICE generator plan would allow the Upper Peninsula to become more energy independent. Brief p 24. MISO's Michigan Phase II Study dated August 2016 (S-9.12) found that the Eastern Upper Peninsula transmission network should be strengthened. The study found that locating a RICE unit in the same area would not provide an economic or cost benefit. But Staff argues the study did not consider the particulars of UPPCO's PCA. See 2 TR 368. UPPCO's proposed RICE facility is smaller and more affordable than those 100 MW units considered in that study. Additionally, UPPCO's proposed RICE unit would be located in a critical transmission corridor that was not considered in the Phase II Study. 2 Tr 369. Therefore, Staff concluded that UPPCO's 20 MW RICE unit is important to the UP's reliability because it would provide new generation in a key location. Brief pp 24-25.

10. <u>PCA is adequate for its energy and capacity needs</u>

MCL 460.6t(5) requires UPPCO to demonstrate in its IRP that it has identified its capacity and energy needs for all of the resources (supply-side and demand-side, utility-owned, and purchased resources) that it plans to use to meet its current and projected needs. Staff witness Proudfoot testified that UPPCO's IRP includes data about the utility's existing generation fleet and analyzes the cost and viability of all reasonable options available to meet projected energy and capacity needs. 2 Tr 232. Staff argues that UPPCO's IRP is reasonable and identifies a portfolio of resources for meeting energy and capacity needs, including RE, DR, and EWR. Therefore, Staff recommends Commission approve UPPCO's portfolio of resources, and that the Commission order UPPCO to seek continuous improvement.

11. Demand Response

MCL 460.6t (f) (iii) requires UPPCO to model Demand Response (DR) in the form of projected load management, projected costs, and DR savings within its IRP. See MCL 460.1095. Sec. 95(1) of the Clean and Renewable Energy and Energy Waste Reduction Act requires the Commission to "promote load management in appropriate circumstances..." and "actively pursue increasing public awareness of load management" among other activities. Utilities are required to include DR in their IRPs. Utilities that recover costs for Advanced Metering Infrastructure (AMI) programs are required to "offer commission-approved demand response programs." See MCL 460.1095.

Staff witness Tiwana testified that Staff rejects UPPCO's belief that additional Demand Response (DR) would not be cost-effective. See 2 Tr 336. UPPCO witness Haehnel testified that 52% of UPPCO's total capacity requirement is served under "the UPPCO's Real Time Market Pricing tariff or is otherwise interruptible." See 2 Tr 42. Staff witness Tiwana testified that UPPCO's current substantial interruptible load appears sufficient to satisfy the requirements of IRP. UPPCO neither provided information to support its claim that additional DR would not be cost-effective, nor did UPPCO model other approaches. UPPCO did indicate that most of its industrial and commercial customers already belong to a DR program.

Staff witness Tiwan testified that Staff recommends UPPCO consider additional DR efforts in future IRP filings after the completion of UPPCO's AMI program roll-out, approved in U-20276. The Michigan Demand Response Potential Study provides that AMI meters are needed for 8 specified DR programs. 2 TR 337. Despite UPPCO's current DR efforts Staff encourages UPPCO to continue to further pursue DR as it implements its AMI program. Brief p 27.

12. <u>Energy Waste Reduction (EWR)_Plan</u>

Staff witness Proudfoot testified that in an IRP case, the highest level of EWR resources that are cost-effective and achievable should be considered for future implementation. 2 Tr 221. The Clean and Renewable Energy and Energy Waste Reduction Act, Act 295 of 2008, as amended by PA 342 of 2016, establishes energy efficiency and energy optimization standards. IRP cost projections help determine whether EWR should be increased for planning purposes. (*Id*.) MCL 460.6t5(d) states that an IRP should include "a utility's plan to eliminate energy waste, including the total amount of energy waste reduction expected to be achieved annually, the cost of the plan, and the expected savings for its retail customers." Specific EWR programs should then be included in a future biennial EWR plan case or amendment with updated cost projections. 2 Tr 234.

The incremental costs related to specific EWR programs are recovered in the EWR surcharge and trued up in annual EWR reconciliation cases. Act 295 of 2008, as amended by PA 342 of 2016. The EWR proposed in an IRP is exploratory and a percentage of projected EWR is chosen, to be followed up in a future EWR plan, as to the execution of the plan, and reconciliation to true-up costs.

13. <u>Increase EWR to 1.65% in 2020 and 1.75% in 2021.</u>

UPPCO requests approval of I a PCA which is based on an EWR goal of 1.5% in 2020. See 2 Tr 88. Staff witness Banks recommends that the Commission order UPPCO to increase its EWR goal from 1.5 to 1.65% in 2020 and 1.75% in 2021, with the details to be determined in its EWR plan case. 2. Tr 322. Witness Banks testified that since 2009 UPPCO has achieved a 1% EWR using the State EWR Administrator. In 2018 UPPCO decided to self- administer it EWR program. Prior to 2018 UPPCO through the State EWR Administrator was able to increase its EWR savings by 110% of the legal minimum in 2017. Witness Banks testified that the State EWR Administrator was able to increase savings to 217% of the legislated standard in 2017, while contracting with same contractors who provide service through the State EWR Plan program. See 2 Tr 323. Staff believes that UPPCO's EWR is underperforming.

Staff witness Banks testified that EWR programs are beneficial to UPPCO's economically challenged customers, known as Asset Limited Income Constrained Employed (ALICE). 2 Tr 323. Approximately 43% of Michigan households are below the ALICE threshold and UPPCO's customers are more economically challenged than Michigan's average Michigan electric eutomer. 2 TR 324. Witness Banks testified that Staff recommends the Commission direct UPPCO to explore expanding its EWR programs for low income customers to include ALICE ratepayers. 2 Tr 324-325. Witness Banks testified that Staff disagrees with UPPCO's argument that expanding UPPCO's EWR would not be cost effective because PA 295 "exempts low income programs from cost effectiveness and no other utility in the state has attempted to make their low-income programs cost effective."

Staff witness Banks testified that Staff recommends the Commission direct UPPCO to "steer its EWR program away from its over reliance on the cheap and easy programs, or programs which yield high savings with low investment, and invest in those measures which will have a more significant and longer lasting impact on their rate payers, especially in the low income area." 2 Tr 327. Staff recommends program that partners with the "Menominee-Delta-Schoolcraft Community Action Agency (CAA) or the Michigan Department of Health and Human Services (MDHHS), Community Development Lead Hazard Control," to help reduce energy costs while helping to eliminate lead from homes. Staff opines that AMI could help identify customers would high usage because "this is a symptom of poor housing stock." 2 Tr 328. Witness Banks testified that UPPCO's targeting of ALICE customers could help reduce uncollectible or bad debt, because UPPCO could partner with other government and private agencies to promote weatherization. 2 Tr 330-331. Witness Banks further testified that Staff believes that UPPCO customer engagement would allow UPPCO to view the EWR program as a benefit to UPPCO and its customers. 2 Tr 331. Therefore, Staff requests that the Commission adopt UPPCO's EWR IRP goals with the EWR details and funding to be determined in UPPCO's pending EWR case. Brief p 29.

14. <u>Preapproval of Solar PPA Capital and IRP Filing Costs and Portage CT Insurance costs are outside the scope of an ACT 341 IRP.</u>

Staff argues in its Brief that UPPCO's request for cost pre-approval is premature, outside the scope of IRP proceeding, and should be considered in UPPCO's next general rate case. Specifically, Staff believes that UPPCO's request for pre-approval of the following costs in an IRP proceeding are outside the scope of this proceeding: Solar PPA cost for capital and other costs, IRP filing costs, and the UPPCO's Portage CT unit insurance settlement proceeds.

UPPCO indicated in its PCA that it will enter into a PPA with a new Upper Peninsula 125 MW solar facility. See 2 Tr 39. Staff witness Hadala testified that UPPCO's current renewable energy portfolio currently exceeds the mandated 15% renewable portfolio standard. Therefore, it would not be appropriate for UPPCO to recover costs from renewable energy generation through renewable energy plans. See 2 Tr 385. Staff witness Matthews testified that Staff believes that UPPCO's recovery of costs associated it Solar project RFP should be sought in UPPCO's next general rate case and not in the Commission's order in UPPCO's IRP case. See 2 Tr 3-16- 317. Staff indicated in its brief that no other parties addressed the issue of cost recovery for this portion of UPPCO's renewable energy. Brief p 30.

15. <u>Regulatory Asset For IRP Filing Costs</u>

Staff argues in its brief that the Commission should deny UPPCO's request to "approve the establishment of a regulatory asset which provides for the full recovery of all IRP related costs pursuant to Section 6t of 2016 PA 341, MCL 460.6t, and all other applicable laws. UPPCO witness Haehnel testified that UPPCO proposes to amortize the value of the regulatory asset over a rolling five-year term to fully amortized the costs before the Commission's ruling in UPPCO's next IRP case filing which will take place five years after February 12, 2019. See 2 Tr 70-71. In response, Staff witness Nichols, testified that because UPPCO's IRP costs are not currently known it would be unreasonable to approve a 'blank check' for these costs. (2 Tr 685-Confidential.) Staff argues that UPPCO's IRP filing costs be deferred and a regulatory asset for IRP costs should be requested by UPPCO in its next general rate case. Brief p 31.

Staff argues that if the Commission approves a regulatory asset for UPPCO's IRP filing costs the regulatory asset cap or cost limit should be established to prevent a "blank check" regulatory asset. Staff witness Nichols testified that because this alternative approach would not allow for a review of the IRP costs prior to approval of the regulatory asset, therefore it is a less preferred method. 2 Tr 685.

16. <u>Portage Facility Insurance Proceeds</u>

Staff argues in its Brief that the Commission should reject UPPCO's request that "[d]ue to the recent catastrophic mechanical failure at UPPCO's Portage generation facility and pending the current and ongoing insurance investigation and evaluation process, UPPCO seeks approval to apply any insurance payout as a direct credit to the proposed RICE generation, thereby directly lowering costs to customers." See 2 Tr 70. Staff witness Nichols testified that Commission's approval of UPPCO request would be inconsistent with the Federal Energy Regulatory Commission Uniform System of Accounts (FERC USoA). See 2 Tr 683-Confidential. Brief p 32.

In Exhibit S-11.7, UPPCO indicates that the unrecovered book value of the Portage facility is $276,683.83 and UPPCO has settled with the insurance provider regarding the damage to the Portage facility. Staff witness Nichol testified that any insurance proceeds received in *excess* of the remaining book value of the Portage generation facility asset, should be booked as a regulatory liability, owed to ratepayers, not a gain to UPPCO's shareholders because insurance expense is borne by UPPCO's rate payers in rates.

See 2 Tr 683-Confidential. Staff recommends that the accounting treatment of any insurance payout be addressed in the UPPCO's next general rate case.

Staff witness Proudfoot testified that Staff recommends that the Commission find that any UPPCO sunk costs, such as the unrecovered book value, are outside the scope of this section 6t IRP case which is designed to approve forward-looking plans. 2 Tr 214.

UPPCO witness Haehnel testified that UPPCO seeks Commission approval to apply any insurance payout as a direct credit to the proposed RICE generation unit in order to lower cost to customers. See 2 Tr 70. The Federal Energy Regulatory Commission Uniform System of Accounts (FERC USoA) Electric Plant Instructions provided in pertinent part:

> "All amounts included in the accounts for electric plant acquired as an operating unit or system, except as otherwise provided in the texts of the intangible plant accounts, shall be stated at the cost incurred by the person who first devoted the property to utility service"

Staff argues that the Commission's approval of UPPCO's requesting accounting treatment of insurance proceeds in an IRP case would be inappropriate and inconsistent with the FERC USoA accounting standards. Staff argues that the Commission should consider UPPCO's requested accounting treatment of any insurance payout in the UPPCO's next general rate case. Brief p 33.

17. <u>Hoist and McClure Units</u>

Staff in its Brief recommends that the Commission approve UPPCO's move of the Hoist and McClure units from behind the meter to in-front-of-the-meter. Staff believes this move is reasonable and may appropriately be considered in an IRP proceeding because

UPPCO is not seeking cost recovery in this case. UPPCO witness Tripp testified that the move increases the capacity that the Midcontinent Independent System Operator (MISO) credits to these units. 2 Tr 161-162. Witness Trip testified that the move is complete and UPPCO has received notification from the MISO that this move was complete as of March 1, 2019. 2 Tr 162. Exhibit S-5.0 provides total cost of this move, as well as the instant case were recovery of these costs was requested. Staff recommends the Commission approve UPPCO's move of the Hoist and McClure units to in-front-of-the-meter be found reasonable, with no associated costs requested or approved in this case.

CARE witness Jester testified that CARE supports UPPCO's move of the Hoist and McClure units to in-front-of-the-meter. 2 Tr 436.

18. UPPCO's proposed financial compensation mechanism (FCM) for its proposed solar PPA is unreasonable

Staff argues in its Brief that UPPCO's proposed financial compensation mechanism (FCM) to be applied to UPPCO's long-term, 25-year, fixed price solar PPA, be rejected because UPPCO's proposal is too high is not necessary to incentivize the solar PPA. Brief p 34. FCM under PA 341 of 2016, is addressed in MCL 460.6t(15). Section 6t(15) provides in pertinent part:

> For power purchase agreements that a utility enters into after the effective date of the amendatory act that added this section with an entity that is not affiliated with that utility, the commission shall consider and may authorize a financial incentive for that utility that does not exceed the utility's weighted average cost of capacity.

Staff argues that UPPCO has a sufficient incentive to enter into its new solar PPA and does not need an FCM. Witness Haehnel testified that UPPCO has relied heavily on

PPAs in the past so UPPCO decided a solar PPA was the optimal choice. 2 Tr 48. UPPCO raised its energy and capacity targets for purchases from the 20 MW, to 125 MW, based on B & V's modeling. (*Id.*) Staff argues that UPPCO has no plans to bid the PPA in the future yet UPPCO is requesting an incentive to do so rather than building more UPPCO owned generation.

Staff argues that UPPCO's proposed FCM is not valid because it inappropriately combines an imputed debt offset mechanism into the calculation for a PPA incentive. UPPCO's proposal results in a return that is much higher than UPPCO's weighted average cost of capital (WACC), the cap allowed under PA 341 of 2016, MCL 460.6t(15).Brief p 35.

UPPCO witness Haehnel testified that UPPCO's FCM proposal mirrors Consumers Energy's "proposed FCM in its IRP proceeding, in U-20165." 2 Tr. 568-Confidential. UPPCO argues its FCM proposal differs from Consumers U-20165 FCM because it cites to a California Public Utility Commission whitepaper for its proposed FCM. Staff argues the whitepaper does not support UPPCO's FCM. Staff witness Nichol testified that UPPCO's FCM imputes new equity to offset imputed debt and collects this via an adder to the PPA bid. See 2 Tr 676-677. Exhibit S-11.1 includes California Public Utility Commission whitepaper that UPPCO relies upon. See Exhibit S-11.1. Witness Nichols testified that UPPCO's FCM proposal should be considered in a cost of capital proceeding and not in an IRP proceeding. As Staff witness Nichols testified, cost of capital proceedings in Michigan are rate cases. 2 Tr 678-679. Therefore, Staff recommends that UPPCO's FCM proposal imputed debt be considered in a rate case, not as an incentive in an IRP. Staff Brief p 36.

19. If the Commission approves and FCM Staff prefers an FCM not tied to Imputed Debt.

Staff argues that Act 341, section 6t(15) permits, but does not require, the Commission to approve UPPCO's FCM and does not limit how the Commission structures an incentive, except for mandating a cap. Witness Nichol testified that Staff supports an FCM similar to Consumers approved FCM. Staff witness Nichols provides recommended FCM terms and conditions in his testimony. See 2 Tr 681-682. Staff also provides Staff proposed FCM language on page 36-37 of its brief.

Witness Nichols testified that UPPCO FCM's max rate should be UPPCO's After-Tax WACC or 6.91%. See 2 Tr 682-683 -Confidential. Because UPPCO's WACC may be too high Witness Nichols testified that another reasonable alternative would be to limit the rate to the 5.88% rate approved for Consumers FCM in U-20165. Staff argues that because the FCM is an incentive and not for a required return the rate it can be any amount the Commission finds appropriate between zero and the statutory maximum of the WACC. Staff witness Proudfoot notes in his testimony that the Commission rejected the DTE Electric UPPCO's proposed consideration of imputed debt in its renewable energy plan case U-15806 because imputed debt should be considered in a rate case. 2 Tr 225. Staff argues in its brief that the Commission decision with regard to UPPCO's FCM should be consistent with the Commission's decision in U-15806.

20. If an FCM is approved Staff recommends Alternatives to the Consumer's FCM.

Staff witness Proudfoot testified that Staff recommends that if the Commission find that imputed debt should not be considered in a rate case then issues of imputed debt should be handled when a contract is submitted to the Commission for approval. 2 Tr

226. Staff argues that in U-15806 the Commission found that the time to consider issues of imputed debt is when a contract is submitted to the Commission for approval. See 2 Tr 225. Staff witness Proudfoot testified, "[i]teems that impact the UPPCO's cost of capital can change between the time of an IRP plan approval and a future year when the contracts are executed or brought to the Commission for approval." (*Id*.) Therefore, Staff argues that it would be premature for the Commission to approve UPPCO's requested FCM. Brief p 38.

Staff witness Harlow testified regarding a second alternative to UPPCO's requested FCM. Witness Harlow testified that if the Commission approves an incentive to offset imputed debt, the incentive should be adjusted in two ways First, the incentive should not apply to the entire contract price, but instead, "according to S&P, only apply to the capacity component of the PPA. See 2 Tr 395. Second, when calculating an incentive as an offset to imputed debt, the Commission should not use UPPCO's proposed 25% risk factor. Witness Harlow testified that according to S&P, a risk factor between 0% and 15% more accurately reflects risk for Michigan utilities who recover reasonable and prudent PPA expenses through PSCR cases. 2 Tr 396. In summary, Staff argues that the Commission should reject UPPCO's proposed FCM because:

- Imputed debt should be either dealt with at the time a contract is submitted to the Commission for approval or within a general rate case;
- An FCM is an incentive and not compensation for an expense; and
- The Commission's order in U-20165 provides a reasonable alternative.

Brief p 38

21. UPPCO and intervenor testimony supports Staff's recommendation to reject UPPCO's proposed FCM.

Staff argues that UPPCO's request for an FCM is based on UPPCO's belief that its proposed Solar PPA, if approved, would create a financial credit risk that constitutes imputed debt. Staff argues that because UPPCO's proposed IRP portfolio and historical portfolio includes numerous PPAs an FCM is not necessary to compensate UPPCO for the financial risks of entering into the Solar PPA.

In Exhibit A-7 UPPCO includes and identifies a Risk Factor at line 12 of Exhibit A-7 (GRH-7), FCM." UPPCO requests a 25% risk factor. Staff argues that an FCM risk factor is not necessary because risks can be considered in UPPCO's general rate case.

Staff and ABATE agree that UPPCO's FCM is too high and is inappropriately tied to imputed debt. ABATE witness Aldersen testified in her rebuttal, Staff recommends that imputed debt issues should be considered in a holistic review of the UPPCO's cost of capital, and I support that recommendation." See 2 Tr 445. ABATE Exhibit AB-1 shows that since 2009 UPPCO has served between 55% and 90% of its total energy needs using PPAs without an FCM designed to mitigate and credit impact. 2 Tr 464.

ABATE witness Aldersen provided alternatives to an FCM which go farther than Staff's alternatives.

> [i]n addition to being less than the weighted average cost of capital, that the PPA rate plus the FCM should be no greater than a competing utility self-build project. If the PPA rate plus FCM were to increase the cost of procuring the utility's power needs to a level that is greater than the alternative utility self-build option for procuring the same power, then the FCM rate should be

> reduced. The utility should provide a cost estimate of the competing self-build project to ensure the FCM rate is not above the threshold level.
>
> 2 Tr 462.

Witness Aldersen testified that if the FCM is approved, it should be re-evaluated on a case by case basis. *Id*

Staff indicated in its brief that it does not oppose ABATE's FCM recommendations. Brief p 40. Additionally, Staff consistent with its position in U-20165, agrees with ABATE, that the Commission has the authority to discontinue an FCM if positive results cannot be shown. See U-20165, Staff's Reply Brief Supporting the Settlement Agreement, p. 14.

Staff agrees with CARE witness Jester that the FCM approved in U-20165 is the most appropriate FCM proposal. See 2 Tr. 414. Witness Jester CARE testified that while an FCM can be revised, it should be fixed for the duration of a PPA. *Id.* Staff indicated in its brief that generally agrees with CARE. CARE filed no rebuttal testimony and therefore did not address any UPPCO WACC changes in its testimony. Brief p 41.

22. <u>PURPA avoided cost rates should be at the equivalent capacity value of the UPPCO's existing PPAs and the energy value at LMP</u>

UPPCO proposes that if the Commission determines that it has a capacity need that the Commission approve setting UPPCO's avoided capacity cost at the capacity price at the time the PURPA contract consistent with the Commission's order in U-18904. 2 Tr 533. UPPCO proposed that its avoided energy payment be based on the actual locational marginal price (LMP) at the time of delivery or based on a forecasted LMP.

Staff witness Hadala testified that Staff recommends the Commission set UPPCO's PURPA avoided capacity rates based on the equivalent capacity value of the Midcontinent Independent System Operator (MISO) Planning Resource Auction (PRA) because UPPCO has no persistent capacity need over the 5-year period. 2 Tr 383. Witness Hadala testified that Staff recommends the PURPA avoided cost of energy should be based on a five-year fixed rate, followed by a variable rate. 2 Tr 384. A five-year fixed rate offers the qualifying facility the benefits of price stability while providing some flexibility to account for volatile market pricing.

Witness Hadala testified that UPPCO has indicated that it has a 10-year planning horizon for its PURPA capacity. 2 Tr 382. Staff recommends a 5-year planning horizon. *Id.* Witness Hadala also testified that Staff recommends the Commission order that a determination of a capacity need for PURPA be over a 5-year horizon because a five-year planning horizon would align with the UPPCO's next IRP and would maintain consistency between cases. See 2 Tr 382.

23. <u>The Commission should order UPPCO to improve its Initial IRP filings by using Staff's reporting template and by seeking timely waivers.</u>

Staff witness Proudfoot testified that Staff reviewed UPPCO's IRP filings to determine UPPCO's compliance with the filing requirements approved in U-15896. 2 Tr 242. Staff indicated in its Brief that it believes UPPCO initial application failed to comply with a number of filing requirements. Subsequent to its initial filings UPPCO provided supplemental information. Staff believes that the supplemental information and the fact that UPPOC was eligible for waivers under MCL 460.6t, demonstrate that UPPCO provided enough information to evaluate the most reasonable and prudent means of meeting the electric utility's energy and capacity needs. Brief p 42.

Staff recommends that UPPCO include in its future initial IRP filings, all information identified in the Integrated Resource Plan Filing Requirements and, if applicable, request a timely waiver of appropriate filing requirements. *Id.* Staff witness Schiller testified that

UPPCO should be directed to request full or partial waivers for IRP filing requirements that are not applicable to the utility in all future IRP filings. See 2 Tr 256. To that end UPPCO should provide a timely explanation why a filing requirement is not applicable to UPPCO's operation, and then should seek a waiver for any requirements it believes are not applicable. *Id.*

Witness Shiller also testified that Staff recommends the Commission adopt Staff's reporting template for use by all utilities future IRP filings. This would provide consistency between utility IRP filings and aid Staff's review of IRP filings to determine compliance with all IRP filing requirements. See Exhibit S-2.2. Witness Shiller testified that Staff's IRP template is the same template Staff has sponsored in all IRP cases. 2 Tr 255.

UPPCO supported the recommendations made by Staff in its testimony and has agreed to complete the necessary requirements in future IRPs. Witness Matthew testified that UPPOC initial IRP filings lacked source data, actual model inputs, and model outputs which made Staff's review more difficult. *Id.* Witness Matthew testified that Staff recommends that Commission direct the UPPCO to work with Staff to improve its data transparency. 2 Tr 316.

Staff indicated in its Brief that Staff's evaluation and review of UPPCO's IRP filings identified some specific IRP areas that need improvement.

24. <u>UPPCO Risk Assessments</u>

Staff witness Heidemann testified that UPPCO's IRP includes two types of risk analysis as required by the Commission's IRP filing requirements. UPPCO's IRP includes the following four of the different build plans:

1. 125 MW solar PPA case;
2. BAU solar 2020 case and;
3. BAU RICE 2022 case; and
4. BAU base case.

2 Tr 362.

UPPCO's sensitivity analysis varied the capital cost, solar capacity factor, and market price. *Id.* UPPCO also completed a stochastic analysis where 50 random alterations were made to the base natural gas price forecast. See 2 Tr 363. UPPCO evaluated the following Business as Usual (BAU) scenarios:

- 1.5% load growth sensitivity;
- All simple cycle sensitivity;
- Base case; and
- 125 MW solar PPA under the 50 gas price forecasts.

2 Tr 363.

Witness Heidemann testified that UPPCO's combination of sensitivity analysis and Monte-Carlo simulation show that if UPPCO continued to rely on the market to the extent it has in the recent past, UPPCO rate payers would be exposed to a great deal of risk. *Id*. Staff witness Heidemann testified that "the solar PPA is the least sensitive of the analyzed build plans to gas price variation." 2 Tr 364. Neither the sensitivity analysis nor the Monte Carlo stochastic analysis was initially applied on UPPCO's PCA. Witness Hedemann testified that many MIRPP scenarios were not evaluated in either analysis.

UPPCO's proposed RICE facility was added late to the IR so a risk analysis was not providing in UPPCO's initial filing. Witness Heidemann testified that UPPCO provided the information requested by Staff through discovery and rebuttal testimony in Exhibit A-38. Witness Heidemann testified that if UPPCO could not perform the risk analysis on the proposed PCA, UPPCO should have sought a waiver anytime during its pendency of this case. Staff recommends UPPCO in future IRP filings request a waiver if they will not evaluate the risk of all MIRPP scenarios and sensitivities. 2 Tr 364. Staff recommends future filings include an analysis of any future PCA in each sensitivity and scenario so the exposure to risks is analyzed in each possible future plan. Brief p 44-45.

25. <u>ATC Transmission</u>

Staff witness Heidemann testified that Staff recommends that UPPCO in future IRP filings work with the transmission owner, ATC, to provide a complete and more current PCA transmission analysis, as required by Section XII of the IRP filing requirements. If UPPCO believes in future IRPs that a transmission analysis is not necessary because it has no plans to construct or modify existing transmission facilities, then UPPCO should apply for a waiver of Section XII(a). See 2 Tr 371.

Witness Heidemann testified that Staff recommends the Commission direct UPPCO to do the following in future IRP filings:

- Provide all pertinent studies regarding transmission in the Upper Peninsula;
- Work cooperatively with ATC to provide a comprehensive analysis of transmission reliability, alternatives, and potential network upgrade costs; and
- Coordinate with Staff prior to filing if the IRP contains information considered CEII or requires in-person audits verification.

2 Tr 372.

Staff recommends the Commission direct UPPCO to improve its future IRP filings transmission analysis and find that UPPCO's proposed IRP PCA is reasonable because the interconnection planed is feasible and because the PCA would improve transmission reliability. Brief pp 45-46.

26. Storage Modeling for the 125MV Solar Project.

Staff argues it is Brief that UPPCO's IRP filings indicate that UPPCO investigated the use of energy storage for UPPCO's proposed solar project and concluded lower cost resources would same energy storage goals. Brief p 46. Revised Exhibit A-1, Confidential, p 53. Staff argues that in future IRP filings UPPCO should more fully explore storage options. *Id.*

UPPCO witness Bose indicates in Exhibit A-1 that battery storage could be used to "firm up" its intermittent. 125 MW solar resource. Staff witness Matthews testified that any UPPCO energy storage could be used for "load shifting, frequency and voltage regulation," as well as "energy arbitrage…" which would protect rate payers from high market prices. See 2 Tr 318. Witness Matthews testified that UPPCO's PCA's added 125MW of solar configuration is not conducive to energy storage, but because this new resource would increase the value of storage Staff recommends UPPCO should investigate storage in future IRP filings to maximize storage's potential. *Id*.

UPPCO witness Stocking testified that "in future proceedings the UPPCO will look to closely evaluate the economics of storage and other emerging technologies, in an effort to further leverage the many benefits of solar energy.". See 2 Tr 124.

No intervenors addressed the storage issue in their testimony or briefs. Staff recommends that the Commission direct UPPCO in future IRP filings to explore storage for the proposed solar resource. Brief p 47.

27. Staff's 3-year IRP reporting template Exhibit S-3.0

Staff witness Mullkoff testified that Staff recommends that the Commission direct UPPCO to use Staff's 3-years IRP template spreadsheet for reporting annual estimated and actual Capital and O&M expenses. See 2 Tr 272. Exhibit S-3.0 Brief p 47.

This issue was not addressed by any other party in its testimony or briefs.

28. UPPCO's Energy Sales Forecasts

Staff witness Makinde testified that Staff believes UPPCO's energy sales forecasts are reasonable and consistent with historical forecasts, however Staff believes that the regression models used only meet the minimum standards for econometric regression and could be refined to produce more satisfactory results. See 2 Tr 283. Witness Makinde testified that UPPCO's energy sales forecast regressions were not benchmarked, (not evaluated in comparison to a standard) such as the actual observed peak load and energy sales for a period. 2 Tr 284.

Witness Makinde testified that UPPCO's energy sales forecasts, have a relatively high forecast error, and contain inconsistencies in monthly and annual data. *Id*. Staff witness Makinde evaluated UPPCO's regression models to determine their reliability, sharpness, and resolution/stability, and to determine the accuracy of the IRP peak load and energy sales forecasts. UPPCO's forecasting errors risk an undervaluation of PCA savings but the low accuracy and inconsistency of the peak load and energy forecasts do not impact the UPPCO's PCA. See 2 Tr 287. Despite UPPCO's energy sales forecast inaccuracies, Staff recommends the Commission find UPPCO's forecasts are adequate and recommends the Commission direct UPPCO in future IRP filings to improve its energy sales forecast.

Witness Makinde testified that Staff recommends UPPCO in future IRP filings:

- Use benchmarking and refine its load forecasting methodology and associated regression to reduce forecasting errors and inconsistency;
- Refine future load and energy sales by conducting hourly or sub-hourly load and energy sales forecasts. (Hourly or sub-hourly load forecasts will also allow the UPPCO to gain greater value from its smart meter roll out).
- Include Electric Vehicle (EV) adoption in the high load growth sensitivity by explicitly increasing load and energy sales based on charging shape consistent with the over EV pilots in the state.

2 Tr 286- 387.

29. <u>RFPs should be included in initial IRP filings and all new energy sources should be competitively bid.</u>

Staff witness Jonathan DeCooman testified that UPPCO's initial IRP filings did not include the RFP for a RICE generation unit. After the initial IRP filing UPPCO provided the RICE unit RFP's and all other information required to satisfy MCL 460.6t(6). 2 Tr 298. Witness Decooman testified that UPPCO's supplemental IRP filings satisfied the 460.6t(6)t requirements. Staff recommends that all RFP's be included in the initial filing to allow the parties time to perform a review as intended by MCL 460.6t(6). Staff recommends that the Commission direct UPPCO to file future RFPs for energy and capacity resources with the UPPCO's initial application in its next IRP filing. MCL 460.6t(6). 2 Tr 301.

Circle Power witness Christopher Moore testified that he believes that UPPCO should be required to file all RFPs with its initial filing, but not issue these RFPs until after approval of the PCA by the Commission. 2 Tr 527. Staff argues that witness Moore's proposal contradicts MCL 460.6t(6) which requires a utility issue a pre-filing RFP. Brief p 49. MCL 460.6t(6) provides in pertinent part:

> "[a] utility that issues a request for proposals under this subsection shall use the resulting proposals to inform its integrated resource plan filed under this section...",
>
> MCL 460.6t(6).

Staff argues that witness Moore's proposal that UPPCO be required to include an RFP in its initial filing, but not issuing the RFP until after a Commission order, would not allow the RFP responses to inform the utility's IRP, as intended by the statute. Therefore, Staff recommends that the Commission find that future RFPs for power should be filed with the UPPCO's initial application in its next IRP filing. Brief p 49.

30. <u>Fuel Price Forecasts</u>

Staff witness Makinde testified that UPPCO did not provide price forecasts for coal and fuel oil. UPPCO does not use coal. UPPCO's two natural gas combustion turbines run on natural gas or fuel oil, but neither will operate after 2022. UPPCO's Portage unit is being retired due to a turbine failure and UPPCO's Gladstone unit is used infrequently and should be retired in 2022. Staff witness Olumide Makinde testified that because UPPCO has no facilities that use coal or oil fuel prices for those commodities' have no significant impact on the UPPCO's PCA and modeling. See 2 Tr 281. Witness Makinde testified that Staff recommends UPPCO include in future IRP filings fuel price forecasts for all fuels in the UPPCO's generation fleet. See 2 Tr 281-282.

31. Stakeholder Engagement.

Staff witness Mullkoff testified that Staff recommends the UPPCO take the following specific steps to improve stakeholder engagement including:

1. Conduct stakeholder meetings at varied times throughout the year and provide advance notice of meetings;
2. Improve the format of public meetings to include more technical interaction and allow interactive participation;
3. Improve technology to allow for a call-in capability;
4. Update its IRP website throughout the IRP process;
5. Provide minutes of all stakeholder meetings;
6. Revise its methodology of conducting a survey to collect customer feedback.

2 Tr 271.

32. PCA is reasonable and should seek commission approval later for appropriate cost approvals.

Staff argues that UPPCO's IRP appropriately balances the factors outlined in Act 341, Section 6t(8) and is the most reasonable and prudent means of meeting the electric utility's energy and capacity needs for the initial three years of the plan. Brief p 50-51. Staff recommends the Commission:

- Require the UPPCO to file and request approval for finalized costs for the electric generation facilities included in its PCA pursuant to PA 341 Section 6t(12), MCL 460.6t(12).
- Direct UPPCO seek Commission approval of the long-term solar power-purchase agreement in a future rate case or through other appropriate means.

- Direct UPPCO to file a new IRP, with updated assumptions, within five years of the Commission's order

Staff does not recommend specific cost approval at this time, based on the initial filing.

F. UPPCO

UPPCO witness Haehnel testified that UPPCO's IRP attempts to create a diversified, balanced portfolio of energy and capacity resources with customer value by providing longer term price stability term (i.e., hedge against market price volatility), and diversification of power supply resources. See 2 Tr 35. UPPCO's IRP seeks to provide customers efficient, reliable, cost-effective and sustainable manner possible electric service and focuses on the following:

- Stakeholder input from customers, other interested parties;
- Commitment to clean and sustainable energy sources;
- Stable pricing to insulate customers from market sensitivities;
- Maximizing the value of existing hydro generation resources;
- Competitive bidding processes with a robust request for proposals (RFP); and
- Performing a rigorous and thorough analyses.

See 2 Tr 36-37.

1. Stakeholder Input

Witness Haehnel testified that in 2018-19 UPPCO hosted four public forums its service territory to obtain feedback from its customers. 2 Tr 49. Exhibit A-3 and A-4 provide UPPCO's IRP customer service survey and responses. The survey results indicate that UPPCO's customers value clean, locally sourced, renewable energy options, and diversified and balanced power supply portfolio which limits costly short-term energy purchase price volatility. See 2 Tr. 50.

Witness Haehnel also testified that UPPCO's IRP stakeholder engagement process included 2018-2019 meetings with UPPCO's largest commercial and industrial customers state and local elected, appointed officials, Independent Power Producers and developers of energy projects, other electric utilities, and any other stakeholders expressing an interest in UPPCO's IRP. Id.

Witness Haehnel testified that UPPCO learned the following through its customer meetings that its customers are:

- Focused on the bottom-line impact on their electric bills and reliability;
- Do not view the IRP process as a stand-alone issue and
- Monitor and track events which may impact their bills. (e.g. UPPCO's rate case U-20276, AMI metering investment, the 2017 Tax Cut and Jobs Act tax reform refunds, and the expiration of the Presque Isle Power Plant related System Support Resource (SSR),

2 Tr. 51- 52.

UPPCO developed a web page to maintain its stakeholders and customers engagement. This page is located at: https://www.uppco.com/did-you-know/regulatory/. Id.

2. <u>Power Supply Procurement Strategy, Resource Adequacy, and Portfolio Risk Mitigation.</u>

Exhibit Revised A-1 shows that UPPCO's power supply portfolio is heavily dependent upon energy market purchases.

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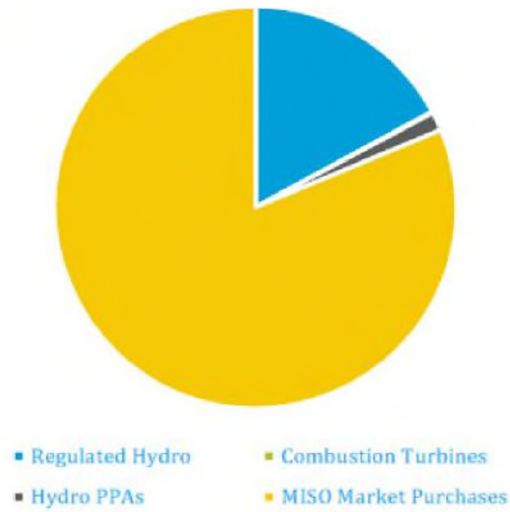

Figure 1-3 Sources of UPPCO Energy

For 2018, UPPCO has purchased approximately 70.7 percent of its energy needs through a series of short term power purchase agreements (PPAs) following competitive auctions, leaving the company with approximately 11 percent spot market exposure. For 2019 calendar year, UPPCO has also locked in 25 MW of around-the-clock energy, as well as various short-term on and off-peak purchases, leaving its projected non-RTMP energy needs 84 percent covered.

Revised Exhibit A-1, page 15.

UPPCO witness Tripp testified that UPPCO's current generation assets consist of two oil-fired CTs and seven hydroelectric facilities powered by stored water at reservoirs. Four hydroelectric generating stations provide capacity. The Midcontinent Independent System Operator (MISO) has given UPPCO's CTs and hydroelectric units a combined capacity credit from of 44.8 MW. The MISO capacity credit for each generation unit is as follows:

- Portage CT: 14.3 MW (no longer operating)
- Gladstone CT: 14.4 MW
- Hoist Hydroelectric Plant: 1.1 MW
- McClure Hydroelectric Plant: 3.3 MW

- Victoria Hydroelectric Plant: 11.3 MW
- Prickett Hydroelectric Plant: 0.4 MW

2 Tr 159.

UPPCO witness Stocking testified that UPPCO's four hydroelectric plants have a total net capacity of about 16 MW and operate with limited capability to store water at approximately a 50% utilization factor. Because UPPCO's hydro resources have the lowest variable operation and maintenance cost, they are used minimize costs from other supply resources. 2 Tr 113.

UPPCO's two oil-fired CTs, are rarely dispatched economically, provide little or no energy value for customers and historically have provided a significant portion of the MISO Module E and State Reliability Mechanism (SRM) capacity requirements. 2 Tr 113-114.

3. Short Term Energy and Capacity Power Purchase Agreements (PPAs)

Witness Stocking testified that UPPCO's four hydroelectric units provide approximately 20% of the energy delivered to retail customers, not inclusive of sales to the RTMP rate class. The remaining 80% of the energy delivered to retail customers is provided through two long-term power purchase agreements with U.P. Hydro, LLC. (U.P. Hydro), and MISO day-ahead and real-time energy markets short-term fixed price market contracts, and purchases. 2 Tr 115.

UPPCO has two 10-year PPAs (Cataract and Au Train). The energy and renewable attributes of the Au Train and Cataract hydroelectric facilities for 2019 calendar year are priced at $80.89 and $78.54 per MWh, respectively, escalating by at least 3.0 percent each year. Witness Stocking testified that these long-term PPAs expire in 2020 and 2025 for Au Train and Cataract, respectively. 2 Tr 115. Witness Stocking testified that because the contract pricing exceeds the cost of procuring energy and capacity from several alternatives UPPCO does not plan on renewing the U.P. Hydro PPAs. 2 Tr 116.

Michigan's SRM requires UPPCO to demonstrate that it owns or has contractual rights to sufficient capacity resources to meet its need four years into the future. Witness Stocking testified that because of this requirement UPPCO entered into a PPA with Wisconsin Power and Light (WP&L) to purchase 25 MW of capacity through the 2019/20 planning year and entered into a contract with Dairyland Power Cooperative (Dairyland) to purchase 20 MW of capacity in planning years 2020/21 and 2021/22. See 2 Tr 119 – 120.

4. Portage CT Failure

Witness Tripp testified that UPPCO planned to retire the Gladstone CT in 2019 and the Portage CT in 2024. The Gladstone CT retirement date followed a 2018 inspection, which recommended UPPCO to take it out of service immediately to prevent a catastrophic failure. Subsequently further analysis showed that UPPCO could economically repair the Gladstone CT to provide short-term capacity energy value for UPPCO customers until the next IRP filing cycle in five years. In November 2018 repair work began and the Gladstone CT returned to operation in December 2018. UPPCO plans on retiring the Gladstone CT in 2022. 2 Tr 159-161.

Witness Tripp testified that in November 2018 UPPCO's Portage CT unit experienced a catastrophic failure and is now nonfunctional. UPPCO plans to retire the Portage CT in 2019. Given the failure of the Partage Facility and the limited operational life of the Gladstone facility UPPCO customers in the recent future face capacity market volatility for up to 56 Zonal Resource Credits (ZRC). Witness Tripp also testified that he expiration of the U.P. Hydro PPAs would create an additional future capacity need of 1 ZRC. 2 Tr 120.

5. <u>Generating Assets and Demand-Side Resources</u>

Witness Tripp testified that UPPCO determined that it could maximize the value of certain existing hydroelectric facilities by moving the Hoist and McClure hydroelectric plants from “behind the meter” to “in front of the meter”. According to witness Trip when MISO considers a unit “behind the meter,” it does not value the unit’s potential contribution to stabilize the grid beyond its typical generation. If MISO considers a generating unit “in front of the meter,” it values the unit’s ability to be called upon during times of energy need to increase generation and provide grid stabilization. MISO assigns capacity values based on “in front of the meter” generating unit’s maximum 1 hour generating capability. 2 Tr 161. Witness Tripp testified that by moving the Hoist and McClure generating units “in front of the meter” with MISO, UPPCO will report their capacity to MISO at their annual maximum generation value instead of their averaged generation. On December 5, 2018 UPPCO filed the necessary documentation with MISO and on March 1, 2016 MISO confirmed that UPPCO’s proposal had been accepted and recognized. Witness Tripp testified this change to “in front of the meter” status increased the MISO recognized combined capacity of the Hoist and McClure hydro facilities by 7.6 MW. See 2 Tr 162.

6. <u>Demand-Side Resources and 1.5% Energy Waste Reduction Goal</u>

Witness McNealy testified that UPPCO plans to maximize available demand-side resources through implementation of its U-20376 2020 and 2021 EWR plan which adopts a target of 1.5% EWR for each plan year based on the previous 3 years’ annual retail electricity sales in megawatt hours. 2 Tr 153. UPPCO believes that increasing its 1.5% EWR target from 1.14% to 1.5% is reasonable because UPPCO has had past success in increasing EWR savings. Witness McNealy testified that UPPCO has begun transitioning its EWR program to the higher 1.5% standard by increasing qualifying residential and commercial measures such as expanding residential solar water heating and small business direct install commercial program to include multi-family properties in 2019. See 2 Tr. 152.

With regard to demand response measures witness McNealy testified that approximately 52% of UPPCO's total capacity requirement for its industrial load is interruptible service. 2 Tr 42. Because a majority of UPPCO's large commercial and industrial customers participate in demand responses, UPPCO did not proposed any new demand response measures. Id. The Commission in U-20276 approved UPPCO's AMI meters program 2 Tr 51. UPPCO believes that when the AMI implementation is complete, additional opportunities for smaller commercial and residential customer demand response will likely arise.

7. <u>Sales and Peak Demand Forecasts for IRP Modeling</u>

Witness Stocking testified that for the purposes of IRP modeling UPPCO combined its Integrated and Iron River systems tariff units and then forecasted both systems in tandem. UPPCO's residential forecast uses two regression models, a monthly customer count projection and a monthly use-per-customer mode including seasonal customers and sales. UPPCO's customer count projection is based on a regression analysis of the historical monthly trend in the number of residential customers. See Tr 110.

UPPCO's long-term commercial and industrial customers sales forecasts were derived from a customer and use-per-customer regression models. UPPCO's customer forecast is based on a regression analysis of the historical monthly trend in the number of commercial customers within the service territory, excluding those served by an Alternative Energy Supplier (AES). See 2 Tr 110.

UPPCO's peak demand forecast was determined using a regression analysis of historical peak kilowatt (kW) to monthly kilowatt-hour (kWh) sales, along with weather and seasonal variables. UPPCO's weather and temperature data utilized a 10-year average of actual monthly National Oceanic and Atmospheric Administration (NOAA) 2007 – 2018 weather data which originated at KI Sawyer International Airport. 2 Tr 112.

8. <u>MIRPP Modeling</u>

UPPCO witness Haehnel testified that UPPCO engaged Black & Veatch Ltd. of Michigan, LLC (B & V) to assist in the development of UPPCO's 20- year IRP and to perform IRP evaluation and modeling. Revised Exhibit A-1, describes B&V's analyses and underlying assumptions for UPPCO's 20-year resource plan. 2 Tr 38.

Consistent with the Commission's MIRPP Section VIII modeling requirements for utilities located in the Michigan portion of MISO Zone 2, B&V completed the following modeling:

- Scenario 1: Business as Usual
- Scenario 2: Emerging Technologies
- Scenario 4: High Market Price Variant.

2 Tr 54.

UPPCO witness Bose testified regarding B&V's modeling methodology. See 2 Tr 187-193. See Revised Exhibit A-1. Witness Bose testified that B&V's fundamental market model was created by using the PROMOD IV cost model. B&V then used an economic analysis and other models to determine the optimal generation resource portfolio based on the lowest cost portfolio which meets UPPCO's power supply needs and strategic objectives. B&V used PROMOD® and PLEXOS®, two commercial software models, in support of its analysis. A PROMOD model of the MISO market was developed to simulate an hourly forecast of wholesale energy and capacity prices over the 20-year planning horizon of the IRP. The regional price forecast was used to establish prices at which UPPCO can sell into or purchase electricity from the MISO market over the study horizon. B&V used a PLEXOS model of UPPCO to support its evaluation of the least cost expansion plan. UPPCO's System Model used specific generation parameters for existing UPPCO units and existing PPA purchases. Market prices from the MISO Model were used as inputs to determine the costs and revenue associated with serving load and selling power into the MISO market. See 2 Tr 191-193; Revised Exhibit A-1 at p. 21.

9. <u>Business As Usual (BAU) Modeling</u>

UPPCO's B&V modeling revealed that UPPCO currently has sufficient existing and near-term capacity resources to meet its projected peak demand and planning reserve requirements over the study period without the need to procure additional capacity, as well as RPS requirements. Despite this UPPCO believes that it will require additional energy resources to reduce its reliance on the wholesale and spot market to improve system reliability and to mitigate market risk for its customers. Revised Exhibit A-1 at p. 41. Brief p 19.

10. Planning Reserve Margin and Firm Capacity Requirements

Revised Exhibit A-1 shows that according to MISO's annual Loss of Load Expectation (LOLE) report UPPCO has a capacity Planning Reserve Margin (PRM) of 8.4 percent. The PRM is a capacity cushion measure of the resources required to be physically located inside a local resource without considering imports from outside of the zone. See Revised Exhibit A-1 (DB-1) at p. 41. UPPCO's full peak 2018 demand including interruptible loads is 142.2 MW. which is consistent with UPPCO's 140.5 MW available capacity. UPPCO's highest firm demand of 86 MW occurred in 2018, resulting in a required capacity of 93.3 MW including the PRM. See Revised Exhibit A-1 (DB-1) at p. 42.

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A summary of UPPCO's peak capacity sources and requirements over the planning period is shown in Figure 6-1.

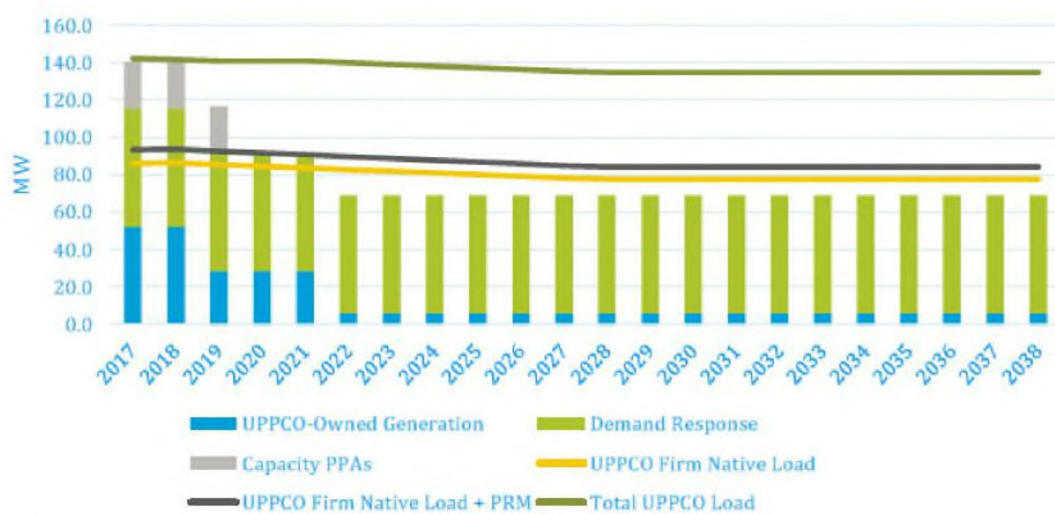

Figure 6-1 UPPCO's Capacity Requirement Projection and Capacity Sources

Brief p 20

UPPCO believes that because its two CTs will retire in 2019 and 2022 respectively UPPCO will need additional firm capacity beginning in 2022 in order to meet PRM requirements. See Revised Exhibit A-1 (DB-1) at p. 42. Brief p 20.

11. <u>Supply Side Resources.</u>

Consistent with its goals of achieving long-term reliability, stable electric costs, and fuel diversity to lower risk of dependence on a single fuel source or the market, UPPCO developed a list of multiple resource options to meet it future needs, The options considered were solar, combustion turbines, wind, RICE, biomass, and battery energy storage resources. See Revised Exhibit A-1 (DB-1) at p. 45. Exhibit A-1 shows that solar is the fastest growing energy source in the U.S., with 9.5 gigawatts of US utility-scale solar power added last year which is more than the previous three years combined. Solar power's popularity is due to the price declines in panel and installation pricing. Prices having fallen by 70 percent over the past 6 years. See Revised Exhibit A-1 (DB-1) at p. 45. UPPCO argues that its Exhibits A-1 shows that based on UPPCO's system size and needs, UPPCO would benefit most from a generator that is a RICE unit modular, fast-start, back-up/peaking technology RICE units are currently being installed in the Upper Peninsula by Marquette Board of Light and Power(MBLP) and Upper Michigan Energy Resources Company(UMERC). See Revised Exhibit A-1 at pp. 50 and 52. Brief p 21.

12. <u>Transmission System/Solutions</u>

UPPCO's B&V PROMOD modeling confirmed that UPPCO's existing transmission rights are adequate to fully dispatch the generation considered in each of the IRP scenarios. Transmission upgrades are not required to realize the benefits of those scenarios. Revised Exhibit A-1 at p. 55.

13. UPPCO's B&V Scenarios

UPPCO, through B&V, modeled scenarios to compare methods to meet UPPCO's energy, capacity, and RPS needs through different combinations new generation and PPAs. Each of these scenarios was compared using a Cumulative Present Worth Calculation (CPWC) to determine the least-cost option. Scenarios variables, such as load growth, market pricing, and gas pricing, were changed to determine a ranking of least cost solutions under base case assumptions, and to understand each scenario's risk and pricing volatility. Revised Exhibit A1 provides that following graphic representation of the results of the BAU scenario.

Revised Exhibit A-1, page 59, Figure 9-1 describes the Business As Usual Scenario as Follows:

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Figure 9-1 Components of the BAU Base Case CPWC

A summary of the results of modeled scenarios appear in Revised Exhibit A-1, page 1-6, Figure 1-5. B & V modeled a scenario in order to determine the cost-effective and most reasonable and prudent plan.

Black & Veatch understands that the state of Michigan requires analyses of the following three scenarios: (BAU), emerging technology (Emerging Technology), and high energy market prices, as discussed further in Section 2.2. Black & Veatch conducted analyses of the cumulative present worth cost (CPWC) and levelized cost over a 20-year period for several unique possible cases within each of the three scenarios as summarized in Figure 1-5 and Table 1-1. Eighteen BAU, five emerging technology, and eight high market cases were analyzed for a total of 31 unique cases.

Figure 1-5 Comparison of All Scenario Levelized Costs ($/MWh)

Black & Veatch notes that many of these scenarios evaluated in this IRP were selected in order to comply with Michigan requirements or to sensitize different energy procurement strategies to technology and market changes, but do not represent a selectable IRP case to UPPCO (e.g. UPPCO cannot chose higher or lower MISO market costs, and those scenarios should only be compared to their respective base cases). Those scenarios which are informative but not selectable are identified in Table 1-1.

14. Most Reasonable and Prudent Alternative

B&V identified the five most cost-effective scenarios and conducted additional analyses to identify the most reasonable and prudent plan. The following graph summarizes the results:

Upper Peninsula Power Company | INTEGRATED RESOURCE PLANNING STUDY

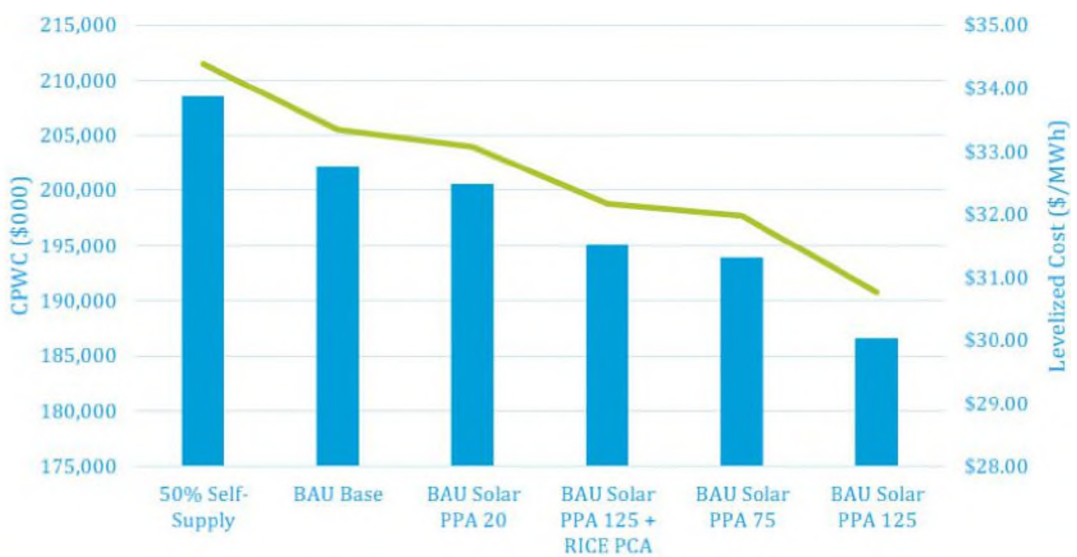

Figure 10-1 CPWC and Levelized Cost Delta of the Top Six Cases ($000)

Though the scenarios are ranked in ascending order of their CPWC, the lowest cost scenario may not be the best option for UPPCO. A scenario with a higher CPWC may be a better fit for UPPCO's system compared to a scenario with a lower CPWC depending upon multiple aspects, both on a qualitative and quantitative basis.

Revised Exhibit A-1, page 118.

15. Competitive Bidding/Requests for Proposals

Witness Haehnel testified that UPPCO utilized competitive bidding to obtain the most reasonable pricing. UPPCO issued two RFPs, both administered and evaluated by an independent third party, to identify the most reasonable pricing for solar generation and RICE generation. 2 Tr. 43.

16. Solar RFP

Witness Haehnel testified that UPPCO initially determined that it would acquire up to 20 MW of AC solar photovoltaic (PV) generating capacity in the Upper Peninsula with a Commercial Operation Date (COD) on or before June 1, 2022, Capacity would be met by a single 20 MW facility or multiple facilities of lower capacity. AC capacity referred to the net generating capacity at the facility's point of interconnection (POI), as controlled by the plant supervisory control and data acquisition (SCADA) system. RFP respondents could also propose solutions with an aggregate inverter capacity exceeding the 20 MW AC limit at the point of interconnection. 2 Tr 43.

Witness Haehnel testified that UPPCO considered the following solar RFP options;

- Build Transfer/EPC or Build-Own-Operate-Transfer PPA with a purchase option Developer responsible for development, turnkey EPC construction and commissioning of Solar PV facilities up to the POI with UPPCO's Generation Step-up (GSU) transformer;
- Build Transfer/EPC or Build-Own-Operate-Transfer PPA with a purchase option Developer responsible for development, turnkey EPC construction and commissioning of Solar PV and related interconnection facilities; and
- Equity Ownership, UPPCO would enter a 25-year PPA (for energy and capacity) with an equity investment made in year 6 from COD.

2 Tr 43-45.

Witness Tripp testified that UPPCO contracted with WSP, a professional services firm to serve as UPPCO's RFP bid process designer and administrator. WSP was responsible for all communication with bidders is conducted a multi-step bid process and the development of a core bidders list. The bidder's list includes all bidders who expressed interest in bidding on proposed UPPCO solar projects and/or were considering projects in UPPCO's service territory. WSP then sent the bidders listed on the bibber's list a Request for Interest (RFI) which asked bidders to return a statement of interest and a signed non-disclosure agreement before the designated deadline. After the REI deadline had passed on September 14, 2018 WSP issued the RFP. See Exhibit A-18; 2 Tr 162 – 163.

Witness Tripp testified that during the RFP process two late bidders were allowed to submit bids. Additionally, UPPCO issued an RFP addendum and bid extension, because it had failed to realize the impact of UPPCO's tax position and its inability to utilize solar Investment Tax Credit. See Exhibit A-19. On January 4, 2019, bid responses were delivered to WSP and WSP developed a bid process report and bid ranking. UPPCO received 30 bids from 6 different bidders. See Exhibit A-20. 2 T 163.

David R. Tripp's Exhibit A-20 Solar RFP Evaluation Summary, shows that the PPAs, including those with purchase options, were more economic than EPC alternatives for UPPCO's customers.

Figure 2

2 Tr 47.

In the chart above, UPPCO's preferred bid and bidder are in the green, lower priced band, and includes the levelized FCM charge expressed in $/MWh. Witness Haehnel testified that UPPCO included the levelized FCM charge in its preferred bid. UPPCO believes that its preferred bid price with an FCM is one of its most competitive bids. Witness Haehnel testified that UPPCO evaluated increasing the size of its energy and capacity purchases to 125 MW from the original 20 MW target so UPPCO ran an IRP modeling scenario to include a Business-As-Usual modeling run with 125 MW of a fixed price Solar PPA. The B&V report at Section 10, shows that the 125 MW Solar PPA had the least cost CPWC. 2 Tr 47- 48.

17. RICE RFP

Witness Haehnel testified that UPPCO's RICE facility, RFP was for 18 to 20 MW of natural gas-fired RICE single or two engine generation facility with a COD commencing on or before June 1, 2022, located in UPPCO's Michigan service territory within MISO Load Resource Zone 2. Exhibit A-24 shows that UPPCO structured the RFP minimum requirements to allow bidders the flexibility to propose technical solutions to maximize overall financial benefit of the project. See 2 Tr 45; Exhibit A-24. Witness Haehnel testified that UPPCO's RICE RFP, used WSP as the bid manager and was similar to the its Solar RFP. 2 Tr 45-46.

Witness Tripp testified that UPPCO contracted with Steigerwaldt Land Services to conduct a land study to identify properties in the Eastern Upper Peninsula. UPPCO then evaluated properties near eight substations for solar and RICE generation installation. Witness Tripp testified that UPPCO selected a location near an existing substation due to its eastern proximity, available electrical transmission connection, proximity to the natural gas transmission system, and available acreage. 2 Tr 164-165.

Witness Tripp testified that UPPCO received two bids with similar preliminary pricing who indicated that additional engineering was needed before firm price estimates were possible. 2 Tr 169. Because it determined that more engineering was necessary before firm pricing would be available, UPPCO selected Bidder A to perform the engineering services and refine its pricing estimates because it has completed engineering or construction of more than 14 similar RICE generating plants with installed capacity of over 1,000 MW and has a proven track record of engineering and design work for RICE generation units in the Upper Peninsula. 2 Tr 655.

During the RICE unit RFP process UPPCO provided the bidders with the following information regarding the UPPCO Portage unit insurance settlement:

- The value of the settlement if UPPCO builds a replacement unit;
- It includes a deductible amount;
- Funds will be dispersed to UPPCO from the insurance UPPCO upon consummation of the insurance settlement agreement, and
- Remaining funds will be dispersed to UPPCO within two years of the date of the loss of the Portage unit, contingent upon the UPPCO providing proof of associated expenditures related to UPPCO's replacement unit.

See Confidential Exhibit A-27.

Confidential Exhibit A-26 shows that UPPCO's proposed RICE unit will be the replacement unit for the Portage CT and that UPPCO plans to use the insurance settlement monies, net of associated clean-up costs, including UPPCO labor, to offset the costs of the 18 MW RICE unit. UPPCO also proposes that the insurance proceeds from the Portage CT unit insurance settlement be credited to the electric plant account charged with the cost of the damage. See Confidential Exhibit A-26. 2 Tr 658.

Witness Tripp testified that when the Portage unit is retired, UPPCO would credit the appropriate account for accumulated depreciation and the cost of removal and the salvage shall be charged or credited, as appropriate. If UPPCO's proposed RICE unit is not approved in this docket, UPPCO would use the total value of the insurance proceeds, net of associated clean-up costs and associated labor, , to repair and/or refurbishing the 45-year old, oil-fired Portage CT. 2 Tr. 175. Witness Tripp testified that he updated his capital cost estimates for the proposed RICE unit by:

- Including pricing from the winning response to the RFP;
- Adding transmission interconnection costs, and
- Applying the insurance settlement.

See Confidential Exhibit A-26; see also 2 T 172.

18. <u>UPPCO'S Preferred Course of Action (PCA)</u>

UPPCO argues in its Brief that the PCA outlined below meets UPPCO's and its customers' energy and capacity needs through 2046. Brief p 31.

19. <u>7.6 MW of Capacity from Moving the Hoist and McClure Hydroelectric Facilities "In Front of the Meter".</u>

Witness Haehnel testified that his change was included in U-20276 and was modeled as part of the BAU scenario in the B&V Report. 2 Tr 39-41. This PCA item is discussed in detail in section IV, E. of this PFD.

20. <u>Increasing UPPCO's EWR Target to 1.5 %.</u>

This PCA item is discussed in section IV.R. of this PFD.

21. 125 MW Solar PPA

Witness Haehnel testified that UPPCO's proposed Solar PPA would replace UPPCO short-term market energy purchases that UPPCO would otherwise procure on an annual basis at some unknown future rate, at an economically beneficial fixed price for 26 years. 2 Tr 82. Witness Stocking testified that the proposed Solar PPA would provide a hedge against on-peak day-ahead market pricing, which typically include a pricing premium against off-peak or nighttime contracts. 2 Tr 121. Confidential Revised Exhibit A-8, page 2, shows UPPCO's solar PPA expected customer savings would be approximately ($6.62)/MWh less than the current average PSCR rate or approximately $3.9 million per year.

Witness Stocking testified that UPPCO is highly dependent on market energy purchases therefore the solar PPA would provide a significant price hedge. UPPCO's PSCR costs are impacted by fluctuations in that market pricing for energy obtained through reverse auction or from the Day-Ahead or Real-Time market. UPPCO believes that hourly solar generation profiles often align closely with market pricing trends and believes that a long-term, fixed price solar PPA would reduce the need to buy a significant amount of energy from, potentially, unfavorable spot-market energy prices. 2 Tr 122; Brief p 32.

22. FCM to Incentivize UPPCO its Long-Term Commitment to Energy and Capacity Needs.

Witness Haehnel testified that UPPCO is requesting an FCM for its proposed MW Solar PPA because the Solar PPA is a long-term commitment which would provide approximately 40% of UPPCO's total energy and approximately 55% of UPPCO's ZRCs. Witness Haehnel testified that UPPCO has decided to not own the solar assets and is therefore foregoing a rate of return for its investors. 2 T 57-58. MCL 460.6t(15) provides in pertinent part

> For power purchase agreements that a utility enters into after the effective date of the amendatory act that added this section with an entity that is not affiliated with that utility, the commission shall consider and may authorize a financial incentive for that utility that does not exceed the utility's weighted average cost of capital.

UPPCO 's Exhibit A-7 provides UPPCO's proposed FCM. UPPCO argues that because UPPCO has decided to enter into a long- term solar to achieve customer savings the Commission should approve the FCM in this IRP proceeding and then consider recovery in UPPCO's next rate case. 2 Tr 60.

23. <u>18 - 20 MW RICE Unit to Begin Service in 2022 (RICE 2022)</u>

UPPCO's revised Exhibit A-1 shows that the B&E report selected the RICE 2022 facility. See Revised Exhibit A-1, pages 50-51. The B& E report provides the following information:

- UPPCO would benefit most from a generator that is a modular, fast-start, back-up/peaking units such RICE that are currently being installed elsewhere in the upper peninsula by MBLP and UMERC.

- RICE units have been selected as the source of new generation in the upper peninsula for MBLP (3 x 16.7 MW units for a total of 50 MW) and UMERC (up 10 x 18 MW units for a total of 180 MW).

- RICE units are more expensive to install than other small conventional generation, but they are generally more efficient with a lower heat rate of 8,500 BUT/kWh, allowing the units to be dispatched with much greater economic frequency (46.2 percent of the time for the other upper peninsula examples).

- Additional energy source variety and firm, quickly dispatchable generation from a 20 MW RICE unit would be a favorable tradeoff for a relatively higher CPWC than the BAU Solar PPA 125 without a RICE.

Revised Exhibit A-1

Witness Stocking testified that a small, quickly dispatchable resource like the RICE would improve UPPCO's system reliability and provide price hedging benefits to UPPCO's portfolio which is heavily dependent on non-dispatchable renewable energy because RICE dispatchable units provide expedient start-up times and quick ramping rates which allow system operators to match the total system demand to the amount of resources available to meet this demand. 2 Tr 125. Witness Stocking further testified that RICE units provide necessary redundant capacity to the growing volume of renewable energy generating facilities in MISO as evidenced by recent approvals to build new natural gas-fired, dispatchable generating resources in Michigan 2 Tr 124.

Witness Tripp testified that UPPCO leveraged the RICE unit 's location siting to provide additional system reliability and power supply benefits for its customers. UPPCO selected the proposed RICE unit's location near the Blaney Park substation to take advantage of its eastern proximity, available electrical transmission connection, proximity to the natural gas transmission system, and available acreage. 2 Tr. 164.

Witness Stocking testified further about the reliability benefits of locating the RICE unit in the Eastern Upper Peninsula. Witness Stocking testified that in April 2018 following the anchor strike to ATC's inter-peninsular submarine cables at the Straits of Mackinac, MISO sought input while considering MTEP 2018 ID No. 15145 (Mackinac – McGulpin 138kV Cable Replacement project). ATC provided information regarding the risks attributable to the loss of the remaining 138kV submarine circuit under several North American Electric Reliability Council (NERC) Transmission System Planning Performance (TPL) requirements. UPPCO believes its proposed RICE project would mitigate some of the contingent loss-of-load risks identified by ATC.

On August 17, 2016 at the request of then Governor Snyder, MISO began its Michigan Exploratory Transmission study to evaluate near and long-term regional production cost savings, reliability and resource adequacy benefits of adding transmission and generation resources in the eastern portion of Michigan's Upper Peninsula and northern Lower Peninsula. This study concluded, among other things that dispatchable, natural gas-fired generating resources located in the region would provide reliability benefits that were comparable to the transmission alternatives. 2 Tr 126 – 127.

Witness Stocking testified that the RICE 2022 project was sized to meet UPPCO's customer needs, its proposed location would allow future expansion and collaboration with other Load Serving Entities or Independent Power Producers to mitigate reliability issues in the central and eastern Upper Peninsula. 2 Tr 128.

24. <u>UPPCO's "Avoided Cost" for Qualified Facilities (QF).</u>

Witness Stocking testified that pursuant to the Commission's Order in U-18094, UPPCO was scheduled to file its next PURPA review application by February 1, 2019. UPPCO filed a motion to extend the filing deadline for its PURPA review to accommodate its inclusion in the IRP filing. On February 7, 2019 the Commission in U-18094 approved UPPCO's motion. 2 Tr 128.

Witness Stocking testified that UPPCO proposes that UPPCO's avoided capacity cost should be set at a level equal to UPPCOs contracted capacity price at the time the PURPA contract with an adjustment for effective load carrying capability applied to the QF. UPPCO proposes that its avoided cost for energy payments, should be based on the actual LMP at the time of delivery, or based on forecasted LMP, at the option of the QF. UPPCO believes that its proposed capacity and energy avoided costs are the most efficient means to determine the true cost of the incremental energy and capacity that UPPCO would look to purchase to satisfy its total energy requirements. Brief p 36. Witness Stocking testified that because Federal Energy Regulatory Commission (FERC) recognizes that avoided costs may be based on the utility's costs to self-generate with incremental resources, or purchase from another source, UPPCO's avoided cost may be aligned with expected cost of the incremental energy and capacity that would be purchased by UPPCO, but for the purchase from the QF. 2 Tr 129 - 130.

Consistent with the Commission's order in U-18094, UPPCO proposes that capacity payments under the standard offer contract should be the avoided capacity cost which should be equal to the contracted capacity cost in the year that the PURPA contract is entered into, adjusted for the effective load carrying capability that is applied to the QF. Witness Stocking testified that if the Commission determines that UPPCO has adequate capacity to serve its requirements over a 10-year planning horizon, then UPPCO should not be obligated to purchase capacity from the QF. 2 Tr 131.

Witness Stocking testified that consistent with the Commission's order in U-18094 UPPCO's energy payments should be the hourly LMP at the time of delivery, or forecasted LMP, at the option of the QF. The Standard Offer contract terms for five, 10, 15, and 20 years, at the option of the QF, should be based on the average forecasted LMP for each time horizon, respectively. Revised Exhibit A-16 provides UPPCO's 20-year LMP forecast as the basis of the avoided energy cost. UPPCO's also proposes to set the QF standard offer cap at 500 which is consistent with other Michigan utilities of comparable size. 2 Tr 132. UPPCO believes that its true avoided costs are similar to those that existed at the time of the Commission's Order in U-18094. The Commission required biennial review of PURPA avoided costs allows UPPCO to adjust its avoided costs to changing market conditions, UPPCO's resource portfolio, and other unexpected circumstances. 2 Tr 131.

Exhibit A-14 provides UPPCO's proposed changes to its Parallel Generation-Purchase Tariff. Witness Stocking testified that UPPCO's proposed tariff meets the Federal Energy Regulatory Commission's requirements for compliance with the Public Utilities Regulatory Policies Act because the tariff allows a QF to sell energy and capacity to UPPCO at non-discriminatory rates set through a competitive bidding process, to interconnect with UPPCO and operate in parallel with established standards and other generating resource. UPPCO's PG-4 tariff provides the standard offer tariff avoided cost rates which UPPCO would pay the QF for delivered energy and capacity. 2 Tr 131. Brief p 37.

25. <u>The PCA Meets All Capacity Needs</u>

UPPCO's Exhibit A-13 shows that UPPCO's PCA meets its service territory capacity needs. Witness Stocking testified that beginning in 2022 UPPCO will maintain a small capacity surplus due to UPPCO's energy and capacity market exposure. 2 Tr. 126; See Exhibit A-13. Because most of UPPCO's peak demand requirements that are satisfied through demand response resources, UPPCO's overall capacity deficit is significantly less than its energy deficit. Because UPPCO's IRP process resulted in competitive pricing UPPCO seeks to provide a long-term, low cost hedge against energy and capacity market volatility to the benefit of its PSCR customers. Witness Stocking testified that yearly excess capacity can be sold through contract or offered into the MISO

Planning Resource Auction. This according to witness Stocking would provide additional benefits to UPPCO's PSCR customers. 2 Tr. 126.

26. PCA Revenue Requirement Leveraging of Competitive Pricing

UPPCO witness Haehnel sponsored the following exhibits which provide the revenue requirement for the various PCA components and a comparison of those requirements with projected power supply cost savings:

- Revised Confidential Exhibit A-8 Summary Inputs and Outputs
- Revised Confidential Exhibit A-9 Revenue Requirement Summary
- Revised Confidential Exhibit A-10 RICE 2022 Revenue Requirement
- Revised Confidential Exhibit A-11 Solar PPA Revenue Requirement
- Exhibit A-12 Hydro Capacity Revenue Requirement
- Revised Confidential Exhibit A-7 PPA FCM

UPPCO argues in its brief that the information provided in these exhibits show significant customer cost savings for UPPCO's proposed Solar PPA and the hydroelectric capacity improvements. UPPCO also argues that the information also shows that UPPCO's PCA overall revenue requirement of is very reasonable. Brief p 38-39.

IV.

DISCUSSION

Consistent with Act 341 UPPCO completed a comprehensive assessment of its capacity and energy needs guided by its customer planning objectives. This assessment served as the foundation of UPPCO's IRP proposed courses of action (PCA). UPPCO's PCA includes the following proposed actions:

- Increasing the Energy Waste Reduction (EWR) goal to 1.5%;
- Moving the Hoist and McClure hydroelectric generating facilities to "in front of the meter";

- Executing a 125 MW power purchase agreement for Solar Power Purchase Agreement (Solar PPA) with a Financial Compensation Mechanism (FCM);

- Retiring the Portage Combustion Turbine (CT) and replacing it with a 20 MW natural gas Reciprocating Internal Combustion Engine (RICE) unit in the eastern portion of its service territory; and

- Updating the Public Utility Regulatory Policies Act (PURPA) avoided costs, established in. U-18094.

UPPCO believes that its PCA is reasonable and prudent and would meet UPPCO's energy and capacity needs throughout the IRP planning period. UPPCO's IRP specifically requests Commission approval for the following:

- The Solar PPA as set forth in Confidential Exhibit A-31.

- The proposed FCM for the Solar PPA subject to rate recovery in UPPCO's next general rate case.

- The construction of a new 20 MW RICE unit in the Eastern portion of the UPPCO's service territory as a replacement for the Portage CT unit.

- The retirement of the Portage CT unit and UPPCO's requested accounting treatment for the proceeds from the insurance payment following the catastrophic failure of the Portage CT.

- The proposed increase in target for EWR savings to 1.5% subject to cost analysis and approval in UPPCO's EWR plan case.

- UPPCO's proposal to set its PURPA avoided cost rates at equivalent market-based avoided cost, as modified by Staff's proposal and accepted by UPPCO in its rebuttal.

- Other relief as set forth in UPPCO's Initial Brief and the record evidence.

A. <u>Staff's Position</u>

Staff generally supports all components of UPPCO's PCA. Staff witness Paul Proudfoot testified that Staff recommends that the Commission find the following:

- UPPCO's IRP meets the provisions of PA 341 of 2016 Section 6t(8), MCL 460.6t(8);

- UPPCO's initial three years of its IRP is the most reasonable and prudent means of meeting the UPPCO's energy and capacity needs.

- Deny UPPCO's requests for specific cost approval; and
- Require UPPCO to file and request approval for finalized costs from the electric generation facilities included in its PCA pursuant to PA 341 Section 6t(12), MCL 460.6t(12).

2 Tr 213.

Staff also made several additional recommendations to the Commission concerning revisions to this IRP and/or future UPPCO IRPs, including:

- Increase UPPCO's EWR target to 1.65% of total electric load for planning year 2020 and 1.75% for planning year 2021. The reasonableness and prudence of the change and its associated cost should be determined in the 2019 EWR plan case. 2 Tr 229 and 322.
- Grant explicit cost preapproval for the first three years of the UPPCO's IRP and direct UPPCO to file a new IRP, with updated assumptions, within five years of the Commission's order in this case. Id.
- Deny UPPCO's request to establish an FCM for the Solar PPA based upon imputed debt and offering an alternative methodology that may be appropriate if the Commission deems an FCM appropriate. See 2 Tr 398, 672, and 680 - 682.
- Deny UPPCO's request to establish a regulatory asset for IRP costs. 2 Tr 685.
- Require UPPCO in future IRP filings to : include a consideration of demand response [2 T 336] and storage [2 T 317 - 318], increase public outreach [2 Tr 265 - 266], establish a checklist for the Commission's IRP filing requirements [2 Tr 256 – 257; Exhibit S-2.2], make various revisions to peak load and energy sales forecast regressions See 2 Tr 287], and provide a more robust transmission analysis. See 2 Tr 371 - 372
- Utilize a five-year planning horizon with respect to PURPA capacity to align PURPA planning with future IRP case. 2 Tr 382.
- Set UPPCO's PURPA avoided capacity cost to the MISO Planning Resource Auction (PR) clearing price for each year that the contract is in place for times when the UPPCO demonstrates that it does not have a persistent capacity need and making additional changes to the avoided energy cost MISO Locational Marginal Price ("LMP") pricing structure option. 2 Tr 383 – 384.
- Increase UPPCO's proposed QF standard offer cap from 500 kW to 550 kW. 2 Tr 384.

- Record the Portage CT insurance settlement as a regulatory liability. 2 Tr 231.

- Grant a waiver from certain filing requirements for the RICE RFP. 2 Tr 299.

- Direct UPPCO to file annual reports using the Staff Exhibit S-3 as template. 2 Tr 232.

Staff also recommends that UPPCO make the following revisions to its filing in its rebuttal case:

- File an implementation plan for the PCA. See 2 Tr 249 - 250;

- Seek a waiver from the filing requirement for a cost of carbon analysis and 2 Tr 254,

- Use Staff's IRP format for future annual reports. See Exhibit S-3.0.

Staff and UPPCO agree with most of UPPCO's PCA. UPPCO witness Haehnel testified that Staff and UPPCO are in complete agreement with Staff on the following:

- Solar PPA;

- RICE 2022;

- Retirement of the Portage CT, and

- Hydro Capacity upgrade.

2 Tr 88-89.

Consistent with Staff's recommendations UPPCO:

- Withdrew its request to establish a regulatory asset for unrecovered IRP costs. See 2 Tr 89.

- Accepted Staff's recommendations for future IRP filings, including providing all information necessary to show compliance with the IRP Filing Requirements in the UPPCO's initial filing or else noting filing requirements that are not applicable or requesting waivers from specific filing requirements. Brief p 43.

- Provided a PCA implementation plan. See Exhibit A-32.

- Requested a waiver from Section XIX(i) of the IRP Filing Requirements, which requires a comparison of total projected carbon emissions under each scenario. See 2 Tr 178.Brief p 43.

- Accepted and adopted Staff's recommended PURPA avoided cost and Standard Offer Tariff and incorporated them in its case. See 2 T 135 – 137.

- Accepts Staff's proposed format for annual reports See Exhibit S-3.0. Brief p 43.

Following UPPCO's IRP revisions UPPCO believes that it is in complete agreement with Staff regarding the Solar PPA, RICE 2022, hydroelectric capacity improvements, and PURPA avoided cost portions of the PCA. UPPCO further believes that only four issues remain in this case where UPPCO and Staff do not agree:

- Whether the Solar PPA should be approved in this proceeding;

- The appropriate accounting treatment for the Portage CT insurance settlement;

- Whether the EWR target should be greater than the 1.5% proposed by UPPCO; and

- The proposed FCM for the Solar PPA.

Brief p 53.

B. <u>CARE & AG Positions</u>

CARE and the AG indicated in their briefs that each party agrees with the following three components of UPPCO's PCA:

- Adding 125 MW of energy and capacity by entering a long-term PPA with a new solar generation facility located in Michigan's Upper Peninsula;

- Implementing UPPCO's PURPA avoided cost proposal application; and

- Moving UPPCO's Hoist and McClure hydroelectric generating units "in front of the meter," meaning "to an electrical location that will allow the capacity of these plants to be used for MISO resource adequacy.

See CARE Brief p 3.

CARE and the AG also support UPPCO's 1.5% EWR target but recommend UPPCO work toward Staff's recommended increase in UPPCO's EWR target percentage.

CARE and the AG support UPPCO's proposed FCM but recommend a different structure and amount than proposed by UPPCO. CARE Brief p 3; AG Brief pp 5-7.

CARE and the AG do not support UPPCO's proposed RICE plant. CARE and the AG recommend that if the Commission does not approve the RICE plant the Commission should direct UPPCO not to repair or replace the Portage CT Generating Station, until UPPCO shows the repair is reasonable and prudent. CARE and the AG recommend the Commission approve UPPCO's proposed accounting treatment of the Portage insurance settlement. CARE Brief pp 21-26: AG Brief pp 5-7.

C. <u>**ABATE's Position**</u>

ABATE does not support UPPCOs IRP proposals. ABATE indicated in its Brief that is not opposed to any particular aspect of UPPCO's IRP but ABATE believes that UPPCO's IRP level of analysis does not conform to IRP standards and should be rejected. ABATE recommends that the Commission find the following regarding UPPCO's IRP:

- The IRP is not the most reasonable and prudent means of meeting UPPCO's energy and capacity needs;
- Insufficient evidence to support approval of a 125 MW solar PPA, a 20 MW RICE unit, an FCM adder above the solar PPA rate, and to increase its EWR target from 1% to 1.5%.
- UPPCO solar PPA analyses showing that the contract rate, as proposed, represents a long-term net economic benefit to ratepayers is faulty, because it relies on unreasonable assumptions;
- UPPCO has provided no sensitivity analyses to determine whether the PPA will still provide a net benefit to customers under various future scenarios;
- The Commission should reject UPPCO's proposed solar PPA unless UPPCO provides additional analyses which show that the offer price will provide net benefits to customers according to rigorous sensitivity testing;

- UPPCO's proposal to finance and own a new 20 MW RICE unit does not provide long-term net economic benefits to ratepayers even under UPPCO's own base case modeling;

- UPPCO has not provided evidence that it has investigated all other potential options to the proposed construction of the RICE unit. A transmission solution or a lower cost generating asset could potentially resolve the power reliability issues cited by UPPCO;

- UPPCO's proposed FCM is unwarranted unless UPPCO cannot prove that the final negotiated solar PPA will include debt-like payment obligations. If an FCM is approved, it should account for the fact that UPPCO's calculations significantly overstate the appropriate adder rate; and

- UPPCO's EWR target increase from the statutory 1% to 1.5% is not supported the with evidence of the cost or net savings of that proposal therefore the Commission should not approve UPPCO's proposal in this proceeding.

ABATE Brief pp 2-3

D. <u>Circle Power's Position</u>

Circle Power like ABATE argues that the Commission should reject UPPCO's IRP. Circle Power argues that UPPCO's IRP modeling contains at least the six following flaws that either individually or in total create an inadequate evidentiary basis and prevent the Commission from making its statutorily required "most reasonable and prudent" finding:

- UPPCO's modeling assumptions overstated the capital costs various technologies, including wind energy;

- UPPCO's IRP used an inaccurate capacity factor for wind generation that inappropriately skewed its RFP process toward solar generation only;

- UPPCO has entered into a 125 MW solar PPA based on a flawed process, and UPPCO has failed to show that it will be in the best interests of rate payers;

- UPPCO based its LMP forecast on data that are not representative of its marketplace;

- UPPCO incorrectly calculated the inflation-adjusted energy payment to QFs; and

- UPPCO's natural gas pricing assumptions understated its actual projected market costs for natural gas.

Brief pp 7-8.

Circle Power argues that UPPCO's incorrect modelling assumptions resulted in UPPCO's reliance on incorrect IRP conclusions and a flawed PCA.

Because both ABATE and Circle Power, for a variety of reasons, believe that the Commission should reject UPPCO's IRP in its entirety this PFD will consider and discuss ABATE and Circle Power's positions in the last section of this PFD. To do otherwise would preclude a discussion of Staff and other intervenors positions with regarding a number of IRP and PCA issues.

E. <u>Moving UPPCO's Hoist and McClure hydroelectric generating units "in front of the meter."</u>

Staff recommends that the Commission approve UPPCO's proposed move of the Hoist and McClure units from behind the meter to in-front-of-the-meter. Staff believes this move is reasonable and may approximately be considered in an IRP proceeding because UPPCO is not seeking cost recovery in this case. UPPCO witness Tripp testified that the move increases the capacity that the Midcontinent Independent System Operator (MISO) credits to these units 2 Tr 161-162. Witness Tripp testified that UPPCO submitted a request with MISO and this move was complete as of March 1, 2019. 2 Tr 162. Exhibit S-5.0 provides total cost of this move, as well as the instant case were recovery of these costs was requested. Staff recommends the Commission approve UPPCO's move of the Hoist and McClure units to in-front-of-the-meter because the request is reasonable, and because UPPCO has not requested approval for any associated costs.

CARE witness Jester testified that CARE supports UPPCO's move of the Hoist and McClure units to in-front-of-the-meter. See 2 Tr 436. The AG in her Brief also supports UPPCO's move of the Hoist and McClure units to in-front-of-the-meter. See Brief pp 7-8.

ABATE and Circle power neither support UPPCO's IRP nor UPPCO's PCA. The evidence presented shows that UPPCO's PCA proposal to move of the Hoist and McClure units from behind the meter to in-front-of-the-meter is reasonable and prudent. I recommend the Commission approve these components of UPPCO's IRP PCA.

F. <u>Solar PPA</u>

UPPCO argues that it Solar PPA will provide clean, renewable energy, reduce exposure to market volatility, and lowering costs relative to UPPCO's business as usual scenario. Staff, CARE, and the Attorney General all agreed. See Staff Brief, pp 12 -13; CARE Brief, pp 3 - 7, and AG Brief, pp 5-6.

Staff witness Heidemann testified that UPPCO's PLEXOS modeling results show that the PCA without the proposed RICE unit is the lowest cost plan and confirms the affordability of UPPCO's proposed solar PPA. 2 Tr 355. Witness Heidemann testified that three variables considered in UPPCO's PPA sensitivity analysis models (capital cost, solar capacity factor, and market capacity price) resulted in UPPCO customer savings and would provide substantial benefits with low risks to UPPCO customers. See 2 Tr 355; 2 Tr 359. UPPCO's B & V PLEXOS model shows the 125 Solar PPA is the lowest cost option despite the modeling undervaluing of UPPCO's owned or contracted resources. 2 Tr 355.

CARE witness Jester agrees with Staff. Staff, CARE and the AG support UPPCO's proposed Solar PPA. Witness Jester testified that according to UPPCO's B & V's PLEXOS model the solar PPA had the lowest levelized cost (2 Tr 41) and would allow UPPCO to hedge risks due to the renewable nature of the Solar PPA. See 2 Tr 411 and CARE Brief pp 3-8.

ABATE does not support UPPCO's proposed Solar PPA because it believes that there is a high probability that the PPA would be a net cost to rate payers. In Exhibit AB-1, ABATE witness Alderson completed a sensitivity analysis which witness Alderson believes supports ABATE's position. See AB-2.

Staff witness Heidemann testified that Staff considered the capacity price forecast in ABATE's analysis and concluded that it was unreasonable because it used the PRA capacity price as a starting point. 3 Tr 376. Witness Heidemann also testified that Staff found numerous errors in ABATE's calculations. After ABATE's errors were corrected that data shows that there are more cases in which the solar PPA is a benefit to customers. Cases in which the PPA is a cost to customers are clustered near the breakeven point. Staff witness Heidemann testified that after reviewing Staff and ABATE calculations Staff concluded that there are more situations that show UPPCO customer benefits than rate payer liability. 2 Tr 377.

ABATE witness Alderson testified that UPPCO did not evaluate the risk of lower natural gas prices associated with UPPCO's 125 MW Solar PPA. Staff witness Heidemann testified that UPPCO's modeling did consider the risk of lower gas prices. UPPCO through B & V ran a Monte Carlo risk analysis that shows the solar PPA is the least sensitive to natural gas price changes of any alternative plan. 2 Tr 374. In the B&V

modeling when the natural gas price was altered, the solar PPA provided greater stability than UPPCO's current approach of purchasing natural gas on the market. 2 Tr 374.

Staff recommends the Commission find that UPPCO's proposed 125 MW solar PPA is the most reasonable and prudent plan for meeting UPPCO's energy needs from a transmission perspective. 2 Tr 355. Brief p 18.

UPPCO accepted ABATE witness Alderson's recommendations. Additionally, UPPCO modified its cost analyses for the Solar PPA to reflect a 0.5% annual degradation factor for the solar array. Revised Exhibit A-8, line 29, includes a degradation factor of minus-0.5% for the solar array in UPPCO's revenue requirement analyses. 2 Tr 96-97.

UPPCO also accepted ABATE witness Alderson's recommendation that data used to calculate the value of energy purchases that would be offset by implementation of the PCA should be UPPCO's recommended PURPA avoided cost. See 2 Tr 97. Revised Exhibits A-8, A-10, A-11, and A-12, utilize the revised LMP forecast sponsored by UPPCO witness Stocking as Revised Exhibit A-16. Exhibit A-33 and Exhibit A-34, provide additional sensitivity analyses further demonstrating that the Solar PPA will provide long-term economic benefits to UPPCO customers under all foreseeable scenarios.

Exhibit A-33 examines the cost savings expected from the Solar PPA under a variety of capacity price scenarios, assuming the base LMP for energy stays constant. 2 Tr 606 – 607. Witness Haehnel testified these capacity price scenarios are reasonable because the base case capacity price scenario premised upon 50% of UPPCO's Cost of New Entry (CONE) is a common benchmark used in IRP proceedings. 2 Tr 607. Witness Haehnel further testified that the lowest and highest capacity price scenarios reflected, were taken directly from witness Alderson's testimony. 2 Tr 607. Exhibit A-33, line 8, shows that the Solar PPA will result in cost savings for UPPCO customers under all foreseeable capacity price scenarios. 2 Tr 608.

Exhibit A-34 examines the cost savings expected from the Solar PPA under a variety of energy price scenarios, with a base case of the revised LMP forecast from Revised Exhibit A-16. 2 Tr 608. Exhibit A-34 shows that under all foreseeable energy price scenarios, the Solar PPA would provide significant cost savings to UPPCO's customers. See Exhibit A-34, line 8. Witness Haehnel testified that even at the Lowest Capacity Price forecast, the Lowest LMP forecast produces long-term economic benefits. 2 Tr 609

ABATE also argues that UPPCO's solar PPA RFP process sought only a solar energy solution. See ABATE Brief, p 9. ABATE believes UPPCO arbitrarily limited its choices to solar in violation of MCL 460.6t. ABATE's argument fails to recognize that UPPCO's RFP followed an extensive B&V analysis. See Exhibit A-1. B&V 's analysis includes and considers the following resource technologies:

- onshore wind;
- utility-scale solar;
- community-scale solar;
- biomass;
- simple-cycle CT;
- reciprocating internal combustion engines, and
- battery storage.

UPPCO also evaluated each of the above technologies and scenarios consistent with the MIRPP and only then was solar selected as the most cost effective alternative. See 2 Tr 38 and Revised Exhibit A-1.

ABATE also argues that MCL 460.6t(6) required UPPCO to complete a technology neutral RFP process. See Brief p 12. ABATE believes that UPPCO's RFP process focused solely on solar to the exclusion of other technologies. ABATE's argument is without merit.

MCL 460.6t(6), provides in pertinent part:

> Before filing an integrated resource plan under this section, each electric utility whose rates are regulated by the commission shall issue a request for proposals to provide any new supply-side generation capacity resources needed to serve the utility's reasonably projected electric load, applicable planning reserve margin, and local clearing requirement for its customers in this state and customers the utility serves in other states *during the initial 3-year planning period* to be considered in each integrated resource plan to be filed under this section. ...
>
> MCL 460.6t(6)(emphasis added).

The plain language of this statute does not require a technology-neutral RFP. The language included by the legislature encourages utilities to craft RFPs to identify potential bids reliable enough for long term planning purposes but does not require technology neutrality.

> An electric utility shall define qualifying performance standards, contract terms, technical competence, capability, reliability, creditworthiness, past performance, and other criteria that responses and respondents to the request for proposals must meet in order to be considered by the utility in its integrated resource plan to be filed under this section.

ABATE's technology neutral RFP requirement is not supported by the plain language of the statute. Neither ABATE, any other party to this matter, nor this ALJ may rewrite the statute to give it the meaning ABATE desires.

MCL 460.6t(6) required UPPCO to issue an RFP for new supply-side generation needed during the first three years of the IRP planning period. Revised Exhibit A-1 shows that UPPCO's IRP covers a 20-year planning period of 2018 through 2038. See Revised Exhibit A-1. UPPCO has not projected a need for supply-side generation until 2022 more than three years after the planning period. See Brief, pp 11 – 13. Contrary to ABATE's belief MCL 460.6t(6) did not require UPPCO to issue an RFP.

Despite the lack of a requirement to issue an RFP UPPCO voluntarily issued solar and RICE RFPs to take advantage of the competitive bidding process to obtain the best possible price and value for rate payers. Staff, CARE, and the AG all agree that UPPCO's decision to issue a solar RFP was reasonable and consistent with the language of MCL 460.6t(6). Therefore, the evidence presented supports a finding that ABATE's arguments to the contrary have no merit.

Circle Power argues that UPPCO's IRP did not properly consider Qualifying Facilities (QF) like Circle Power. Staff witness Hadala testified that there are currently four PURPA QF projects in UPPCO's interconnection queue and that UPPCO is currently actively evaluating the requests for interconnections. 2 Tr 385. None of the QF projects in the queue were submitted by Circle Power. Circle Power did provide evidence that small QFs currently exist within UPPCO's service territory. Circle Power submitted PPAs to UPPCO in July 2019 but provided no supporting financial information.

The QF projects discussed by Circle Power witness Moore are projects that Circle Power would like to build in the future but have not been constructed. Despite this Circle Power provided no evidence regarding its proposed QF facilities that shows whether:

- Financing has been obtained;
- Sites have been proposed;
- Land has been purchased, or
- Any needed local approvals have been obtained.

Circle Power witness Moore testified that in early as November 2018, Circle Power informed UPPCO that the QF project in Houghton County would be larger than Circle Power's previously proposed by FEW projects. Witness Moore testified that Circle Power submitted a distribution request for interconnection of 19.2 MW. See Exhibits CP-13 and CP-14. UPPCO witness Haehnel testified that when UPPCO filed its IRP, only one QF project was in UPPCO's interconnection queue and that project was entitled "Scotia Wind L.L.C." and was backed by Circle Power. See 2 Tr 104. On May 15, 2019 Circle Power, withdrew the project from UPPCO's interconnection queue. Circle Power does not have any current projects in UPPCO's interconnection queue. Id. Circle Power argues that it withdrew its interconnection request because it determined it wished to interconnect at the transmission level. Circle Power argues that it has no obligation to interconnect at the distribution level or to interconnect directly with the utility to which they will sell their power. See 18 CFR § 292.303(c), (d) & (e). Circle Power argues that the fact that it withdrew its Scotia Wind project interconnection application at the transmission level does not mean that it was still not seeking interconnection and consideration as a QF. Circle Power believes that UPPCO was aware of its PURPA obligation to purchase power from QFs, including the FWE/Circle Power project in Houghton County (Scotia Wind), but excluded the project from UPPCO's IRP analysis.

UPPCO argues that Circle Power's intent to build wind farms at some unknown time were so speculative that UPPCO could not include the future projects in its IRP analysis of its customers' electricity needs over a 10 to 20-year timeframe. UPPCO Reply Brief p 16. UPPCO witness Haehnel testified that although Circle Power had access to all of the cost information considered by UPPCO in identifying its PCA including knowledge of the RFP competitively bid prices Circle Power failed to submit an alternative proposal as provided by MCL 460.6t(6) with a lower cost and that would benefit UPPCO's customers.

In July 2019 Circle Power presented UPPCO with two PPAs for wind projects which Circle Power planned to interconnect at a transmission level in order to gain access to wholesales pricing markets. See 2 Tr 105; Exhibits A-35 & 36. Because each project was approximately 20 MW neither project was eligible for UPPCO's Standard Offer Tariff *Id.* Despite this fact Circle Power's proposed PPA's used UPPCO's Standard Offer Tariff pricing and directed UPPCO to sign the PPAs which UPPCO refused to do. See 2 Tr 105. UPPCO reviewed the proposed Circle Power wind PPA's to determine their cost-effectiveness compared to UPPCO's proposed Solar PPA. Witness Stocking testified that the PPA's have an on-peak energy rate of $50.57 per MWh which exceeds the Solar PPA rate by $15.05 per MWh in year one, and $3.34 per MWh in year 25. See 2 Tr 143. Additionally, the proposed PPAs would require UPPCO to pay for any capacity received from each wind farm, while the Solar PPA provides all capacity associated with the solar installation at no additional charge. *Id.*

Witness Stocking in the following table compared Circe Power's proposed PPAs pricing with equivalent market purchase costs over the previous 9 years to determine the PPA's price hedging value.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average
CP Draft PPA Cost	$ 6,038,533.05	$ 6,038,533.05	$ 6,038,533.05	$ 6,038,533.05	$ 6,038,533.05	$ 6,038,533.05	$ 6,038,533.05	$ 6,038,533.05	$ 6,038,533.05	$ 6,038,533.05
Equivalent Market Purchase Cost	$ 5,251,262.51	$ 5,074,755.11	$ 4,572,164.09	$ 5,083,773.30	$ 6,456,753.89	$ 4,106,599.46	$ 3,851,768.11	$ 4,379,048.20	$ 4,683,390.59	$ 4,830,847.31
CP Contract Premium ($)	$ 787,270.55	$ 963,777.94	$ 1,466,368.97	$ 954,759.75	$ (418,220.84)	$ 1,931,933.59	$ 2,186,764.95	$ 1,659,484.85	$ 1,355,142.46	$ 1,207,685.74
CP Contract Premium (%)	13.0%	16.0%	24.3%	15.8%	-6.9%	32.0%	36.2%	27.5%	22.4%	20.0%

See 2 Tr 146; Reply Brief p 17.

Witness Stocking testified that if UPPCO had executed Circle Power's proposed PPAs in 2010 and those PPAs had remained in place UPPCO's customers would have paid a price premium in comparison to market purchases all but one year during the 9-year period. UPPCO customers on average, would have paid energy costs 20% greater than market purchases. 2 Tr 146. Additionally, because UPPCO's Solar PPA more than likely would provide power during periods of peak load, and Circle Power's wind projects would more likely provide power during off-peak times, the Solar PPA provides a better hedge against market pricing. See 2 Tr 148. Based on this information UPPCO correctly concluded Circle Power's PPAs would have very little value as a market hedge.

The evidence presented shows that UPPCO's proposed Solar PPA would provide clean, renewable energy, reduce exposure to market volatility, and lower costs relative to UPPCO's business as usual scenario. I agree with Staff, CARE, and the AG that UPPCO's proposed Solar PPA is reasonable and prudent and recommend the Commission approve the Solar PPA component of the PCA.

G. UPPCO's Proposed FCM

UPPCO is requesting an FCM for its proposed 125 MW Solar PPA because the Solar PPA is a long-term commitment which would provide approximately 40% of UPPCO's total energy and approximately 55% of UPPCO's ZRCs. UPPCO witness Haehnel testified that UPPCO has decided to not own the solar asset and is therefore foregoing a rate of return for its investors. See 2 Tr 57-58. UPPCO also requests an FCM to counteract the negative credit impacts of its proposed long-term PPA commitment. Brief pp 62-63.

FCMs under PA 341 of 22016 are governed by MCL 460.6t(15). Section 6t(15) provides in pertinent part:

> For power purchase agreements that a utility enters into after the effective date of the amendatory act that added this section with an entity that is not affiliated with that utility, the commission shall consider and may authorize a financial incentive for that utility that does not exceed the utility's weighted average cost of capacity.
>
> MCL 460.6T(15)

UPPCO's Exhibit A-7 provides UPPCO's proposed FCM. UPPCO argues that because UPPCO has decided to enter into a long- term solar to achieve customer savings the Commission should approve the FCM in this IRP proceeding and then consider recovery in UPPCO's next rate case. 2 Tr 56-62 and Revised Exhibit A-7. UPPCO witness Haehnel testified that UPPCO's proposed FCM case is reasonable. UPPCO argues that it FCM methodology;

- Is based on imputed debt;
- Parallels the same methodology discussed by Moody's (i.e. UPPCO's credit rating agency) in Exhibit AB-7; and
- Is needed because UPPCO's executed Solar PPA (Exhibit A-32) contains a regulatory out clause under which UPPCO may terminate the agreement if the Commission does not approve an FCM, acceptable to UPPCO.

UPPCO witness Haehnel testified that UPPCO's FCM proposal mirrors Consumers Energy's "proposed FCM in its IRP proceeding, in U- 20165." 2 Tr. 568-Confidential. UPPCO argues its FCM proposal differs from Consumers U-20165 FCM because it cites to a California Public Utility Commission whitepaper for its proposed FCM.

UPPCO's proposed FCM calculates the imputed debt of the PPA and allow UPPCO to earn compensation equal to the rate of return for the incremental equity used to the support the PPA. See 2 Tr 61. Witness Haehnel testified that the FCM would be calculated as follows:

> (a) Calculate the equity required to offset imputed debt for each year of the PPA. The imputed debt will equal the NPV of the PPA payments multiplied by 25% (PPA Imputed Debt = Required Equity Capital);
>
> (b) Multiply the required equity capital resulting from the calculation in a) by the UPPCO's authorized ROE from its most recent general electric rate case for PPAs supported by nonrenewable generation assets or the authorized ROE in its Renewable Energy Plan for PPAs supported by renewable generation assets; and
>
> (c) Gross up the results from the calculation in b) by the factor used for calculating the UPPCO's revenue requirement in its most recent electric rate case.

See 2 Tr 60.

None of the parties' support UPPCO's FCM as proposed. CARE indicated in its Brief that it supports an FCM consistent with the FCM methodology approved in the Consumers IRP settlement. See CARE Brief, p 15. Staff stated that it did not support the requested FCM but listed alternate acceptable FCM methodologies. See Staff Initial Brief, pp 36 – 38.

The AG indicated in its Brief that it does not support UPPCO's proposal to apply the FCM to the proposed solar PPA and not existing power purchase agreements. 2 Tr pp 56-57. The AG agrees with CARE witness Jester that an FCM consistent with the Consumers IRP settlement is a reasonable compromise on this issue. 2 Tr 414-427. ABATE also questions the need for an FCM. See ABATE Initial Brief, p 15. ABATE witness Alderson suggests an alternate method for deriving an FCM that would be more acceptable. See 2 Tr 484 and Exhibit AB-4.

Staff agrees with CARE witness Jester that the FCM approved in U-20165 is the most appropriate FCM proposal. See 2 Tr. 414. CARE witness Jester testified that while an FCM can be revised, it should be fixed for the duration of a PPA. *Id.*

Many of the parties argue that UPPCO's proposed FCM should be rejected because of UPPCO's previous use and reliance on short-term PPAs without an FCM. ABATE Exhibit AB-1 shows that since 2009 UPPCO has met between 55% and 90% of its total energy needs using PPAs without an FCM designed to mitigate any credit impact. 2 Tr 464. UPPCO believes that its past commitments to PPAs are substantially different from its proposed Solar PPA because, each of UPPCO's current PPAs represents a much smaller portion of UPPCO's capacity needs, have much short contract terms and the laddering of these short-term PPAs does not represent a significant, long term commitment of UPPCO resources. UPPCO argues that it Solar PPA is a major, long term commitment of financial resources combined with foregoing earning a rate of return on a significant portion of its power supply portfolio. Brief p 63.

Staff argues that UPPCO request for an FCM is based on UPPCO's belief that its proposed Solar PPA, if approved, would create a financial credit risk that constitutes imputed debt. Staff argues that because UPPCO's proposed IRP portfolio and historical portfolio includes numerous PPAs an FCM is not necessary to compensate UPPCO for the financial risks of its proposed Solar PPA. Exhibit A-7 at line 12 identifies a 25% Risk Factor. Staff believes that an FCM risk factor is not necessary because these risks should be considered in UPPCO's general rate case.

Staff argues that UPPCO has a sufficient incentive to enter into its new solar PPA and does not need an FCM. Staff also argues that UPPCO's proposed FCM is not valid because it inappropriately combines an imputed debt offset mechanism into the calculation for a PPA incentive. UPPCO's proposal results in a return that is much higher than UPPCO's weighted average cost of capital (WACC), the cap under PA 341 of 2016, MCL 460.6t(15). See Brief p 35. ABATE agrees that UPPCO's FCM is too high and is inappropriately tied to imputed debt. ABATE witness Aldersen and Staff agree that UPPCO's imputed debt should be part of a complete review of the UPPCO's cost of capital in UPPCO's next rate case. See 2 Tr 445.

Staff witness Nichols testified that UPPCO's FCM imputes new equity to offset imputed debt and collect this through an adder to the PPA bid. See 2 Tr 676-677. Exhibit S-11.1 includes a California Public Utility Commission whitepaper that UPPCO relies upon. See Exhibit S-11.1. Staff argues the whitepaper does not support UPPCO's FCM.

Witness Nichols testified that UPPCO's FCM proposal should be considered in cost of capital review as part of a rate case and not in an IRP proceeding. 2 Tr 678-679. Staff recommends that UPPCO's FCM proposal imputed debt be considered in UPPCO's next rate case, and not as an FCM in an IRP. Staff Brief p 36.

H. <u>Staff Recommends an FCM not tied to Imputed Debt.</u>

Staff argues that Act 341, section 6t(15) permits ,but does not require, the Commission to approve UPPCO's FCM and does not limit how the Commission structures an incentive, except for mandating a cap. Witness Nichols testified that Staff supports an FCM similar to Consumers approved FCM and provides recommended FCM terms and conditions in his testimony. See 2 TR 681-682. Staff provides proposed FCM language on page 36-37 of its brief.

Witness Nichols testified that the UPPCO FCM's max rate should be UPPCO's After-Tax WACC or 6.91%. See 2 Tr 682-683 -Confidential. Because UPPCO's WACC may be too high witness Nichols testified that another reasonable alternative would be to limit the rate to the 5.88% rate approved for Consumers FCM in U-20165. Staff argues that because the FCM is an incentive and not a required return the FCM rate can be any amount the Commission finds appropriate between zero and the statutory maximum of the WACC. Staff witness Proudfoot testified that he reminds the Commission that it rejected DTE Electric's proposed consideration of imputed debt in its renewable energy plan case U-15806 because imputed debt should be considered in a rate case. 2 Tr 225. Staff argues in its Brief that the Commission's decision with regard to UPPCO's FCM should be consistent with the Commission's decision in U-15806.

UPPCO indicated In response to Staff's, CARE's, and ABATE's concerns regarding UPPCO's use of the imputed debt FCM methodology, that UPPCO still believes that its proposed FCM methodology is reasonable given the UPPCO's risk profile. Witness Haehnel testified that Exhibit A-31 shows that UPPCO signed a 26-year PPA for energy and capacity, and, as a result UPPCO has "debt-like" payment obligations with the counter party for the term of the contract. Additionally, Exhibit A -7 details these "debt-like" PPA FCM, payment obligations at column (b) labeled PPA Payments. 2 Tr 96. Witness Haehnel testified that Revised Exhibit A-7:

- Updates UPPCO's proposed FCM to reflect recent cost updates and the effects of UPPCO's recent rate case (U-20276);
- Identifies UPPCO's risk profile (see line 12), and
- Includes Staff 's alternate "WACC multiplier" methodology accepted in Consumer Energy's recent IRP case (U-20165).

See 2 Tr 89 -90.

I. <u>Staff Alternatives to the Consumer's FCM.</u>

Staff witness Proudfoot testified that Staff recommends that if the Commission finds the imputed debt should not be considered in a rate case then issues of imputed debt should be handled when UPPCO submits a PPA to the Commission for approval. 2 Tr 226. In U-15806 the Commission found that the time to consider issues of imputed debt is when a contract is submitted to the Commission for approval. See 2 Tr 225. Because UPPCO's cost of capital can change after the Commission's IRP plan approval and at the time the contracts are executed or submitted to the Commission for approval, Staff believes that it would be premature for the Commission to approve UPPCO's FCM. Brief p 38.

Staff witness Harlow testified that if the Commission approves and FCM to offset imputed debt, then Staff proposes a second FCM alternative. Staff recommends two FCM adjustments. First, the incentive should not apply to the entire contract price, but instead, "according to S&P, only apply to the capacity component of the PPA. See 2 Tr 395. Second, when calculating the FCM the Commission should not use UPPCO's proposed 25% risk factor. Witness Harlow testified that according to S&P, a risk factor between 0% and 15% more accurately reflects risk for Michigan utilities who recover reasonable and prudent PPA expenses through PSCR cases. 2 Tr 396.

J. <u>ABATE's Alternative FCM</u>

ABATE witness Aldersen provided alternatives to UPPCO's FCM which go farther than Staff's alternatives.

> [i]n addition to being less than the weighted average cost of capital, that the PPA rate plus the FCM should be no greater than a competing utility self-build project. If the PPA rate plus FCM were to increase the cost of procuring the utility's power needs to a level that is greater than the alternative utility self-build option for procuring the same power, then the FCM rate should be reduced. The utility should provide a cost estimate of the competing self-build project to ensure the FCM rate is not above the threshold level.
>
> 2 Tr 462.

Witness Aldersen testified that if the FCM is approved, it should be re-evaluated on a case by case basis. *Id* Staff indicated in its brief that it does not oppose ABATE's FCM recommendations. Brief p 40. Additionally, Staff, consistent with its position in U-20165, agrees with ABATE that the Commission has the authority to discontinue an FCM if positive results cannot be shown. See U-20165, Staff's Reply Brief Supporting the Settlement Agreement, p. 14

K. Staff and Intervenors Testimony Support Staff's Recommendation to Reject UPPCO's Proposed FCM.

Staff argues that the Commission should reject UPPCO's proposed FCM because:

- Imputed debt should be either dealt with at the time a contract is submitted to the Commission for approval or within a general rate case;
- An FCM is an incentive and not compensation for an expense: and
- The Commission's order in U-20165 provides a reasonable alternative.

Staff Brief p 38

I find that the evidence presented show that UPPCO's proposed FCM, which uses an imputed debt calculation, is neither necessary nor reasonable and prudent and should be considered by the Commission when UPPCO submits a PPA to the Commission for approval or in UPPCO's next general rate case. However, if the commission elects to consider an FCM in this matter I recommend that the Commission adopt an FCM similar to the FCM approved in U-20165 subject to Staff's recommend FCM adjustments.

L. UPPCO's Proposed 18 - 20 MW RICE Unit to Begin Service in 2022 (RICE 2022)

UPPCO indicated in its Brief that the B&E BAU scenario modeling found that UPPCO has sufficient existing and near-term capacity resources to meet its projected peak demand and planning reserve requirements. The B&E BAU modeling showed over the study period UPPCO has no need to procure additional capacity and RPS requirements. The B&E BAU modeling also revealed that UPPCO will require additional energy resources to reduce its reliance in the wholesale and spot market, improve reliability and mitigate market risk for its customers. See Brief p 19; Revised Exhibit A-1 at p. 41. UPPCO's Revised Exhibit A-1 shows that the B&E report selected the RICE

2022 facility. See Revised Exhibit A-1, pages 50-51. The B&E report provides the following information:

- UPPCO would benefit most from a generator that is a modular, fast-start, back-up/peaking units such RICE that are currently being installed elsewhere in the upper peninsula by MBLP and UMERC.
- RICE units have been selected as the source of new generation in the upper peninsula for MBLP (3 x 16.7 MW units for a total of 50 MW) and UMERC (up 10 x 18 MW units for a total of 180 MW).
- RICE units are more expensive to install than other small conventional generation, but they are generally more efficient with a lower heat rate of 8,500 BUT/kWh, allowing the units to be dispatched with much greater economic frequency (46.2 percent of the time for the other upper peninsula examples).
- Additional energy source variety and firm, quickly dispatchable generation from a 20 MW RICE unit would be a favorable tradeoff for a relatively higher CPWC than the BAU Solar PPA 125 without a RICE.

Revised Exhibit A-1

UPPCO witness Stocking testified that UPPCO's proposed RICE unit would provide UPPCO's heavily dependent non-dispatchable renewable energy portfolio with a small, quickly dispatchable resource that would improve system reliability and provide price hedging benefits. Witness Stocking testified that RICE dispatchable units provide expedient start-up times and quick ramping rates which allow system operators to match the total system demand to the amount of resources available to meet this demand. 2 Tr 125. Witness Stocking further testified that the proposed RICE unit would provide redundant capacity to the growing MISO volume of renewable energy generating facilities. UPPCO believes that its RICE proposal is consistent with the Commission's recent approvals to build new natural gas-fired, dispatchable generating resources. 2 Tr 124.

UPPCO witness Tripp testified that UPPCO leveraged the RICE unit's location siting to enhance system reliability and power supply benefits for its customers. UPPCO selected the proposed RICE unit's location near the Blaney Park substation to take advantage of its eastern Upper Peninsula location and proximity to electrical transmission connection, the natural gas transmission system, and available acreage. 2 Tr. 164.

Witness Stocking testified that locating the RICE unit in the Eastern Upper Peninsula would provide additional reliability benefits. In April 2018, following an anchor strike to ATC's inter-peninsular submarine cables at the Straits of Mackinac, MISO sought input while considering MTEP 2018 ID No. 15145 (Mackinac – McGulpin 138kV Cable Replacement project). ATC provided information regarding the risks attributable to the loss of the remaining 138kV submarine circuit under several North American Electric Reliability Council (NERC) Transmission System Planning Performance (TPL) requirements. UPPCO believes its proposed RICE project would mitigate some of the contingent loss-of-load risks identified by ATC. 2 Tr 126.

On August 17, 2016, following a request by Governor Snyder, MISO began a Michigan Exploratory Transmission study to evaluate near and long-term regional production cost savings, reliability and resource adequacy benefits of adding transmission and generation resources in the eastern portion of Michigan's Upper Peninsula and norther Lower Peninsula. This study concluded, among other things, that dispatchable, natural gas-fired generating resources located in the region would provide reliability benefits that were comparable to the transmission alternatives.

2 Tr 126 – 127.

Witness Stocking testified that the RICE 2022 project was sized to meet UPPCO's customer needs, its proposed location would allow future expansion and collaboration with other Load Serving Entities or Independent Power Producers to mitigate reliability issues in the central and eastern Upper Peninsula. 2 Tr 128.

Staff agrees with UPPCO that the proposed RICE unit is necessary and would add reliability to the Upper Peninsula Inland Line and mitigate the risk of grid disruption. Staff witness Hedemann testified that on April 1, 2018 a ship's anchor struck the Mackinaw straits line 5 and sliced 3 of ATC's 6 underwater power cables. 2 Tr 370. The cable network serving the Upper Peninsula consists of six cables making up 2 electrical circuits. The loss of one electrical circuit would jeopardize the Upper Peninsula's power grid. Staff agrees with UPPCO that a new RICE unit would allow the Upper Peninsula to become more energy independent. Brief p 24.

MISO's August 2016 Michigan Phase II Study, (found that the Eastern Upper Peninsula transition network should be strengthened. See Exhibit S-9.12. Despite the study's finding that locating a RICE unit in the same area would not provide an economic or cost benefit, Staff believes study neither consider nor discussed two factors found in UPPCO's PCA. See 2 Tr 368. First, UPPCO's proposed RICE facility is smaller and more affordable than those 100 MW units considered in that study. Second, UPPCO's proposed RICE unit would be located in a critical transmission corridor that was not considered in the Phase II Study. 2 Tr 369. Therefore, Staff concluded that UPPCO's 20 MW RICE unit would improve the Upper Peninsula grid reliability because it would provide generation in a key location. Brief pp 24-25.

M. <u>RICE RFP</u>

Witness Haehnel testified that UPPCO issued a RICE facility, RFP for 18 to 20 MW of natural gas-fired RICE single or two engine generation facility with a COD commencing on or before June 1, 2022, located in UPPCO's Michigan service territory within MISO Load Resource Zone 2. Exhibit A-24 shows that UPPCO structured the RFP minimum requirements to allow bidders flexibility to propose technical solutions to maximize overall financial benefit of the project. See 2 Tr 45; Exhibit A-24. Witness Haehnel testified that UPPCO's RICE RFP, used WSP as the bid manager therefore the RICE RFP process was similar to UPPCO's Solar RFP process. 2 Tr 45-46. Witness Tripp testified that UPPCO contracted for RFP services through WSP to act as an independent administrator for the RFP process to ensure an unbiased bidding process. 2 Tr 162-164.

Witness Tripp testified that UPPCO contracted with Steigerwaldt Land Services to conduct a land study to identify properties in the Eastern Upper Peninsula UPPCO and to evaluate properties near eight substations for solar and RICE generation installation. Witness Tripp testified that UPPCO selected a location near an existing substation due to its eastern proximity, available electrical transmission connection, proximity to the natural gas transmission system, and available acreage. 2 Tr 164-165.

Witness Tripp testified that UPPCO received two bids with similar preliminary pricing. Both bids indicated that additional engineering was needed before firm price estimates were possible. 2 Tr 169. Because it determined that more engineering was necessary before firm pricing would be available, UPPCO selected Bidder A to perform the engineering services and to refine its pricing estimates because Bidder A had completed engineering or construction of more than 14 similar RICE generating plants with installed capacity of over 1,000 MW. Bidder A has a proven track record of engineering and design work for RICE generation units in the Upper Peninsula. 2 Tr 655. During the RICE unit RFP process UPPCO provided the bidders with the following information regarding the UPPCO Portage unit insurance settlement:

- The value of the settlement if UPPCO builds a replacement unit;
- It includes a deductible;
- Funds will be dispersed to UPPCO from the insurance UPPCO upon consummation of the insurance settlement agreement, and
- Remaining funds will be dispersed to UPPCO within two years of the date of the loss of the Portage unit, contingent upon the UPPCO providing proof of associated expenditures related to UPPCO's replacement unit.

See Confidential Exhibit A-27.

Confidential Exhibit A-26 shows that UPPCO's proposed RICE unit will be the replacement unit for the Portage CT and that UPPCO plans to use the insurance settlement monies, net of associated clean-up costs, including UPPCO labor, to offset the cost of the 18 MW RICE unit. UPPCO proposes that the insurance proceeds from the Portage CT unit insurance settlement be credited to the electric plant account charged with the cost of the damage. See Confidential Exhibit A-26. 2 Tr 658.

Witness Tripp testified that when the Portage unit is retired, UPPCO will credit the appropriate account for accumulated depreciation and the cost of removal and the salvage shall be charged or credited, as appropriate. If UPPCO's proposed RICE unit is not approved in this docket, UPPCO would use the total value of the insurance proceeds, net of associated clean-up costs and associated labor, to repair and/or refurbishing the

45-year old, oil-fired Portage CT. 2 Tr. 175. Witness Tripp testified that UPPCO updated his capital cost estimates for the proposed RICE unit by:

- Including pricing from the winning response to the RFP;
- Adding transmission interconnection costs, and
- Applying the insurance settlement.

See Confidential Exhibit A-26; see also 2 T 172.

UPPCO's Exhibit A-24 and witness Tripp's testimony provides details regarding the need for this new generation resource. Exhibit A-24 also include UPPCO's RFP. Confidential Exhibit A-25 provides preliminary RICE unit costs. Exhibit A-8 provides updated cost information.

Staff witness DeCooman testified that Staff reviewed UPPCO's RFP process filings and, verified that UPCCO's RFP complied with relevant sections of the Commission's IRP Filing Requirements. 2 Tr 297-299. Staff's initial review produced several questions that were subsequently addressed in UPPCO's discovery responses. Staff ultimately recommended the Commission grant waivers for UPPCO's deficient filing requirements and find UPPCO's RFP to be reasonable. See Exhibit S-5.2 ;2 Tr 299. Staff concluded that UPPCO's RFP for construction of up to 20 megawatts of reciprocating internal combustion engine (RICE) meets the requirements of MCL 460.6t(6) is reasonable and recommends Commission approval.

1. <u>ABATE</u>

ABATE, argues that the Commission must reject UPPCO's request to acquire a new 20 MW RICE unit, because the proposal lacks evidentiary support and is based on by flawed modeling assumptions. UPPCO witness Stocking, testified that the proposed

RICE unit motivations are would alleviate future transmission system limitations; and would alleviate power quality issues experienced by large-energy users located in the eastern half of UPPCO's service area. See 2 Tr 142. ABATE argues that the two factors cited by witness Haehnel are not relevant to the Commission's determination is of the lowest practical costs at which UPPCO can deliver reliable energy services to ratepayers.

ABATE argues that it is not opposed to the idea of UPPCO's RICE unit proposal but ABATE would like more information regarding how UPPCO compared RICE unit costs and risks to alternatives, before ABATE concludes that the RICE unit meets ACT 341 MCL 460.6t(8)(a) reasonable and prudent means of meeting its energy and capacity needs requirements. ABATE argues that before the Commission may approval UPPCO's RICE unit proposal the Commissions must have enough information to answer the following questions:

Did UPPCO examine all available options to meet its energy and capacity needs with an eye towards minimizing costs?

Did UPPCO support its proposal with thorough, detailed, and meaningful evidence in a way that satisfies its burden of persuasion?

See ABATE Brief pp 13-14*;* U-16794 Order, p 13.

ABATE witness Alderson testified that UPPCO's proposed 20 MW RICE unit UPPCO's base case modeling shows no long-term net economic benefit to ratepayers See 2 Tr 463. Witness Alderson testified that her analysis revealed that, if market prices for capacity decrease, or the capacity factor of the unit decreases, the net cost to customers would increase. *Id*. Witness Alderson testified that because UPPCO provided no information regarding alternatives to the RICE plant she was unable to compare the costs benefits etc. of the RICE plant with other alternative. Witness Alderson testified that a transmission solution or a lower cost generating asset could potentially resolve UPPCO's power reliability issues. *Id*.

UPPCO witness Stocking testified that UPPCO did not consider non-RICE plant alternatives because, it relied upon the B&V modeling for its PCA.UPPCO did not include the CT resource option in its PCA, nor did it provide a full revenue requirement analysis. 2 Tr 142. UPPCO believes the B&V modeling shows its proposed RICE unit's efficiency would provide UPPCO customers more benefits than a CT. 2 Tr 142. ABATE argues that because UPPCO's B&V report failed to consider alternatives to its RICE plant proposal it would be unreasonable for the Commission to approve a RICE plant proposal that is not supported by competent, material, and substantial evidence on the whole record. ABATE argues that such a Commission order would be arbitrary, capricious, or unsupported by the evidence, courts will deem it unreasonable and, thus, unlawful. MCL 462.25; *In re Application of Consumers Energy Co. for Reconciliation of 2009 Costs*, 307 Mich App 32; 859 NW2d 216 (2014); *Associated Truck Lines, Inc v Michigan Pub Serv Comm*, 377 Mich 259, 279; 140 NW2d 515, 522 (1966). ABATE argues that UPPCO's has failed to meet its evidentiary burden with regard to its RICE plant proposal and it is unclear whether UPPCO can salvage its faulty proposal within the Act 341 IRP statutory time limits. ABATE Brief p 15.

ABATE, witness Amanda Alderson in her rebuttal testimony testified that the Commission should not grant UPPCO a waiver of certain RFP filing requirements related to UPPCO's proposed RICE generation See 2 Tr 483. Witness Alderson testified that without the required power purchase agreement (PPA) option, the Commission cannot make an informed decision on whether UPPCO's utility-owned proposal is the most reasonable and prudent means of meeting UPPCO's load obligations. Id.

Witness Alderson further testified that Staff has not explained why it agrees with UPPCO's explanation for the lack of a PPA option over the cost differential between these two alternatives [utility owned vs. PPA] Id. ABATE does not agree with Staff's recommendation that the Commission grant UPPCO a waiver for these filing requirements and find that UPPCO's RFP for RICE generation is reasonable.

2. CARE & AG

CARE and the AG disagree with UPPCO's proposal to replace its Portage generating Station with a new 20 MW RICE generating station. The AG indicated in her Brief that she supports CARE and witness Jester's testimony regarding UPPCO's RICE unit proposal. AG Brief pp 6-7. Additionally, CARE recommends that if the commission denies UPPCO's request to construct a new RICE plant that the Commission direct UPPCO to demonstrate the reasonableness and prudence of repairing the Portage Generating Station. Despite this objection, CARE recommends the Commission approve UPPCO's proposed accounting treatment of the Portage generation station insurance settlement.

CARE opposes UPPCO's proposed RICE plant for three reasons:

- CARE believes that UPPCO has sufficient capacity and does need a new generation facility;
- A new generation facility would increase UPPCO customer rates and reduce the customer benefits of the proposed Solar PPA; and

- UPPCO ratepayers would be responsible for a disproportionate share of transmission costs which should be shared by other UP utilities and their customers.

Brief pp 22-24.

In its Brief CARE recommends the Commission deny UPPCO's proposed RICE plant and direct UPPCO to initiate a study of transmission in the Upper Peninsula.

a. <u>UPPCO Capacity Needs.</u>

CARE witness Jester testified that according to its PCA, UPPCO has 53 MW of excess zonal resource credits (ZRCs) for planning years 2022-23, 36 MW of excess ZRCs planning years 2023-24 and 2024-25, and 24 MW excess ZRCs for planning year 2025-26 and continuing until planning year 2030-31. According to witness Jester UPPCO has a capacity surplus and does not need any new generation facilities. CARE Brief p 23.

b. <u>UPPCO's Proposed RICE Plant Customer Costs and Cost Benefits of the Proposed Solar PPA</u>

CARE witness Jester testified that UPPCO's proposed RICE plant's revenue requirements are more than double the projected avoided costs UPPCO's Business As Usual (BAU) study. 2 Tr 429. Witness Jester testified that the BAU for the proposed 125 MW Solar PPA and the RICE plant has a higher cost per MWh than BAU with the proposed solar alone. Witness Jester testified that if the BAU with both solar and RICE has a projected lower levelized cost than BAU without those facilities, then the proposed RICE plant negates the cost benefits of the Solar PPA. *Id.*

CARE argues in its Brief that it does not feel that UPPCO has adequately demonstrated the proposed RICE units grid reliability benefits nor impact on UPPCO ratepayer benefits. CARE believes that UPPCO is not the best entity to complete such an analysis. CARE rejects UPPCO witness Stocking testimony that the RICE plant would

- Provide improved reliability to UPPCO's customers on the eastern end of its service territory;
- Provide load balancing generation needed because of the increasing prevalence on intermittent, renewable generation;

- Mitigate reliability issues by "alleviating potential voltage excursions and thermal loadings attributable to the limitations of the existing electric transmission infrastructure;

- Mitigate certain contingent loss-of-load risks identified by ATC in the MISO MTEP 2018 process subsequent to the April 1, 2018 anchor strike in the Straits of Mackinac and in the MISO 2016 Michigan Exploratory Transmission study.(that dispatchable, natural gas-fired generating resources located in the region would provide reliability benefits that were comparable to the transmission alternatives that were studied); and

- Allow for collaboration with other Load Serving Entities or Independent Power Producers.

Brief pp-23-24

CARE indicated in its Brief that CARE witness Jester, Staff witness Heidemann, and ABATE witness Alderson testified that UPPCO failed to adequately support its claims about the RICE's plant's transmission benefits. CARE recognizes UPPCO claims that the proposed RICE plant will lead to voltage support and relaxed transmission thermal limits in the Eastern Upper Peninsula, but discounts those benefits because CARE believes that those benefits while accrue to both UPPCO and Cloverland Electric Cooperative while only UPPCO ratepayers would bear the costs. Brief pp 24-24.

CARE witness Jester testified that MISO and not UPPCO should determine the proposed RICE plant grid reliability benefits because MISO does not have any potential transmission owner or operator conflicts of interest. Witness Jester also believes that UPPCO's proposal is flawed because UPPCO failed to compare its RICE plant proposal to any other reasonable alternatives, such as solar plus storage that is distributed across UPPCO's territory instead of located at one single facility. 2 Tr 431.

CARE rejects UPPCO's rebuttal testimony regarding the costs and benefits of the proposed RICE plant. UPPCO presented two new RICE plant sensitivity analysis one with a 25% increase in capital costs, and one with a 10% decrease in capital costs. UPPCO claims that first analysis reduces the PCA savings by $652,413, and the second increases total PCA savings by approximately $260,965. Brief pp 25-26. In its Brief CARE rejects UPPCO claims that customers still save between $1,474,376 and $2,387,754 (levelized) under the two updated sensitivity analysis because CARE believes that the new information provides no justification for eliminating BAU with Solar PPA potential savings and opting for the proposed RICE plant. *Id*

CARE and the AG recommend the Commission reject UPPCO's PCA RICE unit proposal and recommends that the Commission complete a transmission study of the Upper Peninsula to determine optimal resources and appropriate cost allocations. CARE Brief p 26; AG Brief p 7.

3. <u>Circle Power</u>

Circle Power did not specifically address UPPCO's RICE unit proposal in its testimony or briefs. Circle Power argues in its brief that UPPCO's IRP modeling is so flawed that none of the modeling results can be used by the Commission to determine whether UPPCO's IRP represents the most reasonable and prudent means of meeting its energy and capacity needs. See MCL 460.6t(8) (a); Brief pp 7-14.

4. <u>UPPCO's RICE Unit Proposal is Reasonable and Prudent</u>

The evidence presented shows that UPPCO's B&E modeling reveals that UPPCO has sufficient existing and near-term capacity resources to meet its projected peak demand and planning reserve requirements. UPPCO's B&E BAU modeling shows that over the study period, UPPCO has no need to procure additional capacity and RPS requirements. However, the B&E BAU modeling reveled that UPPCO will require additional energy resources to reduce its reliance on the wholesale and spot market, improve reliability and mitigate market risk for its customers. See Revised Exhibit A-1 at p. 41.

The evidence shows that UPPCO's proposed RICE unit is necessary and would add reliability to the Upper Peninsula Inland Line and mitigate the risk of grid disruption. The cable network currently serving the Upper Peninsula consists of six cables making up 2 electrical circuits. The loss of one electrical circuit would jeopardize the Upper Peninsula's power grid. UPPCO's new RICE unit would allow the Upper Peninsula to become more energy independent and provide generation in a key location. This finding is consistent with MISO's August 2016 Michigan Phase II Study, which found that the Eastern Upper Peninsula transition network should be strengthened. See Exhibit S-9.12.

The same MISO study concluded, among other things, that dispatchable, natural gas-fired generating resources located in eastern portion of Michigan's Upper Peninsula would provide reliability benefits that were comparable to the transmission alternatives. CARE witness Jester testified that MISO and not UPPCO should determine the proposed RICE plant grid reliability benefits because MISO does not have any potential transmission owner or operator conflicts of interest. This position is without merit. The Commission not MISO is responsible for the regulation of UPPCO and for Michigan grid reliability and must work cooperatively with MISO to coordinate overall grid reliability. UPPCO, as a Michigan regulated utility, is required to take measures to ensure that its customers are serviced through a reliable grid even if UPPCO determines through IRP modeling that it has sufficient existing and near-term capacity resources to meet its projected peak demand and planning reserve requirements.

Circle Power and ABATE's arguments that UPPCO's B&E IRP modeling provides an insufficient foundation for the Commission to determine that UPPCO's PCA including the proposed RIC unit represents the most reasonable and prudent means of meeting its energy and capacity needs as required by MCL 460.6t(8) (a) are without merit. Circle Power and ABATE's arguments regarding UPPCO's IRP modeling will be addressed in the final section of this PFD.

The evidence presented supports a finding that UPPCO's IRP PCA RICE unit proposal is reasonable and prudent. Therefore, I recommend that the Commission adopt Staff's recommendations and for the purposes of UPPCO's IRP approve UPPCO's PCA RICE unit proposal.

N. <u>Preapproval of Solar PPA Capital and IRP Filing Costs and Portage CT Insurance costs are outside the scope of an Act 341 IRP.</u>

UPPCO's requested Commission pre arrival of the following costs in this IRP proceeding: Solar PPA cost for capital and other costs, IRP filing costs, and UPPCO's Portage CT unit insurance settlement proceeds. Staff argues in its Brief that UPPCO's request for cost pre-approval is premature, outside the scope of this IRP proceeding, and should be considered in UPPCO's next general rate case. Brief pp 30-31.

UPPCO indicated in its PCA that it will enter into a PPA with a new Upper Peninsula 125 MW solar facility. See 2 Tr 39. Staff witness Hadala testified that UPPCO's current renewable energy portfolio currently exceeds the mandated 15% renewable portfolio standard. Given this Staff believes that it is not appropriate for UPPCO to recover costs from renewable energy generation through its renewable energy plans. See 2 Tr 385. Staff witness Matthews testified that Staff believes that UPPCO's should request recovery of its Solar project costs in UPPCO's next general rate case and not in this IRP case. See 2 Tr 3-16- 317.

No other parties addressed the issue of cost recovery of UPPCO's proposed Solar renewable energy project in and IRP proceeding. Staff's recommendation is reasonable and prudent. Therefore, I agree with Staff and recommend that the Commission not approve UPPCO's request to recover its Solar PPA capital and other costs in this IRP proceeding.

O. <u>Regulatory Asset For IRP Filing Costs</u>

Staff argues in its Brief that the Commission should deny UPPCO's request to establish a regulatory asset to provide for the full recovery of all IRP related costs pursuant to Section 6t of 2016 PA 341, MCL 460.6t, and all other applicable laws. Brief p 31. UPPCO witness Haehnel testified that UPPCO proposes to amortize the value of the regulatory asset over a rolling five-year term to fully amortized the costs before the Commission's ruling in UPPCO's next IRP case filing which will take place five years after February 12, 2019. See 2 Tr 70-71.

Staff witness Nichols, testified that because UPPCO's IRP costs are not currently known it would be unreasonable to approve a 'blank check' for these costs. 2 Tr 685-Confidential. Staff argues that UPPCO's IRP filing costs be deferred and a regulatory asset for IRP costs should be requested by UPPCO in its next general rate case. Brief p 31.

Staff argues that if the Commission approves a regulatory asset for UPPCO's IRP filing costs the regulatory asset cap or cost limit should be established to prevent a "blank check" regulatory asset. Staff witness Nichols testified that because this alternative approach would not allow for a review of the IRP costs prior to approval of the regulatory asset, it is therefore i a less preferred method. 2 Tr 685.

No other parties addressed the issue of regulatory asset approval for UPPCO's IRP filing costs. I find the evidence shows that Staff's recommendation is reasonable and prudent. Therefore, I agree with Staff and recommend that the Commission deny UPPCO's request to establish a regulatory asset recover its IRP filing costs in this IRP proceeding.

P. <u>Portage CT Unit Retirement</u>

In November 2018 UPPCO's Portage CT unit suffered a catastrophic failure and remains off-line. UPPCO plans to retire the Portage unit in 2019. CARE witness Jester testified that the Portage plant adds no value to the PCA because it is "not efficient enough to be dispatched for energy production" and "is not located in electrical proximity to the proposed RICE unit and cannot be viewed as justified as an alternative to the RICE plant. CARE believes that UPPCO has presented no reasonable justification for continuing to operate the Portage plant. Brief p 27.

The AG supports CARE witness jester's recommendations regarding the retirement of the Portage CT unit. See AG Brief pp 7-8.

No party opposes the retirement of the Portage CT. UPPCO's request is reasonable and prudent. Therefore, I recommend the Commission approve UPPCO's request to retire the Portage CT.

Q. Accounting Treatment for Portage CT Insurance Settlement

UPPCO and its insurer have agreed to a final insurance settlement of the claim for the Portage CT unit failure .The terms of this settlement are premised on the Portage CT being retired and replaced with comparable generation. Insurance proceeds will be dispersed in two parts:

- Payment upon consummation of the insurance settlement agreement is to be applied to the impending costs of removal and retirement, and
- Payment two years from the date of the loss of the Portage unit - contingent upon UPPCO providing proof of associated expenditures related to a replacement unit, which is the RICE project proposed in this case.

See Brief, p 30.

UPPCO witness Haehnel testified that UPPCOs seeks Commission approval to apply any insurance payout as a direct credit to the proposed RICE generation unit in order to lower cost to customers. See 2 Tr 70.

Confidential Exhibit A-26 shows that UPPCO's proposed RICE unit will be the replacement unit for the Portage CT and that UPPCO plans to use the insurance settlement monies, net of associated clean-up costs, including UPPCO labor, to offsets the cost of the 18 MW RICE unit. UPPCO also proposes that the insurance proceeds from the Portage CT unit insurance settlement be credited to the electric plant account charged with the cost of the damage. See Confidential Exhibit A-26. 2 Tr 658.

UPPCO witness Tripp testified that when the Portage unit is retired, UPPCO would credit the appropriate account for accumulated depreciation and the cost of removal and the salvage shall be charged or credited, as appropriate. If UPPCO's proposed RICE unit is not approved in this docket, UPPCO would use the total value of the insurance proceeds, net of associated clean-up costs and associated labor, to repair and/or refurbishing the 45-year old, oil-fired Portage CT. 2 Tr. 175.

CARE indicated in its Brief that it supports UPPCO's proposed accounting treatment of the Portage unit's insurance proceeds. CARE argues that because one third of the Portage insurance claim is contingent on repairing, rebuilding, or replacing the unit, the Commission should only consider the contingent amount of the insurance settlement in its economic evaluation of the RICE plant, and should not allow the contingent funds to be used to repair the Portage Generating Station if the RICE plant is not approved. Brief pp -27-28.

Staff witness Nichols testified that Commission approval of UPPCO's request would be inconsistent with the Federal Energy Regulatory Commission Uniform System of Accounts (FERC USoA). See 2 Tr 683-Confidential. Brief p 32. The Federal Energy Regulatory Commission Uniform System of Accounts (FERC USoA) Electric Plant Instructions provided in pertinent part:

> "All amounts included in the accounts for electric plant acquired as an operating unit or system, except as otherwise provided in the texts of the intangible plant accounts, shall be stated at the cost incurred by the person who first devoted the property to utility service"

In Exhibit S-11.7, UPPCO provides the unrecovered book value of the Portage CT facility and indicates that UPPCO has settled with the insurance provider regarding the damage to the Portage facility. Staff witness Nichols testified that because insurance expense is borne by UPPCO's rate payers in rates any insurance proceeds received in excess of the remaining book value of the Portage generation facility asset, should be booked as a regulatory liability, owed to ratepayers, and not be treated as a gain to UPPCO's shareholders. See 2 Tr 683-Confidential.

Staff witness Proudfoot testified that Staff recommends that the Commission find that any UPPCO sunk costs, such as the unrecovered book value, are outside the scope of this section 6t IRP case which is designed to approve forward-looking plans. 2 Tr 214.

UPPCO indicated in its Reply Brief that it now agrees with Staff's recommendation that the accosting treatment of UPPCO's Portage CT insurance settlement be considered in UPPCO's next rate case. See UPPCO Reply Brief p 27.

The evidence shows that the Commission's approval of UPPCO's requested accounting treatment of the Portage CT Unit insurance proceeds in an IRP case would be inappropriate and inconsistent with the FERC USoA accounting standards. The evidence also shows that UPPCO's insurance settlement accounting treatment and any UPPCO sunk costs, such as the unrecovered book value, are outside the scope of this section 6t IRP case. Therefore, I recommend the Commission consider UPPCO's requested accounting treatment of any insurance payout in the UPPCO's next general rate case.

R. <u>Energy Waste Reduction (EWR) Plan</u>

The Clean and Renewable Energy and Energy Waste Reduction Act, Act 295 of 2008, as amended by PA 342 of 2016, establishes energy efficiency and energy optimization standards. IRP cost projections determine whether EWR should be increased for planning purposes. *Id*. MCL 460.6t5(d) states that an IRP should include "a utility's plan to eliminate energy waste, including the total amount of energy waste reduction expected to be achieved annually, the cost of the plan, and the expected savings for its retail customers." Specific EWR programs should be included in a future biennial EWR plan case or amendment with updated cost projections. 2 Tr 234.

The incremental costs related to specific EWR programs are recovered through UPPCO's EWR surcharge and trued up in annual EWR reconciliation cases. See Act 295 of 2008, as amended by PA 342 of 2016. Staff witness Proudfoot testified that in an IRP case, the highest level of EWR resources that are cost-effective and achievable should be considered for future implementation. 2 Tr 221.

UPPCO proposes to increase EWR target to 1.5% of UPPCO's total electric load. 2 Tr p 39. This proposal exceeds the current statutory requirement of 1% savings and targets 1.14% savings for 2018 and 2019 planning years. 2 Tr p 39.

UPPCO witness McNeally testified that UPPCO plans to maximize available demand-side resources through implementation of its U-20376 2020 and 2021 EWR plans. These plans adopt a target of 1.5% EWR for each plan year based on the previous 3 years' annual retail electricity sales in megawatt hours. 2 Tr 153. UPPCO believes that increasing the 1.5% EWR target from 1.14% to 1.5% is reasonable because UPPCO has had past success increasing savings and believes that it would have similar EWR program success. Witness McNeally testified that UPPCO has begun transitioning its EWR program to the higher 1.5% standard by increasing qualifying residential and commercial measures such as expanding residential solar water heating and small business direct install commercial program to include multi-family properties in 2019. See 2 Tr. 152.

The AG agrees with CARE expert witness Jester that UPPCO's 1.5% annual first-year savings is achievable and cost-effective. However, CARE and the AG recommend the Commission require UPPCO to increase its EWR to 1.65% of UPPCO's total electrical load for planning year 2020 and 1.75% for planning year 2021. approve UPPCO's EWR proposal. CARE Brief p 13, AG Brief p 7.

Staff witness Banks testified that Staff recommends the Commission order UPPCO to increase its EWR goal from 1.5 to 1.65% in 2020 and 1.75% in 2021, with the details to be determined in UPPCO's EWR plan cases. 2. Tr 322. Witness Banks testified that since 2009 UPPCO achieved a 1% EWR. In 2018 UPPCO self- administered its EWR program and was able to increase its EWR savings by 110% of the legal minimum. Witness Banks testified that in 2017 the State EWR Administrator was able to increase savings to 217% of the legal standard, through contracts with same contractors who provide service through the State EWR Plan program. See 2 Tr 323. Staff believes that UPPCO's EWR is underperforming.

Staff witness Banks testified that UPPCO's EWR programs benefit UPPCO's economically challenged Asset Limited Income Constrained Employed (ALICE) customers. 2 Tr 323. Approximately 43% of Michigan households are below the ALICE threshold. UPPCO's customers are more economically challenged than Michigan's average Michigan electric customer 2 TR 324. Witness Banks testified that Staff recommends the Commission direct UPPCO to expand its EWR program for low income customers by including ALICE ratepayers. 2 Tr 324-325. Witness Banks testified that Staff does not agree with UPPCO's claim that expanding its EWR would not be cost effective because PA 295 exempts low income programs from cost effectiveness and no other utility in the state has attempted to make their low-income programs cost effective.

Staff witness Banks testified that Staff recommends the Commission direct UPPCO to move its EWR program from an over reliance on the cheap and easy programs, or programs which yield high savings with low investment, to measures which would have a more significant longer lasting impact on low income rate payers .2 Tr 327. Staff recommends that UPPCO partner with the Menominee-Delta-Schoolcraft Community Action Agency (CAA) on a potential Michigan Department of Health and Human Services (MDHHS), Community Development Lead Hazard Control, on a program to reduce energy costs and eliminate lead from homes. Staff believes that these lead abatement programs could be combined with CAA weatherization programs to improve customer health and safety and increase energy savings. 2 Tr 328. Witness Banks testified that UPPCO's ALICE customer uncollectable and bad debt data could be used to identify low income customers who could benefit from other government and private agencies weatherization programs. 2 Tr 330-331

UPPCO, Staff, CARE and the AG disagree regarding UPPCO's EWR target. Staff, CARE and the AG believe the UPPCO's EWR target should be increased to 1.65% of total electric load for planning year 2020 and 1.75% for planning year 2021. Neither ABATE nor Circle Power addressed UPPCO's EWR in their testimony, exhibits or briefs.

UPPCO witness Haehnel testified that UPPCO disagrees with Staff because it believes that Staff's proposal would increase UPPCO's EWR costs. UPPCO witness Haehnel testified that UPPCO's filed testimony and exhibits in its 2020 and 2021 EWR plan U-20376 supports the terms of activities and costs needed to meet UPPCO's 1.5% EWR target. 2 Tr 95. UPPCO, Staff, CARE and the AG agree that UPPCO's EWR costs represented in the IRP should be detailed in UPPCO's EWR Plan case for the 2020 and 2021 plan years. 2 Tr 88.

The evidence presented shows that UPPCO's EWR program has under preformed when compared to the performance of the State EMR Administrator. Since 2009 UPPCO achieved a 1% EWR. In 2018 UPPCO self- administered its EWR program and achieved savings of 110% of the legal standard. In 2016 the State Administrator was able to achieve EWR savings of 130% of the legal standard and in 2017 the State EWR Administrator was able to increase savings to 217% of the legal standard, through contracts with same contractors who provide service through the State EWR Plan program. See 2 Tr 323. The evidence clearly shows that UPPCO's self-administered EWR has under preformed. Staff recommendations to increase UPPCO's EWR goal from 1.5 to 1.65% in 2020 and 1.75% in 2021, with the details to be determined in UPPCO's EWR plan cases is supported by the evidence and is reasonable and prudent. Therefore, I recommend the Commission adopt Staff's EWR recommendations.

S. <u>PURPA Avoided Cost Rates</u>

UPPCO proposed in its application that if the Commission determine that it has a capacity need that the Commission approve setting UPPCO's avoided capacity cost at the capacity price at the time the PURPA contract consistent with the Commission's order in U-18904 .2 Tr 533. UPPCO proposed that its avoided energy payment be based on the actual locational marginal price (LMP) at the time of delivery or based on a forecasted LMP.

Staff witness Hadala testified that Staff reviewed UPPCO's PURPA proposal and recommends that because UPPCO has no persistent capacity need over the 5-year period, the Commission set UPPCO's PURPA avoided capacity rates based on the equivalent capacity value of the Midcontinent Independent System Operator (MISO) Planning Resource Auction (PRA) 2 Tr 383. Witness Hadala testified that Staff recommends the PURPA avoided cost of energy should be based on a five-year fixed rate, followed by a variable rate. 2 Tr 384. A five-year fixed rate offers the qualifying facility the benefits of price stability while providing some flexibility to account for volatile market pricing.

Staff recommends the Commission order that a determination of a capacity need for PURPA be over a 5-year horizon because a five-year planning horizon because this would align with the UPPCO's next IRP and would maintain consistency between cases. See 2 Tr 382.

UPPCO witness Stocking also testified that UPPCO's modeling inputs and outputs were prepared using 2017 real dollars. This resulted in PURPA avoided cost energy payments in 2017 real dollars rather than nominal dollars. Circle Power witness Moore testified that UPPCO's forecast should be adjusted by assumed annual inflation rate of 2.565%. The resulting energy payment should also be adjusted using the same rate. UPPCO made this change in Revised Exhibit A-16. 2 Tr. 139. In rebuttal UPPCO witness Stocking testified that UPPCO modified its initial proposal and adopted Staff witness Hadala's recommendations as follows:

- Utilized a five-year planning horizon with respect to PURPA capacity to align PURPA planning with future IRP cases. 2 Tr 382.
- Added an "alternative option for UPPCO's avoided energy payment based on a five-year fixed rate, followed by five or more years at a variable rate based on MISO Locational Marginal Price (LMP). See 2 Tr 383 and Exhibit S-10.0.

- Set UPPCO's PURPA avoided capacity cost to the MISO Planning Resource Auction (PRA) clearing price for each year that the contract is in place for times when the UPPCO demonstrates that it does not have a persistent capacity need and making additional changes to the avoided energy cost MISO LMP pricing structure option.

See 2 T 383 – 384 and Exhibit S-10.0.

Circle Power witness Moore testified that UPPCO and Staff's proposal:

- Violates FERC's PURPA regulation 18 CFR § 292.304(d)(2)(ii);
- Is not commercially reasonable;
- Would render all QF projects located in UPPCO's service territory; unfinanceable; and
- Would be discriminatory against QFs.

2 Tr 534.

Witness Moore testified PURPA provides that rates for the purchase of energy from

QFs

- Must not discriminate against qualifying cogenerators or qualifying small power producers;
- Be just and reasonable to the customers of the electric utility; and
- Be in the public interest.
- See 16 USC § 824a-3(b); 18 CFR § 292.3049a)(1).

Witness Moore also testified that if a utility is guaranteed a rate of return over the life of a project (typically twenty to thirty years), a short-term five or even ten-year fixed price contract provided to QFs is discriminatory.

2 Tr 534–35.

Circle Power argues that neither UPPCO nor Staff witness Hadala provided evidence that the five-year fixed rate offers price stability to QFs seeking to obtain financing for PURPA projects, or that a 20-year fixed rate contract imposes risk to

UPPCO's customers. An appropriate LMP forecast results in little difference between providing a long-term contract to a QF project and using that same forecast to approve a utility's own generation build. *2 Tr* 534.

In U-18094 the Commission found that UPPCO's avoided cost of energy should be based, at the option of the QF, either on the Locational Marginal Pricing (LMP) at delivery or on UPPCO's forecasted LMP and that "QFs should be permitted to opt for a contract term of five, 10, 15, or 20 years.. See U-18094, Order at 9, 12. Circle Power argues that UPPCO and Staff's recommended UPPCO avoided energy cost payment would render QF projects in UPPCO's service territory unfinanceable. 2 Tr 525. Circle Power believes that Staff's recommendation would cut off QF development, violate PURPA, and would undermine the goal of MCL 460.6t(8)(a)(vi) to create a diversity of generation supply.

CARE and the AG agree with the consensus regarding UPPCO's avoided capacity cost but disagree with UPPCO's and Staff's recommended capacity and energy payment, planning horizon, and standard offer proposals. CARE and the AG recommend the Commission deny UPPCO's and Staff's proposed capacity and energy costs and approve UPPCO's PURPA capacity and avoided cost proposals in UPPCO's original IRP application. CARE Brief p 9; AG Brief pp-5-7.

CARE believes that UPPCO's and Staff's avoided capacity proposals produce the same end result given UPPCO's current capacity position. The Commission in U-18094 directed that UPPCO's capacity cost should be based on the UPPCO's short-term capacity contracts. If UPPCO does not have a capacity need then UPPCO must pay the PRA price. CARE believes that rather than the Commission directing that UPPCO's avoided capacity cost is PRA price, CARE recommends that the Commission approve UPPCO's initial avoided capacity cost proposal. CARE believes this would maintain greater consistency with the Commission's established PURPA policy if UPPCO has a future capacity need.

CARE and the AG disagree with Staff's recommendation that UPPCO use a long-term energy price that is fixed for 5 years and variable thereafter.

CARE argues that short QF contract term lengths would discriminate against PURPA QFs in violation of 18 CFR 292.304(a)(1)-(2). CARE argues that Staff have indicated they support UPPCO's proposed Solar PPA which has a 26-year contract length. CARE argues that UPPCO's and Staff's avoided cost proposal is not consistent with Staff's support for a longer term Solar PPA. CARE argues that the Commission in U-18090 held that a utility's proposal to calculate capacity and energy costs based on short-term market prices is inappropriate under PURPA. See U-18090, Order p 17.

CARE also argues that UPPCO's and Staff's proposal is inconsistent with the Commission's the Power Supply Cost Recovery (PSC) process requirements and is inconsistent with the Commission's order in In U-18090. The Commission's order in U-18090 required Consumers Energy to allow QFs to opt for a 20-year standard offer contract and noted that the less common contracts for longer terms could be negotiated separately. *Id* at pp 23-24. CARE argues that UPPCO's proposal violates MCL 460.6j which protects PURPA rates from Commission reconsideration for 17.5 years. MCL 4606j provides in pertinent part:

> "the minimum financing period before reconsideration of the previously approved capacity charges is for the duration of the financing for a qualifying facility that

produces electric energy by the use of . . . renewable resources, or any combination of renewable resources, as the primary energy source.

See MCL.6j(13)(b)(ii)

CARE argues that Staff's 5-year planning horizon for a project with 20 years of financing would violate this provision. CARE Brief p 11.

CARE also supports UPPCO's original proposal for a 10-year planning horizon because CARE believes that:

- it has greater potential for significant ratepayer savings;
- if capacity need is within the planning horizon, then avoided capacity cost can be a fixed schedule within the QF contract; and
- A longer planning horizon allows for more predictability in QF contracts.

Id.

CARE believes that a 10-year planning horizon can help ensure that UPPCO's ratepayers enjoy the cost-saving benefits of adding incremental QF capacity now and deferring (or even eliminating) the need to acquire capacity in the future. CARE believes a 10-year panning horizon would be consistent with the Commission's order in U-18094.

CARE agrees with Staff witness Hadala's statement that UPPCO must provide a standard contract for projects up to 3 MW but disagrees with Staff's suggestion that UPPCO must use Consumers Energy's standard offer contract "to produce its own template contract and publish it on its website." See 2 Tr 384. CARE believes that the Commission should require UPPCO to obtain ex parte Commission review of the standard offer contract language and provide an opportunity for comment. CARE Brief p 12.

CARE and Circle Power's arguments misrepresent Staff's proposed modifications to UPPCO's avoided cost and Standard Offer tariff. Neither CARE's nor Circle Power's arguments are supported by the record. Neither Staff nor UPPCO have proposed any change to the length of the term of UPPCO's Solar PPA. Neither the testimony of UPPCO witness Stocking, nor testimony of Staff witness Hadala, include a discussion of the length of the term for a new PURPA PPA. UPPCO argues in its Reply Brief that UPPCO has consistently offered QFs the choice of a 10, 15, or 20-year term PPA. There is no evidence in the record that UPPCO or Staff has proposed shorting a QF's PURPA contract.

UPPCO and Staff's proposed alternative avoided energy payment option would not discriminate against QFs. Exhibit S-10.0 provides that QFs will have the option of using the 5-year fixed rate for determining the avoided energy payment. As pointed out by Staff witness Hadala the use of a variable rate for later years will protect UPPCO's customers from the price risk of inherently less accurate LMP forecasts. See 2 Tr. 384. In U-20165 the Commission found a similar avoided cost pricing mechanism was in the public interest. See U-20165 Order Approving Settlement Agreement, pp 88 – 89. There is no evidence into the record to support CARE's and Circle Power's claim that a five-year fixed rate for determining avoided energy costs, followed by a variable for the duration of a long-term contract, would prevent QFs from financing their projects.

The record shows that UPPCO's PURPA avoided cost proposal, as modified by Staff is supported by the evidence and is reasonable and prudent. Therefore, I recommend the Commission approve UPPCO's proposed avoided capacity and energy costs.

T. ABATE and Circle Power Reject UPPCO's IRP and PCA.

ABATE argues in its Reply Brief that UPPCO's reliance on the B&V report resulted in an in adequate unreasonable error riddled IRP. Reply Brief p 4. ABATE believes that the Commission must determine the sufficiency and reliability of the B&V before it can determine the reasonableness of UPPCO's IRP proposals. ABATE argues that UPPCO's B&V based IRP does not represent the most reasonable and prudent means of meeting UPPCO's energy and capacity needs throughout the planning period. ABATE believes that if the Commission approves UPPCO's IRP without amendment then the Commission would be acting contrary to the Michigan Rules of Evidence and applicable legal precedent. Reply Brief p 5.

ABATE provides a number of reasons why it believes that UPPCO's B&V report-based IRP is inadequate. First, ABATE argues that the B&V report "Special Notice" section of the Black & Veatch Report contains the following numerous disclaimers regarding the data and assumptions used to develop the report's recommendations and conclusions. Specifically, the disclaimers indicate that B&V:

- Does not guarantee the accuracy of the information, data, or opinions contained in the Report;
- Based the Report on information outside of its control;
- Assumed that the information it received from others, including verbal communications, was complete and correct;
- Does not represent or warrant that the information contained in the Report is sufficient or appropriate for any purpose;
- Offers no guarantee or assurances that any facts, observations, analysis, projections, opinions, or other matters contained in the Report will be more accurate, either at the time the Report is issued or at any other time; and

- It is not feasible for Black & Veatch to conduct a comprehensive investigation or make definitive determinations for the compensation provided.

ABATE argues that these B&V disclaimers effectively undercut UPPCO's IRP PCA proposals because UPPCO relied heavily on the disclaimed information and conclusions when completing its IRP. ABATE argues that the following are examples and not a complete listing of UPPCO PCA proposals that were based exclusively on the B&V report: 125 MV Solar PPA, 20 MW RICE unit, EWR target, retirement and replacement of the Portage CT with a RICE unit, and need for additional resources and MIRPP modeling. Reply Brief pp 6-7. Because the entire B&V report was admitted to the record as Exhibit A-1 without objection by ABATE and all other parties and without cross examination of the B&V authors or UPPCO witnesses, ABATE has waived any objection to the admissibility of the B&E report. Given this ABATE may now only question how much weight the Commission should give the B&V report.

On pages 8 through 11 of ABATE's Reply Brief ABATE argues that the Commission may not give any weight to the B&V report because the report "is deficient from an evidentiary standpoint." Reply Brief p 8. ABATE then proceeds on the remaining pages to argue that the Commission may not consider the B&V report because doing so would violate Michigan Rules of Evidence (MRE) 702, 901, 902 and various related court decisions which provide guidance and precedential support. On page 11 of ABATE's Reply Brief ABATE writes:

> "Given that the Black & Veatch Report is already in evidence, ABATE urges the Commission to afford the evidence little, if any, weight. The Black & Veatch Report is not reliable and, therefore, has little-to-no probative value in this proceeding."

See ABATE Reply Brief p 11

The record shows that the parties mutually agreed that motions to strike would be filed on or before July 12, 2019 and that cross examination would occur on July 17, 2019. No motion to strike was filed by any party including ABATE. On July 17, 2019 all parties, including ABATE, appeared and indicated on the record that the parties had mutually consented to the waiving of all cross examination and consented to the binding in the record of all testimony and exhibits. See 2 Tr 24-26. The transcript of the July 17, 2019 hearing shows that the B&V report was offered as Revised Exhibit A-1 Confidential and admitted to the Confidential record. See 2 Tr 195-196. Because the B&V report was admitted to the hearing record without objection, ABATE waived any and all objections to the admissibility of the B&V report. Given this, there is no need to address ABATE's arguments that the B&V report does not comport with MRE 702, 901, or 902. Therefore, contrary to ABATE's assertion, the Commission is free to assign the B&V report whatever weight it chooses in light of the overall record.

U. Replacement of the Portage CT unit with a new RICE Unit

ABATE argues that UPPCO proposes in its PCA to replace it Portage CT unit with a new RICE unit. In Exhibits A-33 and A-34 UPPCO witness Haehnel provided "additional sensitivity analyses in which considered the economic value of the RICE unit for UPPCO's customers under a variety of energy and capacity price scenarios." *Id*. ABATE argues that witness Haehnel testimony regarding the "increased efficiency" and "reliability benefits" of new RICE unit is based data and information from the B&V report. *Id*. ABATE argues that UPPCO analyzed the cost of repairs to the Portage CT sister unit ,the Gladstone unit, and determined that with repairs the Gladstone CT could remain operational until 2022. ABATE argues that the B&V report and UPPCO's decision to retire the Portage CT unit and not repair the Portage Unit were not fully explored in the B&V report. Therefore, ABATE argues that without a through and complete analysis the Commission should require UPPCO to thoroughly examine ABATE's single cycle CT and Portage CT repairs options before it authorizes the construction of a new RICE unit. See Reply Brief pp 13-14.

Because I have addressed the reasonableness and prudence of UPPCO's proposed RICE unit in sections III C.2. ;IV L and IV M. of this PFD there is no need to discuss the positions of the parties and the evidence presented.

V. <u>ABATE's Objections to UPPCO's Solar PPA</u>

ABATE's Reply Brief pages 14 to 18 are a restatement ABATE's objections regarding UPPCO's Solar PPA. Sections IV F. and IV V. of this PFD provide a discussion of ABATE 's argument regarding the Solar PPA.

W. <u>ABATE's Objections to UPPCO's FCM</u>

ABATE's Reply Brief pages 18 to 20 restate ABATE's objections to UPPCO's proposed FCM. Sections IV G. H. I. J. K. and W. of this PFD provided a complete discussion of the UPPCO's requested FCM.

X. <u>ABATE's and Circle Power's Objections to IRP Waivers</u>

Act 341 allows the Commission to implement separate "filing requirements, review criteria, and approval standards" for an electric utility with fewer than 1,000,000 customers. See MCL 460.6t(4). UPPCO is a small utility with 52,000 customers could have sought waivers from certain filing requirements but UPPCO did not request any waivers and attempted to comply with all of the Commission's IRP filing requirements. See UPPCO Initial Br, p 4; 2 Tr 243. ABATE argues that the Commission's granting of any UPPCO waiver IRP filing requirement would be prejudicial because the parties that have invested significant time and resources reviewing and critiquing UPPCO's IRP filing without a waiver.

Circle Power like ABATE argues in its Brief that the Commission should adopt a strict all or nothing position regarding small utility initial IRP filings. Circle Power believes that when Staff or an intervening party determines that a small utility submitted poor or incomplete initial IRP filings the utility may not subsequently, through discovery or documents, submit more complete acceptable IRP documentation. ABATE believes that in these situations the Commission may not grant a waiver of any IRP filing requirement deficiency.

Circle Power argues that the errors found in UPPCO's initial filing by both Staff and Circle Power:

- Negatively impacted UPPCO's IRP and PCA, including the initial 3 years of this IRP,
- Made Staff and intervenors IRP review unduly burdensome and time consuming. Id. at 522.
- Incomprehensible responses and missing filing requirements significantly impeded Staff's review;
- Staff was robbed of valuable time for analysis, time which it instead was forced to spend on correcting, interpreting and revising UPPCO's filings.

Circle Power Brief p 29.

Circle Power argues that the Act 341's "strict" time period allowed for Staff, Intervenors and the Commission's IRP review assumes that and IRP applicant will initially file a full set of complete IRP documentation. Circle Power believes that because UPPCO did not file complete initial IRP documents, Staff's and the intervenor's review that followed could not be complete and thorough and did not create aa adequate factual basis to allow the Commission to make a finding that UPPCO's IRP is the most reasonable and prudent plan. Circle Power Brief pp. 29-30.

Both ABATE and Circle Power's arguments are self -serving attempts to rewrite Act 341. There is no language in Act 341 or the Commission's IRP filing requirements which creates an all or nothing initial IRP filing statutory scheme which prevented UPPCO from supplementing or changing its initial IRP filings to better comply with the Act 341 or to comply with the Commission's IRP filing requirements. Such a scheme would be contrary to the free flow of information through the discovery and would either significantly impair discovery or render the whole process meaningless. This was clearly not the Commission's intent with regard to waivers of small utility IRP filing requirements.

MCL 460.6t(4) provides in pertinent part:

> For an electric utility with fewer than 1,000,000 customers in this state whose rates are regulated by the commission, the commission may issue an order implementing separate filing requirements, review criteria, and approval standards that differ from those established under subsection (3).

The Commission in its order in U-18461 issued the Michigan Integrated Resource Plan filing requirements pursuant to its authority under MCL 4606t(4). The Commission's IRP filing requirements with regard to small utility IRP waivers provides:

> An electric utility with fewer than 1,000,000 customers in this state may request a waiver to any portion of these IRP filing requirements. Any request for a waiver shall include a discussion and justification outlining why the waiver is warranted and in the best interest of its customers. Discussion and justification for the requested waiver shall include a description of the utility's current and forecasted energy and capacity needs, and its plan for meeting those needs over the upcoming ten years.

If the utility requires resolution of a waiver request prior to filing an IRP application, the utility shall file the waiver request no less than 60 days prior to the filing of the IRP application.

See U-18461, Order Exhibit A p 9

ABATE incorrectly argues in its Brief that this Commission IRP filing requirement required UPPCO to request a waiver at least 60 days before the filing of its IRP application. The plain language of this filing requirement indicates that a waiver request must be filed 60 days prior to the IRP filing if the utility requires the Commission to resolve the waiver request before the IRP filing date. The record shows that UPPCO did not file a waiver request until after its IRP filing date and after Staff completed it IRP review. Only after the initial Staff review, and considerable discovery was completed, did Staff recommend UPPCO request a waiver and recommend the Commission approve the waiver. Because the legislature in MCL 460.6t(4) granted the Commission the authority to issues IRP filing requirements the granting of an IRP filing requirement waiver after the IRP is filed is within the complete discretion of the Commission so long as the waiver does not conflict with other Act 341 IRP filing requirements. Therefore, I find that ABATE and Circle Power's argument has no merit and recommend the Commission reject their IRP filing waiver argument.

ABATE and Circle Power's arguments that UPPCO's initial IRP filing may not be supplemented or modified through the discovery process is also without merit. The evidence shows that Staff reviewed UPPCO's initial IRP filing to determine UPPCO's compliance with Act 341 and the Commission's IRP filing requirements adopted in U-18418 and U-18461. During the discovery process Staff and intervenors received and had access to additional information and documentation. Staff's Exhibit S-2.0 provides a summary of UPPCO's compliance with each filing requirement. *See* Exhibit S-2.0; 2 Tr 241. After completing its review of UPPCO's IRP Staff concluded that UPPCO's IRP filing deficiencies did not greatly impact the IRP and Staff recommended the Commission approve UPPCO's IRP as amended subject to Staff's recommendations. See Staff Initial Br, p 8.

Circle Power argues that UPPCO must demonstrate in its IRP filings that its plan represents the "most reasonable and prudent" means to meet its energy and capacity needs. Circle Power argues in its Brief that in order to make this finding, the Commission must rely on UPPCO's modeling of its existing marketplace and UPPCO's forecasts of anticipated costs under the various required IRP scenarios. Circle Power witness Moore testified that UPPCO's IRP modeling contains at least the following six flaws:

- UPPCO's modeling assumptions overstated the capital costs of various technologies, including wind energy;
- UPPCO's IRP used an inaccurate capacity factor for wind generation that inappropriately skewed its RFP process toward solar generation only;
- UPPCO has entered into a 125 MW solar PPA based on a flawed process, and UPPCO has failed to show that it will be in the best interests of rate payers;
- UPPCO based its LMP forecast on data that are not representative of its marketplace;
- UPPCO incorrectly calculated the inflation-adjusted energy payment to QFs; and
- UPPCO's natural gas pricing assumptions understated its actual projected market costs for natural gas.

Brief pp 7-8.

Circle Power argues that UPPCO's reliance on incorrect modelling assumptions resulted in UPPCO's flawed and incorrect IRP conclusions and flawed PCA. Circle Power argues that UPPCO's modeling errors resulted in a weak and unsupported IRP which does not provide an adequate factual foundation for the Commission to find that UPPCO's IRP is the "most reasonable and prudent" under MCL 460.6t(8)(a).

Y. Solar PPA

Circle Power witness Moore testified that UPPCO's modeling in properly excluded wind power and this flaw did not allow the modeling to correctly predict the most cost-effective sources of new generation capacity. UPPCO's flawed modeling, according to witness Moore, resulted in UPPCO improperly selecting solar as the most cost- effective new generation capacity and UPPCO's proposed Solar RFP. See generally 2 Tr 500 – 511 and 513 to 514. Specifically witness Moore testified that UPPCO's IRP improperly excluded two wind farm projects being pursued by Circle Power See 2 Tr 497 – 500. This argument is discussed in section IV F. of this PFD.

1. Wind Power Pricing

Circle Power next devotes a substantial portion of its Initial Brief to arguing that the Company's IRP analyses did not adequately account for future trends in wind pricing. See Circle Power Initial Brief, pp 10 – 11 ("However, the NREL 2017 ATB and NREL 2018 ATB reports each also contain projections for future decreases in on-shore wind CAPEX costs at the technology resource groups appropriate for the Upper Peninsula.") Circle Power's argument fails because it failed to put forth any evidence in support and also because it is contravened by the actual data.

Circle Power's argument is premised upon an assertion that NREL ATB CAPEX cost data projects a downward trend in the price of wind power. See *id.*, p 10. Circle Power then provides a variety of information, which it asserts support this downward trend. See *id.,* pp 10 – 11. Circle Power failed to introduce the NREL ATB CAPEX data upon which its argument is based. UPPCO did, however, introduce the NREL ATB CAPEX data upon which the IRP analyses were based, and this data does not support Circle Power's assertion. In rebuttal, Dr. Huang introduced the actual 2017 data upon which Circle Power relied in asserting a downward trend in wind prices:

See 2 Tr 185.

As Dr. Huang testified, this data shows a relatively flat rather than a downward trend. *Id.* Dr. Huang further testified that the NREL ATB CAPEX data was consistent with Black & Veatch's own industry observations. *Id.* Thus, the record evidence supports UPPCO's IRP analyses and directly refutes Circle Power's arguments.

2. <u>LMP Forecast</u>

Witness Moore also testified that UPPCO's avoided costs proposal is flawed because it did not use the UPPCO INTEGRATED load node for its LMP energy rate forecast. 2 Tr 511 – 512. UPPCO witness Stocking testified the Circle Power witness

Moore testified the UPPCO's B&V LMP forecast used in the PROMOD modeling tool calculated the Michigan zonal hub and not the UPPC Integrated node. Staff witness Heidemann in Exhibit S-9.1 provided an analysis of the historical average and median difference between the UPC. Integrated hub and the Michigan hub.

Staff witness Heidemann testified that he believes UPPCO's use of an energy price forecasting hourly zonal model is reasonable because sub- hourly simulations:

- Provide additional granularity and accuracy to pricing data, but are significantly more expensive than the hourly models; and
- Increase the computational time significantly without resulting in a different build plan or more accurate prediction of costs.

Witness Heidemann concluded that UPPCO's use of a Michigan hub hourly zonal model was a reasonable model for determining UPPCO's energy price forecasts. 2 Tr 351. Witness Heidemann testified that Staff does not believe that UPPCO's use of the Michigan Hub effected UPPCO's IRP proposed action because UPPCO's use of the Integrated Node as the energy price location would have only improved the PCA's performance. 2 Tr 352. Additionally, if UPPCO's PLEXOS capacity expansion model assumed an UPPCO and MISO modeling zones both zones are connected by transmission links with a set transmission limit. Staff believes UPPCO's capacity expansion modeling assumptions are reasonable because the amount of UPPCO's PCA generation additions is relatively small when compared to the total MISO Zone 2 generation. See 2 Tr 353; Staff Brief p 17.

UPPCO accepted Staff's proposal and incorporated the same in Revised Exhibit A-16. See Revised Exhibit A-16 and 2 Tr 138. The evidence presented shows that Staff reviewed UPPCO's forecast and found that it was reasonable and prudent. Circle

Power's arguments to the contrary are without merit. Therefore, I find UPPCO's forecast is reasonable and prudent and recommend that the Commission adopt UPPCO's forecast.

3. Inflation Adjustments

Circle Power witness Moore testified unless subsequently adjusted for inflation, UPPCO's energy payments to QFs should be based on a nominal LMP forecast and UPPCO should have used the Real Discount Rate of 5.36% for their CPWC calculations rather than the 7.467 percent Nominal Discount Rate. Witness Moore testified that this price distinction is shown in Exhibit A-20. *2 Tr* 513. Witness Moore testified that UPPCO in its rebuttal testimony admitted this error, *see id.* 2 Tr 138–39 but did not indicate what impact the error has on the IRP.

UPPCO witness Stocking testified that because modeling inputs and outputs were performed using 2017 real dollar resulting in PURPA avoided cost energy payment in 2017 real dollar rather than nominal dollars. Circle Power witness Moore testified that the forecast should be adjusted by UPPCO's assumed annual inflation rate of 2.565% and resulting energy payment should also be adjusted using the same rate.

UPPCO made this change in Revised Exhibit A-16, therefore this is issue is no longer in dispute. 2 Tr. 139. UPPCO also added a solar panel degradation factor of 0.5% annually to its cost modeling. See Revised Exhibit A-8. I find that UPPCO's inflation adjustment is reasonable and prudent and recommend the Commission adopt UPPCO's inflation adjustment.

4. UPPCO's IRP Modeling -Capital Costs

Circle Power witness Moore testified that UPPCO's modeling CAPEX inputs for photovoltaic solar and onshore wind were taken from the NREL 2017 ATB (Annual Technology Baseline) report. 2 Tr 501. Witness Moore testified that UPPCO included a 20% "uplift" which according to an UPPCO's discovery responses, was to allow it to better assess its full costs. See Brief p 9. 2 Tr 502.*Id.* at 502. Circle Power argues that the 20% uplift was for costs already included in the NREL report's definition of "CAPEX."

Circle power rejects UPPCO witness Huang's rebuttal testimony, that CAPEX costs in the NREL 2017 ATB report only included "Overnight Construction Costs,". Circle Power argues that witness Huang and the IRP used the "CAPEX" number from the NREL 2017 ATB report tables and not only "Overnight Construction Costs". Witness Moore testified that CAPEX expressly includes the "Financial Costs" cited by UPPCO as a basis for its 20% uplift. 2 Tr 502.

Circle Power argues that Staff's witness Matthews expressed concerns regarding UPPCO's addition of the 20% owner's costs for both solar and wind CAPEX. 2 Tr 314. Staff witness Matthews testified that he did not feel that the 20% uplift materially affected UPPCO's IPR modeling because UPPCO ran an RFP for the 125 MW of solar that resulted in lower LCOE than modeled by UPPCO based on NREL inputs. *Id.* at 315. Circle Power argues that the Commission should not treat UPPCO's 20% uplift as a harmless error because UPPCO's double counting applied to solar and non-solar projects. Circle Power Brief p 10.

Contrary to Circle Power's assertions, UPPCO witness Huang testified that the basis for the 20% owner's cost assumption, which was applied consistently across all technologies, is to account for items that are not included in NREL's data, such as: site specific interconnection fees, land acquisition, environmental and permitting studies and fees, as well as certain owner development and project management costs incremental to the EPC's project management. See 2 Tr 184. Absent the inclusion of these incremental owners' costs, the capital costs of other technologies would be understated versus market purchase.

The evidence presented shows that Staff reviewed UPCO's IRP modeling and found that UPPCO's 20% uplift in the IRP modeling did not materially affect UPPCO's IPR modeling because UPPCO ran an RFP for the 125 MW of solar that resulted in lower LCOE than modeled by UPPCO based on NREL inputs. See 2 Tr 315. Therefore, I find that UPPCO's IRP modeling was reasonable and prudent and recommend the Commission adopt UPPCO's IRP modeling with regard to this issue.

5. <u>Wind Power Capacity Factors</u>

Circle Power argues that the wind capacity factor used in UPPCO's IRP modeling as too low and are flawed. See Circle Power Brief, pp 11 – 14. Circle Power argues that that potential wind power technical innovations could result in a 45% increase in wind power capacity. UPPCO's modeling used a wind capacity factor of approximately 34% which is lower than used in UPPCO's modeling See *id.*, pp 11 – 13. UPPCO witness Huang testified that the capacity factor used UPPCO's IRP modeling was consistent with NREL ATB data and with the capacity factors reported for the only two existing Upper Peninsula wind farms. See 2 Tr 184. UPPCO argues in response that Circle Power admitted in a discovery response (Exhibit A-39) discovery that the capacity from Circle Power's proposed wind projects would provide an inconsequential contribution to UPPCO's service area capacity needs. See Exhibit A-39, p 12 (stating that the MISO system-wide capacity factor for the current year is expected to be 15.6%, which would result in a total of approximately 6 zonal resource credits (ZRC), i.e. 15.6% x 38.4 MW from Circle Power's proffered wind projects). Witness Huang testified that UPPCO's wind power capacity factors and price trends values used in the B&V modeling were consistent with those commonly used for IRP planning. See 2 Tr 184. Witness Huang testified that his experience and the current price trend data shows that the price for wind energy has become flat. 2 Tr 185. Given witness Huang's testimony UPPCO argues that the data assumptions used in its B&V modeling are accurate and reasonable. Therefore, UPPCO rejected Circle Power witness Moore's recommendations. Circle Power argues that because UPPCO estimated an on- shore wind capacity factor which overestimates the CAPEX costs wind energy was overpriced in the IRP, and UPPCO's IRP, improperly excluded wind energy from the RFP process and favored a solar centric IRP. *2 Tr* 497. I find that Circle Power's arguments are not supported by the record and are without merit. Therefore, I recommend that the Commission adopt UPPCO's B& V modeling.

6. <u>Natural Gas Pricing Assumptions</u>

Circle Power argues that UPPCO incorrectly based its natural gas price forecast on zonal rather than nodal data. Circle Power argues that UPPCO's IRP modeling used a natural gas pricing assumption that is similar to UPPCO's LMP forecasts. Circle Power witness Moore testified that UPPCO's natural price forecast is based on zonal (hub) prices which he believes is not representative of UPPCO's actual market costs. 2 Tr 513. Circle Power argues that because the zonal prices were used in the IRP modeling for dispatch order and capacity factor of certain facilities—including, that of UPPCO's proposed RICE facility modeling and resulting IRP is flawed. 2 Tr 513, 526. Brief p 20.

Exhibit CP-11 shows that, fuel costs used in the IRP's modeling were $28.20 (2022) versus UPPCO's fuel costs of $37 (2018). *See* Exhibit CP-11. Circle Power believes that 31% difference between hub costs and actual costs, shows that hub prices are not representative of UPPCO's actual marketplace because they understate actual gas and may not be used in IRP models. 2 Tr 514.

UPPCO provided natural gas price forecasts under the Business as Usual (BAU), Emerging Technology, and the High Market Price Sensitivities. Staff witness Mckinde testified that UPPCO provided additional information in discovery, regarding delivered natural gas prices for its existing and new utility owned generating plants. 2 Tr 280. UPPCO's long-term price forecast is based on an annual Henry Hub price forecast using publicly available natural gas data from the 2018 Energy Information Administration (EIA) Annual Energy Outlook. 2 Tr 281. Staff believes the projections of delivered fuel prices are reasonable and the methods used in developing the price forecasts are appropriate. Staff recommends that Commission approve UPPCO's natural gas forecasts. Brief p 13. I find that the evidence shows that UPPCO's natural gas price forecasts are reasonable and prudent and I recommend the Commissions adopt UPPCO's natural gas price forecasts.

V.

CONCLUSION

MCL 460.6t provides that the Commission shall approve a proposed IRP if it determines the IRP tis the most reasonable and prudent means of meeting the electric utility's energy and capacity needs. The Commission must consider the following factors and the balance among the factors, when reviewing a proposed IRP:

- Resource adequacy and capacity to serve anticipated peak electric load, applicable planning reserve margin, and local clearing requirement.
- Compliance with applicable state and federal environmental regulations.
- Competitive pricing.
- Reliability.
- Commodity price risks.
- Diversity of generation supply.
- Whether the proposed levels of peak load reduction and energy waste reduction are reasonable and cost effective. Exceeding the renewable energy resources and energy waste reduction goal in section 1 of the clean and renewable energy and energy waste reduction act, 2008 PA 295, MCL 460.1001, by a utility shall not, in and of itself, be grounds for determining that the proposed levels of peak load reduction, renewable energy, and energy waste reduction are not reasonable and cost effective.

MCL 460.6(t)(8)(a).

UPPCO, Staff, CARE and the AG agree that UPPCO's IRP, despite its shortcomings, meets the requirements of section 6t. Staff, UPPCO. CARE and the AG also agree that UPPCO's IRP, consistent with section 6t(5), includes the following:

(a) A long-term forecast of the electric utility's sales and peak demand under various reasonable scenarios.

(b) The type of generation technology proposed for a generation facility contained in the plan and the proposed capacity of the generation facility, including projected fuel costs under various reasonable scenarios.

(c) Projected energy purchased or produced by the electric utility from a renewable energy resource. If the level of renewable energy purchased or produced is projected to drop over the planning periods set forth in subsection (3), the electric utility must demonstrate why the reduction is in the best interest of ratepayers.

(d) Details regarding the utility's plan to eliminate energy waste, including the total amount of energy waste reduction expected to be achieved annually, the cost of the plan, and the expected savings for its retail customers.

(e) An analysis of how the combined amounts of renewable energy and energy waste reduction achieved under the plan compare to the renewable energy resources and energy waste reduction goal provided in section 1 of the clean and renewable energy and energy waste reduction act, 2008 PA 295, MCL 460.1001. This analysis and comparison may include renewable energy and capacity in any form, including generating electricity from renewable energy systems for sale to retail customers or purchasing or otherwise acquiring renewable energy credits with or without associated renewable energy, allowed under section 27 of the clean and renewable energy and energy waste reduction act, 2008 PA 295, MCL 460.1027, as it existed before the effective date of the amendatory act that added this section.

(f) Projected load management and demand response savings for the electric utility and the projected costs for those programs.

(g) Projected energy and capacity purchased or produced by the electric utility from a cogeneration resource.

(h) An analysis of potential new or upgraded electric transmission options for the electric utility.

(i) Data regarding the utility's current generation portfolio, including the age, capacity factor, licensing status, and remaining estimated time of operation for each facility in the portfolio.

(j) Plans for meeting current and future capacity needs with the cost estimates for all proposed construction and major investments, including any transmission or distribution infrastructure that would be required to support the proposed construction or investment, and power purchase agreements.

(k) An analysis of the cost, capacity factor, and viability of all reasonable options available to meet projected energy and capacity needs, including, but not limited to, existing electric generation facilities in this state.

(l) Projected rate impact for the periods covered by the plan.

(m) How the utility will comply with all applicable state and federal environmental regulations, laws, and rules, and the projected costs of complying with those regulations, laws, and rules.

(n) A forecast of the utility's peak demand and details regarding the amount of peak demand reduction the utility expects to achieve and the actions the utility proposes to take in order to achieve that peak demand reduction.

(o) The projected long-term firm gas transportation contracts or natural gas storage the electric utility will hold to provide an adequate supply of natural gas to any new generation facility.

See MCL 460.6t(5).

UPPCO, Staff, CARE and the AG agree that UPPCO's IRP complies with the Commissions MIRPP modeling and IRP filing requirements adopted in the Commission's order in U-18418, and U-15896, 12/20/2017 Order. See Exhibit A, p 2.

ABATE and Circle Power, for the reasons previously discussed in this PFD, argue that UPPCO's IRP does not meet the requirements of 460 6t(5) & (8) and does not meet various MIRPP and IRP filing requirements. ABATE and Circle Power believe that UPPCO's IRP is not the most reasonable and prudent means of meeting the electric utility's energy and capacity needs. For the reasons previously discussed I find that the record evidence shows that UPPCO's IRP, despite its shortcomings, does set forth a plan which is the most reasonable and prudent means for UPPCO to meet its energy and capacity needs.

Additionally, UPPCO and Staff have agreed to a number of recommendations. Consistent with those recommendations UPPCO:

- Withdrew its request to establish a regulatory asset for unrecovered IRP costs. See 2 Tr 89.
- Accepted Staff's recommendations for future IRP filings, including providing all information necessary to show compliance with the IRP Filing Requirements in the UPPCO's initial filing or else noting filing requirements that are not applicable or requesting waivers from specific filing requirements. Brief p 43.
- Provided a PCA implementation plan. See Exhibit A-32.
- Requested a waiver from Section XIX(i) of the IRP Filing Requirements, which requires a comparison of total projected carbon emissions under each scenario. See 2 Tr 178.Brief p 43.

- Accepted and adopted Staff's recommended PURPA avoided cost and Standard Offer Tariff and incorporated them in its case. See 2 T 135 – 137.

- Accepts Staff's proposed format for annual reports See Exhibit S-3.0. Brief p 43.

Therefore, I recommend the Commission's final order in this matter adopt, incorporate, and approve if necessary, these agreed upon matters. Additionally, based on the record evidence I find that there is preponderance of the evidence that UPPCO's IRP meets the requirements of MCL 6t because the IRP is the most reasonable and prudent means for UPPCO to meet its energy and capacity needs. I recommend the Commission approve UPPCO's IRP subject to the following findings and recommendations:

1. I find that there is a preponderance of the evidence that UPPCO's Energy Waste Reduction goal should be set at 1.65% of total electric load for planning year 2020 and 1.75% for planning year 2021. The reasonableness and prudence of this change and its associated cost should be determined in the 2019 EWR plan case.
2. I find that the preponderance of the evidence that it would be reasonable and prudent to grant UPPCO cost preapproval for the first three years of the UPPCO's IRP. I recommend the Commission direct UPPCO to file a new IRP, with updated assumptions, within five years of the Commission's order in this matter.
3. I find that there is a preponderance of the evidence that UPPCO's request to establish a Financial Compensation Mechanism (FCM) for the Solar Power Purchase Agreement (PPA) based upon imputed debt Is not reasonable and prudent I recommend the Commission deny UPPCO's request for an FCM for its

Solar PPA. If the Commission determines an FCM is appropriate the Commission should approve one of Staff's recommended alternative FCM methodologies.

4. I find that there is a preponderance of the evidence that UPPCO's request to establish a regulatory asset for UPPCO's IRP filing costs is not reasonable and prudent. Therefore, I recommend the Commission deny UPPCO's request for a regulatory asset.

5. I find that there is a preponderance of the evidence that it would be reasonable and prudent for the Commission to require UPPCO in future IRP filings to provide more complete IRP information. I recommend the Commission direct UPPCO to provide the following in future IRP filings:

   (a) Analysis of demand response and storage;

   (b) Evidence of increased public outreach;

   (c) Completed checklist for the Commission's IRP filing requirements;

   (d) Staff's recommend revisions to peak load and energy sales forecast regressions; and

   (e) Robust transmission analysis.

6. I find that there is a preponderance of the evidence that it would be reasonable and prudent for the Commission to direct UPPCO to utilize a five-year planning horizon for PURPA capacity to align PURPA planning with future IRP cases.

7. I find that there is a preponderance of the evidence that it would be reasonable and prudent for the Commission to set UPPCO's PURPA avoided capacity cost to the MISO Planning Resource Auction (PR) clearing price for each year that the contract is in place for times when the UPPCO demonstrates that it does not have a persistent capacity need and making additional changes to the avoided energy

cost MISO Locational Marginal Price (LMP) pricing structure option. Therefore, I recommend the Commission set UPPCO's PURPA avoided cost in this manner.

8. I find that there is a preponderance of the evidence that it would be reasonable and prudent for the Commission to increase UPPCO's proposed Qualifying Facility (QF) standard offer cap from 500 kW to 550 kW.
9. I find that there is a preponderance of the evidence that it would be reasonable and prudent for the Commission to direct UPPCO to record the Portage CT insurance settlement as a regulatory liability.
10. I find that there is a preponderance of the evidence that it would be reasonable and prudent for the Commission to grant UPPCO a waiver from certain filing requirements for the RICE RFP.
11. I find that there is a preponderance of the evidence that it would be reasonable and prudent for the Commission to direct UPPCO to file annual reports using Staff's Exhibit S-3 as template.

MICHIGAN OFFICE OF ADMINISTRATIVE HEARINGS AND RULES
For the Michigan Public Service Commission

Martin D. Snider

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Martin D. Snider
Administrative Law Judge

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