S T A T E O F M I C H I G A N

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

* * * * *

In the matter of the application of Consumers Energy Company for approval of its integrated resource plan pursuant to MCL 460.6t and for related accounting and ratemaking relief.	)))))	Case No. U-20165

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 February 20, 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 March 4, 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 March 11, 2019. **The Commission has selected this case for participation in its Paperless Electronic Filings Program. No paper documents will be required to be filed in this case.**

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 ADMINISTRATIVE HEARING SYSTEM
For the Michigan Public Service Commission

Sharon L. Feldman
Administrative Law Judge

February 26, 2015
Lansing, Michigan

S T A T E O F M I C H I G A N

MICHIGAN ADMINISTRATIVE HEARING SYSTEM

FOR THE MICHIGAN PUBLIC SERVICE COMMISSION

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PROPOSAL FOR DECISION

I.

PROCEDURAL HISTORY

This case involves a review of Consumers Energy's June 15, 2018 Integrated Resource Plan (IRP) filing under section 6t of 2016 PA 341, MCL 460.6t. Following the company's filing, a prehearing conference was held on July 16, 2018. At the prehearing conference, intervention was granted to the following parties: the Michigan Environmental Council (MEC), the Sierra Club (SC), the Natural Resources Defense Council (NRDC), the Association of Businesses Advocating Tariff Equity (ABATE), Energy Michigan, Inc. (Energy Michigan), the Michigan Energy Innovation Business Council (Michigan EIBC), the Institute for Energy Innovation (EI), the Independent Power Producers Coalition (IPPC), Solar Energy Industries Association, Inc. (SEIA), the Michigan Chemistry Council, the Michigan Electric Transmission Company, LLC (METC), Cypress Creek Renewables, LLC (Cypress Creek), the Residential Customer

Group (RCG), the Great Lakes Renewable Energy Association (GLREA), Attorney General Bill Schuette, the Midland Cogeneration Ventures, LP (MCV), the Environmental Law & Policy Center (ELPC), the Ecology Center, the Union of Concerned Scientists, Vote Solar, and seven companies referred to as the Biomass Merchant Plants or BMPs (Cadillac Renewable Energy, LLC; Genesee Power Station, LP; Grayling Generating Station, LP; Hillman Power Company, LLC; TES File City Station, LP; Viking Energy of Lincoln, Inc.; Viking Energy of McBain, Inc.). A consensus schedule was established, as reflected in the docket. On July 17, 2017, the ALJ entered a protective order concurred in by all parties.

ELPC, the Ecology Center, and Vote Solar (collectively referred to as the Joint Intervenors) filed a Motion to Strike Testimony of Certain Consumers Energy Company Witnesses on August 15, 2018. Energy Michigan, IPPC, and SEIA filed written responses in support of the motion. Consumers Energy, Staff and ABATE filed written briefs opposing the motion. Oral argument was held on August 30, 2018.

On September 10, 2018, the ALJ issued a ruling granting the motion to strike for the reasons stated and providing an expedited schedule for interlocutory appeals. On September 17, 2018, Consumers Energy, ABATE, the Attorney General, filed applications for leave to leave to appeal the ruling. On September 24, 2018, Staff, IPPC, SEIA, the BMPs, and the Joint Intervenors filed responses.

On October 5, 2018, the Commission issued a ruling granting the applications for leave to appeal and granting the relief. At a second prehearing conference held on October 11, 2018 to implement the Commission's October 5, 2018 order, the ALJ

revised the schedule for filing testimony and converted the first scheduled day for the evidentiary hearings to a motion hearing date.[1]

In accordance with the revised schedule, the following parties filed testimony: Staff; Michigan EIBC and IEI; METC; MCV; the Attorney General; ABATE; MEC, NRDC and SC (collectively MEC-NRDC-SC); ELPC, the Ecology Center, the Union of Concerned Scientists, and Vote Solar (collectively ELPC et al); SEIA; GLREA; the RCG; and IPPC. As reflected in the docket, some of the testimony and certain exhibits were filed confidentially pursuant to the protective order. Consumers Energy, Staff, SEIA, the Attorney General, ELPC et al, MEC-NRDC-SC, and IPPC filed rebuttal testimony.

On November 9, 2018, SEIA filed a motion to strike portions of the testimony of Consumers Energy witness Keith G. Troyer, METC filed a motion to strike the rebuttal testimony of SEIA witness Kevin M. Lucas, and MEC-NRDC-SC filed a motion seeking to file surrebuttal testimony, accompanied by the proposed testimony. At the November 14, 2018 motion hearing, the ALJ granted SEIA's motion and denied METC's motion for the reasons stated on the record. The MEC-NRDC-SC motion was deferred to a later date, and ultimately resolved through an agreement between MEC-NRDC-SC and Consumers Energy, permitting the surrebuttal testimony to be offered and also permitting additional sur-surrebuttal testimony from Ms. Walz to be offered. At the evidentiary hearings held November 15, 16, 19, and 20, 10 witnesses appeared and were cross examined while the testimony of the remaining 52 witnesses was bound into the record without the need for them to appear.

The following parties filed briefs on December 21, 2019: Consumers Energy, Staff, the Attorney General, ABATE, MEC-NRDC-SC, ELPC, Ecology Center, the Union

[1] See 4 Tr 113-146, and October 11, 2018 scheduling memo, docket entry #188.

of Concerned Scientists and Vote Solar (collectively ELPC et al), SEIA, GLREA, the RCG, Michigan EIBC and IEI, IPPC, METC, and MCV. The following parties filed reply briefs On January 11, 2019: Consumers Energy, Staff, the Attorney General, ABATE, MEC-NRDC-SC, ELPC et al, SEIA, GLREA, the RCG, Michigan EIBC and IEI, METC, MCV, Energy Michigan, and the Michigan Chemistry Council.

The evidentiary record is included in 2929 transcript pages in 9 volumes. It includes the testimony of 62 witnesses and 363 exhibits, with certain transcript pages and exhibits designated as confidential. In the discussion that follows, section II provides an overview of the legal framework application to this case; sections III and IV provide an overview of the record and a synopsis of the positions of the parties. Subsequent sections discuss the key disputed issues and present the recommendations of the ALJ.

II.

LEGAL FRAMEWORK

Before proceeding to address the record, it is appropriate to provide an overview of the legal framework governing Integrated Resource Plan filings. MCL 460.6t, added by 2016 PA 341, governs this proceeding. Subsection 6t(1) provided direction to the Commission in advance of the company's filing:

> (1) The commission shall, within 120 days of the effective date of the amendatory act that added this section and every 5 years thereafter, commence a proceeding and, in consultation with the Michigan agency for energy, the department of environmental quality, and other interested parties, do all of the following as part of the proceeding:
>
> > (a) Conduct an assessment of the potential for energy waste reduction in this state, based on what is economically and technologically feasible, as well as what is reasonably achievable.

(b) Conduct an assessment for the use of demand response programs in this state, based on what is economically and technologically feasible, as well as what is reasonably achievable. The assessment shall expressly account for advanced metering infrastructure that has already been installed in this state and seek to fully maximize potential benefits to ratepayers in lowering utility bills.

(c) Identify significant state or federal environmental regulations, laws, or rules and how each regulation, law, or rule would affect electric utilities in this state.

(d) Identify any formally proposed state or federal environmental regulation, law, or rule that has been published in the Michigan Register or the Federal Register and how the proposed regulation, law, or rule would affect electric utilities in this state.

(e) Identify any required planning reserve margins and local clearing requirements in areas of this state.

(f) Establish the modeling scenarios and assumptions each electric utility should include in addition to its own scenarios and assumptions in developing its integrated resource plan filed under subsection (3), including, but not limited to, all of the following:

(i) Any required planning reserve margins and local clearing requirements.

(ii) All applicable state and federal environmental regulations, laws, and rules identified in this subsection.

(iii) Any supply-side and demand-side resources that reasonably could address any need for additional generation capacity, including, but not limited to, the type of generation technology for any proposed generation facility, projected energy waste reduction savings, and projected load management and demand response savings.

(iv) Any regional infrastructure limitations in this state.

(v) The projected costs of different types of fuel used for electric generation.

(g) Allow other state agencies to provide input regarding any other regulatory requirements that should be included in modeling scenarios or assumptions.

> (h) Publish a copy of the proposed modeling scenarios and assumptions to be used in integrated resource plans on the commission's website.
>
> (i) Before issuing the final modeling scenarios and assumptions each electric utility should include in developing its integrated resource plan, receive written comments and hold hearings to solicit public input regarding the proposed modeling scenarios and assumptions.

In Case No. U-18418, by order dated July 31, 2017, the Commission opened a docket to establish parameters related to the IRP process. The order explained that beginning in March 2017, Staff, the Michigan Agency for Energy, and the Michigan Department of Environmental Quality held stakeholder meetings and developed a "Strawman Proposal." Using this proposal as a reference, and after holding public hearings and receiving additional written comments, and soliciting additional input from other state agencies, the Commission issued an order on November 21, 2017, approving modeling assumptions and scenarios in an attachment to its order entitled "Michigan Integrated Resource Planning Parameters" (MIRPP). It directed that each electric utility whose rates are regulated by the Commission demonstrate compliance with the Michigan Integrated Resource Planning Parameters as a condition of Commission approval of its IRP under MCL 460.6t(3).

Subsection 3 of MCL 460.6t requires each regulated electric utility to file its IRP within 2 years of the effective date of 2016 PA 341:

> Not later than 2 years after the effective date of the amendatory act that added this section, each electric utility whose rates are regulated by the commission shall file with the commission an integrated resource plan that provides a 5-year, 10-year, and 15-year projection of the utility's load obligations and a plan to meet those obligations, to meet the utility's requirements to provide generation reliability, including meeting planning

reserve margin and local clearing requirements determined by the commission or the appropriate independent system operator, and to meet all applicable state and federal reliability and environmental regulations over the ensuing term of the plan. The commission shall issue an order establishing filing requirements, including application forms and instructions, and filing deadlines for an integrated resource plan filed by an electric utility whose rates are regulated by the commission. The electric utility's plan may include alternative modeling scenarios and assumptions in addition to those identified under subsection (1).

Under subsection 5, the utility’s plan must include all 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.[2]

Subsection 6 requires Commission action within 300 days of the plan filing:

> Not later than 300 days after an electric utility files an integrated resource plan under this section, the commission shall state if the commission has any recommended changes, and if so, describe them in sufficient detail to allow their incorporation in the integrated resource plan. If the commission does not recommend changes, it shall issue a final, appealable order approving or denying the plan filed by the electric utility.

This section goes on to provide:

[2] See MCL 460.6t(5).

If the commission recommends changes, the commission shall set a schedule allowing parties at least 15 days after that recommendation to file comments regarding those recommendations and allowing the electric utility at least 30 days to consider the recommended changes and submit a revised integrated resource plan that incorporates 1 or more of the recommended changes. If the electric utility submits a revised integrated resource plan under this section, the commission shall issue a final, appealable order approving the plan as revised by the electric utility or denying the plan. The commission shall issue a final, appealable order no later than 360 days after an electric utility files an integrated resource plan under this section. Up to 150 days after an electric utility makes its initial filing, the electric utility may file to update its cost estimates if those cost estimates have materially changed. A utility shall not modify any other aspect of the initial filing unless the utility withdraws and refiles the application. A utility's filing updating its cost estimates does not extend the period for the commission to issue an order approving or denying the integrated resource plan. The commission shall review the integrated resource plan in a contested case proceeding conducted pursuant to chapter 4 of the administrative procedures act of 1969, 1969 PA 306, MCL 24.271 to 24.287. The commission shall allow intervention by interested persons including electric customers of the utility, respondents to the utility's request for proposals under this section, or other parties approved by the commission. The commission shall request an advisory opinion from the department of environmental quality regarding whether any potential decrease in emissions of sulfur dioxide, oxides of nitrogen, mercury, and particulate matter would reasonably be expected to result if the integrated resource plan proposed by the electric utility under subsection (3) was approved and whether the integrated resource plan can reasonably be expected to achieve compliance with the regulations, laws, or rules identified in subsection (1). The commission may take official notice of the opinion issued by the department of environmental quality under this subsection pursuant to R 792.10428 of the Michigan Administrative Code. Information submitted by the department of environmental quality under this subsection is advisory and is not binding on future determinations by the department of environmental quality or the commission in any proceeding or permitting process. This section does not prevent an electric utility from applying for, or receiving, any necessary permits from the department of environmental quality. The commission may invite other state agencies to provide testimony regarding other relevant regulatory requirements related to the integrated resource plan. The commission shall permit reasonable discovery after an integrated resource plan is filed and during the hearing in order to assist parties and interested persons in obtaining evidence concerning the integrated resource plan, including, but not limited to, the reasonableness and prudence of the plan and alternatives to the plan raised by intervening parties.

Subsection 8 provides the standards for approval:

> (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 most reasonable and prudent means 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).

Specific cost approvals resulting from Commission approval of an IRP are provided for in subsections 11, 12 and 13 as follows:

> (11) In approving an integrated resource plan under this section, the commission shall specify the costs approved for the construction of or significant investment in an electric generation facility, the purchase of an existing electric generation facility, the purchase of power under the terms of the power purchase agreement, or other investments or resources used to meet energy and capacity needs that are included in the approved integrated resource plan. The costs for specifically identified investments, including the costs for facilities under subsection (12), included in an approved integrated resource plan that are commenced within 3 years after the commission's order approving the initial plan, amended plan, or plan review are considered reasonable and prudent for cost recovery purposes.
>
> (12) Except as otherwise provided in subsection (13), for a new electric generation facility approved in an integrated resource plan that is to be owned by the electric utility and that is commenced within 3 years after the commission's order approving the plan, the commission shall finalize the approved costs for the facility only after the utility has done all of the following and filed the results, analysis, and recommendations with the commission:
>
>> (a) Implemented a competitive bidding process for all major engineering, procurement, and construction contracts associated with the construction of the facility.
>>
>> (b) Implemented a competitive bidding process that allows third parties to submit firm and binding bids for the construction of an electric generation facility on behalf of the utility that would meet all of the technical, commercial, and other specifications required by the utility for the generation facility, such that ownership of the electric generation facility vests with the utility no later than the date the electric generation facility becomes commercially available.
>>
>> (c) Demonstrated to the commission that the finalized costs for the new electric generation facility are not significantly higher than the initially approved costs under subsection (11). If the finalized costs are found to be significantly higher than the initially approved costs, the commission shall review and approve the proposed costs if the commission determines those costs are reasonable and prudent.

> (13) If the capacity resource under subsection (12) is for the construction of an electric generation facility of 225 megawatts or more or for the construction of an additional generating unit or units totaling 225 megawatts or more at an existing electric generation facility, the utility shall submit an application to the commission seeking a certificate of necessity under section 6s.

Further regarding cost approvals, subsection 17 provides:

> (17) The commission shall include in an electric utility's retail rates all reasonable and prudent costs specified under subsections (11) and (12) that have been incurred to implement an integrated resource plan approved by the commission. The commission shall not disallow recovery of costs an electric utility incurs in implementing an approved integrated resource plan, if the costs do not exceed the costs approved by the commission under subsections (11) and (12). If the actual costs incurred by the electric utility exceed the costs approved by the commission, the electric utility has the burden of proving by a preponderance of the evidence that the costs are reasonable and prudent. The portion of the cost of a plant, facility, power purchase agreement, or other investment in a resource that meets a demonstrated need for capacity that exceeds the cost approved by the commission is presumed to have been incurred due to a lack of prudence. The commission may include any or all of the portion of the cost in excess of the cost approved by the commission if the commission finds by a preponderance of the evidence that the costs are reasonable and prudent. The commission shall disallow costs the commission finds have been incurred as the result of fraud, concealment, gross mismanagement, or lack of quality controls amounting to gross mismanagement. The commission shall also require refunds with interest to ratepayers of any of these costs already recovered through the electric utility's rates and charges. If the assumptions underlying an approved integrated resource plan materially change, or if the commission believes it is unlikely that a project or program will become commercially operational, an electric utility may request, or the commission on its own motion may initiate, a proceeding to review whether it is reasonable and prudent to complete an unfinished project or program included in an approved integrated resource plan. If the commission finds that completion of the project or program is no longer reasonable and prudent, the commission may modify or cancel approval of the project or program and unincurred costs in the electric utility's integrated resource plan. Except for costs the commission finds an electric utility has incurred as the result of fraud, concealment, gross mismanagement, or lack of quality controls amounting to gross mismanagement, if commission approval is modified or canceled, the commission shall not disallow reasonable and prudent costs already incurred or committed to by contract by an electric utility. Once the commission finds that completion of the project or

> program is no longer reasonable and prudent, the commission may limit future cost recovery to those costs that could not be reasonably avoided.

Subsection 15 provides authority for the Commission to consider and authorize a financial incentive:

> 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.

Also relevant to this proceeding, the Public Utility Regulatory Policies Act of 1978 (PURPA), as amended, is a federal statute designed, among other purposes, to promote the growth of small power production facilities. MCL 460.6v directs the Commission to conduct a contested case proceeding at least every 5 years to implement section 210 of PURPA by reevaluating the procedures and rates schedules including avoided cost rates "as it relates to qualifying facilities from which utilities in this state have an obligation to purchase energy and capacity." Qualifying facilities under PURPA are referred to throughout the record in this case as QFs.

In its application in this case, Consumers Energy also seeks to revise the PURPA avoided cost rates and other parameters the Commission established in Case No. U-18090. In its October 5, 2018 order holding that Consumers Energy could seek to revise the PURPA determinations in Case No. U-18090, the commission concluded that a determination of PURPA avoided costs is integral to a determination under section 6t whether the company's IRP represents the most reasonable and prudent means of meeting the utility's energy and capacity needs:

> [T]he Commission previously opined that "PURPA avoided costs should be integrated with capacity demonstration and IRP proceedings in order to more accurately assess capacity needs. The IRP proceedings are

> conducive to updating avoided costs, because the Commission will already be evaluating, in detail, utility-specific plans for any incremental generation or purchases along with associated costs." November 21 order, p. 33. The Commission did not, in fact, intend for this finding to apply to a future time period, as opined by the ALJ, but rather to any IRP proceeding, including this first proceeding conducted under the new legislation. The Commission is more than sympathetic to the ALJ's analysis regarding the feasibility of conducting the required IRP proceeding, including the consideration of PURPA avoided costs and the other determinations that go with finalizing the prices and terms that are available to QFs, in 300 days. Act 341 was replete with ambitious deadlines that required substantial effort from the parties, the administrative law judges, the Staff, and the Commission. The 300-day limit for IRP proceedings is another such deadline. However, and with full knowledge of the associated difficulty, the Commission finds that it cannot sanction the narrowing of the evidence that should properly be before it when making the required determination that Consumers' IRP "represents the most reasonable and prudent means of meeting the electric utility's energy and capacity needs." MCL 460.6t(8)(a). [3]

Citing sections 6t(3), 6t(5), and 6t(8), quoted above, the Commission held:

***

> The Commission finds that PURPA issues are integral to each of these categories of required information and each of the listed findings under Section 6t(3), (5), and (8), even without taking note of the fact that administrative agencies are not required to follow the rules of evidence but rather "may admit and give probative affect to evidence of a type commonly relied upon by reasonably prudent persons in the conduct of their affairs." Mich Admin Code, R 792.10427(1); MCL 24.275.[4]

The provisions of PURPA and of MCL 460.6v are discussed in more detail below.

III.

OVERVIEW OF THE RECORD

The following subsections contain a review of the record, including the testimony offered by each party, beginning with the direct testimony and then turning to the rebuttal testimony. The review is intended to provide an overview of the testimony of

[3] See October 5, 2018 order, page 18.
[4] See October 5, 2018 order, Case No. U-20165, pages 18-19.

each witness, rather than a detailed recital, with the testimony, exhibits, and arguments of the parties discussed in greater detail as appropriate to address the disputed issues.

A. Consumers Energy

Consumers Energy presented the testimony and exhibits of 24 witnesses in support of its IRP, proposed course of action (PCA), and other requested relief.

Richard T. Blumenstock

Mr. Blumenstock is the Executive Director of Electric Supply for Consumer's Energy.[5] He provided an overview of the company's IRP filing including summary of the design, an overview of the study process used to complete the IRP, a description of the results including the company's "proposed course of action" (PCA), and a summary of the approvals requested in this case.

In discussing the design of the IRP, he testified that the company's planning objectives were based on its commitment to "people, planet, prosperity." He identified four key decisions the IRP addresses, including an examination of the retirement of the Medium 4 coal plants, achievement of the planning objectives set by the Commission and by Consumers Energy, to seek competitive pricing for supply options, and to develop a financial incentive for the company to "earn a fair return on PPAs."[6] In discussing the study process used to complete the IRP, he discussed the company's engagement with stakeholders, including public outreach events. He provided a high-level overview of the scenarios and sensitivities underlying the plan, indicating they align with those included in the Commission's November 21, 2017 order in Case No. U-

[5] Mr. Blumenstock's testimony, including rebuttal testimony and cross-examination, is transcribed at 6 Tr 216-302. His qualifications are set forth at 6 Tr 220-222.
[6] See 6 Tr 235-236.

18418, with additional scenarios reflecting Consumers Energy's internal gas price forecast rather than the Energy Information Agency (EIA) forecast, additional sensitivities reflecting the impact of the Tax Cuts and Jobs Act (TCJA), and potentially avoidable environmental expenditures.[7] Mr. Blumenstock also explained that Consumers Energy hired two consulting firms, ABB Enterprise Software, Inc. (ABB) to provide an independent analysis of the potential early retirement of Medium 4 units, and PACE Global to review the IRP analysis and compliance with filing requirements.

In discussing the results, Mr. Blumenstock testified that the company's PCA shows no need for capacity in the next 3 years and calls for Karn units 1 and 2 to retire in 2023 and the Campbell units 1 and 2 to operate through 2031. He testified that the backfill plan for Karn 1 and 2 relies on energy waste reduction (EWR), conservation voltage reduction (CVR) and demand response (DR), and "leveraging available solar generation as necessary."[8] Over the long term, with the company's PPA with MCV expiring in 2030, and the remaining coal units expected to retire between 2031 and 2040, he testified that the company's plan calls for additional EWR, CVR, and DR, solar generation, and some battery technology. He characterized the company's plans as a "clean and lean" approach. He testified that the company is seeking regulatory asset treatment for the undepreciated plant balances and net salvage costs of the two Karn units when they retire, is seeking to move to competitive bidding for new capacity and to set avoided cost rates under the federal Public Utilities Regulatory Policy Act (PURPA). And he testified that because the company expects to enter power purchase agreements (PPAs) through competitive bidding to meet supply-side capacity

[7] See 6 Tr 237-244.
[8] See 6 Tr 223.

requirements, the company is requested a financial incentive under section 6t(15), which it labels the Financial Compensation Mechanism (FCM).

Mr. Blumenstock testified that the company's plan is "fully integrated" and "modification to or rejection of a proposal made in the PCA impacts the PCA's viability and the Company's willingness to execute on the remaining portions of the PCA not modified or rejected."[9] Mr. Blumenstock provided an introduction to the testimony presented by the company's other witnesses, and presented the IRP filing requirements checklist as his Exhibit A-1, and Consumers Energy's IRP Report as his Exhibit A-2. Mr. Blumenstock provided the following description and summary of the company's filing, quoted here in its entirety for completeness:

> The Company is requesting the MPSC find:
>
> 1. The Company's IRP and PCA represent the most reasonable and prudent means of meeting the electric utility's energy and capacity needs. In reaching that finding, the company further requests the Commission to:
>
> a. Find that the Company's current capacity position outlook shows no capacity need over the next three years;
>
> b. Find that the most reasonable and prudent disposition of the Medium 4 is to retire Karn Units 1 and 2 in 2023, and continue to operate Campbell 20 Units 1 and 2 through 2031;
>
> c. Find that the most reasonable and prudent means of replacing capacity for Karn Units 1 and 2 is increased EWR, CVR, DR, and solar generation;
>
> d. Find that the expenditures expected to be commenced in the next three years following the expected final order in this proceeding that are intended to replace capacity for Karn Units 1 and 2 are approved for cost recovery purposes. Those expenditures, expected to occur between June 27 of 2019 and June of 2022, are as follows:

[9] See 6 Tr 224.

• CVR Deployment: Achieving a total peak load reduction of 44 MW 2 (incremental 40 MW) by June 1, 2022 with a capital cost of $8,924,600 and a total Operations and Maintenance ("O&M") cost of $666,600;

• EWR: Savings increase from 1.5% to 2.0% per year achieving total EWR peak load reductions of 718 MW (incremental 52 MW from current EWR Plan) by June 1, 2022 with a capital cost of $0 and incremental O&M cost of $161,589,035; and

• DR expansion: Achieving a total peak load reduction of 607 MW (an incremental 238 MW from 2019 levels proposed in the Company's pending electric rate case) by June 1, 2022 with a capital cost of $21,028,357 and a total O&M cost of $36,272,652.

e. Approve the Company's proposal to evolve the Company's resource portfolio through 2040 as follows:

• CVR deployment achieving 111 MW (115 ZRCs) by 2028 and maintain at that level, thereafter;

• EWR savings at 2% per year through 2029 and 2.25%, thereafter, achieving an incremental (to approved levels in U-17771) 361 MW (373 ZRCs) by 2040;

• DR expansion achieving an incremental (to base DR levels appearing in Mr. Ennis' Exhibit A-60 (PCE-1), line 6) 539 MW (605 ZRCs) by 2030 and maintain at that level, thereafter;

• Solar generation achieving 6,350 MW (3,175 ZRCs) by 2040; and

• Batteries beginning in 2032 at 50 MW (50 ZRCs) and climbing to 450 MW (450 ZRCs) by 2040.

The Company's IRP, as outlined above, is based on the modeling and analysis presented in this case. The Company reserves the right to make changes to its resource acquisition strategy as appropriate due to changing circumstance; and

f. Approve the full recovery of Karn Units 1 and 2's remaining book balance through the use of a regulatory asset. Specifically, the Company requests that the Commission approve the Company's continued depreciation of Karn Units 1 and 2 at the current Commission-approved depreciation rates until base rates are reset in the next electric general rate case. In the next rate case, the

> remaining book balance would be removed from plant in service and accumulated depreciation accounts and placed into the regulatory asset approved and created in this proceeding. The Company proposes to set an annual amortization rate that allows for the recovery of the remaining book balance and the decommissioning costs by 2031 by designating it a regulatory asset to be recovered through 2031;
>
> 6. [sic] Approve the Company's proposed competitive-bid methodology for determining avoided cost rates and for determining and addressing capacity need or sufficiency for purposes of PURPA; and
>
> 7. [sic] Approve the Company's proposed FCM for new PPAs.[10]

Mr. Blumenstock also presented rebuttal testimony and was cross-examined.

Charles F. Adkins

Mr. Adkins is a Vice President for the Advisors Consulting Practice within ABB Enterprise Software, Inc. (ABB).[11] He presented his independent assessment of the cost or value of retiring one or more of the Medium 4 units prior to the planned retirement dates in May 2031.

Mr. Adkins testified that in the development of his analysis, he assessed Consumers Energy's use of ABB's Strategist modeling for the units, conducted a higher-level review of other elements of the IRP, and found the modeling assumptions appropriate. His Exhibit A-9 is an overview of the Strategist modeling. He explained that his analysis looked at two independent valuations, the impact of early retirements on the pricing under the company's Non-Utility Generator (NUG) contracts, and an evaluation of the units themselves. For each analysis, he looked at three potential retirement decisions, Campbell Unit 1, Campbell Unit 2, and both Karn Units 1 and 2, at

[10] See Tr 258-260.
[11] Mr. Adkins' testimony, including rebuttal testimony and cross-examination, is transcribed at 6 Tr 310-414. His qualifications are set forth at 6 Tr 311-315.

each of three potential retirement dates, 2021, 2023, and 2031, for a total of 27 combinations. He described the modeling of the NUG impact, testifying that the NUG pricing does not impact the dispatch of the facilities, simplifying the analysis.[12]

Turning to the unit evaluation, he testified that the generic Natural Gas Combustion Turbine (NGCT) and Natural Gas Combined Cycle (NGCC) were used to represent the scope of future build decisions, and off-system purchases were limited to 30 MW. He presented the results separately for the two analyses, and on a combined basis. His results estimated the value of retiring Karn units 1 and 2 in 2021 as $141 million, and the value of retiring these units in 2023 as $114 million, in 2017 dollars. His results estimated a cost to retiring either of the Campbell units early.[13]

Mr. Adkins also presented rebuttal testimony and was cross-examined.

Sara T. Walz

Ms. Walz is a Senior Engineering Technical Analyst Lead in the Resource Planning Section of the Electric Grid Integration Department.[14] Ms. Walz was primarily responsible for the modeling underlying the company's IRP. She identified and described the scenarios and sensitivities evaluated in the plan, described the planning and modeling process, discussed the resource options considered and selected, described the development of the forecast costs of the renewable energy technologies, explained how demand-side programs were designed to be modeled in Strategist, and presented the results of the modeling in her testimony and in Exhibits A-10 through A-34.

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[12] See 6 Tr 317-320.
[13] See 6 Tr 328.
[14] Ms. Walz's testimony including rebuttal testimony and cross-examination, is transcribed at 6 Tr 416-665. Her qualifications are set forth at 6 Tr 421-425.

She testified that the company's modeling used the scenarios and sensitivities adopted in Case No. U-18418 and three additional scenarios, each using Consumers Energy's natural gas price forecast in lieu of the EIA forecast, citing Mr. Gallaway's testimony for additional details. Ms. Walz also testified that assumptions used in the modeling are summarized in Exhibits A-10 and A-11, and that PACE Global verified the underlying assumptions, citing Ms. Haugh's testimony and discussing some of the assumptions in more detail. She testified that as part of its planning process, Consumers Energy also considered as potential replacement resources technologies that were ultimately screened out, including thermal storage, compressed air, flywheel, combined heat and power, fuel cells, geothermal, and distributed generation. She testified that the remaining technologies were modeled using a levelized cost of energy (LCOE) as shown in Exhibit A-13, with an alternate analysis for CT and DR technologies that produce little energy and correspondingly have high LCOE values.[15] Ms. Walz also testified that the company's analysis included consideration of the transmission system, with an illustration of the transmission system topology in her Exhibit A-14. She testified that the IRP considers the potential role of transmission expansion in helping to meet demand requirements.[16] Ms. Walz also discussed simplifying assumptions made to facilitate the modeling, and she discussed the renewable energy technologies--including wind, solar, battery storage—and demand-side resources—including DVR, DR, and EWR—included in the modeling.

In summarizing the results of the company's modeling, she explained that the company identified five "critical portfolio 'designs'" evaluated in the IRP, including: 1) the

[15] See 6 Tr 443-445.
[16] See 6 Tr 447.

purchase of all incremental capacity from the market at spot prices; 2) the construction of all incremental capacity by the company; 3) a mix of supply-side and demand-side option; 4) the company's PCA; and 5) the company's alternate plan. She testified that the mix of resources for the PCA and alternate plan were the same for all scenarios and sensitivities, but the other portfolio mixes were allowed to vary.[17] She presented the results of the IRP modeling, for the scenarios and sensitivities modeled, for the five portfolios. She testified that most of the modeling results showed that a combination of supply-side and demand-side resources is better than reliance on the market, and that the PCA has an NPV $485 million to $2 billion less than full market purchases in five of six scenarios, with a cost of $778 million when Consumers Energy's own gas price forecast is used along with its business-as-usual assumptions regarding the cost of renewables and demand-side resources.[18] She presented the sensitivity analysis in her Exhibits A-22 through A-28, and described key observations and conclusions.[19] Ms. Walz also discussed the modeling for the company's retirement analysis for the Medium 4, with modeling results in her Exhibits A-29 and A-30. Her Exhibit A-31 shows the modeling results based on an assumption that surplus capacity has no value. Her Exhibit A-33 includes the capital and O&M costs used in the Medium 4 retirement analysis.

Finally, Ms. Walz testified regarding the capital and O&M expenses associated with the PCA and with the company's alternate plan, also presented in Exhibit A-32, for the years 2019 to 2040, with the underlying fuel cost projections in her Exhibit A-34.

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[17] See 6 Tr 467-470.
[18] See 6 Tr 472.
[19] See 6 Tr 477-482.

Ms. Walz also presented rebuttal and sur-surrebuttal testimony and was cross-examined.

Donald A. Lynd

Mr. Lynd is the Director of Electric Transmission Planning and Protection for Consumers Energy.[20] He provided testimony concerning transmission network upgrades, engagement with transmission owners, transmission alternatives, and capacity import and export limits utilized in the IRP.

Mr. Lynd testified Consumers Energy discussed future transmission scenarios with METC, the predominant owner of electric transmission systems in the service area. He stated the company does not anticipate interconnections with other entities as part of the IRP. He acknowledged that the scenarios Consumers Energy provided to METC and that METC analyzed were not the scenarios ultimately used to develop the PCA but agreed that the cost ranges METC developed for the scenarios it did analyze were reasonable. He presented METC's analysis in his Exhibit A-97.[21]

Mr. Lynd testified that the IRP analysis assumed cost upgrades to the transmission network of $54,000/MW, based on a range of results from $1,300/MW to $179,000/MW shown by recent Generator Interconnection Agreements with METC or ITC. However, he also stated the definitive costs would vary by project and could only be determined by a MISO generator interconnection study.[22]

Mr. Lynd also testified to the capacity import limit (CIL) and capacity export limit (CEL) used in the IRP analysis. He acknowledged that more recent information is now

[20] Mr. Lynd's testimony, including rebuttal testimony and cross-examination, is transcribed at 6 Tr 670-703. His qualifications are set forth at 6 Tr 670-672.
[21] See 6 Tr 674-675.
[22] Lynd, 6 Tr 676.

available. He testified an increase in the CIL is only required if there is a desire to import resources above the CIL into Zone 7, and he testified that the recent MISO Planning Resource Auctions (PRAs) show there is an abundance of CIL that is not being used, presenting details in his Exhibit A-98.[23] He disputed that METC's proposal to increase CIL was needed or justified. Mr. Lynd also testified that transmission upgrades to reduce line losses and system inefficiency are rarely cost effective and noted that METC did not offer any upgrades for this purpose.

Mr. Lynd also presented rebuttal testimony and was cross-examined.

Srikanth Maddipati

Mr. Maddipati is a Treasurer and Vice President of Investor Relations for Consumers Energy.[24] He presented the company's proposed methodology "for establishing a Financial Compensation Mechanism ("FCM") for the use of Consumers Energy's balance sheet resulting from Power Purchase Agreements ("PPAs")."[25]

Mr. Maddipati described PPAs as agreements that contractually obligate Consumers Energy to purchase energy and capacity from a generation provider at a pre-determined price. He testified that while these PPAs are not recorded on the company's books as debt, they "have similar financial characteristics as long-term debt, and are often considered 'off-balance sheet' financings" by credit rating agencies.[26] Mr. Maddipati testified that among the credit rating agencies, S&P has the most explicit method for calculating imputed debt, further testifying that S&P "calculates the Net Present Value ("NPV") of the PPA payments through the life of the contract and applies

[23] See 6 Tr 677-679.
[24] Mr. Maddipati's testimony including rebuttal testimony and cross-examination, is transcribed at 7 Tr 717-865. His qualifications are set forth at 7 Tr 720-722.
[25] See 7 Tr 722.
[26] See 7 Tr 722.

a risk factor to calculate the PPA's imputed debt."[27] He asserted the risk factor for the company is 25%.[28] Mr. Maddipati testified that Moody's "offers" a number of methods, but may not explicitly calculate imputed debt but consider it in an overall evaluation of credit risk.[29] Mr. Maddipati also cited a report by the consulting firm The Brattle Group to show precedent for "incorporating imputed debt from PPAs."[30]

In explaining that the PPAs impact the financial profile and credit of the company, Mr. Maddipati testified that "[t]he increased financial burden and these credit costs are borne by customers and investors of the Company and unless addressed, unfairly shifts costs from the PPA provider to these stakeholders."[31]

Mr. Maddipati asserted that independent power producers rely on a PPA and the company's creditworthiness to secure financing, and reasoned:

> The creditworthiness of the Company is supported by the Company's net income and the equity capital provided by investors. Equity capital is subordinate to the Company's debt, and in part the ROE established by the Commission compensates investors for the risks undertaken to support the credit of the Company. To the extent the Company enters into PPAs, the equity capital provided by Consumers Energy's shareholders will also support the credit of the capital raised by the PPA provider. However, absent a proper compensation mechanism, equity capital providers will be subsidizing PPA providers.[32]

He also referenced Mr. Torrey's testimony in justifying the company's proposed FCM as needed to "help align the Company's and customer's interests by removing potential bias toward utility owned assets."[33]

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[27] See 7 Tr 723.
[28] See 7 Tr 723.
[29] See 7 Tr 723.
[30] See 6 Tr 724.
[31] See 6 Tr 724.
[32] See 7 Tr 726.
[33] See 7 Tr 727.

In explaining the company's proposed FCM, Mr. Maddipati provided this description of the calculation:

> (a) Calculate the equity required to offset imputed debt for each year of the PPA. The imputed debt will equal the NPV of the PAA payments, multiplied by 25% (PPA Imputed Debt = Required Equity Capital);
>
> (b) Multiply the required equity capital resulting from the calculation in a) by the Company's authorized ROE from its most recent general electric rate case for PPAs supported by non-renewable generation assets or the authorized RIOE 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 company's revenue requirement in its most recent electric rate case.[34]

As an additional step, the resulting annual payments would be levelized to a $/MWh basis across the life of the PPA, using the authorized return on equity to discount the payments and the weighted average cost of capital to levelize that discounted amount over the life of the PPA.[35] He presented an example calculation in his Exhibit A-52, which calculates a $8.28 per MWh charge for a 10-year PPA with a combined price of $60/MWh.

In further support of this calculation, Mr. Maddipati testified that this calculation is consistent with the methodology used by rating agencies and offers simplicity in determining the imputed debt of the PPA.[36] In a footnote, he testified that his method is based on a permanent capital structure with 50% debt and 50% equity, "although a higher equity ratio is needed to support the Company's credit as outlined in the Company's pending electric rate case."[37]

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[34] See 7 Tr 727-728.
[35] See 7 Tr 730-731.
[36] See 7 Tr 728.
[37] See 7 Tr 729 at n1.

Mr. Maddipati also presented rebuttal testimony and was cross-examined.

Thomas P. Clark

Mr. Clark is the Director of Merchant Operations and Resource Planning for the company.[38] Mr. Clark testified to provide an overview of the planning and modeling process Consumers Energy conducted leading to its PCA. He testified that development of the plan required significant modeling effort and consideration of costs, regulations, communities, customers, and environmental impacts.[39] He outlined the planning steps in the IRP, focusing on the determination of the company's capacity position and identifying the first year of need, completing a risk analysis, and determining the most reasonable and prudent plan that meets Commission and Consumers Energy planning objectives, and considers stakeholder feedback.

Mr. Clark testified that the company's PCA is the result of extensive modeling analysis. He explained the PCA with reference to the near-term, intermediate-term, and far-term, and the planned utilization of five resource categories, EWR, DR, Wind, Solar and storage.[40] Mr. Clark also testified that Consumers Energy does not propose any transmission infrastructure investments that would be required to support the near-term resource proposals in the PCA. He explained that Consumers Energy consulted with METC to identify potential transmission investments and that "METC identified potential impacts in transmission investment associated with the early retirement and replacement with supply-side resources of the Medium 4," citing Mr. Lynd's testimony.[41] He discussed the cost impacts of the PPA, citing Ms. Myers's testimony, and the

[38] Mr. Clark's testimony, including rebuttal testimony and cross-examination, is transcribed at 7 Tr 866-1025. His qualifications are set forth at 7 Tr 870-873.
[39] See 7 Tr 874.
[40] See 7 Tr 903-912.
[41] See 7 Tr 912-913.

company's planned environmental compliance, citing Ms. Breining's testimony. He also reviewed the PCA to show that it balances and meets the company's and Commission's planning objectives and is consistent with customer interests.[42] And he explained the risk assessment methodology employed by the company, and discussed some of the underlying resource choices.

Mr. Clark also discussed the company's Medium 4 retirement analysis. He explained that in accordance with the Commission's orders, Consumers Energy assessed whether continued operation of the Medium 4 is in the best interest of customers and provided an overview of the analysis. He explained that Consumers Energy analyzed the joint retirement of Karn units 1 and 2 based on its determination that it would be impractical to operate only one unit, but analyzed the separate and joint retirement of Campbell units 1 and 2. Mr. Clark described previous retirement analyses, and the steps undertaken in its analysis in this case, beginning with a reexamination of the capital and O&M expenses necessary to continue to operate the units, and the capital and O&M expenses associated with the early retirement scenarios, presented in his Exhibits A-3 through A-6. He also discussed the natural gas price and capacity price assumptions evaluated in the analyses, and the company's use of replacement plans modeled by Strategist. The capacity price assumptions are presented in Exhibit A-7.

Presenting the results of the analysis in Figure 4 of his testimony at 7 Tr 886, Mr. Clark testified that the results of the analyses show an improvement in the benefit of early retirement, but the results are "not overly compelling."[43] On this basis, he testified

[42] See 7 Tr 914-917.
[43] See 7 Tr 886.

that Consumers Energy has decided that Karn units 1 and 2 should be retired by 2023 to avoid the environmental investments required to continue operation beyond that date.[44] He testified that this decision also diversifies retirements currently slated for 2031. Mr. Clark testified that regardless of early retirement or continued operation, Consumers energy expects the unrecovered book value will be recovered from customers, citing Ms. Myers's testimony.[45] He also explained how the company considered community impacts in its decision, explaining that they are significant at both the Karn and Campbell sites, and that community concerns favor a 2023 retirement for the Karn units rather than an earlier date.[46] Mr. Clark also discussed the other analytical considerations required by the Commission.

Mr. Clark also testified that Consumers Energy contracted with ABB Enterprise Software, Inc, to perform an independent retirement analysis of the Medium 4 units and noted that Mr. Adkins with ABB has provided testimony in this case.

The final portion of Mr. Clark's testimony addressed the PURPA avoided cost rate. He testified that the proxy plant method adopted in Case No. U-18090 is not consistent with the PCA and testified that the best way to establish an avoided cost consistent with the PCA would be to utilize a competitive bidding process.[47] He cited Mr. Troyer's testimony in explaining the avoided cost rate when Consumers Energy does not need capacity. He also testified that if the Commission wishes to use an alternate methodology, it should use the incremental energy and capacity resources identified in the IRP over the next three-year implementation period. He presented

[44] See 7 Tr 889.
[45] See 7 Tr 892.
[46] See 7 Tr 893-895.
[47] See 7 Tr 932-933.

Exhibit A-8 to show his calculation, based on the capital costs of CVR. He testified that over the next three years, Consumers Energy has no capacity need. Also, while noting that the company does not believe a 10-year timeframe is reasonable, he explained the company's capacity position over the next 10 years, testifying that the company does not need supply-side capacity resources over the next ten years but intends to use competitive bidding to begin a ramp-up of solar resources between 2022 and 2030.[48]

Heidi J. Myers

Ms. Myers is the Director Revenue Requirements and Analysis for Consumers Energy.[49] In her direct testimony, Ms. Myers presented a calculation of the fixed charge rate used in the company's modeling. She testified that the company's modeling was based on a fixed charge rate calculated using a 35% federal income tax rate, which is no longer in place. She explained that a sensitivity was run that incorporated the current 21% tax rate.[50]

She also discussed the projected rate impacts of the company's proposed court of action and alternative. In support of this testimony, she presented Exhibits A-55 and A-56. She testified that the PCA holds customer rate increases to a compound annual growth rate of less than 0.7%. She explained that the annual percentage increase each year would vary but is less than 2% in 20 of 21 years. For the alternate plan, she testified that the incremental revenue requirement equates to a compound annual growth rate of 0.83%.[51]

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[48] See 7 Tr 935.
[49] Ms. Myers' testimony, including rebuttal testimony and cross-examination, is transcribed at 7 Tr 1026-1067. Her qualifications are set forth at 7 Tr 1030-1032.
[50] See 7 Tr 1033.
[51] See 6 Tr 10 1034-1038.

Third, Ms. Myers explained the proposed accounting for the requested regulatory asset for the remaining Karn unit 1 and 2 plant balances and net salvage costs. Her Exhibit A-57 provides an analysis of five different treatments of the remaining net book value of the Karn units: traditional retirement recovery, a regulatory asset beginning in 2023, a regulatory asset beginning in 2031, a regulatory asset beginning in 2039, and securitization.

Norman J. Kapala

Mr. Kapala is an Executive Director of Coal Generation.[52] He provided an overview of Consumers Energy's existing generation resources, capital expenditures related to these resources, including Operation and Maintenance expenses, and potential effects associated with retirement of one or more of the existing resources, specifically the Campbell units 1 and 2, and the Karn units 1 and 2 (the Medium 4).

Actual avoidable costs are defined by the capital and major maintenance costs that can be avoided.[53] He detailed projected capital expenditures for all the Karn and Campbell units, including avoidable, unavoidable, and incremental expenses and costs.

Mr. Kapala testified that the company is not requesting approval of separation costs in this IRP. The company developed an estimate of the costs but has not completed a full analysis.[54]

Mr. Kapala described the outcomes of the company's modeling for the IRP, addressing projected expenditures and potential savings (including O&M and necessary upgrades) associated with early retirement and continued operation of the Medium 4.

[52] Mr. Kapala's testimony including rebuttal testimony and cross-examination, is transcribed at 8 Tr 1094-1228. His qualifications are set forth at 8 Tr 1098-1100.
[53] See 8 Tr 1158.
[54] See 8 Tr 1130.

He considered the business as usual scenario, where none of the Medium 4 were retired early, along with scenarios which included early retirement of two of the units. Mr. Kapala testified the company determined it would not be prudent to retire more than two of the units early.[55] He testified that the company modelled scenarios in which all four Medium 4 units retire in May 2031, then modelled the retirement of Karn units 1 and 2 in May 2021 and May 2023, Campbell units 1 and 2 in May 2021 and May 2023, and then modelled only Campbell unit 1 in in May 2021 and May 2023 and Campbell unit 2 in May 2021 and May 2023.[56]

Mr. Kapala detailed the projected capital expenditures for the Medium 4 units under the business as usual scenario, through the year 2031, and reviewed the capital expenditures and other expenses that could be avoided with early retirement of some of the units. He also opined the condition of equipment was better at the Campbell facilities. He testified that Consumers Energy concluded that the optimal scenario involved retirement of the Karn units 1 and 2 in 2023 and continued operation of the Campbell unit 1 and unit 2 through 2031 was the best PCA. He stated under the PCA the company would be able to purchase power from the MISO market if, prior to early retirement date, an unexpected maintenance event occurs which would not be economical to repair or replace.[57] And, he pointed out that MISO approval of the early retirement would be required.[58]

Mr. Kapala stated with early retirement of Karn Units 1 and 2, the company will still incur some unavoidable operational costs prior to the retirement date. And, there

[55] See 8 Tr 1115.
[56] See 8 Tr 1103.
[57] See 8 Tr 1141.
[58] See 8 Tr 1145.

will be costs associated with separation of these units from the Karn units 3 and 4 to allow the Karn units 3 and 4 to stand alone. Mr. Kapala testified these costs were not included in the IRP. The company intends to present the costs in a future regulatory proceeding. After early retirement of the Karn units 1 and 2, and with the Campbell units 1 and 2 in operation through 2031, the company asserted that several additional projects were needed to maintain reliability at the Campbell units. Mr. Kapala testified that the additional projects represented work that was planned for the future but moved forward to meet reliability needs.

Mr. Kapala confirmed some of the costs for the Medium 4 listed in the IRP differ from those in the electric general rated case filed on May 2017. He also explained the company's plans to manage the shutdown of the Karn units in a manner designed to comply with all environmental regulations, intending to facilitate quick redevelopment of the site to avoid negative economic impacts to the local community, and with a community transition plan to facilitate retention of employees and address potential separation of employment.

Melissa Haugh

Ms. Haugh is a Director at Pace Global, a Siemens business and one of the consulting companies hired by Consumers Energy to assist with its IRP.[59] She provided a third-party review of the Consumer Energy's IRP and its findings. She testified that she assessed the company's analytical approach, including baseline assumptions and key market inputs used in the IRP analysis, and reviewed the company's PCA and the risk analysis of that PCA. She indicated the natural gas price assumptions from the

[59] Ms. Haugh's testimony is transcribed at 8 Tr 1447-1460. Her qualifications are set forth at 8 Tr 1449-1450 and in her resume, Exhibit A-35.

most recent US Energy Information Administration Annual Energy Outlook, required by the MSPC, are commonly used and are sound. However, she also stated Consumer Energy's assumptions concerning lower gas prices were within a plausible range of potential natural gas market prices. She determined that the company's proposals concerning retirement of the Karn Units 1 and 2, and the incremental addition of alternative energy sources, including wind and solar, addressed capacity needs. Ms. Haugh opined that the company's process and analysis were reasonable and prudent and that the PCA was supported by sound analysis. She presented Exhibits A-36 through A-38 in support of her analysis.

Keith G. Troyer

Mr. Troyer is a Senior Engineer II in the Transactions and Wholesale Settlements, Electric Contract Strategy Section of the Electric Grid Integration Department.[60] Mr. Troyer testified regarding the company's planned treatment of PPAs as a supply option in the IRP. He reviewed current PPAs included in the company's portfolio, listed in his Exhibit A-39, with planned extensions with QFs and an extension of the PPA with MCV included in the company's IRP. He testified that Consumers Energy's IRP is based on the assumption that Consumers Energy will add supply through PPAs over the course of the IRP plan period, based on revisions to the PURPA avoided cost determinations made in Case No. U-18090. He testified that currently, as of 2018, Consumers Energy has 2,974 MW of capacity through PPAs, not including its solar EARP participants.[61]

[60] Mr. Troyer's testimony, including his rebuttal testimony and cross-examination, is transcribed at 8 Tr 1230-1370. His qualifications are set forth at 8 Tr 1235-1238.
[61] See 8 Tr 1239.

Mr. Troyer testified that under PURPA, Consumers Energy is obligated to executive contracts with QFs up to 20 MW in size. He reviewed the Commission's orders in Case No. U-18090 and testified that the avoided cost rates approved in that case are above the levelized cost of Consumers Energy's new wind farms, Cross Winds II and III, and Apple Blossom.[62] He presented a chart summarizing the capacity and energy rates by technology approved in Case No. U-18090.[63] He also testified that following the Commission's May 31, 2017 order in that case, Consumers Energy received 398 interconnection requests for 1.8GW of generation ranging from 0.15-20 MW. He testified that the added cost of 1.8 GW would be approximately $263 million annually at $98.40 per MW over a 20-year contract length, substantially above the wind farm cost levels.[64]

Citing Mr. Blumenstock's testimony on the company's plan to rely on modular and renewable additions to capacity, he testified that the company's plan does not propose a natural gas plant, so the natural gas proxy used in Case No. U-18090 no longer represents avoided cost. He proposed instead that full avoided cost would be determined by a competitive solicitation process:

> The Company proposes to utilize a competitive solicitation process to select any new supply-side capacity resources. The resulting cost of the new capacity resources from this competitive solicitation process will be used as the basis for determining future avoided costs. In preparation of future IRP filings, the Company will determine if it has a need for new generation capacity over the next three years and the type(s) of generation that is most reasonable and prudent to procure (e.g., solar, wind, natural gas). Energy waste reduction measures (energy efficiency, demand response, etc.) and energy storage would be evaluated to determine if they can be implemented to offset any projected generation capacity need. The remaining capacity need would be offered through a

[62] See 8 Tr 1244-1247.
[63] See 8 Tr 1248.
[64] See 8 Tr 1248-1249.

> competitive solicitation for the technologies that are most reasonable to procure.[65]

Mr. Troyer further described the competitive solicitation process. He testified that Consumers Energy will issue an RFP for the required type of generation, independent power producers may bid, and the RFP will be administered by a third-party administrator, so the company may also submit proposals "for the specified technology." He testified that proposals will be selected based on criteria within the competitive solicitation and the attributes of the proposal, including performance standards, contract terms, technical competence, capability, reliability, past performance, and other applicable criteria. He testified: "The company may request proposals for development asset acquisition, build-transfer options, partnerships and/or PPAs."[66] He also testified the solicitation would be conducted in the same manner as the company currently conducts RFPs. He then explained that if PPAs are included in the options, and are selected, the company anticipates it will file for approve of the FCM consistent with Mr. Torrey's and Mr. Maddipati's testimony.[67] He testified that QFs would also be permitted to participate in each solicitation, without regard to the technology identified in the solicitation.[68] Mr. Troyer explained that the proposals selected in the competitive bidding will establish the full avoided cost rates for capacity and energy based on the highest-cost proposal selected, although QFs would also have the option to choose the MISO LMP as the energy rate.

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[65] See 8 Tr 1251.
[66] See 8 Tr 1253.
[67] See 8 Tr 1253.
[68] See 8 Tr 1254.

Mr. Troyer explained that the company will seek approval of projects selected in the competitive solicitation through its IRP filing, in which it will present its capacity demonstrations and results of any RFP issued prior to the filing. He explained that if the company's capacity need is not filled through the competitive solicitation, there will be a capacity need for the next three years that QFs could fill at the avoided cost set through the RFP.[69] He also testified that if the Commission determines there is a capacity need in the IRP process, then Consumers Energy would have the opportunity to meet that need through a competitive solicitation.[70]

When no capacity need exists, Mr. Troyer testified, the avoided cost rate for capacity would be the MISO PRA, and QFs would be able to select a 15-year contract using the LMP for the energy rate, or a 5-year contract with a forecast LMP energy price.[71] In support of the five-year contract proposal, Mr. Troyer noted that in its 2009 plan case, Consumers Energy forecast an LMP of $79.12/MW for 2017, while actual LMPs were $29.58.

Mr. Troyer also testified that Consumers Energy believes the company's capacity demonstration for purposes of determining whether it has a capacity need under PURPA should be three years rather the ten years established in Case No. U-18090. He then testified that over the next three years, Consumers Energy will use demand side resources to meet its capacity need and it would thus be more appropriate to base its avoided cost on those resources, citing Mr. Clark's Exhibit A-8, and presenting a

[69] See 8 Tr 1253.
[70] See 8 Tr 1253-1254.
[71] See 8 Tr 1256.

comparison of the costs in Exhibit A-8 with the avoided costs determined in Case No. U-18090 in his Exhibit A-40.[72]

In support of the three-year timeframe, he testified that three years aligns with the period of cost recovery under section 6t, and better aligns with the filing requirements under that section, that lower cost technologies may become available over time, that it would not be reasonable to conduct a competitive solicitation to procure resources 10 years in advance, and due to PURPA, if Consumers Energy has a single need in 1 of the 10 years, it would have to sign 20-year contracts resulting in surplus capacity.[73] He further testified that using a 10-year window would add $121 million to costs now when no need exists, and testified that short-term needs can be met with bilateral agreements.

Addressing the length of contracts for QFs, Mr. Troyer testified that the company proposes the shorter contract lengths, as discussed above, when the company does not have a capacity need, while for contracts resulting from a competitive solicitation would have the term established in the solicitation. Mr. Troyer also testified that the Commission is still considering when a legally enforceable obligation (LEO) arises under PURPA, citing its February 22, 2018 decision in Case No. U-18090.[74]

Mr. Troyer also testified that because the Commission has ruled that QFs cannot be required to supply the RECs that result from renewable energy generation, Consumers Energy is proposing to reduce the avoided cost energy payments to QFs by

[72] See 8 Tr 1260-1261.
[73] See 8 Tr 1261-1266.
[74] See 8 Tr 1271.

the value of RECs for all solicitations of renewable energy.[75] He testified that this reduction would not apply to QFs choosing MISO LMP rates for energy.

As another change in the PURPA program, Mr. Troyer testified that Consumers Energy is proposing to reduce the size of project eligible for the standard offer tariff from the 2MW project size adopted in Case No. U-18090 to 150 kW. He testified that the standard offer tariff is appropriate for "small developers" and likened the project size to the size of project identified in MCL 460.1173 for distributed generation.[76] He testified that because projects of this size are generally owned by customers, Consumers Energy would pay full avoided cost for these QFs even if it has no capacity need.[77]

Mr. Troyer also addressed the company's proposed FCM, indicating that the company would request approval of the FCM for each contract approved by the Commission, and would then add it to the booked expenses each month, but would request recovery of the FCM amounts through general rate cases.[78]

Mr. Troyer also presented rebuttal testimony and was cross-examined.

Scott D. Thomas

Mr. Thomas is the Executive Director of Enterprise Project Development for Consumers Energy.[79] He provided testimony to support the cost estimates and operating parameters for the gas-fueled generation technologies used in the IRP modeling, with details in his Exhibit A-51. He testified that Consumers Energy retained a consultant, HDR Engineering, to provide industry information, and also solicited

[75] See 8 Tr 1271-1273.
[76] See 8 Tr 1274-1275.
[77] See 8 Tr 1275.
[78] See 8 Tr 1276.
[79] Mr. Thomas' testimony, including his rebuttal testimony and cross-examination, is transcribed at 8 Tr 1371-1444. His qualifications are set forth at 8 Tr 1375-1376.

budgetary proposals from major contractors. He described the technologies, construction timelines, and indirect costs included in the company's analysis.[80]

Mr. Thomas also provided testimony to support the cost estimates for solar generation used in the IRP. He testified that Consumers Energy relied on an industry consultant, IHS Markit, for inputs. He testified that Consumers Energy expects to install utility-scale ground-mounted solar with fixed-tilt panels, as modeled in the IRP.

Mr. Thomas explained that the PCA proposes incremental additions of solar generation, to be competitively bid, and may be company-owned, purchased from developers, or purchased through PPAs.[81] He explained that Consumers Energy proposes to develop and submit bids in the competitive solicitation and would perform early site development – acquiring real estate and local permits, applying for generator interconnection agreements, performing preliminary engineering, obtaining firm prices for equipment and construction, and establishing plant performance expectations, and that the firm construction costs and levelized cost of delivered energy would be used as benchmarks for evaluating bids by others.[82]

Mr. Thomas discussed the development time frame and the land resources necessary, testifying that the company has evaluated the land resources available in the Lower Peninsula and concluded that development of the capacity contemplated by the PCA is feasible. He testified that the company intends to develop solar facilities in geographically diverse areas and testified that the evaluation of the risks associated with construction will be a key factor in the project selection process. Mr. Thomas testified that the company may seek "strategic alliances" to assure a supply for

[80] See 8 Tr 1376-1378.
[81] 8 Tr 1380.
[82] See 8 Tr 1381.

construction and labor to complete the large amount of solar anticipated in the PCA. He also discussed interconnection considerations, testifying that the company intends through the competitive solicitation to seek sites reasonably close to high voltage distribution and transmission lines.[83]

Michael A. Torrey

Mr. Torrey is a Vice President of Rates and Regulation for Consumers Energy.[84] He provided testimony to provide a policy perspective in support of certain of the company's proposals, including its proposal to recover the unrecovered book value related to the proposed early retirement of the Karn Units 1 and 2 through a regulatory asset, its proposed Financial Compensation Mechanism (FCM), and its proposed reliance on a competitive bidding process to select new capacity resources, including a three-year outlook for capacity demonstrations to determine PURPA avoided cost requirements. He emphasized that all of the elements of the company's filing are "integrated", and the plan requires all parts to be approved.

Regarding Karn cost recovery, he testified that the company's retirement decision is based on the assumption that the unrecovered book balance at the time of retirement would be recovered, and further testified that other state commission's have used a regulatory asset for cost recovery.[85] Regarding the PURPA capacity determination, he cited Mr. Troyer's testimony for a description of the company's competitive bidding proposal and testified that the capacity sufficiency outlook for PURPA purposes should be three years "as contemplated by the IRP Statute,"

[83] See 8 Tr 1384-1386.
[84] Mr. Torrey's testimony, including his rebuttal, is transcribed at 8 Tr 1462-1465. His qualifications are set forth at 8 Tr 1464-1465.

[85] See 8 Tr 1468.

referencing the three-year cost approval included in MCL 460.6t(11).[86] He opined that a 10-year capacity demonstration horizon would erode the customer benefits created by the PCA because the statute does not provide for cost recovery 10 years into the future. He also cited Mr. Troyer's testimony regarding the number and total capacity of QF projects, testifying that a 10-year outlook would force Consumers Energy to build a large base load generating plant.[87] Regarding the company's proposed FCM, he testified that the traditional regulatory model favors utility construction, and that by choosing a PPA, a utility would be foregoing earnings. He testified that the company's proposed PCA meets the statutory criteria, and should be approved, contending that the competitive bidding strategy presents "significant risk" to the company's ability to attract capital, and that the FCM also provides an incentive to overcome the bias inherent in favor of utility-owned assets.[88] He recommended that the FCM be recovered through general rates.

Cari K. Hurt

Ms. Hurt is a Principal Accounting analyst in the Property Accounting Department of Consumers Energy.[89] Ms. Hurt testified to provide an analysis of the impact of depreciation expense, unrecovered book balances, and decommissioning costs on the various scenarios considered in the Medium 4 retirement analysis. She explained that the three scenarios she analyzed include a baseline approach that assumes all costs are recovered through normal depreciation as if the plants were operated through

[86] See 8 Tr 1470.
[87] See 8 Tr 1471.
[88] See 8 Tr 1472-1475.
[89] Ms. Hurt's testimony is transcribed at 8 Tr 1492-1499; her qualifications are set forth at 8 Tr 1493.

May 31, 2031, a traditional retirement accounting approach in which the unrecovered balances plus decommissioning costs are allocated to the remaining plants in service at the time or retirement, and an accelerated depreciation approach in which the full recovery of the book value and projected decommissioning costs is attained by the retirement date. Her Exhibits A-53 and A-54 present comparisons of these options.

Todd A. Wehner

Mr. Wehner is Director of Corporate Finance for Consumers Energy.[90] He presented an analysis of the annual costs associated with the retirement of Karn Units 1 and 2 in 2023, if the company were to securitize those costs. He presented Exhibit A-59 in support of his analysis. He explained that his analysis underlies the options discussed by Ms. Myers. He further explained the unrecovered balances, decommissioning costs, 8-year securitization period, and interest rate used in his analysis. He also testified that a negative aspect of securitization is that credit rating agencies consider securitized debt in evaluating the company's credit rating, discussing Moody's and S&P.

Patrick C. Ennis

Mr. Ennis is Executive Director of Industrial Products for Consumers Energy.[91] Mr. Ennis presented testimony describing the company's current and proposed DR portfolio, and explained the assumptions relating to DR used in the IRP planning process. Mr. Ennis also described the DR capital costs Consumers Energy seeks approval for recovery in this case. His Exhibit A-60 shows the DR program size by

[90] Mr. Wehner's testimony is transcribed at 8 Tr 1501-1509; his qualifications are set forth at 8 tr 1502-1503.
[91] Mr. Ennis's testimony, including his rebuttal testimony, is transcribed at 8 Tr 1511-1543; his qualifications are set forth at 8 Tr 1511-1543.

year, and his Exhibit A-61 shows the DR capital and O&M costs by year, with an additional $21 million in capital and $36 million in O&M through 2022 above the levels included in the company's recent rate case. He testified that the intent of the current DR programs for residential and business customers is to reduce peak load, describing the current programs and referencing the report in his Exhibit A-62 for additional detail.[92] Mr. Ennis cited Mr. Fratto's testimony and the company's reliance on a statewide study of DR potential in Michigan to show the feasibility of the increased DR included in the company's IRP. Mr. Ennis also discussed "execution risks" associated with the DR projections,[93] and the financial incentive Consumers Energy is seeking in Case No. U-20164, without which "the Company would likely not increase its DR portfolio to the levels outlined in the PCA."[94]

Robert L. Fratto

Mr. Fratto is Managing Director of GDS Associates.[95] He testified regarding the estimate of DR potential his firm developed for Consumers Energy, based on a September 2017 study conducted by the Applied Energy Group, which forms the basis for the projections included in the IRP. He explained the approach GDS used and provided a comparison of the estimated DR potential to the results of other studies. He also provided an assessment of the cost assumptions in the AEG study, and discussed key risk factors that can impact the reliability of DR as a resource.

[92] See 8 Tr 1514-1522.
[93] See 8 Tr 1526-1528.
[94] See 8 Tr 1528-1530.
[95] Mr. Fratto's testimony is transcribed at 8 Tr 1545-1574; his qualifications are set forth at 8 Tr 1546-1547.

Theodore A. Ykimoff

Mr. Ykimoff is Director of Energy Waste Reduction Programs at Consumers Energy.[96] He testified to describe Consumers Energy's ability to achieve annual energy efficiency savings of 2% per year from 2021 to 2029, and 2.25% from 2030 to 2039. His Exhibit A-63 contains the savings and cost estimates for the historical period 2009-2016, and for the projected period 2017-2040, with incremental amounts, conserved energy, and estimated savings achievable based on the GDS Associates statewide study. Mr. Ykimoff also cited the EWR workgroup Staff led in 2017, which identified a savings potential of 2% to 2029, and he reviewed 6 other states with similar targets. Mr. Ykimoff testified that the company's plan calls for 85% of the maximum potential identified. He acknowledged that the costs per kWh increase as the targets increase and testified that EWR is still a low-cost effective resource. He also explained that the company is seeking approval in this case of the three-year costs included in Exhibit A-63.

Richard F. Spellman

Mr. Spellman is Senior Vice President of GDS Associates, in charge of the Energy Efficiency/Renewable Energy Department.[97] He testified to explain his company's approach to an energy efficiency potential study for the Lower Peninsula and explain the forecast savings and program implementation costs. The Michigan Lower Peninsula Electric Energy Efficiency Potential Study completed in August 2017 is his Exhibit A-64, and the Consumers Energy EWR Potential Study is his Exhibit A-65. His

[96] Mr. Ykimoff's testimony including his rebuttal is transcribed at 8 Tr 1576-1591; his qualifications are set forth at 8 Tr 1577-1578.
[97] Mr. Spellman's testimony is transcribed at 8 Tr 1593-1615; his qualifications are set forth at 8 tr 1594-1595.

Exhibit A-66 contains EIA data on energy efficiency spending. He explained that the study distinguishes among three types of EWR potential, "technical," "economic," and "achievable," and he explained how the financial incentives paid to program participants were determined for the study. He testified that the study results are comparable to the range of most state and local EWR potential studies. He also explained the base case and alternate EWR potential scenarios examined for the study and explained the "net-to-gross" adjustment applied to gross savings to adjust for free-ridership and spillover.

Mark A. Ortiz

Mr. Ortiz is the Grid Modernization Program Lead for Consumers Energy.[98] Mr. Ortiz provided an overview of the CVR program, including future plans, cost assumptions, and benefits. He explained that the CVR technology is designed to reduce the delivered voltage along the electric circuits, reducing load. He also stated that utilities have been using CVR for decades, but technology has recently improved. He reviewed the service quality standards that must be met, as well as exceptions that would facilitate CVR, and explained the devises that will be used. He indicated that Consumers Energy does not have a program currently but is testing one in 2018 on 20 circuits. He testified that the company's Electric Distribution Infrastructure Improvement Plan (EDIIP) includes CVR as one of three critical parts of the grid modernization strategy, and that 25% of the company's substations have been upgraded to support the CVR initiative. He also described the incremental investments that will be needed to meet the PCA requirements. Based on the Electric Power Research Institute (EPRI) CVR studies, he testified that a 2.5% average voltage reduction on the system "may be

[98] Mr. Ortiz's testimony is transcribed at 8 Tr 1617-1640; his qualifications are set forth at 8 Tr 1618-1619.

feasible and cost effective," with projected savings of 2% of system load. His Exhibit A-67 presents the annual projected capital expenditures through 2028, while Exhibit A-68 presents the forecast O&M expenses for the same period. His Exhibit A-69 presents the three-year capital and O&M expenses the company seeks approval of in this case. His Exhibit A-70 presents the forecasted annual peak demand and energy reductions from the CVR program included in the IRP.

Eugene M.J.A. Breuring

Mr. Breuring is a Senior Rate Analyst II in the Planning, Budgeting and Analysis Section of the Rates and Regulation and Quality Department of Consumers Energy.[99] He presented the company's forecasts of deliveries, peak demand, and generation requirements for 2018 through 2039, with details in his Exhibits A-71 through A-74. He described the key variables used in forecasting and the econometric modeling used. He testified that the company's business-as-usual generation forecast does not include an increase in electric vehicles at this time, does not include CVR, and includes EWR to the extent of 1.5% per year. He testified that customer-owned generation is not explicitly considered but is reflected in the historical data. He also discussed the impact of DR programs and EWR on the company's peak forecast. And Mr. Breuring discussed forecast uncertainty and the alternative forecasts used in the different sensitivities.

[99] Mr. Breuring's testimony, including his rebuttal, is transcribed at 8 Tr 1642-1665.

Brian D. Gallaway

Mr. Gallaway is Director of Fossil Fuel Supply in the Energy supply Operations Department of Consumers Energy.[100] Mr. Gallaway presented a description of the company's current fuel procurement and supply arrangements, as well as projected costs and sensitivities used in the company's modeling. He presented Exhibits A-75 to A-85 in support of his testimony. Regarding coal prices, he discussed coal mixes for the plants, as well as commodity and transportation contracts, and future price forecasts. Mr. Gallaway also discussed the proposed retirement of Karn units 1 and 2, testifying the retirement would have no impact on the company's coal purchasing strategy.

Regarding natural gas prices, he explained that the company used the EIA forecast as required by the Commission's order in Case No. U-18418 but also used its own composite forecast, derived from multiple third-party sources, which he characterized as less risky than relying on EIA. He also explained how future costs for the company's current and potential new gas plants were forecast, including the cost of storage.

Teresa E. Hatcher

Ms. Hatcher is Director of Renewable Energy in the Transactions and Wholesale Settlements Section of Consumers Energy's Energy Supply Department.[101] She discussed the company's current renewable energy generation and provided a comparison of the company's renewable energy plan most recently presented in Case

[100] Mr. Gallaway's testimony, including his rebuttal, is transcribed at 8 Tr 1667-1694; his qualifications are set forth at 8 Tr 1668-1670.
[101] Ms. Hatcher's testimony is transcribed at 8 Tr 1696-1727; her qualifications are set forth at 8 Tr 1697-1698.

No. U-18231 with its IRP. She testified that the company's planned renewable energy and energy waste reduction will meet the statutory 35% goal. She also discussed the company's 50% clean energy initiative, and the voluntary renewable energy programs it offers. She presented Exhibits A-86 through A-89 in support of her testimony.

Carolee Kvoriak Smith

Ms. Smith is Director of Tax Planning and Tax Counsel for Consumers Energy.[102] She testified to address the Production Tax Credit and Investment Tax Credit amounts and eligibility requirements, including the timing of the phase-outs of the credits. She testified there is a risk, though it is not likely, that the credits will be changed.

Heather A. Breining

Ms. Breining is a Senior Engineering Technical Analyst II, in the Environmental Services Department of Consumers Energy.[103] Ms. Breining testified to describe the environmental regulations applicable to Consumers Energy's generating plants, the cost of compliance with those regulations, and the timing of and justification for the expenditures. She also explained the company's clean energy goals, and scenarios and sensitivities used in the IRP modeling.

B. Staff

Staff presented the direct testimony of 18 witnesses.

[102] Ms. Smith's testimony is transcribed at 8 Tr 1729-1736; her qualifications are set forth at 8 Tr 1730-1731.
[103] Ms. Breining's testimony is transcribed at 8 Tr 1739-1740; her qualifications are set forth at 8 Tr 1739-1740.

Paul Proudfoot

Mr. Proudfoot, the Director of the Energy Resources Division of the Michigan Public Service Commission (MPSC), provided an overview of Staff's recommendations and the underlying policy.[104] After reviewing the testimony of other Staff witnesses, Mr. Proudfoot testified that Staff recommends the Commission find the IRP meets the provisions of MCL 460.6t(8) and that the proposals for the initial three years of the IRP represent the most reasonable and prudent means of meeting energy and capacity needs, but the company's resource plans beyond three years should not be approved in this case. Citing the three-year cost-approval provision of section 6t(11), he noted that the later years of the PCA include significant amounts of new solar as well as significant amounts of market purchases, and explained that potential changes to market conditions, including transmission intertie limits and the availability of supply outside the company's territory could change significantly within five years of the Commission's order in this case.[105] Mr. Proudfoot identified the cost approvals Staff supports as part of this IRP, including the projected capital expenses for three years of EWR, DR, and CVR, and explained Staff's recommendation that the Commission address recovery of projected EWR cases in EWR plan and reconciliation cases, and address recovery of DR and CVR O&M expenses in future rate cases. He also discussed Staff's additional recommendations regarding DR, including a recommended change in the company's residential Universal Peak Rewards program, and Staff's additional recommendations regarding CVR, including recommended reporting requirements.

[104] Mr. Proudfoot's testimony is transcribed at 9 Tr 2534-2570. His qualifications are set forth at 9 Tr 2535-2540.
[105] See 9 Tr 2543, 2566-2567.

Regarding the company's request for the creation of a regulatory asset for the unrecovered book balance of Karn units 1 and 2, Mr. Proudfoot explained Staff's recommendation that the Commission deny the company's request. He characterized it as a request to recover sunk costs that is outside the scope of an IRP, which he characterized as a forward-looking plan. He testified that Consumers Energy could seek a regulatory asset outside of an IRP, also testifying that the traditional depreciation treatment in a rate case would provide recovery.[106]

Regarding the company's proposed competitive bidding process, Mr. Proudfoot testified that Staff recommends the process be modified to provide for annual RFPs, and to set aside 2% of the capacity in each RFP for customer distributed generation (CDG).[107] He also cited the "Guidelines for Competitive Request for Proposal for Renewable and Advanced Cleaner Energy" adopted in Case No. U-15800, explaining that Staff recommends the company be required to follow these guidelines, and that contracts resulting from a competitive bidding process approved in this docket be filed in this docket for approval of cost recovery.[108] He distinguished PPAs for renewable energy that are intended to meet the company's 15% target, which he stated should be filed for approval in a renewable energy plan case, and PPAs entered into outside the competitive bidding process and not intended to meet the renewable energy target, which he stated should be filed for approval in a PSCR case.[109]

Regarding the company's PURPA-related proposals, Mr. Proudfoot testified that Staff generally agrees with the company's proposal to set the PURPA avoided cost of

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[106] See 9 Tr 2545, 2547-2548, 2568.
[107] See 9 Tr 2550.
[108] See 9 Tr 2556-2557.
[109] See 9 Tr 2558.

capacity based on the competitive bidding process and to reduce the application of the standard offer tariff to facilities that are 150 kW or smaller. He explained that Staff recommends after each annual competitive bidding process, the company file updated avoided cost in this docket and request ex parte review and approval.[110]

He further testified that Staff recommends a five-year rather than a three-year timeframe for the determination of a capacity need, explaining that five years matches the statutory time between IRP filings, and that the timeframe should be as least as long as the four-year capacity need demonstration required under section 6w. Citing Case No. U-18090, Mr. Proudfoot also testified that Staff recommends that avoided cost be updated every two years.

Mr. Proudfoot testified that Staff does not support the company's proposed FCM. He testified that first and foremost, Staff recommends that imputed debt be considered holistically in rate cases. In explaining Staff's analysis of the company's proposed FCM, Mr. Proudfoot testified that Staff conducted additional research into how the states identified in the Brattle Group report Consumers Energy relied on have approached imputed debt issues since the report was written in 2008. His Exhibit S-1 contains the results of Staff's analysis.[111]

Mr. Proudfoot also identified a series of alternatives Staff proposes, including in order of preference, a proposal Mr. Nichols explains to treat one year of PPA payments as a regulatory asset, a revision to the company's FCM method to reflect S&P's calculation of imputed debt explained by Mr. Harlow, and as a third alternative, expressly providing for Consumers Energy to own up to 50% of new capacity additions.

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[110] See 9 Tr 2545, 2550-2551.
[111] See 9 Tr 2559.

Mr. Proudfoot stated that Staff could be supportive of a financial incentive, (not tied to future imputed debt) to foster incentives for PPAs because competition will positively affect rates. And, he acknowledged the financial incentives associated with asset ownership and the ability to earn a return on that asset in rate-base.

Mr. Proudfoot also addressed the use of incentive mechanism in evaluating competitive bids. He testified that if the Commission decides to approve a formulaic incentive based on imputed debt, it should be used in the bid evaluation process, but should not apply to PPAs entered into to meet renewable energy requirements or to comply with PURPA.

Lynn M. Beck

Ms. Beck is a Department Analyst in the Resource Adequacy and Retail Choice Section of the Energy Resource Division of the MPSC.[112] She explained the steps Staff followed in reviewing the IRP and addressed the filing requirements. She testified that Consumers Energy met the "overarching filing requirements," but explained that the company fell short of meeting Staff's expectations in certain areas, some of which are addressed by other Staff members. After reviewing numerous filing requirements and identifying the means by which the company complied, Ms. Beck testified that while Staff appreciates the checklist the company provided in its Exhibit A-1, Staff has prepared its own checklist, Exhibit S-2.2, and recommends that list be used in the future.

Ms. Beck also specifically addressed the company's analysis of potential new or upgraded electric transmission options as required by section 6t(5)(h), MCL

[112] Ms. Beck's testimony is transcribed at 9 Tr 2571-2605. Her qualifications are set forth at 9 Tr 2573-2575.

460.6t(5)(h). She testified that the company worked "collaboratively" with METC to evaluate transmissions options and future upgrades to the transmission system, citing Mr. Lynd's testimony.[113] However, she noted that other than the early retirement of Karn units 1 and 2, Consumers Energy did not provide METC with scenarios consistent with the company's PCA, because "both METC's analysis and and Consumers Energy's IRP process were taking place in the same time frame."[114] Ms. Beck testified that the METC analysis is intended to inform the company of the transmission network impact of the generation unit retirements and the addition of generation at various sites. She cited an audit response from Consumers Energy indicating that it did not specifically model resource locations in its IRP, and thus METC could not have analyzed resource locations. She testified:

> Staff understands the preliminary nature of the transmission analysis relative to the development of the Proposed Course of Action, however, the Proposed Course of Action includes solar installations that may vary in size and may be installed in a variety of locations across the METC footprint. The Company could have specified proxy locations for the injection of solar energy into the transmission system to gain relevant information about the impact of a resource configuration that resembles the Proposed Couse of Action and its impact to the electrical system.[115]

Ms. Beck reviewed Mr. Lynd's testimony, including the cost assumption used in the company's plan, and reviewed METC's findings as presented in Exhibit A-97. She testified that considering only the first three years of the company's IRP, Staff expects the limited number of resource additions contemplated would have only a minimal impact on the transmission system. She recommended that if the Commission approves the IRP, Consumers Energy continue to work with METC to conduct a study

[113] 9 Tr 2588 and 2599.
[114] See 9 Tr 2599.
[115] See 9 Tr 2600.

that more closely analyzes the company's proposed course of action, also citing Mr. Makinde's testimony, and to determine more specific interconnection costs by resource type that can be used in future IRPs. She also recommended that Consumers Energy investigate the company's ability to adequately meet resource needs if MISO changes to a seasonal accreditation for capacity.

Sarah A. Mullkoff

Ms. Mullkoff is a Department Analyst in the Generation and Certificate of Need Section of the Energy Resource Division of the MPSC.[116] Ms. Mullkoff reviewed the company's steps to comply with the Commission's guidance in Case No. U-15986 regarding stakeholder outreach and public outreach. She testified that while the company followed the guidelines, Staff has additional recommendations to improve the process, including a recommendation that the company provide additional mediums for stakeholder participation, a recommendation that the company provide an opportunity for written comments as well as emailed comments, and a recommendation that the company develop a webpage to allow for ongoing stakeholder engagement and transparency.[117] She explained that Staff's recommendations are based in part on its review of other states.

Ms. Mullkoff also addressed Staff's recommendations regarding IRP reporting requirements under section 6t(14). She testified that Staff recommends annual or more

[116] Ms. Mullkoff's testimony is transcribed at 9 Tr 2606-2617. Her qualifications are set forth at 9 Tr 2608-2610.
[117] See Exhibit S-3.

frequent filings in this docket. She presented Exhibit S-3 as a template for such reporting.[118]

Naomi J. Simpson

Ms. Simpson, a Public Utilities Engineer in the Generation and Certificate of Need Section of the Energy Resource Division of the MPSC, provided an overview of Staff's assessment of consumers Energy's IRP modeling and risk assessment methodologies, including a description of the reviews undertaken by other Staff members.[119] She explained that her analysis focused on the resource screening criteria used in the modeling, the risk assessment, and the workforce provision of section 6t(8)(b). Regarding the resource screening criteria, she explained the company's process with reference to Ms. Walz's testimony and Exhibit A-13 and testified that Staff found the company's process reasonable. Regarding the company's risk assessment, she explained the company's approach with reference to Mr. Clark's testimony. She testified that while the PCA was not least expensive alternative with all scenarios and sensitivities, Staff found the PCA exhibited a consistent level of risk in all futures considered by Consumers Energy and found the incremental nature of resource additions proposed in the PCA inherently mitigated long-term risk of rate volatility for customers.

Characterizing the company's risk analysis "static," she recommended that the company consider stochastic approaches to risk assessment in future analyses, to reflect the risk associated with a variety of parameters changing randomly. She testified that Indiana Michigan uses a stochastic analysis as part of its risk assessment. Ms.

[118] See 9 Tr 2615-1616.
[119] Ms. Simpson's testimony, including rebuttal testimony, is transcribed at 9 Tr 2646-2667. Her qualifications are set forth at 9 Tr 2648-2651.

Simpson explained that because the first three years of the company's plan in this case involve a small amount of low-cost resources, Staff has concluded it poses minimal risk for ratepayers, and thus Staff does not recommend revised analysis in this case.

Addressing section 6t(8)(b), Ms. Simpson testified that Consumers Energy did not address the use of a Michigan workforce in its IRP. She stated the company expressed the intention to utilize a Michigan workforce when feasible in an audit response. Staff recommended the company clarify how it will do so in future IRP filings.

Roger A. Doherty

Mr. Doherty is an Engineer in the Resource Adequacy and Retail Choice Section of the Energy Resource Division of the MPSC.[120] He presented Staff's analysis of the fuel and capacity price forecasts and retirement assumptions in the PCA, as well as an evaluation of resource adequate.

After reviewing the fuel cost forecasts in IRP and concluding that the company complied with the statutory requirements, he addressed the natural gas price forecast the company used in its retirement analysis of the Medium 4 units, labeled the Business as Usual Consumers Energy (BAUCE) forecast. He explained that for the period 2017 through 2022, the company uses the New York Mercantile Exchange (NYMEX) future prices posted on August 29, 2017, but for years 2024 through 2040 the company "applied the average rate of change of the 2017 EIA AEO, IHS Markit (IHS) February 2017 forecast, and the Energy Ventures Analysis, Inc.'s (EVA) August 2017 forecast to the NYMEX futures price."[121] Mr. Doherty testified to Staff's concerns with this forecast, indicating that it is not a standard composite, and does not directly use the third-party

[120] Mr. Doherty's testimony is transcribed at 9 Tr 2618-2630. His qualifications are set forth at 9 Tr 2620-2622.
[121] 9 Tr 2624.

forecasts, but instead, extracts the percentage changes from the third-party forecasts and applies those percentages to the futures market price beginning in 2022.

Mr. Doherty testified that the company's BAUCE gas forecast is significantly lower than other industry "base case" projections and is comparable to but lower than the "lowest cost scenario" in EIA's 2018 outlook.[122] He testified that Staff considers the forecast reasonable but more in line with a low gas price scenario than a business as usual scenario. His Exhibits S-4.0 through S-4.3 provide comparisons of the company's forecast.

Mr. Doherty reviewed the company's capacity price forecast, including its use of 75% of CONE as the most probable scenario. He testified that while it seems high, it is reasonable to believe that capacity procured in the MISO auction 4 years in the future will be more expense than recent PRA clearing prices.

Mr. Doherty also testified that the PCA appears to meet resource adequacy requirements of peak load and planning reserve margin requirements through 2030. He stated the PCA provides forecasted peak load capacity and planning reserve margin requirements that are adequate. He also noted the company's commitment that it will keep new resources in Zone 7. Acknowledging that the FERC rejected the company's request to recertify Filer City as a QF, he testified that the PCA should still meet requirements through 2030.

Olumide O. Makinde

Mr. Makinde, a Department Analyst in the Resource Adequacy and Retail Choice Section of the Energy Resource Division of the MPSC, explained Staff's analysis of

[122] See 9 Tr 2628.

company's load growth projections.[123] He stated that Staff found the company's peak demand and energy sales forecasts to be reasonable and appropriate. Mr. Makinde stated the load growth projections were consistent with the EIA projections; within 5% for both energy sales and peak demand. However, Staff recommended the company use hourly or daily data for the variables of weather and historic energy sales to improve accuracy of the forecasts. And, Staff recommended the Mean Absolute Percent Error (MAPE) evaluation be conducted on the monthly peaks.

Mr. Makinde also explained Staff's analysis of the company's assumptions and inputs to the Strategist model for the load forecasts for Consumers Energy and for the rest of Zone 7. He testified that Staff found the company's load assumptions to be reasonable and consistent with other load growth projections in the region, explaining that he used several non-parametric statistical tests to compare the company's projections to the 2017 EIA Annual Energy Outlook (AEO) forecast. A comparison of the company's forecast to the EIA forecast is included in Exhibit S-5.0, and the statistical test results are presented in Exhibit S-5.1. Mr. Madinde testified that he also reviewed the company's evaluation of its regression analysis, presenting a summary of the variables used in his Exhibit S-5.2

Mr. Makinde then explained his review of the company's use of its forecast in the Strategist modeling, testifying that the load forecast for the remainder of Zone 7 is critical to the modeling because it drives the dispatch of generating units, and confirming the reasonableness of the company's forecast. Mr. Makinde also addressed the company's energy prices in its Exhibit A-8, as outputs of the Strategist modeling.

[123] Mr. Makinde's testimony is transcribed at 9 Tr 2631-2645. His qualifications are set forth at 9 Tr 2633-2635.

He explained that these marginal prices are not the same as LMPs, because they do not include congestion or losses, which generally amount to less than 5% of LMP.[124] Reviewing information in his confidential Exhibit S-5.3 showing historical and projected market purchases, Mr. Makinde testified that the company projects it will have significant increases in energy purchases during the 2020s and 2030s. He explained that Staff therefore recommends that the company continue to monitor the transmission system capabilities and changes within the MISO energy market that could affect the PCA.

Zachary C. Heidemann

Mr. Heidemann, a Public Utilities Engineer in the Generation and Certificate of Need Section of the Energy Resource Division of the MPSC, also participated in the evaluation of the company's compliance with the modeling requirements and risk assessment.[125] He stated the company ran all the required scenarios and sensitivities for the MIRPP and ran other portfolio designs to evaluate potential resources.

Addressing the company's gas price forecast, he testified that although it initially appeared that the did not use a gas price sensitivity equal to 200% of the base gas price, consultation with the company established that the company did use a full 200% for the commodity cost, and the apparent discrepancy was attributable transportation costs.

Mr. Heidemann also addressed the company's Medium 4 retirement analysis. He testified that Consumers Energy substantially complied with the Commission's order

[124] 9 Tr 2643, Referring to Direct testimony of Mr. Clark at p 65.
[125] Mr. Heidemann's testimony is transcribed at 9 Tr 2669-2687. His qualifications are set forth at 9 Tr 2670-2673.

in Case No. U-18322. He testified: "Staff interpreted the Commission order to evaluate the retirement of the Medium 4 in Case No. U-18322 to supersede MIRPP requirement to evaluate the retirement of fossil fuel plants under MIRPP."[126] Mr. Heidemann acknowledged the company only considered retirement of the Karn 1 and 2 units together, rather than individually. Staff asserted that environmental modifications were properly considered and that the retirement years 2021 and 2023 were reasonable based on the potential costs. Mr. Heidemann stated that all model runs for an early retirement of Karn 1 and 2 units in 2023 yield customer savings under the CE gas price forecast, with a capacity price of 75 % of CONE. However, the company did not perform a gas or capacity price sensitivity using the EP or ET scenarios because the model selected out-of-state wind. Mr. Heidemann noted the data indicating savings in the EP and ET scenarios is misleading because the company did not view out-of-state wind to be a reasonable option, and therefore would not act on the results of the analysis. He also testified that DR could be forced into the modeling for a more practical analysis of early retirement. An analysis using this method indicated retirement of the Karn units in 2023 did provide savings for customers.

Mr. Heidemann testified that Staff finds the company proposal to retire Karn 1 and 2 units in 2023 to be reasonable. However, he testified, Staff expects a more holistic retirement analysis of fossil generation to be presented in future IRPs. He noted the company did not provide a complete comparison of the PCA with early retirement and without.

[126] 9 Tr 2679, referring to MPSC Case No. U-18322, Order date March 29, 2018, p 23-25.

Jonathan J. DeCooman

Mr. DeCooman, a Public Utilities Engineer in the Generation and Certificate of Need Section of the Energy Resource Division of the MPSC, provided an analysis of the IRP modeling assumptions regarding existing and potential new fossil-fueled generating units.[127] He confirmed that Consumers Energy provided the information required by the filing requirements, and testified that Staff found the company's modelling to be reasonable over the IRP planning period. He explained Staff's evaluation, also presenting Exhibits S-8.0 through S-8.4. He testified that Staff also analyzed the cost assumptions underlying the company's Medium 4 retirement analysis. Mr. DeCooman reviewed the cost estimates associated with separation of the Karn 1 and 2 units from Karn 3 and 4, and the Campbell 1 and/or 2 units from Campbell 3. He reviewed potential separation costs, capital investment costs, base O&M costs, and major maintenance costs. He also reviewed the company assumptions for potential new fossil generation units and compared company cost estimates to other sources. He again concluded the cost assumptions underlying the company's modeling were reasonable.[128]

Jesse J. Harlow

Mr. Harlow, a Public Utilities Engineer in the Renewable Energy Section of the Energy Resource Division of the MPSC, provided testimony concerning renewable energy price and capacity factors, PURPA, and the company's FCM.[129] Mr. Harlow stated that Staff does not dispute the company's renewable energy cost assumptions or

[127] Mr. DeCooman's testimony is transcribed at 9 Tr 2688-2704. His qualifications are set forth at 9 Tr 2690-2693
[128] 9 Tr 2704.
[129] Mr. Harlow's testimony is transcribed at 9 Tr 2705-2723. His qualifications are set forth at 9 Tr 2707-2711.

the capacity factor assumptions in the IRP; Staff found the assumptions to be reasonable. However, Mr. Harlow expressed concern about the company's assumptions related to capacity credits for solar facilities, noting that MISO is currently considering revisions that could reduce capacity credits from 50% to 30%.

Mr. Harlow reiterated that Staff does not support the company's proposed FCM and does not support compensation related to alleged imputed debt because it is "highly speculative"[130] and any debt obligation from PPAs is a very small component of the company's financial structure. Mr. Harlow testified that the company currently operates with a 52% debt and 48% equity capital structure.[131] He provided an example which indicates the impact of 6,300 MW of solar capacity (at $60.00) with no FCM would create a debt to equity ratio of approximately 50/50.[132]

Mr. Harlow also concluded that the company's proposed FCM violates the statutory cap in MCL 460.6t(15), which limits a financial incentive to the utility's weighted average cost of capital. He testified that the current weighted average cost of capital (WACC) is 5.89%, while the FCM proposed by the company would produce an incentive of 13.8% for a ten-year PPA, more than double the WACC.[133]

Mr. Harlow also testified that the company's FCM improperly applies a method adopted by S&P for calculating imputed debt. Mr. Harlow stated that the method used by S&P only applies the imputed debt calculation to the capacity component of the PPA contract price, while the company's FCM applies the calculation to the entire contract

[130] 9 Tr 2714.
[131] 9 Tr 2715, citing Consumers Energy's March 31, 2017 filing in case U-18322.
[132] 9 Tr 2714.
[133] 9 Tr 2716, Citing example in Exhibit A-52.

price.[134] And, Mr. Harlow stated the proposed risk factor of 25% used in the FCM is too high. He cited documentation to show that when a State has a legislatively created cost recovery mechanism, S&P uses a much lower risk factor – from 0 to 15%.[135] On this basis, he testified, the company is guaranteed recovery of approved PPA costs, asserting that the risk factor should be no higher than 15%.[136] And he further explained that if the company is contracting for excess capacity, it could sell the excess energy in MISO markets as a pass through transaction with essentially no risk. Mr. Harlow presented Exhibits S-9.0 to S-9.2 to illustrate his testimony.

Turning to the company's PURPA proposals, Mr. Harlow testified that the avoided costs developed in MPSC case number U-18090 are outdated because Consumers Energy no longer intends to build new natural gas facilities, with mainly solar generation contemplated in the IRP. Mr. Harlow testified that setting avoided costs based on RFPs for new solar facilities seems to be the most reasonable approach. He explained that a QF would be paid avoided costs based on the highest-priced bid in each RFP. Mr. Harlow further testified that Staff supports Consumers Energy's proposal to base the energy payment to QFs on either the MISO LMP, or a schedule based on the marginal energy price, and that Staff support lowering the applicability of the standard offer tariff to QFs that offer 150 kW or less. He also testified that Staff support reducing the timeframe for capacity determinations from ten years to five years.

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[134] 9 Tr 2717.
[135] 9 Tr 2717, citing Standard and Poor's Encyclopedia of Analytical Adjustments for Corporate Entities.
[136] See MCL 460.6j.

Merideth A. Hadala

Ms. Hadala is a Department Analyst in the Renewable Energy Section of the Energy Resource Division of the MPSC.[137] In her testimony, she presented Staff's recommendation that the Commission adopt a Customer Distributed Generation Program as an element of the competitive solicitations in the IRP. She recommends that 2% of the capacity acquired in every RFP be reserved for Customer Distributed Generation (CDG) programs, to be filled after the solicitation and contracting are completed. Ms. Hadala stated the initial price offered for the CDG will be the avoided cost established by the competitive bid, with a reverse auction if the program capacity is not filled at that price, up to maximum price of 150% of the established avoided cost rate. She further proposed that if the 2% figure is still not met, the remaining capacity would be added to the next amount requested in an RFP. She testified that eligible projects would be located at customer sites, and would be limited to 550 kWac or less, not to exceed customer load. And she proposed 20-year contracts. She also described the benefits to small DG projects at a variety of locations on the grid.

Karen M. Gould

Ms. Gould, an Auditor in the Renewable Energy Section of the Energy Resource Division of the MPSC, provided testimony concerning energy waste reduction (EWR).[138] She explained that in the company's rate case, Case No. U-18322, the Commission directed the company to provide additional information regarding its forecasts, including

[137] Ms. Hadala's testimony is transcribed at 9 Tr 2724-2731. Her qualifications are set forth at 9 Tr 2726-2727.
[138] Ms. Gould's testimony is transcribed at 9 Tr 2732-2740. Her qualifications are set forth at 9 Tr 2734-2736.

energy efficiency projections.[139] She testified that Consumers Energy provided the additional information in its next rate case, Case No. U-20134, and that Staff has evaluated the information and concluded that the process the company uses to account for EWR in its sales forecasts is reasonable. She explained Staff's review of historical and projected savings and presented a compilation in Exhibit S-11.

Ms. Gould testified that while the savings projections in the IRP were higher than in previous filings, Staff accepted the higher figures were the result of a company commitment to ramp up annual EWR savings to over 2%.

Brad B. Banks

Mr. Banks, Department Analyst in the Energy Waste Reduction Section of the Energy Resource Division of the MPSC, also provided testimony concerning energy waste reduction (EWR).[140] He stated that Staff supports the company's proposal to increase EWR and increase energy savings by at least 2% by 2021, and by 2.25% by 2030. Staff found these goals, and the company's plan to achieve them, to be reasonable. He characterized the proposed savings as "safely conservative," explaining that Staff agrees with Mr. Ykimoff's analysis. He testified that once the company achieves its EWR goals, Staff would like to see the company invest in health and safety deferral issues through Community Action Agencies, especially regarding low-income housing.

[139] 9 Tr 2737, see MPSC Order case U-18322, March 29, 2018.
[140] Mr. Banks' testimony is transcribed at 9 Tr 2741-2747. His qualifications are set forth at 9 Tr 2743-2744.

Katie J. Smith

Ms. Smith is an Economic Specialist in Resource Adequacy and Retail Choice (RARC) Section of the Energy Resource Division of the MPSC. She presented Staff's recommendations regarding the company's proposed demand response (DR) programs, forecast load reductions, and associated costs.[141] She testified that Staff supports DR initiatives, and reviewed Mr. Ennis's testimony describing the company's current programs and proposed changes. She testified that Staff does not agree with the DR changes Consumers Energy proposed in its recent rate case, Case No. U-20134 and explained that Mr. Isakson addresses Staff's concern with the company's Universal Peak Rewards program in his testimony in this case.

Ms. Smith reviewed the company's projected DR savings, including its reliance on the Michigan Demand Response Potential Study, and testified that Staff believes the projected 607 MW reduction by June 2022 is reasonable. Regarding the company's projected reduction of 1,250 MW by 2030, Ms. Smith testified that Staff considers it ambitious and will evaluate the ramp-up timeframe from 2022-2030 in the company's next IRP filing. She presented participation numbers for key company programs in her Exhibit S-12.1, obtained through an audit request.

Turning to the company's requested cost recovery, she testified that Staff finds approval of the three-year projected capital costs of $21,028,357 for DR programs to be reasonable and recommends approval but recommends that the company's requested three-year O&M expense projection of $35,679,319 for DR programs should be reviewed and recovered through a rate case. She also noted that under Staff's

[141] Ms. Smith's testimony is transcribed at 9 Tr 2748-2761. Her qualifications are set forth at 9 Tr 2750-2752.

proposed revision to the DR Framework established in Case No. U-18369, costs would be reviewed and approved in a DR reconciliation case and would then flow through for recovery in a subsequent rate case.[142]

Ms. Smith also recommended that in future IRP filings, Consumers Energy use a template version of her Exhibit S-12.0 to report on its DR programs.

David W. Isakson

Mr. Isakson is a Department Analyst in the Rates and Tariff Section of the Regulated Energy Division of the MPSC[143]. In his testimony, Mr. Isakson explained that Staff objects to the company's proposed Universal Peak Rewards (UPR) program, and recommends an alternative, a Critical Peak Pricing (CPP) program. He testified that Staff believes the UPR program suffers from a free-ridership problem, is opaque to customers, an imprecise in its calculation. In contrast, he characterized Staff's proposed CPP program as strictly voluntary, including both a cost of inaction and a benefit of action, more understandable to customers, and more precise in its calculation.

He cited pilot program results to show that the proposed CPP should be as effective as the UPR, resulting in substantially similar reductions.

Tayler Becker

Mr. Becker is an Engineer in the Electrical Operations Section of the Energy Resource Division of the MPSC.[144] Mr. Becker presented an analysis of the company's projected conservation voltage reduction (CVR) program. He reviewed the company's

[142] 9 Tr 2758-2759.
[143] Mr. Isakson's testimony is transcribed at 9 Tr 2763-2772; his qualifications are set forth at 9 Tr 2764-2765.
[144] Mr. Becker's testimony is transcribed at 9 Tr 2774-2785. His qualifications are set forth at 9 Tr 2775-2777.

requested approval of $8,924,600 in capital expenditures to enable CRV, including a review of Mr. Ortiz's testimony and Exhibit A-38. He testified that CVR is included in the company's Electric Distribution Infrastructure Investment Plant (EDIIP), aligning with the company's IRP plans. He explained that while Consumers Energy has ongoing CVR pilots, Staff is concerned that the company has not yet demonstrated that it will be able to stay within voltage range and avoid "infrequent fluctuations" in voltage. He also testified that the company has not demonstrated that CVR-enabled circuits will accommodate customer generation, nor has it demonstrated that the substation and circuit upgrades it has installed to date will communicate on the same platform as existing equipment. He testified that other utilities have implemented CVR but explained that each company's program will have unique CVR objectives, making the pilot program results critical to a determination of the program's potential success.

Mr. Becker looked at four scenarios based on whether the MPSC approves the $39,100,00 requested for CRV in the rate case, to ensure consistency. Mr. Becker also made recommendations for future semiannual reporting if the Commission supports the CVR program, providing a template in Exhibit S-14.1 and also referencing Ms. Mullkoff's testimony.

Robert F. Nichols

Mr. Nichols is the Manager of the Revenue Requirements Section of the Financial Analysis and Audit Division of the MPSC.[145] He provided testimony concerning CRV and the FCM. He reiterated that Staff does not support the FCM proposed by the company.

[145] Mr. Nichols' testimony is transcribed at 9 Tr 2786-2810. His qualifications are set forth at 9 Tr 2788-2790.

However, Mr. Nichols stated Staff could support alternative compensation mechanisms. Mr. Nichols acknowledged the company is allowed to earn a return of on assets owned by the utility, but costs associated with PPAs are passed through to customers with no addition returns. He reviewed a 2008 report from the Brattle Group which was used by the company as support for its proposed FCM.[146] Mr. Nichols quoted passages from this report's conclusions concerning treatment of alleged PPA imputed debt by the Commissions of six other states.[147] Mr. Nichols stated the report identified three treatments of imputed debt: 1) in a cost of capital proceeding; 2) with a cost added to PPAs; and 3) when making the determination in bid versus build situations.[148] He asserted the FCM proposed by the company would be used in the latter two.

Mr. Nichols stated the company could not predict the total dollar amount that would be generated by its FCM. He estimated the company FCM would generate a dollar amount of $48 million to $183 million from its current PPAs; he stated the incentive amount would be $117 million based on $60 MWh and a 10-year contract.

Mr. Nichols stated the Act does not require approval of a financial incentive and does not dictate any specific mechanism.[149] He pointed out that the company maintains very good credit ratings despite the fact it does not receive a FCM on any of its current PPAs, representing 2,954 MW. And, Mr. Nichols notes S&P calculated the mean ROE for 2017 as 9.74%, yet the Company has a ROE of 10.1% with no FCM.

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[146] See Exhibit S-15.3.
[147] California, Delaware, Florida, Nevada, New Mexico, and Wisconsin.
[148] 9 Tr 2795.
[149] See MCL 460.6t(15).

Staff recommend any consideration of imputed debt be addressed when setting the cost of capital in a rate case, not in an IRP. However, Staff addressed some alternatives. First, the MPSC could determine that any FCM is premature. The Company has a reasonable credit rating and has earned a reasonable rate of return with no FCM. Or, the MPSC could allow the FCM with the corrections addressed by Mr. Harlow; lower risk factor and application to only the cost of capacity. Finally, the MPSC could approve an incentive that is not based on imputed debt. Mr. Nichols proposed consideration of a FCM which created a regulatory asset for the PPA expenses in a test year. This asset would be included in the working capital of a general rate case; therefore, the company would earn a "return on" the asset in the PSCR; there would be no "return of" any expense.

Mr. Nichols also acknowledged the company requested capital investment costs for CRV in the rate case number U-20134. He stated Staff recommends the MPSC approve regulatory account treatment for CVR costs (not approved in the rate case) which are actually incurred and are in excess of any costs previously approved.

Cody Matthews

Mr. Matthews, a Public Utilities Engineer in the Smart Grid Section of the Energy Operations Division of the MPSC, provided testimony concerning energy storage.[150] In the PCA, Consumers Energy proposes to add 50 MW of battery storage beginning in 2032, with 450 MW by 2040. Mr. Matthews stated Staff has concerns about this proposition because the company is proposing the introduction of a large amount of renewable energy, prior to 2032, with no storage support.

[150] Mr. Matthews' testimony is transcribed at 9 Tr 2811-2819. His qualifications are set forth at 9 Tr 2813-2814.

Mr. Matthews stated the modelling relied on by the company was not able to couple battery storage and renewable generation, therefore, the models failed to optimize the combination. He opined that the inability to model storage and renewables has resulted in delayed implementation of battery resources. He testified that battery storage will significantly benefit the capabilities of renewable resources. Mr. Matthews reviewed and discussed some battery storage projects that have been implemented. And, he pointed out that the company touted storage as an important resource on its own website.[151]

Jay S. Gerken

Mr. Gerken, a Manager of the Rate Base Unit in the Revenue Requirements Section of the Financial Analysis and Audit Division of the MPSC, provided testimony concerning the Company's request for a regulatory asset for the unrecovered book value of the Karn 1 and 2 units.[152] Explaining Staff's recommendation that the Commission deny the request, Mr. Gerken stated a special regulatory asset is not necessary because traditional ratemaking provides a mechanism for recovery of the unrecovered book value and the decommissioning costs. When Karn 1 and 2 are retired, the assets will be removed from plant and accumulated depreciation accounts. The unrecovered costs, and decommissioning expenses, will be added to the remaining assets of the plant group. These costs are recovered through depreciation expenses. Mr. Gerken opined that any potential savings associated with the creation of a regulatory asset, would not have a significant impact on the IRP proposal.

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[151] 9 Tr 2816.
[152] Mr. Gerken's testimony is transcribed at 9 Tr 2820-2827. His qualifications are set forth at 9 Tr 2822-2823.

C. Attorney General

The Attorney General presented the testimony of Mr. Coppola.

Sebastian Coppola

Mr. Coppola is an independent business consultant in the fields of energy and utility regulation.[153] Based on his review of the IRP, he expressed a concern with the extent of the company's planned reliance on renewable energy and demand-side programs, characterizing them as sources "over which the Company has little control." Making certain assumptions about the relationship between MWs and ZRCs, he presented a chart comparing the percentage of each resource type (natural gas, coal, nuclear, wind, solar, batteries, energy waste reduction and conservation voltage reduction, and demand response) in the company's portfolio in 2018 to the corresponding percentage in the company's projected portfolio for 2040, both by MW and by ZRC.[154] After noting that this table shows solar resources will provide 40% of the total demand in 2040, he further testified that this percentage does not fully capture the reliance on solar generation, characterizing EWR, CVR, and DR programs as "not generation resources in the true sense," because they reduce demand. He restated the proposed demand-side resources as peak demand reductions, with solar energy then representing 63% of the calculated net peak. He objected to this level of reliance on solar energy, questioning whether it would achieve throughout the year its measured capability on a summer peak day, and presenting Exhibit AG-1 to show the MISO ZRC calculation for solar resources. He reviewed the company's monthly peak demand as shown in Exhibit A-72 and questioned whether solar energy would be sufficient to meet

[153] Mr. Coppola's testimony, including his direct and rebuttal testimony, is transcribed at 8 Tr 2351-2427; his qualifications are set forth at 8 Tr 2352-2355 and 2398-2413.
[154] See 8 Tr 2363.

the forecast January 2039 peak.[155] He also questioned whether land resources would be adequate to support solar generation at utility scale, or whether smaller projects would result, reducing economies of scale. He also took issue with the projected cost declines. And, Mr. Coppola identified similar concerns with the reliability of wind generation, endorsing the company's decision to not pursue out-of-state wind.

Mr. Coppola also objected that the company's plan builds up a capacity surplus between 2020 and 2030, focusing on Figure 5 in Mr. Blumenstock's testimony at 6 Tr 256.[156] He expressed a concern that the company would be forced to sell unneeded capacity into the MISO market at a price below cost. He recommended that Consumers Energy "make a much better effort to narrow the time and amount of new resource additions to reduce the surplus capacity to levels at least below 500 ZRCs."[157] He also recommended that the company be required in future IRPs to closely monitor and reassess as appropriate its strategy of reliance on wind and solar resources.

Mr. Coppola reviewed the analysis underlying the company's decision to retire Karn units 1 and 2 in 2023, concluding that the economic justification for retirement is "not very compelling."[158] He noted that Consumers Energy may be able to pursue a less costly alternative to comply with Clean Water Act requirements, and he noted Mr. Blumenstock's testimony indicating that considerations other than cost also played a role in the company's retirement decision. He endorsed the company's decision to delay retiring Campbell units 1 and 2 until 2031 but did not recommend that the Commission reject the company's proposed retirement of Karn units 1 and 2. He did

[155] See 8 Tr 2367.
[156] See 8 Tr 2371
[157] See 8 Tr 2373.
[158] See 8 Tr 2379.

recommend that the Commission reject the company's proposed regulatory asset to recover undepreciated Karn plant balances as of the date of retirement.[159]

Turning to the company's competitive bidding proposals, including its proposal to use competitive bidding to determine PURPA avoided costs, Mr. Coppola generally agreed with the proposals as presented by Mr. Troyer, with the following additional recommendations: 1) that demand-side resources including EWR, CVR, and DR be developed only if the cost those resources are lower than the cost of resources offered in the competitive solicitation; 2) that the competitive solicitations not exclude any resource type; 3) that the additional safeguards are put in place to ensure that utility affiliates do not gain an advantage; and 4) to avoid purchasing from QFs when the utility has no capacity need, it should seek a waiver from FERC from the purchase obligations of PURPA.[160] In connection with the demand-side resources, however, Mr. Coppola expressly endorse cost recovery of proposed expenditures through June 2022.[161] Mr. Coppola also objected to the company's proposed FCM, disputing that the company needs an incentive, and taking issue with the calculation of imputed debt as excessive.[162] In his Exhibit AG-9, he calculated that under the company's proposal, FCM amounts could reach $121 million annually.[163]

D. <u>ABATE</u>

ABATE presented the testimony of Mr. Pollock.

[159] See 8 Tr 2377-2383.
[160] See 8 Tr 2386-2387.
[161] See 8 Tr 2396.
[162] See 8 Tr 2388-2395.
[163] See 8 Tr 2394.

Jeffry Pollock

Mr. Pollock is an energy advisor and President of J. Pollock, Inc.[164] He expressed a concern with the total cost of the company's PCA, contending that $7 billion in incremental net plant and $168.5 million in annual O&M costs would be "heavily front-loaded" and that the PCA would strand investments in Karn units 1 and 2 without an adequate showing. He recommended that the Commission require Consumers Energy to analyze extending the lives of existing resources beyond their design lives, including MCV. Turning to the competitive bidding element of the company's plan, he testified that while ABATE supports competitive bidding as long as it is inclusive, transparent and unbiased, it is unknown whether this would lead to self-build projects or PPAs, characterizing the risks as "dramatically different." Citing evolving technology, he recommended that the Commission not approve costs in this proceeding. He characterized the company's plan as leading to higher rates and increased ratepayer risk. Regarding risk, he identified the risk that lower power supply costs would not materialize as the company is projecting, the risk that the company has understated future gas prices, and the risk that the company's reliance on DR resources to meet its reserve margin will lead to curtailments. Mr. Pollock also took issue with the company's proposed Financial Compensation Mechanism.

E. MEC-NRDC-SC

MEC-NRDC-SC presented the testimony of three witnesses.

[164] Mr. Pollock's testimony is transcribed at 8 Tr 2093-2231, including the confidential portion of his testimony; his qualifications are set forth at 8 Tr 2097 and 2144-2159.

Douglas B. Jester

Mr. Jester is a partner in the consulting firm 5 Lakes Energy LLC.[165] In his testimony for MEC-NRDC-SC, Mr. Jester provided comments generally supportive certain elements of the company's IRP, including the early retirement of Karn units 1 and 2, reliance on CVR, EWR, DR, wind and solar to meet renewable energy requirements and replace the Karn capacity, and additional demand-side resources and solar energy to plan for future retirements. Mr. Jester addressed three elements of Consumers Energy's IRP proposal in more detail. First, he addressed the company's proposal to recover the undepreciated book value and net salvage costs of Karn units 1 and 2 through a regulatory asset. He accepted Ms. Myers's analysis of the options and recommended that the Commission approve the regulatory asset if the Karn units retire in 2023, with recovery through 2031, but would require Consumers Energy first to file a securitization application for the Commission's consideration.

Second, Mr. Jester addressed the company's proposal to use a competitive bidding process to address future capacity needs. He recommended the Commission support competitive bidding as a means to lower the cost of acquiring resources and also for Consumers Energy to attain the assistance of the solar development industry, testifying: "[T]he quantities of solar resources the Company contemplates acquiring in the period from 2022 through 2030 are large relative to the Company's existing project management capacity."[166] He testified, however, that the company's actual proposal is both flawed and incomplete. He expressed a concern that the company has not

[165] Mr. Jester's qualifications are set forth at 8 Tr 1772-1775 and his resume, Exhibit MEC-1. His testimony for MEC-NRDC-SC is transcribed at 8 Tr 1771-1807. He also presented testimony on behalf of ELPC et al.
[166] See 8 Tr 1784.

proposed to provide contract details in its RFP, testifying that contractual provisions affect the allocation of risk between parties and can thus effectively discriminate against an independent power producer relative to the company.[167] He testified that the contract duration must also match the life expectancy of the resource.[168]

Mr. Jester also recommended that the company acquire solar resources in annual increments rather than soliciting all such resources four to five years before the capacity is needed, to take advantage of potential cost declines.[169] He also addressed the difficulty faced by RFPs that are either too specific or too general. He testified that Consumers Energy should use either a single value for each output type to compare proposals or fix the value of capacity or energy so that proposals can more readily be compared.[170] He presented a Lawrence Berkeley National Laboratory report on utility-scale solar in his Exhibit MEC-2.

Third, he addressed the company's proposed Financial Compensation Mechanism. He acknowledged Mr. Torrey's testimony that the regulatory framework incents direct investment of capital but discussed limitations on the company's ability to pursue such investments, including reasonableness and prudence reviews and PURPA requirements. He recommended that the Commission find an incentive scheme that reflects both an incentive for the company to forego earnings on potential capital investments and consistency with these limits. Mr. Jester objected to the underlying rationale and the method proposed by Consumers Energy, disputing the impact of imputed debt attributable to PPA obligations, and recommending alternatives including

[167] See 8 Tr 1784-1785.
[168] See 8 Tr 1785.
[169] See 8 Tr 1786.
[170] See 8 Tr 1787-1790.

providing a fixed percentage below the weighted average cost of capital or considering an incentive in the context of a rate case. He cited a California PUC study he presented Exhibits MEC-3, and illustrative calculations in his Exhibits MEC-4 and MEC-5.

George W. Evans

Mr. Evans is President of Evans Power Consulting, Inc.[171] He reviewed the Strategist modeling Consumers Energy used to develop its IRP, and identified shortcomings primarily related to the Medium 4 retirement analysis. He testified that Consumers Energy's modeling limited to two the number of units that could retire before 2031 and failed to analyze the retirement of either or both Campbell units after 2023 and before 2031. He discussed Mr. Adkins's testimony, testifying that his analysis failed to consider an actual replacement plan for replacement capacity for the Campbell units, instead considering only a natural gas plant.

Mr. Evans explained his revisions to the Strategist modeling, based on two sets of assumptions regarding the availability of short-term capacity resources. He presented his results in Exhibit MEC-7 and testified that Mr. Comings discusses these results in more detail.

Tyler Comings

Mr. Comings is a Senior Research at Applied Economics Clinic in Somerville, Massachusetts. [172] He presented an analysis of Consumers Energy's Medium 4 retirement analysis, concluding that Consumers Energy did not properly evaluate the retirement of the Campbell units. He testified that Consumers Energy's own analysis

[171] Mr. Evans's qualifications are set forth at Tr 1811-1812 and in his resume, Exhibit MEC-6. His testimony is transcribed at 8 Tr 1809-1820.
[172] Mr. Comings' qualifications are set forth at 8 Tr 1826-1827 and in his resume, Exhibit MEC-9. His testimony, including his rebuttal and surrebuttal testimony, is transcribed at 8 Tr 1824-1885.

did not consider retirement dates between 2023 and 2031 and relied on assumptions biased in against early retirement. He took issue with the capital spending assumptions in the analysis and objected that Consumers Energy did not sufficiently consider additional wind resources or short-term capacity purchases in its modeling. He also took issue with Mr. Adkins's analysis as inconsistent with the company's method and PCA.

F. SEIA

SEIA presented the testimony of one witness.

Kevin M. Lucas

Mr. Lucas is the Director of Rate Design for SEIA.[173] He reviewed the company's capacity need forecast, testifying that "many factors must align" for the analysis to be accurate, and further characterizing the adequacy of the company's supply plans as "resting on a knife point." He reviewed Mr. Breuring's adjusted baseline forecast and expressed concerns that Consumers Energy had overstated the likely magnitude of energy and peak load reductions attributable to energy waste reduction, direct load management, and dynamic peak pricing programs over the period 2018 to 2030 and had excluded any significant grown in electric vehicles. He contrasted the company's forecasts with its high-growth and ROA-shift sensitivities, with the Energy Information Administration's Annual Energy Outlook as of 2018, and with several forecasts of electric vehicle growth.[174] He also presented a breakdown of the baseline and additional demand-side management resources projected in the company's plan, discussing risks associated with the projections, which he characterized as

[173] Mr. Lucas's testimony including his rebuttal is transcribed at 8 Tr 1948-2090; his qualifications are set forth at 8 Tr 1951-1952 and 8 Tr 2038-2040.
[174] See 8 Tr 1957-1963.

"aggressive."[175] After also discussing the risks he perceives with the number of supply-side projects in the company's IRP,[176] he recommended that Consumers Energy increase the quantity of solar energy in the first five years of its plan to address the potential demand-side and supply-side resource risks, and identified benefits from pursuing this strategy.

Mr. Lucas also reviewed the company's plan to retire Karn units 1 and 2 in 2023 and testified that retirement of the Karn units in 2021 in conjunction with the earlier ramp of solar resources would lead to cost savings of $80 million. He took issue with some of the O&M cost assumptions associated with the retirement scenarios, and with other assumptions in the company's analysis. He also discussed the available of solar projects through the company's PURPA queue, reviewing Commission avoided cost determinations and contending that the Commission has unambiguously reaffirmed the utility's obligation to contract with the QFs.[177]

He testified that SEIA does not contend that avoided costs should remain at the values established in Case No. U-18090, and generally supports the concept of competitive procurement of solar resources. He further testified that earlier adoption of solar resources would take advantage of a greater federal investment tax credit, and also recommending the use of single-tracker rather than fixed-tilt solar projects, noting their higher capacity factor and capacity credit.[178]

Mr. Lucas, however, took issue with the company's proposed competitive solicitations as lacking transparency and fairness to third-party developers. He also

[175] See 8 Tr 1963-1968.
[176] see 8 Tr 1963-1972
[177] See 8 Tr 1974-1981.
[178] See 8 Tr 1981-1991.

objected to the company's proposed FCM as unjustified and burdensome to customers, further characterizing it as a "tax." And he objected to the company's PURPA-related changes, based on policy and on PURPA requirements, including the company's proposals to shorten the contract length and the time horizon for the capacity demonstration, to reduce the size of project eligible for the standard offer tariff, and to reduce the energy payment to QFs by the market value of RECs.[179]

G. ELPC et al

ELPC et al presented the testimony of three witnesses.

Douglas Jester

In his testimony for ELPC et al, Mr. Jester addressed the company's proposed approach to its PURPA obligations. He reiterated the discussion of competitive bidding in his testimony for MEC-NRDC-SC, and then addressed Mr. Troyer's testimony. He agreed that "[t]he Commission's decisions about avoided costs in U-18090 were founded on an assumption shared by all parties that the Company's likely next resource would be natural gas-fueled combined cycle plant," and that "changes in technology and fuel costs since that time have invalidated that assumption."[180] He objected, however, to the company's comparison of the avoided costs set in Case No. U-18090 to the cost of recent wind energy developments. He objected to the net effect of the company's proposed revisions to the PURPA avoided cost calculations and other PURPA contract issues as "grossly discriminatory against PURPA QFs."[181] He testified that the company's proposed three-year time horizon for determining a capacity need would

[179] See 8 Tr 1991-2037.
[180] See 8 Tr 2251.
[181] See 8 Tr 2253.

foreclose any finding of a capacity need, further objected that Consumers Energy's view of capacity need is inconsistent with its longstanding practice of acquiring capacity several years in advance of full utilization of the capacity, and proposing an alternative approach.[182] He also objected that the company had not articulated a method of deriving from the competitive solicitation separate capacity, on-peak energy, and off-peak energy rates that could be applied to each of the different possible technologies. Mr. Jester objected to the company's proposals regarding the contract duration and eligibility for the standard offer tariff, and to its FCM proposal.[183]

Joseph M. Daniel

Mr. Daniel is a Senior Energy Analyst for the Union of Concerned Scientists. After describing the Union of Concerned Scientists, Mr. Daniel offered his insights on IRP best practices. He testified that the IRP modeling should have done a better job of allowing the model to select resources on an economic basis. He particularly objected to the company's assumptions regarding wind energy, taking issue with its elimination of in-state wind as a resource option based on a belief it would not be feasible, and further considering out-of-state wind as high risk. He testified that Consumers Energy should have modeled the extent to which wind is cost effective before a priori excluding it from consideration and could have viewed wind as available in small increments rather than as a single 500 MW project. He discussed the company's reliance on IHR Markit and identified alternative studies. He also testified that if off-system wind had been included, wholesale market prices would be reduced, and in addition, the value of storage resources may also be increased. He recommended that the Commission require

[182] See 8 Tr 2254-2259.
[183] See 8 Tr 2259-2267.

Consumers Energy to issue RFPs for wind energy until its next IRP, and to allow its modeling to choose wind in future IRPs.

Mr. Daniel also contended that Consumers Energy should have subjected the portfolios it selected as optimal based on the Strategist modeling to additional performance testing using the same scenarios and sensitivities it developed. He characterized this step as "portfolio testing," and testified that it is common practice by utilities conducting IRPs. Instead, he testified, neither the company's PCA nor its alternative plan were selected as the least cost, and the company has not shown either have less risk than the portfolios that were selected. He recommended that the Commission require portfolio testing in all future IRP filings.

As his third concern, Mr. Daniel testified that Consumers Energy should have considered a carbon tax as part of the environmental regulations it might face.[184] He testified that Consumers Energy's environmental regulation scenario considered only an in-state restriction, with no national or regional impact. He testified that including a carbon price in a reference case is "both a smart practice, a common practice, and arguably the best practice."[185]

James P. Gignac

Mr. Gignac is Lead Midwest Energy Analyst for the Union of Concerned Scientists. His testimony focused on the company's insistence that its plan must be approved in its entirety. He noted that the governing statute permits the Commission to recommend changes to the plan. He also discussed other states in which IRPs are

[184] . See 8 Tr 2299-2306.
[185] See 8 Tr 2302.

subject to modification by regulatory commissions, citing a study of best practices in utility integrated resource planning, including in Exhibit ELP-8.

H. GLREA

GLREA presented the testimony of three witnesses, summarized below and in the following section.

Robert Rafson

Mr. Rafson is a member of GLREA's IRP committee, and the owner of Chart House Energy, LLC, a renewable energy development company. He testified to his view of the likely impact of the company's proposed capacity solicitation process on PURPA providers. After explaining the importance of PURPA contracts in diversifying electric generation and reducing costs, he testified that the avoided cost rates established in Case No. U-18090 are "still valid" and should continue to be used. He disputed that demand-side resources should be used to set avoided cost rates, recommended a five-year window for a capacity determination rather than the three-year window Consumers Energy proposed, and recommended that standard contracts continue to be 20 years, and available for projects up to 2 MW. Additionally, Mr. Rafson recommended that the Commission not apply the company's proposed FCM to PURPA contracts. He also discussed the benefits of customer-owned systems and net metering.

John Richter

Mr. Richter is a member of the Board of Directors of GLREA, and also serves as its policy analyst and as Chairman of its IRP Committee.[186] He expressed general support for the company's planned reliance on the additional of modular solar projects rather than large fossil-fuel-powered generating plants. He testified the GLREA considers the core issue in this case the status of PPAs, citing a 1.8 GW queue of interconnection proposals. He stated that GLREA supported and continues to support the Commission's decision in Case No. U-18090, citing contract terms up to 20 years, standard tariff terms for projects up to 2 MW, Commission reconsideration of avoided costs in IRP proceedings, and $52.51/MWh and $140,505/ZRC until the next review.

Mr. Richter objected to the company's proposed FCM, questioning whether capital costs increase as a result of PPAs, and noting risks associated with generation.[187] He also objected to the company's proposed competitive solicitation process to meet capacity needs, contending that the process the company has proposed is flawed in many ways, more specifically objecting to the company's plan to specify the type of generation for each solicitation and also the selection criteria.[188] He also took issue with the company's plan to set PURPA avoided costs using the capacity solicitation process, contending that it is difficult to see how the company would ever have a capacity need under its proposal, and contending that its proposal is not consistent with the interests of its customers or the requirements of PURPA.[189]

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[186] Mr. Richter's testimony is transcribed at 8 Tr 2444-2465; his qualifications are set forth at 8 tr 2445-2446.
[187] See 8 Tr 242449-2451.
[188] See 8 Tr 2451-2452.
[189] See 8 Tr 2452-2454.

Mr. Richter objected to the company's proposal to reduce the size of QF project eligible for the standard offer tariff, recommending instead that the eligibility be increased to 3 MW consistent with Mr. Jester's testimony for ELPC.[190] He also objected to the proposed reduction in the term of the standard offer tariff. Instead, he recommended that the standard offer contract should be amended to allow QFs to offer RECs to the utility.

Mr. Richter testified that contrary to the company's claims, he believes Consumers Energy does have a capacity need over the next three years.[191] He testified that GLREA recommends that the Commission rather than the company determine whether a capacity need exists.[192] He testified that GLREA also supports Staff witness Mr. Proudfoot's alternative proposal to assign 50% of capacity needs to Consumers Energy ownership.[193] Mr. Richter also contended that it would be unfair to use the price from a competitive solicitation to set avoided costs, if the contract terms are not comparable, and if the technologies are not comparable. He recommended that a competitive solicitation process be managed by an independent board selected by the Commission, with Consumers Energy discouraged from participating directly, with limits on the information that could be shared among the company's affiliates and other protections.[194] He also disputed that the avoided cost rate set in Case No. U-18090 is excessive, comparing the PURPA avoided costs for wind and solar from Mr. Troyer's testimony to the cost assumptions presented by Ms. Hatcher.[195]

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[190] See 8 Tr 2459.
[191] See 8 Tr 2454.
[192] See 8 Tr 2461.
[193] See 8 Tr 2462.
[194] See 8 Tr 2464.
[195] See 8 Tr 2465.

Mr. Richter also testified that GLREA supports lifting the cap on distributed generation to promote customers who want to own their own generating facilities.

I. GLREA and RCG

Mr. Peloquin testified for both GLREA and RCG.

William A. Peloquin

Mr. Peloquin is a retired CPA with extensive experience testifying in MPSC cases.[196] In his testimony for GLREA, he objected to the company's proposed FCM, strongly disagreeing with Mr. Maddipati's claim that PPAs reduce financial flexibility and increase the risk of default for Consumers Energy. He testified that the company fully recovers its PPA obligations through PSCR rates, and if PPAs were perceived to add risk, the company would be fully compensated through the ratemaking formula.[197] He also asserted that the cost of the company's proposal is the biggest reason to reject it, testifying that the 13.8% FCM adder from Mr. Maddipati's example would make PPAs uneconomic. He also disputed that Consumers Energy should recover the undepreciated balances of Karn 1 and 2 through a regulatory asset under an early retirement scenario.[198] Last, Mr. Peloquin objected to the company's competitive solicitation proposal on the basis that the company retained too much control to provide a fair process.

In his direct testimony for the RCG, Mr. Peloquin reiterated the testimony he provided for GLREA.[199]

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[196] Mr. Peloquin's testimony for GLREA is transcribed at 8 Tr 2467-2477; his qualifications are set forth at 8 Tr 2468-2473. Mr. Peloquin also presented testimony on behalf of the RCG as discussed below.
[197] See 8 Tr 2473-2474.
[198] See 8 Tr 2475-2476.
[199] See 8 Tr 2479-2489.

J. METC

METC presented the testimony of Mr. Marshall.

Charles Marshall

Mr. Marshall is the Director of Transmission Planning for ITC Holdings Corp.[200] His testimony addressed the impact of the company's IRP on the Capacity Import Limit (CIL) for Michigan. He testified that Consumers Energy's proposed plant retirements will have an adverse impact on the voltage support on the existing transmission system, and thus limit the maximum power transfer capability from MISO to southern Michigan, reducing the State's ability to rely on capacity from MISO. Acknowledging that Consumers Energy plans to replace the retiring resources with new solar and wind generation, he testified that the voltage support provided by the new generation would depend on its location, which is unknown at the present. He testified that his analysis shows that the most cost-effective solution is the installation of a few large capacity dynamic voltage supporting devices at or near the transmission system. Mr. Marshall explained that he performed an analysis of the impact of the company's PCA on the CIL using the approach and method applied by MISO in its annual Loss of Load Expectation (LOLE) study, and this analysis showed a 65% reduction in CIL from the 2018/2019 level of 3,785 MW by 2023, further explaining his analysis.

Mr. Marshall then addressed the resource adequacy implications of the company's proposal, testifying that his analysis shows that to meet LOLE targets by 2032, Michigan would need to increase its "proxy generating capacity" by an additional

[200] Mr. Marshall's testimony is transcribed at 8 Tr 2491-2519; his qualifications are set forth at 8 Tr 2493-2494.

3,321 MW, and 2,000 MW of that would need to come from local generation given the projected CIL of 1,321 MW.

Mr. Marshall also testified regarding meetings with Consumers Energy in the spring of 2018, prior to the filing of its IRP, and without details regarding that IRP. He testified that the option METC provided to Mr. Lynd at that time was a conceptual solution to increase the CIL into Michigan. He testified that during the meetings, Consumers Energy presented plans for its IRP that METC studied to assess the impacts to the transmission system, including cost estimates, as summarized in Mr. Lynd's Exhibit A-97. He testified that the company's filed IRP is substantially different from the plans shared with METC, that from a transmission perspective, the most meaningful details of the PCA were omitted.[201] He further explained that Consumers Energy's omission of details hindered METC's ability to participate in this proceeding, and because METC does not know where the solar and wind resources will be located, it could perform a LOLE study but could not provide an estimate of the investment required to support the interconnection of the resources.

K. Michigan EIBC and IEI

Michigan EIBC and IEI presented the testimony of one witness.

Laura Sherman

Dr. Sherman is a senior consultant with 5 Lakes Energy LLC and Vice President of Policy Development for Michigan EIBC and IEI.[202] Dr. Sherman addressed the company's competitive bidding proposal. She testified that Michigan EIBC and IEI

[201] See 8 Tr 2518.
[202] Dr. Sherman's testimony is transcribed at 9 Tr 2830-2847. Her qualifications are set forth at 9 Tr 2831-2834 and in her resume, Exhibit EIB-1.

generally support the inclusion of third-party development in the utility's plan but emphasized the importance of a fair and objective process for competitive bidding. She acknowledged the Commission's direction to Staff in Case No. U-18419 to develop best practices and recommended that the Commission establish rules to govern the process for all regulated utilities, with stakeholder input. She recommended that the Commission and stakeholders review any proposed RFP before it is issued; she emphasized the importance of an independent administrator, with full responsibility for the evaluation and decision process; and identified other guiding principles to encourage competitive participation and reach efficient and timely decisions. Dr. Sherman also addressed the company's proposed FCM, agreeing that current incentives encourage the utility to own generation, and testifying that any incentive mechanism should be transparent and understandable to all potential participants. She took issue with the company's FCM proposal as not meeting this criterion, presenting Exhibits EIB-2 and EIB-3 to show Michigan EIBC and IEI's efforts to obtain additional information regarding the proposal.

L. IPPC

IPPC presented the testimony of four witnesses.

Darwin J. Baas

Mr. Baas is Director of the Kent County Department of Public Works.[203] He described the Kent County waste-to-energy facility, with a capacity of 18.2 MW and QF certification. He testified that Kent County also has a partnership with Energy Developments Ltd to supply landfill gas to a facility that is located on County property. Mr. Baas testified to explain that the contract length in a PPA is an important factor in

[203] Mr. Baas's testimony is transcribed at 9 Tr 2849-2855; his qualifications are presented at 9 Tr 2851.

the successful operation of a QF. Among the reasons, he identified the need for a revenue stream for financing and to meet facility and equipment refurbishment obligations. He reviewed the length of the municipal bonds Kent County issued for the operations, ranging from 5 to 25 years, and the budget for plant refurbishment for the years 2011 through 2019. He testified that the 50-year life span of the waste-to-energy facility runs to 2040. He testified that the current PPA with Consumers Energy for the facility expires in 2022, and that Consumers Energy has indicated it will not negotiate an extension until 2019 and has otherwise created uncertainty by indicating in its PSCR filings that it will continue the contract on a year-to-year basis until terminated with a one-year notice.

Marc Pauley

Mr. Pauley is Commercial Director for North American Operations at Energy Developments, Inc.[204] He explained that the company develops and operates electric generating projects fueled with landfill gas reserves and described its Michigan operations including its recent decision to move its North American headquarters to Michigan, which has approximately 20% of its north American business. He testified that his company would prefer to enter a 35-year contract with Consumers Energy, which is what Consumers Energy offered when most of the Michigan plants were started but supports the 20-year contract approved in Case No. U-18090. He testified that a shorter contract would lead to compromised maintenance of the facilities and to their shutdown.

[204] Mr. Pauley's testimony is transcribed at 9 Tr 2857-2862; his qualifications are presented at 9 Tr 2858-2859.

Lee W. Mueller

Mr. Mueller is an architect and is the Co-Member Manager of Boyce Hydro Power, LLC.[205] He testified to the importance of contract length to the successful operation of hydroelectric QFs. He testified that four Boyce hydroelectric power stations in Michigan have sold power to Consumers Energy since 1925. He testified that since 2006, Boyce has spent over $6.5 million in repairs and improvements to the facilities, and Boyce was able to finance this work because its PPA with Consumers Energy extends through 2022 with options to extend beyond that date. He disagreed with Mr. Troyer's recommendation to reduce the contract length, noting that hydroelectric facilities are licensed for thirty years or more, and are expensive to construct. He identified upcoming needs for additional financing and emphasized the importance of long-term contracts to obtain that financing.

William Stockhausen

Mr. Stockhausen is Principal Agent for two hydroelectric companies, Michiana Hydroelectric Co. and Elk Rapids Hydroelectric Power LLC.[206] He described the facilities that comprise IPPC and addressed Consumers Energy's proposed changes to the PURPA requirements the Commission adopted in Case No. U-18090. He objected to the proposed changes, which he characterized as "a complete divergence from the Commission's adopted methodology and other PURPA related items."[207]

Mr. Stockhausen took issue with Mr. Troyer's testimony regarding the requirements of PURPA, providing his understanding that the utility is obligated to enter

[205] Mr. Mueller's testimony is transcribed at 9 Tr 2864-2869; his qualifications are set forth at 9 Tr 2465.
[206] Mr. Stockhausen's testimony, including his rebuttal, is transcribed at 9 Tr 2871-2898; his qualifications are set forth at 9 Tr 2872-2873.
[207] See 9 Tr 2875.

into PPAs with QFs 20 MW and under that offer to sell their energy and capacity to the utility at the utility's avoided cost, and that the utility can only be relieved of the purchase obligation if it receives a waiver from FERC.[208] Mr. Stockhausen agreed that the avoided cost rates set in Case No. U-18090 do not reflect the next generating unit Consumers Energy would bring online, but disputed Mr. Troyer's reliance on a new solar development as representative of avoided costs, citing the company's recent contract with T.E.S. Filer City, and wind and solar it proposed to develop in Case No. U-18231. He testified that the cost the company identified for its Cross Winds II and III projects in Case No. U-18231 reflect only the contracted-for capital costs of the developments and do not include additional costs for financing, depreciation, general taxes and O&M expenses associated with the development.[209] He disputed that the avoided cost rate approved in Case No. U-18090 has a high cost implication for customers, also challenging Mr. Troyer's claim that the approved cost in that docket for hydro facilities was as high as $67.32/MWh, contending: "[N]one of the IPPC members' run-of-the-river avoided costs under U-18090 even come close to $67.32 for a 20-year period."[210] Turning to the capacity need demonstration, Mr. Stockhausen testified that for IPPC members, he considers that the Commission has already determined that a capacity need exists using a 10-year horizon. He testified that IPPC also objects to shortening the time horizon for a capacity need determination to 3 years, contending it would always allow the utility to claim no capacity need, and would appear to violate FERC regulations.[211] While not taking a position on whether competitive solicitations

[208] See 9 Tr 2876-2877.
[209] See 9 Tr 2880, citing testimony from witness Marc R. Bleckman in Case No. U-18231.
[210] See 9 Tr 2881.
[211] See 8 Tr 2883-2884, citing 18 CFR 292.302(b)(2).

should be used to set avoided cost for new QFs, he considers it discriminatory to allow Consumers Energy to negotiate contracts with T.E.S. Filer City and for renewable energy in Case No. U-18231 and yet subject existing QFs to a new competitive solicitation process. Mr. Stockhausen also indicated that he presumes the Commission's determinations in Case No. U-18090 will apply to IPPC members' existing QF facilities with expired and expiring contracts.[212]

Mr. Stockhausen also objected to the company's proposals to shorten the contract term available to QFs and to reduce the size of project eligible for the standard offer tariff.[213] And he objected to the company's proposed offset to energy prices for the market price of RECs, particularly for existing QFs based on the Commission's orders in Case No. U-18090, but also stating his understanding that this would violate PURPA.[214]

In support of his testimony, Mr. Stockhausen also presented as Exhibit IPP-1 comments field by Northwoods Hydropower Inc. in Case No. U-20095.

M. MCV

MCV presented the testimony of Ms. Medine.

Emily Medine

Ms. Medine is a Principal in the consulting firm Energy Ventures Analysis, Inc.[215] Her testimony addressed the future role of MCV is providing capacity and energy resources to Consumers Energy, endorsing certain aspects of the plan and recommending modifications to others. She took issue with the company's contention

[212] See 8 Tr 2875-2876.
[213] See 9 Tr 2887-2889 and 2891-2892.
[214] See 9 Tr 2890-2891.
[215] Ms. Medine's testimony is transcribed at 9 Tr 2902-2927; her qualifications are set forth at 9 Tr 2903-2904 and 2926-2927.

that its IRP must be approved in its entirety, and with the inference she drew that the company is seeking approval of its long-term plans, relying on MCL 460.6t.[216] She noted that the company's plans include the assumed exercise of its five-year option to extend its contract with MCV, characterizing this as a "constructive extension," and recommended that Consumers Energy be required to acknowledge this as such.[217] She took issue with the company's proposed retirement of Karn units 1 and 2 as unsupported, not reflective of potential reduced rail rates and not based on the AEO natural gas price forecast, further objecting that the early retirement would have an adverse impact on the prices paid to MCV. She recommended that the Commission require further analysis.[218] She also contended that Consumers Energy should consider a further extension of its contract with MCV in lieu of overbuilding solar resources prior to 2030, further recommending that in modeling future resource options, the MCV be considered in a similar manner to company-owned generation. She also recommended that Consumers Energy be required to evaluate the change in dispatch of the MCV and Campbell that would arise from the surplus capacity planned for 2025-2030.[219] She also noted that the FERC rejection of QF status for the Filer City plant creates a capacity concern.

N. Rebuttal

1. Consumers Energy

Consumers Energy presented the rebuttal testimony of 16 witnesses.

[216] See 9 Tr 2904-2905.
[217] See 9 Tr 2905, 2907, 2915-2916.
[218] See 9 Tr 2906-2907, 2922-2925.
[219] See 9 Tr 2906,2907, 2916-2922.

Richard T. Blumenstock (rebuttal)

In his rebuttal testimony, Mr. Blumenstock took issue with Mr. Proudfoot's recommendation that O&M costs for EWR, DR, and CVR be addressed in in rate cases and/or EWR plan and reconciliation cases, asserting these costs are integral to the PCA.[220] He clarified that the company is not seeking approval of its alternative plan. He agreed with several Staff recommendations regarding future IRP filings, including recommendations made by Staff witnesses Ms. Mullkoff, Mr. Makinde, Ms. Simpson, and Mr. Matthews. He agreed in part with Ms. Beck's recommendations, stating that Consumers Energy would indicate in its IRP filing whether the company received any alternate proposals as part of its IRP process. He explained that Consumers Energy did not specify proxy locations for solar energy to facilitate an analysis of the transmission system impacts because the company did not develop its plan until April 2018, "leaving no time for METC to analyze the PCA's impact on the electrical system," and further dismissing the effort as "nothing more than speculation," but agreeing to provide the information in future filings "if it is known."[221] He also agreed that Consumers Energy would continue to collaborate with METC regarding future IRP filings. And Mr. Blumenstock disagreed with Mr. Heidemann's recommendations for a future retirement analysis for all fossil generation as part of the Emerging Technologies (ET) scenario, contending that absent a change in the filing requirements, the company is not required to undertake such an analysis, and only included the Medium 4 retirement analysis because it was expressly directed to.[222]

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[220] See 6 Tr 263.
[221] See 6 Tr 265-266.
[222] See 6 Tr 269.

Turning to ELPC et al witness Mr. Daniels's recommendations regarding future filings, Mr. Blumenstock agreed in part with the recommendations, noting the company's plans to file an IRP within 3 years, reiterating that the company's solicitations will not include wind energy, but QF wind projects less than 20 MW will be allowed to bid, and committing that in future modeling, the models will be allowed to select wind as an option.[223] Regarding his recommendation that optimized portfolios be tested under each of the scenarios, he cited Mr. Clark's rebuttal to support that this testing was not needed, and indicated Consumers Energy would test the portfolios in the future "if warranted."[224]

Mr. Blumenstock addressed Ms. Medine's concern that the company's long-term resource plan exceeds the bounds of the IRP by statute, responding that the Commission "is required to determine that the IRP represents the most reasonable and prudent means of meeting the electric utility's energy and capacity needs," and stating that the company is only seeking cost approval for costs projected through June 1, 2022. Mr. Blumenstock also disputed Ms. Medine's conclusion that Consumers Energy has made a binding commitment through its filing to extend the MCV contract to 2030.[225] Presenting a chart showing the company's capacity position relative to requirements without relying on the TES Filer City expansion, he testified that the results show the company will only need capacity in two years, 2025 and 2026, and can replace this capacity through short-term capacity purchases or expediting elements of the PCA.[226]

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[223] See 6 Tr 271.
[224] See 6 Tr 272.
[225] See 6 Tr 273-274.
[226] See 6 Tr 274-276.

Mr. Blumenstock responded to Mr. Pollock's concerns with certain modeling assumptions by asserting that the company's assumptions were consistent with the filing requirements, and, while acknowledging changes are certain to occur, testified they would be captured in five years when the Commission updates IRP study parameters. He also testified that the modular approach in the company's PCA mitigates the risk of changing assumptions.[227] Addressing Ms. Medine's concerns that the company's modeling does not predict any reduction in coal and gas generation from the company's increase in renewables, Mr. Blumenstock disputed that the increase in renewables would affect the dispatch of the coal and gas units, testifying "MISO's utilization of renewables has no impact on the cost of production for other generating units, nor will it have a significant impact on the energy price of Campbell Units 1 and 2 or MCV."[228]

Responding to concerns expressed by Mr. Coppola and Ms. Medine that the company's PCA creates capacity surpluses, Mr. Blumenstock dismissed the concerns, asserting that implementation of EWR, DR, and CVR or build of solar generation facilities takes time to develop. And, he noted that Staff agree with the timelines in the PCA.

Mr. Blumenstock also expressly disagreed with Mr. Coppola's and Mr. Pollock's concerns that large amounts of solar generation could create capacity shortfalls at certain times of the year.[229] He stated that demand is typically lower than peak capacity requirements and asserted power could be imported to compensate. And, he disagreed with Mr. Coppola's use of a 50% capacity factor for solar generation, explaining that

[227] See 6 Tr 275-276.
[228] See 6 Tr 277.
[229] See 6 Tr 278-279.

factor applies only to new generation, while facilities with a history of production may be rated higher. However, responding to Mr. Harlow's and Mr. Marshall's concern, he admitted that MISO is considering reducing its capacity accreditation for solar, but relied on the modular nature of the company's plan to address future divergences from the IRP assumptions.[230]

Finally, Mr. Blumenstock addressed Mr. Marshall's concern with the impact of the company's PCA on the capacity import limits and capacity requirements for Michigan. He testified that Consumers Energy is participating in MISO workgroups and in MISO's Transmission Expansion Planning process. He disputed that this IRP is an appropriate place to consider whether transmission upgrades will be required.[231] He also disputed that the company's increasing level of imports from 2015-2017 indicate increased reliance in the future, testifying that the most important factor driving imports is the energy price for generation in Michigan, with lower energy prices leading to lower Michigan generation, and testifying that past imports reflect that MISO has selected generation from outside Michigan, not that Michigan is short of generation.[232]

Charles F. Adkins (rebuttal)

In his rebuttal testimony, Mr. Adkins confirmed that his original analysis used coal prices that had not been properly escalated when analyzing the value of retiring the Karn Units 1 and 2 or the Campbell Units 1 and 2. He testified that use of the corrected inputs did not change his recommendations regarding the Karn retirements, although the value of retiring the Karn units increased to $199 million for a 2021 retirement and to

[230] See 6 Tr 279-280.
[231] See 6 Tr 281.
[232] See 6 Tr 281-282.

$172 million for a 2023 retirement. He also testified that the use of the corrected inputs showed it would be optimal to retire the Campbell units in 2029.

He also addressed MEC-NRDC-SC witnesses' testimony regarding the replacement capacity values used in his analysis. He asserted that Mr. Comings did not present evidence of lower cost options than used in his modeling.[233] He further disputed that his analysis was flawed by the failure to identify a specific replacement plan in modeling each retirement, contending that his reliance on the least cost marginal capacity resource was reasonable.[234] He also disputed that the results of his analysis would have been different if he had looked out to 2040 rather than ending his analysis with 2032.[235] Mr. Adkins disputed that he had made other errors as claimed by Mr. Comings, although he acknowledged that he did not update the NUG evaluation. He presented the original and updated retirement analyses in his Exhibits A-100 to A-103.

Sara T. Walz (rebuttal)

In her rebuttal, Ms. Walz addressed concerns raised by Mr. Pollock and Mr. Coppola regarding the reliability of the PCA to meet peak demand and energy requirements. She objected to Mr. Pollock's view that DR would provide the company's reserve margin, responding that the company does not earmark resources for the reserve margin. She also testified in response to Mr. Coppola's concerns that the Strategist model "co-optimizes" energy and capacity requirements.[236]

Ms. Walz testified that Mr. Coppola's concerns with the reliability of the company's plan wrongly equated MWs and ZRCs in reducing the company's PRMR to

[233] See 6 Tr 334.
[234] See 6 Tr 335.
[235] See 6 Tr 336.
[236] See 6 Tr 491-493.

reflect the impact of demand-side management, and wrongly dismissed demand-side management as a capacity resource.[237] She testified that he erroneously calculated ZRCs for solar resources, and objected to his concern with energy delivery rather than capacity, asserting: "Mr. Coppola's calculation that the Company must provide 3,432 ZRCs of solar capacity in the month of January is invalid. The Company does not currently have a requirement to provide a specified level of ZRCs, apart from the peak hour of the year."[238] Ms. Walz also disputed Mr. Coppola's concern that the company has overstated the likely decline in solar generation costs.[239]

She disputed Mr. Comings's analysis incorporating additional wind in concluding that it would be economical to retire Campbell units 1 and 2 in 2023, also referencing the testimony of other witnesses, and disputed that the company's modeling of replacements for the Medium 4 should have considered market purchases, contending that the company is limited to 5% of its Planning Reserve Margin from the MISO Planning Reserve Auction, and Consumers Energy views this as a risk mitigant to minor adjustments in the company's capacity position rather than a resource to rely on.[240] She also contended that Mr. Evans's modeling excluded network upgrade costs of approximately $54/kW.[241]

Turning to Staff recommendations, Ms. Walz acknowledged that the company's modeling did not include benefits from energy storage and asserted that the company expects to be able to analyze such benefits in the future.[242]

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[237] See 6 Tr 506-507.
[238] See 6 Tr 508.
[239] See 6 Tr 508-509.
[240] See 6 Tr 495-497.
[241] See 6 Tr 497-498.
[242] See 6 Tr 498-500.

As did Mr. Blumenstock, she disputed Ms. Medine's assertion that the addition of renewable and demand-side resources would lead to a decrease in the dispatch of remaining coal and gas generation.[243] She also disputed that modeling limitations impact the company's Medium 4 retirement analysis, which assumes that coal units operate at least at minimum output in every hour the units are available.

Turning to Mr. Pollock's concern with the company's gas price forecasts, she distinguished the forward prices in Exhibit AB-8 from the company's forecast, stating that the company's forecast is not based on forward prices, but "rather considers the short-term trend of forward prices, and relies on third-party industry experts to influence escalation rates into the long-term future."[244] Also citing Mr. Gallaway's testimony, she disputed that the company's natural gas price forecast is unrealistically high, but acknowledged an error in the company's forecast that Mr. Pollock corrected in his Exhibit AB-10.

Addressing Mr. Lucas's concerns regarding the planned deployment of solar resources, Ms. Walz testified that the company does not support Mr. Lucas's recommendation that the company add additional solar energy beginning in 2020, even though greater investment tax credits are available.[245]

In her rebuttal and sur-surrebuttal testimony, Ms. Walz discusses the modeling for the retirement of the Campbell units, disputing Mr. Comings's testimony and surrebuttal testimony. After reviewing Mr. Evans's modeling, she testified that the results presented in Mr. Comings's testimony vary widely for retirement of both or one of the Campbell units in 2023, indicating potential cost increases to customers from

[243] See 6 Tr 500-502.
[244] See 6 Tr 504.
[245] See 6 Tr 511-513.

retirement as well as savings. She summarized the results in her Exhibits A-104 (for both Campbell units) and A-105 (for Campbell unit 2) limited to assumptions Consumers Energy used in its modeling, its own gas forecast and capacity prices between 50% and 75% of CONE. After eliminating the modeling results based on market purchases in these exhibits as invalid, she also objected that MEC-NRDC-SC's modeling used the capital and O&M spending plans for Campbell in the 2023 retirement analysis that are applicable to the 2031 retirement and understated the cost of replacement wind and solar resources but overestimating the tax credits that could be attained. Her exhibits also present the results of revising these assumptions. She testified that the revised results for retiring both units in 2023 show a potential cost of $367 million as well as potential savings of $190 million, while the revised results for Campbell unit 2 show a potential cost of $189 million and potential savings of $185 million.[246] She explained that by retiring one or both of the Campbell units in 2023 as well as the Karn units, the replacement capacity comes from new-build solar and wind, which are significantly more expensive than the DR available to replace the Karn capacity.[247]

Donald A. Lynd (rebuttal)

In his rebuttal testimony, Mr. Lynd addressed Mr. Marshall's testimony, disputing that the company's IRP is resource deficient, and citing Staff witness Mr. Doherty's testimony to the contrary.[248] He characterized Mr. Marshall's analysis as "informative," but took issue with several elements of his analysis.

First, Mr. Lynd asserted that the reliability of MISO projections is limited by "the quality of the portfolio of projects and network modifications submitted by member

[246] See 6 Tr 513-521.
[247] See 6 Tr 521-522.
[248] See 6 Tr 689-690.

utilities and adjoining regional transmission organizations."[249] He also stated that additional upgrades would be made in intervening years that are not included in the current projections. Acknowledging that Consumers Energy had not provided METC with information it needed to determine a cost estimate, Mr. Lynd reiterated his view that use of an average upgrade cost is appropriate in an IRP.[250] Additionally, he took issue with Mr. Marshall's use of a four-hour rather than a three-hour shift in the pumping and generating profile for Ludington, but acknowledging that future analysis should explore greater flexibility of this resource.

Mr. Lynd agreed with Mr. Marshall's conclusion that Michigan is resource adequate for 2018 but took issue with his estimate of a 75 MW addition of unforced proxy generating capacity to achieve the target LOLE, citing two MISO reports for planning year 2018-2019 with significantly greater unforced capacity shown as required to achieve the LOLE. Mr. Lynd considered this discrepancy as indicating Mr. Marshall's analysis for 2032, premised on his analysis of 2018, is unreliable.[251]

Mr. Lynd disagreed with Mr. Marshall's assertion that CIL levels should increase to approximately 4,000 MW. He pointed out that Mr. Marshall's modeling showed a need for on 3,321 MW. And, he disagreed with Mr. Marshall's assertion that use of Static VAR Compensators (SVC) is a cost-effective method to create voltage stability, contending that Mr. Marshall did not analyze a sufficient number of alternatives, and also challenging the CIL increases his analysis targeted.

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[249] See 6 Tr 684.
[250] See 6 Tr 685.
[251] See 6 Tr 686-687.

Shrikanth Maddipati (rebuttal)

In his rebuttal testimony, Mr. Maddipati responded to testimony from witnesses for Staff (Mr. Proudfoot, Mr. Nichols and Mr. Harlow), the Attorney General (Mr. Coppola), ABATE (Mr. Pollock), ELPC et al (Mr. Jester), SEIA (Mr. Lucas) and GLREA and the RCG (Mr. Peloquin, Mr. Rafson, and Mr. Richter). He reprised his testimony explaining the rationale for the FCM and again citing Mr. Torrey's testimony, contending that if the Commission disagrees with Mr. Torrey's policy rational, the financial impact from PPAs would still remain.

Mr. Maddipati disputed that the recovery of PPA costs through the PSCR process eliminates the need to consider imputed debt, asserting that "PPAs are a direct obligation of the company," and contending that to the extent rates are insufficient, "PPA payments would in fact still be made."[252] He characterized the PSCR process as "simply the vehicle through which revenues are collected."[253]

Mr. Maddipati disputed the assertion that imputed debt should be addressed in a rate case, rather than through a financial incentive, characterizing the PCA as a fundamental change in the company's business model, and also objecting that failure to take imputed debt into account in competitive bidding would skew the buy versus build analysis. He presented an analysis in Exhibit A-111 to show the potential difference in earnings for the company in a buy versus build scenario. He also objected that none of the other witnesses had been responsible for effectively managing the credit of a public utility, citing his Exhibit A-112.[254] Mr. Maddipati disputed that the company's current

[252] See 7 Tr 736.
[253] See 7 Tr 737.
[254] See 7 Tr 738-739.

portfolio of PPAs is relevant to whether its FCM is necessary, stating that the company's PCA calls for the company to competitively bid all future generation.[255]

Mr. Maddipati expressly took issue with Staff's analysis in Exhibit S-9.0, objecting that Mr. Harlow used a single payment year rather than the NPV of future payments as shown in his Exhibit A-113. He responded to testimony that S&P only considers capacity payments in calculating imputed debt by contending that Mr. Harlow "misrepresented" his position because he "clarified" his proposal in a discovery response to "only include payments that were contractually obligated."[256] He further explained what he would consider contractually obligated, using the MCV contract as an example of a contract that contains an option for Consumers Energy to purchase additional energy.[257] And he presented an email correspondence with someone at S&P in support of his use of a 25% risk factor, included in Exhibit A-115. He also reiterated his view that the company's FCM does not violate the statutory cap on financial incentives.[258]

Specifically addressing Mr. Lucas's testimony, he contended that Mr. Lucas "attempts to misrepresent and mischaracterize the Company's position," and recommended his testimony be given no weight.[259] He asserts that Mr. Lucas recommends ignoring the impact of imputed debt "until the company is on the precipice of a downgrade or completely unable to access capital."[260] He further characterized Mr. Lucas as confused regarding the risk the company faces when entering a PPA,

[255] See 7 Tr 742-743.
[256] See 7 Tr 749.
[257] See 7 Tr 749-750.
[258] See 7 Tr 752-753.
[259] See 7 Tr 753.
[260] See 7 Tr 754.

disputed his claim that customers are paying the cost of capital twice through the FCM, and characterized the FCM as removing the hidden cost the company faces "of providing credit support to PPA providers."[261] He acknowledged that his calculation does not mimic any agency methodology exactly, but contended as he did in response to Mr. Harlow's testimony that he had clarified his position in response to discovery and is not including the entire PPA payment in his imputed debt calculation.[262] He reiterated earlier points in response to Mr. Jester, Mr. Coppola, Mr. Pollock, Mr. Peloquin, Mr. Rafson and Mr. Richter, also objecting to alternative mechanisms discussed by Mr. Jester and Mr. Pollock.[263]

Scott D. Thomas (rebuttal)

In his rebuttal testimony, Mr. Thomas disputed Mr. Coppola's concern regarding available land for solar development, acknowledging the importance of siting, but reiterating his earlier testimony that there is adequate land for solar development. He disputed that solar projects need to be 100 MW or greater to take advantage of economies of scale. Mr. Thomas also disagreed with Mr. Lucas's recommendation that the company should pursue single-axis tracking system solar rather than fixed-tilt solar, testifying that the less effective fixed-tilt systems were deliberately chosen as a "conservative" choice for the PCA, but the company will evaluate all technologies in the competitive bidding process.[264] Addressing Mr. Daniel's testimony regarding wind development, Mr. Thomas disputed his analysis of wind potential in Michigan. Addressing Mr. Comings's recommendation to add wind resources before the

[261] See 7 Tr 756-757.
[262] See 7 Tr 757.
[263] See 7 Tr 758-762.
[264] See 8 Tr 1392.

production tax credits expire, he testified that the phase out of the production tax credit will begin in 2020, leaving little time.[265]

Keith G. Troyer (rebuttal)

In his rebuttal testimony, Mr. Troyer responded to Ms. Medine's testimony regarding extension of the PPA with MCV by disputing that the company's IRP constitutes a construction extension of the agreement, further characterizing it as premature for that decision to be made. He also testified that Consumers Energy's modeling does consider the MCV as a resource option after 2030.[266]

Regarding the company's proposed competitive solicitations, Mr. Troyer agreed with Staff witness Mr. Harlow's recommendation that RFPs be conducted annually, presented Exhibit A-106 to show the company's planned schedule, but expressed a concern that the PURPA capacity need demonstration may restrict the company's ability to conduct solicitations annually.[267] He also agreed with Mr. Proudfoot's recommendation for expedited approval of PPAs, and with his recommendation the PPAs entered into to meet the company's renewable energy portfolio requirements be filed and reviewed in the renewable energy plan cases.[268]

Mr. Troyer disputed testimony from several witnesses including Mr. Pollock, Mr. Richter, Mr. Jester, Dr. Sherman, and Mr. Lucas that the competitive solicitation process as outlined by Mr. Troyer may not be sufficiently fair or transparent. He provided additional detail as to how the preparation phase would be implemented, including an additional discussion of the value-added characteristics the company might

[265] See 8 Tr 1393.
[266] See 8 Tr 1280-1281.
[267] See 8 Tr 1281-1282.
[268] See 8 Tr 1283.

require, and as to how the solicitation, evaluation, and approval phases would be implemented, presenting a summary in his Exhibit A-107.[269] Mr. Troyer testified that the process needs to be fair in order to obtain FERC approval for the company's affiliates to submit bids, and that the company would comply with the Code of Conduct.[270] He disagreed with Dr. Sherman's recommendation that the company file proposed RFPs with the Commission for review and approval, including an opportunity for stakeholder input. He rejected this recommendation on the basis that the company has successfully conducted competitive solicitations in the past, and also because any project selected will be filed for Commission approval along with a description of the solicitation process.[271]

Mr. Troyer agreed with Mr. Jester that the maximum length of contracts awarded through the competitive solicitation should match the depreciation schedule of a similar company-owned asset, and further indicated that the company anticipates soliciting 25-year PPAs for solar projects.[272] Mr. Troyer also disagreed with Mr. Coppola's recommendation to open the competitive solicitations to all technologies, contending that would increase the administrative cost and create unnecessary implementation delays, also testifying that "the IRP provides the necessary direction to select the type of resources for the competitive solicitation."[273]

Mr. Troyer also addressed the company's PURPA proposals in his rebuttal testimony. He endorsed Mr. Harlow's agreement with several of the company's

[269] See 8 Tr 1283-1292; note that Mr. Troyer repeatedly refers to this exhibit as "Exhibit A-109."
[270] See 8 Tr 1284.
[271] See 8 Tr 1290.
[272] See 8 Tr 1289.
[273] See 8 Tr 1284.

proposals.[274] Mr. Troyer also responded to Mr. Stockhausen's testimony regarding the cost comparisons Mr. Troyer presented in his testimony, disputing that the levelized costs per/MWh he identified for the company's wind farms excluded O&M or other relevant costs, and also disclaiming that the company would use these values as the basis for avoided cost.[275] Mr. Troyer also disputed Mr. Stockhausen's interpretation of the applicability of the Commission's orders in Case No. U-18090 to certain QFs with expiring contracts, but agreed that QFs that already have contracts with the company should continue to be considered a supply resource for the company.[276] Mr. Troyer disputed testimony from Mr. Stockhausen and others that the avoided cost rates set in Case No. U-18090 should be continued, reiterating the company's rationale and also citing Dr. Sherman's Exhibit EIB-3.

In response to Mr. Harlow's recommendation, Mr. Troyer testified that Consumers Energy would agree to extend the timeframe for the capacity needs demonstration from three years to five years, based on Mr. Harlow's discovery response in Exhibit A-110, which states in part: "If the Company is actively pursuing its Commission approved capacity plan as presented in its Integrated Resource Plan, then Staff believes the Company does not have a capacity need, provided the Company will be conducting competitive solicitations, allowing all qualifying facilities (QFs) to participate regardless of technology."[277]

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[274] See 8 Tr 1294, 1302, 1303.
[275] See 8 Tr 1294-1295.
[276] See 8 Tr 1296-1297.
[277] See 8 Tr 1304-1307.

Thomas J. Clark (rebuttal)

In his rebuttal testimony, Mr. Clark addressed the company's IRP, Medium 4 analysis, and PURPA recommendations in response to testimony presented by witnesses for SEIA, MCV, MEC-NRDC-SC, ELPC et al, ABATE and GLREA. He disputed that the company's baseline capacity position from 2018 to 2023 will present difficulty, testifying that the vast majority of capacity additions during that time reflect the completion of projects that are already underway. He disputed that additional solar would be desirable, but also explained that the company plans to issue a competitive solicitation for solar to be in place by 2022.[278] He acknowledged that the company is no longer planning on the Filer City contract, presented Exhibit A-99 to show the company's revised capacity position.

Turning to the Medium 4 analysis, after reviewing the testimony of numerous witnesses, Mr. Clark testified that Consumers Energy is committed to its original recommendation to retire Karn units 1 and 2 in 2023 and operate Campbell units 1 and 2 until 2031. He disputed Mr. Comings's recommendation that one or both the Campbell units retire in 2023. He acknowledged that the coal prices used in the company's initial analysis contained an error, also addressed by Ms. Walz in her rebuttal testimony, but disputed that correcting this error would affect the company's decision. He also disputed that the company should use a capacity cost estimate based on 50% of CONE in its analysis as recommended by Mr. Comings, and he testified that savings estimated from unit retirements are not cumulative, and that retiring four units would increase the cost of replacement capacity.[279] Mr. Clark rejected Mr. Comings's

[278] See 7 Tr 939-942.
[279] See 7 Tr 949-953.

concern that Consumers Energy over projected the capacity factors of the Campbell units, testifying that many variables affect capacity factors. Mr. Clark also took issue with the assumption in Mr. Comings's analysis that Campbell capacity could be replaced with wind. He also cited Ms. Walz's and Mr. Kapala's rebuttal testimony for a discussion of other errors Consumers Energy identified in Mr. Comings's analysis, and in Mr. Lucas's analysis.[280] Mr. Clark also addressed Ms. Medine's, Mr. Coppola's, and Mr. Pollock's concerns that the company overstated benefits from early retirement of the Karn units, explaining limitations of the Strategist modeling, and the significant of 2023 as the date by which additional environmental investments in Karn would need to be made.Mr. Clark also addressed testimony from Ms. Medine regarding consideration of the MCV as a resource after 2030, and the company's alternate plan.

Turning to the company's PURPA proposals, Mr. Clark disputed Mr. Jester's recommendation to consider any capacity addition that is avoidable or not yet approved by the Commission as a capacity need, characterizing the inquiry as highly dependent on what is meant by "approved by the Commission," and contending that the company is attempting to avoid this problem by shortening the timeframe to three years. He also addressed Mr. Harlow's recommendation to use a five-year period, also citing Mr. Harlow's response to discovery included in Exhibit A-110, as Mr. Troyer did, and indicating that Consumers Energy agrees that if Consumers Energy is pursuing a Commission-approved capacity plan, it does not have a capacity need over the forecast period.[281] Mr. Clark also expressed disagreement with certain other PURPA-related recommendations made by Mr. Jester, Mr. Rafson, Mr. Richter, and Mr. Lucas. In

[280] See 7 Tr 954-956.
[281] See 7 Tr 963-964.

particular, addressing Mr. Lucas's proposed blended avoided cost rate, he objected to what he characterized as its complexity and uncertainty.[282]

Heidi J. Myers (rebuttal)

In her rebuttal testimony, Ms. Myers responded to the claim that traditional ratemaking provides for the recovery of the unrecovered book value of Karn units 1 and 2. She testified that to Consumers Energy, the regulatory asset proposal is an essential part of the company's proposed course of action.[283] She disputed that it is outside the scope of the company's IRP for the same reason, also asserting that approval is administratively efficient and provides certainty and alignment.[284]

In response to Mr. Coppola's objection that traditional ratemaking treatment would moderate the impact on rates, she cited her Exhibit A-57 and testified that the company's proposed regulatory asset approach with recovery through 2031 is more advantageous when the net present value of the revenue requirements are compared.[285] Ms. Myers also addressed Mr. Pollock's testimony that the PCA would cause rates to increase by 22%, citing the 15.65% increase calculated in her Exhibit A-55, and testifying that Mr. Pollock wrongly equated the $7 billion incremental capital investment to an increase in net plant, not considering the offsetting $3 billion in accumulated depreciation.[286]

Finally, she noted Mr. Nichols's recommendation that the Commission approve regulatory accounting treatment for the CRV revenue requirement not included in current rates, in the event the Commission were to disallow costs included in the

[282] See 7 Tr 967-968.
[283] See 7 Tr 1048.
[284] See 7 Tr 1049.
[285] See 7 Tr 1050.
[286] See 7 Tr 1051-1052.

company's Case No. U-20134 rate case filing. She testified that Consumers Energy agrees with the proposal.

Michael A. Torrey (rebuttal)

In his rebuttal testimony, Mr. Torrey responded to Mr. Jester's testimony regarding the FCM, reiterating that the FCM is required to support the "clean, lean, and more modular" strategy in the PCA, and disputing that it will result in unreasonable costs to customers.[287] He also disputed that the FCM is intended to match the earnings that would be available if the company owned the resources. He also objected to Mr. Jester's recommendation that the regulatory asset treatment for Karn be approved conditioned on the company also seeking securitization for the costs by July 2021.[288] And Mr. Torrey objected to Mr. Jester's recommendation that capacity needs be determined with reference to whether a capacity addition can be deferred or avoided, contending that it would "likely result in most of the Company's future capacity plan always being characterized as a need and subject to fulfillment by QFs."[289] He noted that Mr. Troyer's rebuttal testimony only indicated that Consumers Energy would consider a five-year capacity need horizon.

In response to Mr. Lucas's testimony regarding the FCM, Mr. Torrey testified that recovery of administrative costs only would be "grossly inadequate to allow the Company to move away from the traditional regulatory model."[290] He testified that the

[287] See 8 Tr 1478-1480.
[288] See 8 Tr 1482-1483.
[289] See 8 Tr 1483.
[290] See 8 Tr 1487.

PCA is "likely to result in Consumers Energy contracting through PPAs, with up to 6,350 MW of solar by 2040 that currently have no earnings potential."[291]

In response to Mr. Rafson's view that the company's proposed FCM should not apply to PURPA contracts, Mr. Torrey testified that entering PURPA contracts with QFs displaces either company-owned capacity, or another PPA, both of which would produce earnings for the company.[292] He also testified that the company would not find Mr. Proudfoot's 50-50 sharing proposal acceptable.[293]

Patrick C. Ennis (rebuttal)

In his rebuttal testimony, Mr. Ennis addressed Mr. Isakson's recommendation regarding the company's proposed Universal Peak Rewards program. He indicated that the company would be willing to adopt the Critical Peak Pricing program as an option for residential customers but would not be willing to replace the Universal Peak Rewards program with the Critical Peak Pricing program. He acknowledged that the "baseline" calculation underlying the Universal Peak Rewards program is opaque and is now working with a consultant to improve the accuracy of its calculation, and "is amenable" to including the baseline in its customer communication strategy. He disputed that the program runs afoul of section 95(1) of 2016 PA 342, and he disputed that the free ridership problem identified by Mr. Isakson is significant.[294]

He also addressed concerns raised by Mr. Lucas, Ms. Smith, and Mr. Pollock regarding the ambitious nature of the company's DR goals. He testified that many of the programs are "simply the ramp-up of proven customer demand-side programs," and

[291] See 8 Tr 1488.
[292] See 8 Tr 1488-1489.
[293] See 8 Tr 1489.
[294] See 8 Tr 1533-1540.

referenced his and Mr. Fratto's direct testimony acknowledging execution risk. He testified that Consumers Energy agrees to Staff's recommendation that DR O&M expenses be reviewed and recovered through rate cases. And he testified that as DR capacity increases, compensation to commercial and industrial customers also increases.[295]

Theodore A. Ykimoff (rebuttal)

In his rebuttal testimony, Mr. Ykimoff addressed Mr. Banks's testimony, agreeing that the standardizing the certification of weatherization contractors is a good idea, and likewise agrees that low-income program designs to help address safety and health deferral issues are important, he recommended they be considered in the company's 2019 EWR plan filing case.[296] Mr. Ykimoff took issue with Mr. Pollock's calculation of the cost of EWR, contending that he made two calculation errors, ignoring the measured life of energy savings and including the entire rather the incremental financial incentive in his calculations.[297]

Mark A. Ortiz (rebuttal)

In his rebuttal testimony, Mr. Ortiz presented Consumers Energy's EDIIP as Exhibit A-118 and testified in response to Mr. Becker's concerns with the potential fluctuations in voltage that Consumers Energy has a plan to stay within voltage range and avoid "infrequent fluctuations," testifying to the monitoring the company will use in its pilot program. He also testified that the company's planned technology components

[295] See 8 Tr 1540-1543.
[296] See 8 Tr 1588-1590.
[297] See 8 Tr 1590-1591.

are all compatible, and that reporting will be completed as outlined in Staff's Exhibit S-14.1.

Eugene M.J.A. Breuring (rebuttal)

In his rebuttal testimony, Mr. Breuring responded to Mr. Lucas's objection to the flat electric vehicle sales forecast, testifying that the "dramatic increases in the EV industry . . . is not intended to be part of the Company's BAU forecast at this time." He also addressed his concern that the DSM reductions in the company's adjusted sales forecast exceed the EIA's 2018 outlook, responding that the company's projections are supported by Mr. Ykimoff and Mr. Ortiz.[298] Turning to Mr. Makinde's testimony recommending the use of hourly or daily data for weather and historical sales variables, he testified that the data is not available, and further testified that the company's models have historically produced highly accurate results. He also objected to Mr. Makinde's recommendations to produce statistical validations of the monthly peaks, indicating that it would be more work to develop 12 monthly regression models and possibly generate inconsistent results.[299]

Brian D. Gallaway (rebuttal)

In his rebuttal testimony, Mr. Gallaway viewed Mr. Pollock's concern that the company's gas price forecast is overstated as support for the company's use of its composite forecast rather than relying on the EIA forecast, reiterating why the company chose the blended forecast.[300] He responded to Mr. Doherty's concern with the forecast by acknowledging that Staff's method has been used by the company but testifying that the company believes its forecast is better.

[298] See 8 Tr 1663[1664.
[299] See 8 Tr 1664-1665.
[300] See 8 Tr 1688.

Teresa E. Hatcher (rebuttal)

In her rebuttal testimony, Ms. Hatcher addressed Staff's proposed customer distributed generation proposal, characterizing it as premature and requiring further research. She testified that Consumers Energy is not required to file a distributed generation tariff until its next rate case, and also disputed that Staff's additional program would comport with the statutory 1% cap or the 150-kW limit per customer. She objected to considering this in the IRP rather than in a rate case, and further testified that a cost study should be required. She also characterized the 2% of capacity solicitations Staff proposes for the program as "arbitrary." She also objected to GLREA witness Mr. Rafson's proposal to lift the cap on distributed generation as inconsistent with the statute.

2. Staff

Staff presented rebuttal testimony from Ms. Simpson.

Naomi J. Simpson (rebuttal)

In her rebuttal testimony, Ms. Simpson addressed the transmission concerns raised by Mr. Marshal for METC, explaining the following additional Staff recommendations:

> First, Staff recommends the Commission order Consumers Energy Company . . . to continue to investigate transmission improvements that facilitate the import of both capacity and energy, including the impact to the capacity import limit (CIL), and provide those details in the Company's next integrated resource plan (IRP). Second, Staff recommends that transmission investments be considered in utility IRP filings. Third, Staff recommends the Commission order Staff to explore all Midcontinent Independent System Operator (MISO) stakeholder processes to determine if there is an existing process that can be leveraged to perform

a more comprehensive analysis of the transmission system for the entire Zone 7 region upon completion of the 1st round of utility IRPs.[301]

She testified that consistent with Ms. Beck's testimony, Staff continues to encourage Consumers Energy to work with METC to further analyze how its proposed course of action will impact the electrical system. In support of Staff's recommendation that transmission investments be considered in IRP filings, she cited sections 6t(5)(h) and (j), MCL 460.6t(5)(h) and (j). She explained that Staff's recommendation to explore MISO stakeholder processes reflects MISO's key role in analyzing the entire Zone 7 region.

3. MEC-NRDC-SC

MEC-NRDC-SC presented the rebuttal testimony of two witnesses.

Tyler Comings (rebuttal)

Mr. Comings presented both rebuttal and surrebuttal testimony. In his rebuttal testimony, Mr. Comings responded to testimony by Ms. Medine, Mr. Pollock and Mr. Coppola concluding that Consumers Energy had not supported the early retirement of the Karn units. Mr. Comings testified that these witnesses only looked at the company results containing a modeling error it subsequently acknowledged, that the coal prices it used were not escalated from 2022 levels, while the company's revised results showed additional savings from the 2023 retirement option. He also testified that Consumers Energy did consider AEO gas price forecast in its analysis, citing Exhibit MEC-39 as showing additional savings, and took issue with Mr. Coppola's revised estimate of Clean Water Act compliance costs. He also explained that the unrecovered plant balances for Karn units 1 and 2 should be considered sunk costs.

[301] See 9 Tr 2664.

In his surrebuttal testimony, Mr. Comings addressed Ms. Walz's rebuttal testimony. He testified that if her claims are correct, the tax credit issue would only apply to Mr. Evans's modeling of new renewable resources and not his modeling of capacity purchase replacement. He also took issue with the results she presented, contending that she only presented the results using Consumers Energy's own gas forecast, wrongly applied her tax adjustment to the modeling results relying on capacity purchases, and did not revise her modeling to allow the selection of alternate resources for the modeling results adjusted for the tax credit issue. He presented revised results in table form.

Michael Milligan (rebuttal)

Dr. Milligan is Principal at Miller Grid Solutions, Inc., a consulting firm in Westminster, Colorado.[302] In his rebuttal testimony for MEC-NRDC-SC, he took issue with certain aspects of Mr. Marshall's analysis for METC, characterizing it as technically sound but with "inadequacies" that likely overstate the projected decline in CIL by 2023 and the projected resource deficiency by 2032. He emphasized that maintaining an adequate CIL and ensuring resource adequacy in Zone 7 are critical but identified improvements to the assumptions in METC's modeling that he contended would improve the accuracy of the results.

4. ELPC et al

ELPC presented the testimony of Dr. Woychik.

[302] Dr. Milligan's rebuttal testimony is transcribed at 8 Tr 1931- 1945; his qualifications are presented at 8 Tr 1933-1934 and in his resume, Exhibit MEC-31.

Eric C. Woychik (rebuttal)

In his rebuttal testimony for ELPC et al, Dr. Woychik addressed Mr. Coppola's concern with the reliability of renewable energy and demand-side management as resources for Consumers Energy. After disputing that Mr. Coppola's analysis was sound or well supported, Dr. Woychik described the reliability requirements an expert would consider as based on considerations of capacity and NERC reliability standards and reviewed the steps Consumers Energy undertook to evaluate reliability. He also reviewed the Expected Load Carrying Capacity (ELCC) calculation framework and explained Production Cost Simulation Models as well-established tools to evaluate energy resources. He expressly disputed reliance on ZRCs as a measure of reliability and disputed that coal or gas-fired generation would reduce the risk of customer outages. Dr. Woychik also disagreed with Mr. Coppola's concern that land use limits the company's planned reliance on solar resources and provided additional information regarding projected solar costs. And Dr. Woychik disputed that the Commission should be concerned with the periodic development of excess capacity.

5. SEIA

SEIA presented rebuttal testimony from Mr. Lucas.

Kevin Lucas (rebuttal)

In his rebuttal, Mr. Lucas took issue with elements of Mr. Coppola's testimony regarding demand-side and renewable resources, contending that he erroneously discounted consideration of demand response as not a true resource, and correspondingly overstated the company's planned reliance on solar resources. He also disputed Mr. Coppola's concern that the quantity of available land would constrain

the company's ability to attain cost-effective solar resources, citing Mr. Thomas's testimony and concluding that the company's long-term plan would require only 1.6% of the available land. He also cited a National Renewable Energy Laboratory report projection of future solar capital costs to support projected future cost reductions.[303] He also took issue with Mr. Coppola's calculations of the cost of surplus capacity based on 50% of CONE, contending this grossly overstates the cost of new capacity that would be procured under the PCA.

Mr. Lucas also took issue with elements of Mr. Marshall's testimony, contending that Mr. Marshall's analysis of the potential future CIL values was faulty. Additionally, Mr. Lucas addressed testimony from other parties regarding the company's proposed FCM, pointing out some testimony critical of the company's proposal, reiterating his objection to Consumers Energy earning a percentage return on its PPA payments, and citing Dr. Sherman's testimony in particular as reflecting his concerns regarding the company's proposed competitive solicitation.

6. Attorney General

The Attorney General presented rebuttal testimony from Mr. Coppola.

<u>Sebastian Coppola (rebuttal)</u>

In his rebuttal testimony, Mr. Coppola took issue with the testimony of MEC-NRDC-SC witnesses recommending the early retirement of the Campbell units 1 and 2, contending that Mr. Comings ignores the reliability risk of replacing the Karn units and the Campbell units in 2023. He took issue with the assumption that capacity could be replaced on a short-term basis through the MISO market, testifying that recent low

[303] See 8 Tr 2055-2057.

capacity prices do not provide assurance capacity prices will be low in 5 to 6 years.[304] He also objected to reliance on the development of additional wind energy, also questioning the reliability of wind as a resource in comparison to a baseload fossil-fuel plant. Mr. Coppola also focused on the uncertainty associated with the savings estimates, citing a range of results produced by changes in base assumptions.

Mr. Coppola addressed Staff's recommendations regarding Karn, testifying that neither Mr. Comings nor Staff witnesses Mr. Proudfoot and Mr. Heidemann considered the potential lower-cost option for Clean Water Act compliance, which Mr. Coppola mentioned in his direct testimony. He recommended that the Commission wait for additional factual information before shutting down any baseload power plant.[305]

Regarding the proposed financial compensation mechanism, Mr. Coppola also took issue with Staff's willingness, as expressed by Mr. Harlow, to support an incentive for the company to consider competitive options. Mr. Coppola cited MCL 460.6t(6) to support his contention that the company is already obligated to conduct a competitive solicitation.[306] He also objected to Mr. Proudfoot's proposal to set aside 50% of capacity for company-built projects, characterizing it as anti-competitive, inconsistent with the same statute, and a subsidy to the company.[307] He also disagreed with Mr. Nichols's alternate proposal to create a regulatory asset for PPA payments, allowing the company to earn a return on the annual payment amounts. Mr. Coppola objected both on policy grounds and feasibility grounds. And Mr. Coppola objected to Mr. Nichols's

[304] See 8 Tr 2416-2417.
[305] . See 8 Tr 2418-2421.
[306] See 8 Tr 2421-2422.
[307] See 8 Tr 2422.

proposal to create a regulator asset for CVR capital expenses that were not approved in the company's most recent rate case, Case No. U-20134.

Finally, Mr. Coppola objected to Ms. Hadala's proposal to set aside 2% of the future capacity solicitations for a customer distributed generation program, contending that the proposal creates a subsidy for the benefit of certain customers at the expense of the remaining customer base, and objecting that Staff had not presented an analysis of potential line loss savings.[308]

7. IPPC

IPPC presented rebuttal testimony from Mr. Stockhausen.

William Stockhausen (rebuttal)

In his rebuttal testimony, Mr. Stockhausen addressed the company's proposed FCM in response to Staff's recommendations. Mr. Stockhausen testified that IPPC does not oppose the company's proposal for long-term contracts. He took issue with Staff's recommendation that no incentive is necessary for PURPA contracts, not disputing this conclusion, but noting the company's resistance to entering into long-term contracts with QFs. In his view, the company would be more resistant if it could earn an incentive on non-QF contracts but not on QF contracts.[309]

[308] See 8 Tr 2425-2427.
[309] See 9 Tr 2897-2898.

IV.

POSITIONS OF THE PARTIES

This section is intended to provide a general overview of the positions of the parties, with a summary of the key issues to be addressed in this PFD. It is not intended to provide a complete representation of each party's arguments on any point.

A. Consumers Energy

Consumers Energy seeks approval of its plan, including its preferred course of action (PAC). It expressly seeks cost approval for EWR, DR, and CVR resources it proposes to develop over the next three years pursuant to MCL 460.6t(11). It expressly seeks approval of its proposed regulatory asset for the unrecovered book balance of Karn units 1 and 2, as well as for decommissioning costs. It expressly seeks approval of its proposed competitive bidding method for avoided cost determination under PURPA, as well as other PURPA-related parameters. And it expressly seeks Commission approval of its proposed financial compensation mechanism. It emphasizes that all the elements of its plan are interrelated, and in the absence of approval of any element, the company is not willing to pursue the remainder of the plan.

B. Staff

Staff argues that Consumers Energy's plan should be approved, including its preferred course of action, concluding that the company's plan meets the modeling parameters and filing requirements, that the cost and operating assumptions used in its modeling are reasonable, and that its plans to retire Karn 1 and 2 in 2023 and operate Campbell units 1 and 2 until 2031 are reasonable. Staff identifies the capital costs it believes should be approved in this case, and others that should not be approved at this

point. Staff recommends approval of the company's proposed competitive bidding to determine avoided costs, with a stand offer maximum project size of 150 kw and a five-year capacity planning horizon. Staff recommends that the Consumers Energy set aside 2% of its competitive solicitation for distributed generation. Staff does not support the company's proposed financial compensation mechanism or Karn regulatory asset. Staff also identifies additional information it requests be included in the company's next IRP filing.

C. Attorney General

The Attorney General questions the reliability of Consumers Energy's plan, characterizing its strategy as risky. The Attorney General identifies issues Consumers Energy should be required to address in its next IRP, including the reliability of renewable and demand-side resources. The Attorney General supports the company's decision to delay retirement of the Campbell units, but disputes that retiring Karn 1 and 2 early is justified, further arguing that the proposed regulatory asset treatment for the undepreciated book value of the units should be rejected. The Attorney General supports the company's proposal for competitive bidding but recommends modifications to benefit ratepayers. The Attorney General also objects to the proposed financial compensation mechanism.

D. ABATE

ABATE argues that the company has not fully justified its IRP, objecting to the projected cost of the company's IRP is $7 billion over the planning period, and contending it exposes ratepayers to additional risk associated with its proposed reliance on solar generation with uncertain cost estimates and performance metrics. ABATE

argues that the Commission should accept Mr. Pollock's recommendations, including rejection of the proposed early retirements of Karn units 1 and 2, with a deferral of proposed capacity additions pending further analysis; further study of the impact of using demand response to meet planning reserve margin requirements; requiring a transparent and unbiased competitive bidding process to determine avoided cost rates; limit the cost recovery of self-build projects to the bid price; adopt a mechanism for monetizing the impact of PPAs on Consumers Energy's credit risk, which can be relied on when evaluating competing proposals to supply capacity; only adopt a Financial Compensation Mechanism with a risk factor between 0 and 15%, or use an "additional sum" approach. Regarding Karn, ABATE argues that if the Commission approves the early retirement, it should not approve the proposed regulatory asset, but should refuse to allow Consumers Energy to earn a return on the undepreciated remaining book value of the units when they are no longer used and useful. It also argues that consideration of the Campbell retirement dates is beyond the scope of this case.

E. MEC-NRDC-SC

MEC-NRDC-SC generally supports Consumers Energy's proposed course of action, with recommended modifications to the competitive bidding based on Mr. Jester's testimony. MEC/NRDC/SC also offers an alternative financial compensation mechanism for power purchase agreements, objecting that the company's proposal exceeds the statutory threshold. MEC/NRDC/SC support the 2023 retirement date for the Karn units 1 and 2, but also argue that Campbell units 1 and 2 should be retired at the same time, taking issue with Consumers Energy's modeling. MEC/NRDC/SC also

support creation of a regulatory asset for the undepreciated book value of Karn units 1 and 2, conditioned on the company seeking to securitize those costs.

F. GLREA and RCG

GLREA argues that the IRP is not fully consistent with the statutory and regulatory requirements of PURPA, focusing on the contract length, and on the project size covered by the standard offer tariff. It also argues that there is a lack of clarity as to the company's capacity need over the first three years of the IRP period. Additionally, GLREA argues that the relationship between the IRP and the company's renewable energy plan is "inconsistent and unclear." GLREA also takes issue with the company's proposed competitive bidding process, arguing it must be transparent, fair and equitable and completely independent of Consumers Energy's control and influence. GLREA objects to the proposed Financial Compensation Mechanism. It also objects that the IRP fails to analyze or incorporate customer-owned generation and characterizes its forecast of capacity and energy savings from demand response and energy waste reduction as overly optimistic. GLREA requests that the IRP be limited to the upcoming three-year period. It also objects to its proposal to create a regulatory asset for unrecovered book balances associated with the Karn units' retirements.

In its brief, the RCG supports the arguments raised by GLREA.

G. MCV

The MCV argues that because Consumers Energy expressly opted to exercise the five-year extension of its PPA with the MCV in its application, it is improper for the company to treat this as a key component of its plan while arguing that a firm commitment to exercise the option does not result from its plan. MCV seeks an order

from the Commission that the company has committed to exercise its option, and that this exercise is supported on the record as a whole. MCV then argues that if the Commission does not approve the IRP in its entirety, Consumers Energy should not be allowed to withdraw the IRP in its entirety. It also argues that Consumers Energy has not demonstrated that the early retirement of the Karn units is reasonable. It also argues that the company should be required to revise its plan to reflect Filer City continuing to operation only through the original term of the agreement.

H. SEIA

SEIA challenges Consumers Energy's determination of no capacity need, contending it requires many factors to align and contains substantial risk, contending it fails to address modeling sensitivities, does not consider likely electric vehicle growth, requires "massive and rapid" increases in demand-side management programs, requires the on-time delivery of hundreds of MWs of new resources, and reflects Filer City capacity that is no longer available. SEIA argues that the company should increase the quantity of solar in the next five years of its plan, in conjunction with retiring Karn units 1 and 2 in 2021 rather than 2023. SEIA also argues that Consumers Energy's proposed financial compensation mechanism should be rejected, and that its proposed competitive procurement methodology is biased against third-party projects and should be revised. SEIA argues that it conditionally supports using competitive solicitations for setting avoided cost, but disputes several of the PURPA-related changes Consumers Energy proposes as unreasonable or unlawful, including the use of five-year forecast energy prices, the three-year capacity demonstration proposal, further limits on the

availability of the standard offer contract, and its proposed price reduction for the market value of renewable energy credits.

I. ELPC et al

ELPC, the Ecology Center, the Union of Concerned Scientists, and Vote Solar argue that the company's PURPA proposals subvert the statutory intent and prior Commission orders, further arguing that the company's proposals to determine capacity need and reduce the planning horizon from 10 years to 3-5 years discriminates against QFs, the standard offer size should not be reduced from 2 MW, and 20-year contracts should be available for projects 2 MW or smaller. They argue that it is improper for Consumers Energy to present its PCA as an all-or-nothing approach, and that the company's modeling was deficient, identifying proposed improvements for future IRP cases. ELPC et al also argue that any competitive bidding process should be fairly implemented, and that the amount of any financial incentive must be lower than the company's proposed FCM.

J. Michigan EIBC and IEI

Michigan EIBC and IEI argue that the Commission should ensure appropriate rules and regulations are in place for Requests for Proposal before approving the company's competitive bid structure, should ensure that the competitive bid processes are fair and objective, and should ensure that any financial incentive is calculated in a transparent and fair manner that will result in a competitive option for independent power producers.

I. IPPC

IPPC argues that the proposed competitive bidding structure for existing QFs would upset settled expectations and undermine previous Commission determinations. It further contends that applying a new avoided cost method to IPPC member QFs would be discriminatory in violation of PURPA. It argues that its member QFs should be allowed to enter into or renew contracts in accordance with the Commission's order in Case No. U-18090 for terms up to 20 years, and that a financial compensation mechanism should only be allowed for 20-year contracts.

J. METC

METC argues that as explained by Mr. Marshall, METC identified a hole in the company's proposed course of action, the impact of that course of action on the capacity import limit (CIL), which must be considered to ensure the reliability of the transmission system given the State's resource mix. It also argues that the Commission should recognize the need for increased collaboration by Consumers Energy with METC going forward.

K. Reply briefs

In its reply brief, Consumers Energy reiterates many of the points made in its initial brief and relies substantially on the rebuttal testimony of its witnesses. It addresses the main contentions of Staff and intervenors in individual sections by topic. It argues that it complied with the modeling parameters and filing requirements, addresses concerns regarding the PCA raised by ELPC et al, GLREA, ABATE, the Attorney General, and MCV, as well as addressing Staff's view of costs that should be approved in this case. It further addresses its Medium 4 retirement analysis, focusing

primarily on arguments raised by MEC-NRDC-SC, and on objections to its proposed regulatory asset for Karn unit 1 and 2 remaining plant balances and removal costs. Consumers Energy also addresses objections to its competitive bidding process and PURPA proposals, and objections to its proposed financial incentive. Consumers Energy disputes METC's analysis, disputes ABATE's and the Attorney General's concerns with the cost of the PCA and explains its objections to Staff's proposal to provide for a customer distributed generation program as part of the competitive solicitation process, and states its agreement with or objection to Staff proposals for reporting and further analysis.

In its reply brief, Staff argues that the company's financial compensation mechanism exceeds the statutory cap and is more than necessary to persuade the company to enter into power purchase agreements. Staff also argues that Consumers Energy should perform a retirement analysis of its remaining coal units in its next IRP.

Addressing SEIA's arguments, Staff emphasizes that Consumers Energy is not currently obligated to purchase all of the capacity in its interconnection queue, citing the Commission's use of a 150 MW cap in Case No. U-18090. Staff notes that it requested the Commission to clarify its order, and argues in its response, the Commission has not yet defined a legally enforceable obligation under PURPA and deferred consideration of this issue, pending stakeholder discussions, to a rulemaking proceeding considering revisions to the Electric Interconnection Standards. Staff thus argues that until the Commission defines a legally enforceable obligation, Consumers Energy is not

obligated to purchase capacity from the queue.[310] Staff argues that SEIA reads too much into the Commission's October 5, 2018 order in Case No. U-18090.[311]

Staff also disputes the MCV's claim that the company's retirement analysis of Karn units 1 and 2 was defective, noting Staff's argument in its initial brief that MCV misunderstood the company's model. Staff also takes issue with similar claims by ABATE and the Attorney General. See Staff reply brief, page 10. Staff also takes issue with SEIA's call for an earlier retirement date for these units, arguing that SEIA did not provide modeling results showing an overall lower cost from replacing the units with solar energy in time to obtain higher investment tax credits. Staff responds to calls for Campbell 1 and 2 to retire earlier by reiterating its call for additional analysis in the company's next IRP.

Staff does agree with METC that increased collaboration from Consumers Energy is needed and argues that Staff's 50/50 ownership proposal would facilitate better coordination and lead to reduced costs.

Turning to Michigan EIBC and IEI arguments that rules should be in place for competitive bidding, Staff argues that Consumers Energy should be allowed to proceed with a competitive solicitation before any rules are determined, and that the Commission should open a separate docket to seek comments from stakeholders and the public on the best practices for RFPs and competitive bidding. Staff also argues that the Commission's order requiring Staff to research approaches and best practices did not require Staff to complete its research before Consumers Energy issues its RFP. Staff argues that the separate timeline is necessary both to avoid interfering with Consumers

[310] See Staff reply brief, pages 6-7.
[311] See Staff reply brief, pages 7-8.

Energy's capacity solicitation and to avoid interfering with the IRPs of other utilities that will be filed in 2019. Staff also argues that because section 6t (6) requires utilities to conduct RFPs, it would be inappropriate to change the rules on Michigan utilities by implementing new RFP regulations and competitive bidding while their applications are under development or being litigated. See Staff reply brief, page 15.

In their reply brief, MEC-NRDC-SC continue to recommend Karn units 1 and 2 be retired not later than 2023, and that Campbell units 1 and 2 or unit 2 alone be retired in 2023, or that Consumers Energy provided a more comprehensive analysis of Campbell retirement options within a year. They also argue that Consumers Energy has failed to address their criticisms of the company's FCM in its initial brief, ignoring or misinterpreting Mr. Jester's testimony on this topic.

In her reply brief, the Attorney General reiterated a concern with the ability of the company's plan to deliver reliable energy when needed, focusing on solar resources. The Attorney General disputes Consumers Energy's reliance on Exhibit AG-12 to support its claim that even with no solar energy, it would still have sufficient resources to meet a January peak demand in 2039.[312] The AG argues this exhibit does not demonstrate that the PCA is reliable and reiterates a concern that shortfalls in any of the resources in Exhibit A-12 would lead to an overreliance on the MISO market, "with no guarantee of favorable pricing." The AG renews her call for the Commission to require a review of (1) the reliability factor and the ability for the Company's proposed energy resources (including solar) to provide consistent power supply, particularly during peak demand periods; and (2) the assumption that solar costs can decrease by as much as 35%. The AG also objects that the PCA has a capacity surplus between

[312] See AG reply brief, pages 6-7.

2020 and 2030.[313] The AG contends that the company's build-up of capacity is intended to help it meet its demand-side-management goals.[314] The AG also reiterates opposition to the FCM.

ABATE's reply brief reiterates view that the Commission should reject the early retirement of Karn units 1 and 2, and that the Commission should deny a return on the undepreciated plant balance if the units do retire early. ABATE also renews its concern that Consumers Energy is proposing to rely on DSM/DR to an unrealistic level, contending that DR will lead to more frequent deployment of DR consumption curtailments and for longer duration.[315] ABATE argues that the Commission should require a reliability study. ABATE also takes issue with the cost of the IRP. Additionally, ABATE reiterates its concerns with the FCM. ABATE also takes issue with Staff's proposal to allow the company to own 50% of new capacity resources, contending this would thwart competition and supporting full competitive bidding.[316]

In their reply brief, Michigan EIBC and IEI support Staff's proposed limit of 50% on Consumers Energy's ownership of new renewable energy resources. Quoting Dr. Sherman's testimony extensively, they also argue that the Commission needs to establish procedures for a competitive bidding process. They also cite the Commission's April 27, 2018 order in Case No. U-18419, adopting the Attorney General's recommendation in part to provide more oversight of future RFPs for CON or IRP cases, and directing Staff to research approaches and best practices based on a review of other jurisdictions. Michigan EIBC argues that Consumers Energy's proposed

[313] See AG reply brief, page 8.
[314] See AG reply brief, page 9.
[315] See ABATE reply brief, page 5.
[316] See ABATE brief, pages 9-10.

competitive bidding should not be implemented until the Staff study called for has been completed, "with appropriate recommendations back to the Commission and an opportunity for public comment."[317] Responding directly to Consumers Energy's argument that it is unnecessary and time consuming to convene stakeholder group to consider an RFP process, Michigan EIBC and IEI argue that any potential extension of the process is offset by benefits gained from the involvement of all interested parties. Among the key concerns they identify is to ensure the independence of a third-party evaluator, to avoid subjective and non-transparent criteria, and flexibility for the third-party administrator to seek clarification or modification of a proposal for non-substantive deficiencies. These parties also renew their concerns with the financial compensation mechanism proposed by Consumers Energy, emphasizing Dr. Sherman's testimony on the importance of transparency and fairness.

In its reply brief, SEIA responds expressly to the Attorney General's concerns with solar energy generally, and with the planned build-up of capacity. SEIA argues that the Attorney General's concerns with the reliability and cost of solar energy are not supported by its analysis and are based on faulty assumptions.

SEIA's reply brief also renews its argument that Consumers Energy's PCA fails to address its obligation to purchase from QFs. SEIA argues that Consumers Energy's and Staff's concern that QF purchases would undermine the competitive solicitation process is not grounds for ignoring the requirements of State and federal law. SEIA agrees that the avoided cost method and inputs for Consumers Energy should be revised, acknowledging that the hybrid-proxy model no longer reflects Consumers Energy's capacity additions. It also states that it is not challenging the Commission's

[317] See Michigan EIBC and IEI reply brief, pages 4-5.

determination in Case No. U-18090 that Consumers Energy has a near-term capacity need of 150 MW and does not object to a competitive procurement regime. It argues that nonetheless QFs have rights today to PURPA PPAs based on the Commission's orders in Case No. U-18090 and Consumers Energy has disregarded those orders. It argues that to the extent the Commission modifies the implementation of PURPA in this case, such modification may not be made retroactive to QFs that had a right to PURPA contracts with Consumers Energy prior to such action.

SEIA responds to METC's concerns regarding the impact of the company's plan on Michigan's CIL, contending that its concerns are exaggerated and are not likely related to the use of solar energy in the plan. SEIA argues that Mr. Marshall considered capacity issues beyond Consumers Energy's ability to control, and that his modeling results were highly dependent on the underlying assumptions. SEIA also renews its objections to the financial compensation mechanism Consumers Energy proposed, supporting Staff's recommendation that the Commission consider imputed debt in the context of setting a reasonable cost of capital in a general rate case. SEIA states that it finds Staff's additional proposals constructive, and offers its own alternative based on a sharing of savings for PPAs entered into below an established proxy cost for new capacity.[318] SEIA emphasizes its view that Consumers Energy should not be paid for complying with the law.

ELPC et al argue that the company's proposed method for determining whether a capacity need exists would never result in a capacity need determination outside the competitive solicitation process. ELPC cites Mr. Jester's testimony as providing the simplest way to determine whether there are deferable capacity additions over a ten-

[318] See SEIA reply brief, pages 19-20.

year horizon. ELPC et al characterize Consumers Energy's dissatisfaction with this method as merely a result of the company's preferences.

They also argue that the company's proposal to reduce avoided costs by the value of RECs is not supported in the record and discriminates against QFs. They note the company's citation to 8 Tr 1272, but dispute that this explains how the market value of RECs will be determined. It also argues that if the company's competitive solicitation requires the transfer of RECs from winning bidders, there is no basis for the company's proposal, and if it does not require the transfer of RECs, then reducing the avoided cost would violate PURPA.

Addressing Staff's arguments in their reply brief, ELPC et al argue that Staff's brief misstates their position on the planning horizon, asserting that ELPC et al continue to believe the planning horizon should be 10 years, and that Mr. Jester never made a different recommendation. They also take issue with the Attorney General's reliance on Mr. Coppola's testimony, contending that Mr. Coppola did not provide an analysis of reliability standards, and misunderstood MISO's Expected Load Carrying Capacity calculation. They also argue that Mr. Coppola unduly relies on ZRCs as a measure of reliability, fails to support his claim that Michigan lacks the resources to build solar energy, and fails to support his statements regarding the cost of solar energy.

In its reply brief, METC characterizes Consumers Energy's response as an attempt to diminish METC's point by quibbling with minor aspects of the study. METC characterizes its analysis as rigorous and renews its concern that an increase in the CIL is required to ensure reliability under the company's proposed course of action. METC argues that Consumers Energy should have coordinated its PCA with METC and

dismisses the utility's stated concern with confidentiality as a justification for failing to coordinate. METC highlights Mr. Marshall's conclusions regarding resource adequacy by 2032, and disputes Mr. Blumenstock's testimony that Mr. Marshall's concerns should be deferred to a MISO workgroup. METC also addressed Mr. Lynd's and Mr. Blumenstock's testimony regarding deficiencies in Mr. Marshall's analysis, point by point, contending that any deficiencies pertain only to the magnitude of the impact, not the existence of the impact. METC notes that Mr. Marshall relied on publicly available data and emphasizes his testimony that an open and transparent communication is critical to develop an optimized transmission system.

GLREA's reply brief objects to Consumers Energy's argument that all of the elements of its IRP are "integrated" and must therefore all be approved by characterizing it as "all-or-nothing," and a diminishment of the Commission's authority. It also renews its concern with the FCM, also arguing that PURPA contracts should not be subject to an FCM because the contracts are required by federal law and objecting that Consumers Energy has not addressed whether its proposed FCM would apply to an extension of its contract with the MCV. GLREA also characterizes the uncertainty whether Consumers Energy will renew that contract or purchase the plant as relevant to a determination of Consumers Energy's actual avoided costs. GLREA also argues for a pilot competitive bidding program that would be consistent with QF rights under PURPA. It further objects to the reduction in the size of the project eligible for the standard offer tariff.

GLREA also argues that the Commission should not approve regulatory asset treatment for Karn unrecovered plant balances, or for the Campbell units, characterizing

such a decision as premature and outside the scope of this case. GLREA also supports Staff's proposed expanded distributed generation proposal.

The RCG's reply brief endorses the arguments raised by GLREA.

In its reply brief, the MCV renews its argument that Consumers Energy has agreed to a contract extension and that it should also consider the MCV as a resource option from 2030 to 2035. It responds to Staff's rejection of Ms. Medine's contention that the Medium 4 retirement analyses should have been based on the AEO gas price forecast by citing the Commission's order in Case No. U-18418, and similarly responds to MEC-NRDC-SC.

Energy Michigan submitted a reply brief addressing Consumers Energy's PURPA proposals, contending that the company's proposals violate the spirit and letter of the law. Energy Michigan expressly objected to elimination of a 20-year contract term at fixed prices, citing FERC rulings and the testimony of IPPC witnesses, the shortened capacity horizon, citing SEIA and ELPC arguments, and the treatment of RECs, citing the Commission's decision in Case No. U-18090. It also argues that the competitive solicitation proposal should be modified to make it more open and transparent, characterizing it as a "significant step in the right direction," but contending that the solicitation formation process is critical to ensure fairness and recommending public review and input into the solicitation process. Finally, it argues that a reasonable FCM should be approved if Consumers Energy implements an open competitive bidding process for new capacity, although it expresses skepticism that the company's reliance on imputed debt is persuasive. Energy Michigan also expressed a concern about

Staff's proposed 50-50 capacity split, arguing that the benefits of the company's approach are diminished if it is effectively guaranteed 50% ownership.

The Michigan Chemistry Council submitted a reply brief, in which it urges the Commission to proceed cautiously in this first IRP under the new legislation. It argues that the company's request for regulatory asset treatment of Karn unit 1 and 2 unrecovered plant balances and decommissioning costs should be denied. It acknowledges it has not performed an analysis but urges the Commission to give ABATE's concerns regarding the early retirement of these units careful consideration. It further supports competitive bidding to meet capacity requirements with modifications to ensure transparency and fairness. It argues that all technologies should be allowed to participate, citing the Attorney General's recommendation, that additional oversight is required to ensure fairness, citing MEC-NRDC-SC's and Michigan EIBC's concerns, and that annual solicitations should occur, citing Mr. Jester's testimony. It also opposes the proposed FCM as too high.

V.

PROPOSED COURSE OF ACTION

Consumers Energy seeks approval for its PCA in its entirety as "the most reasonable and prudent means of meeting the Company's energy and capacity needs through 2040." It states in its brief:

> The Company's PCA presents a fundamental shift in the resources which make up the Company's capacity resource portfolio and also proposes to dramatically change the way the Company procures capacity moving forward. The PCA ensures compliance with the Company's Clean Energy Goals – a reduction in carbon emissions by 80% and the elimination of coal-fired generation by 2040 – and also proposes to predominately rely on new solar resource additions to meet the Company's future capacity needs. Furthermore, to capture declining resource costs and better align

> new capacity additions with future capacity needs, the Company is proposing to use a competitive bidding process to address all future capacity needs.[319]

Indeed, Consumers Energy received many positive comments on its plan. Staff explains in its brief: "Staff wholeheartedly backs these innovative approaches to resource planning. Consumers' IRP is not only a clean plan that will move the Company closer to its goal of eliminating coal-fired generation in its generation portfolio, the plan will also drive down capacity and energy prices by promoting competition."[320] SEIA writes: "Consumers' PCA is a bold plan for eliminating Consumers' dependence on utility-owned coal-fired generation in favor of competitively procured renewable energy. In this regard, Consumers' PCA should be commended."[321] To ELPC et al: "Many aspects of the Company's IRP and PCA are commendable. The retirement of the Company's uneconomical coal fleet will have tremendous health benefits for the people of Michigan, and the Company's plan to use competitive renewable procurement to replace retired coal capacity will spur job growth, benefit ratepayers, and advance Michigan's status in the clean energy economy. A proposed course of action that includes retirement of coal units replaced by cost-effective energy conservation and renewable resources makes sense for the Company and its customers. "[322] ABATE states: "The Company deserves credit for taking steps to promote transparency and collaboration throughout the IRP implementation process."[323] Several witnesses were similarly complimentary in their testimony.

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[319] See Consumers Energy brief, pages 1-2.
[320] See Staff brief, page 1.
[321] See SEIA brief, page 1.
[322] See ELPC et al brief, page 1.
[323] See ABATE brief, page 1.

As shown through the testimony of its witnesses as discussed above, and in Exhibit A-2, Consumers Energy's IRP goes beyond the statutory 15-year planning period (approximately 2019 through 2033) to show how the company plans to meet its capacity needs through 2040. As discussed in section III above, key features of the company's plan include its decision to retire Karn Units 1 and 2 in 2023, to retire Campbell Units 1 and 2 in 2031, to obtain its remaining resource needs through a combination of demand-side and renewable supply-side resources, and to obtain supply-side resources through competitive bidding. Mr. Clark's testimony explains the PCA with reference to the near term (the first three years), intermediate term (June 2022 to May 2031) and far term (June 2031 through 2040).[324]

Several parties note that this is the first IRP the Commission has considered under 2016 PA 341. As such, they argue the Commission should pay careful attention to the standards it sets.

In the discussion that follows, section A considers the dispute over whether the Commission can approve less than the full term of a plan. This is relevant to considering the concerns raised by parties regarding the "intermediate term" and "far term" elements of the company's plan. As discussed in section B, the record reflects concerns regarding the reasonableness and prudence of the company's plans, particularly after the near-term or first three years of the plan.

A. Time Period of Approval

The first issue that arises from a review of the testimony and the parties' arguments is the question of the appropriate timeframe for review and approval of the

[324] See 7 Tr 903-904.

plan. Consumers Energy seeks approval for its plan for the entire timeframe of its analysis, i.e. through 2040. Staff's brief clearly argues that cost approvals under section 6t are limited to 3 years following approval of the plan but does not expressly discuss approval of the resource acquisition strategy or other elements the company seeks approval for over the longer term. While Staff does not directly address the company's argument, the ALJ notes that Staff testimony on several points was carefully limited to the first three years of the plan period.

Mr. Proudfoot testified: "Staff also recommends the Commission provide explicit approval for only the first three years of the plan and direct the Company to update its IRP as appropriate and file its next IRP within five years of the Commission's order in this case."[325] In her rebuttal, Ms. Simpson repeated this limitation on Staff's recommendation: "Staff maintains its recommendation that the Commission limit its approval of the Company's IRP to the first three years and the investments associated with that three-year period."[326]

In her testimony, Ms. Medine testified to her understanding of section 6t:

> Consumers appears to believe that approval of its IRP is approval for a long-term resource plan. The statute makes clear that only the "costs for specifically identified investment … in an approved integrated resource plan that are commenced within 3 years after the commission's order approving the initial plan, amended plan, or plan review are considered reasonable and prudent for recovery purposes." The statute also states that a "utility shall file an application for review of its integrated resource plan not later than 5 years after the effective date of the most recent commission order approving a plan, a plan amendment, or a plan review." In other words, approval is limited within these constraints.[327]

[325] See 9 Tr 2543.
[326] See 9 Tr 2667.
[327] See 9 Tr 2905.

While Consumers Energy did not directly address Staff's proposed three-year limitation in its rebuttal testimony, it did address Ms. Medine's testimony. Mr. Blumenstock presented the following testimony:

> Q. On page 3 of her direct testimony, Ms. Medine appears to suggest that a "long-term resource plan" cannot be approved in an IRP. Do you agree with conclusion?
>
> A. No. In approving an IRP, the Commission is required to determine that the IRP represents the most reasonable and prudent means of meeting the electric utility's energy and capacity needs. Pursuant to this requirement, the Company is requesting that the Commission approve the Company's PCA, finding it to represent the most reasonable and prudent means of meeting the electric utility's energy and capacity need. The Company is not asking for cost recovery for the entire PCA, just for cost approval for expenses associated with EWR, DR, and CVR, as detailed on pages 42 through 43 of my direct testimony.[328]

Although not mentioning Staff's proposed limitation, Consumers Energy repeats Mr. Blumenstock's testimony in its initial brief.[329]

In its brief, GLREA argues that the IRP should be limited to a three-year period:

> GLREA asserts that in this first CECO IRP there is no need to fully implement all potential aspects of an IRP, particularly in view of CECO's assertions that it has limited capacity needs over the next three years, and given that the time period after the next three years will reveal important capacity changes that may occur with respect to such matters as the expiration of the Palisades PPA, and any extensions of the PPA with the MCV, or a purchase of the MCV.[330]

Consumers Energy responds to GLREA in its reply brief:

> At pages 35 through 36 of its Initial Brief, GLREA proposes that the Company's IRP "should be limited for the upcoming three-year period." This proposed limitation is inconsistent with the law and the purpose of this proceeding. In this IRP proceeding, the Company was required to provide a 5-year, 10-year, and 15-year projection of the Company's load

[328] See 6 Tr 272.
[329] See Consumers Energy brief, page 50.
[330] See GLREA brief, pages 35-36.

> obligations and a plan to meet those obligations. See MCL 460.6t(3). Furthermore, in approving an IRP, the Commission is required to determine that the IRP represents the most reasonable and prudent means of meeting the electric utility's energy and capacity needs. MCL 460.6t(8). These provisions provide for the filing and approval of a long-term resource plan and not the approval of only a three-year plan, as GLREA proposes.
>
> Pursuant to the above statutory provisions, the Company is requesting that the Commission approve the Company's PCA, finding it to represent the most reasonable and prudent means of meeting the Company's energy and capacity needs. In requesting this approval, the Company is not seeking pre-approval of the costs in the entire PCA. The Company is only seeking pre-approval for costs associated with the EWR, DR, and CVR resources that the Company will incur in the three years subsequent to the Commission's approval of the IRP. The Company also acknowledges that its long-term resource plans will continue to be reviewed in future IRP proceedings.[331]

As quoted above in section II, MCL 460.6t requires the company to file 5, 10, and 15-year plans. The only explicit three-year limitation in MCL 460.6t is the 3-year limit on cost recovery in subsection 6t(11). Consumers Energy is not required to file another plan for a period of five years. Although it has stated that it intends file another plan in three years, it is difficult to view this assurance as a legally binding commitment.[332] In its reply brief, Consumers Energy states only that agrees to file a plan in 3 years *if* the Commission approves its current IRP without modification.[333]

Absent a more compelling statutory basis to limit approval of the entirety of the company's plan to three years, the ALJ finds that approval of an IRP is clearly limited to at most a 15-year period. Consumers Energy's plan through 2040 clearly exceeds the 15-year plan timeframe in section 460.6t(3), so the ALJ concludes that Commission

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[331] See Consumers Energy reply brief, pages 16-17.
[332] Staff does view this as a commitment. See Staff brief, page 23, citing Mr. Blumenstock's testimony at 6 Tr 271, where he states that Consumers Energy "intends" to file a new or amended IRP within a three-year period.
[333] See Consumers Energy reply brief, page 75.

approval of the IRP would not extend beyond June 2034.[334] The ALJ recognizes that in its November 17, 2018 order in Case No. U-18418, the Commission called for modeling results to be presented over a 20-year period, but did not purport to extend the timeframe for approval of the plan elements.[335] The ALJ notes that in its comments in that docket, Consumers Energy objected to the 20-year modeling horizon as inconsistent with the statute.[336] It is clearly reasonable, however, when evaluating a 15-year plan, for the Commission to consider the impact of decisions made within those 15 years on subsequent years.

An important observation when considering the significance of Commission approval of an IRP under MCL 460.6t is that, while the statute requires a utility to file a plan every five years, it does not require the utility to have an approved plan. Thus, should the Commission approve Consumers Energy's plan in its entirety, as requested, for the 15-year plan term, the approved plan may remain in place with no subsequently-approved plan for an indefinite time period.

Nonetheless, Staff's analysis indicates the difficulty of evaluating a 15-year plan, with myriad projections and assumptions of limited accuracy. The Commission should articulate an expectation that an approved IRP will not serve as justification for unreasonable or imprudent decision-making, when the underlying assumptions have changed.

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[334] Note that unlike Act 304, the statute does not provide for specific findings regarding the long-term forecasts in the plan. For example, MCL 460.6h(7) states: 'In its final order in a gas supply and cost review, the commission shall evaluate the decisions underlying the 5-year forecast filed by a gas utility pursuant to subsection (4). The commission may also indicate any cost items in the 5-year forecast that on the basis of present evidence, the commission would be unlikely to permit the gas utility to recover from its customers in rates, rate schedules, or gas cost recovery factors established in the future."
[335] See, e.g., November 21, 2017 order, pages 45-46.
[336] See November 17, 2017 order, page 56

B. Reasonableness, Prudence, and Resource Adequacy

Putting aside the question of how Consumers Energy will procure the planned resources, e.g. through competitive solicitation or constructed and owned by the utility, and putting aside the question of the reasonableness of its Medium 4 retirement decisions, all of which are discussed separately below, and focusing instead on the resource portfolio included in Consumers Energy's plan, several parties question whether the company's PCA represents the most reasonable and prudent means of meeting the electric utility's energy and capacity needs. Among the key concerns, whether the company's plan is based on an adequate analysis of transmission system options and constraints, whether its reliance on certain demand-side resources including CVR and DR is reasonable, whether it has adequately considered the availability and benefits of additional storage in conjunction with its reliance on renewable energy, and whether it has adequately planned for a growing electric vehicle market. As noted above, while Staff's brief recommends approval of the company's plan with certain modifications, Staff witnesses expressed a greater degree of concern with the company's plan following the first three years, as discussed below.

1. Transmission System

Subsection 5(h) requires Consumers Energy to present: "An analysis of potential new or upgraded electric transmission options for the electric utility." Subsection 5(j) requires: "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." The Integrated Resource Plan Filing Requirements instruct:

> In accordance with MCL 460.6t(5)(h), the utility shall include an analysis of potential new or upgraded electric transmission options for the utility. The utility's analysis shall include the following information:
>
> a) The utility shall assess the need to construct new, or modify existing transmission facilities to interconnect any new generation and shall reflect the estimated costs of those transmission facilities in the analyses of the resource options;
>
> b) A detailed description of the utility's efforts to engage local transmission owners in the utility's IRP process in an effort to inform the IRP process and assumptions, including a summary of meetings that have taken place;
>
> c) Current transmission system import and export limits as most recently documented by the RTO and any local area constraints or congestion concerns;
>
> d) Any information provided by the transmission owner(s) indicating the anticipated effects of fleet changes proposed in the IRP on the transmission system, including both generation retirements and new generation, subject to confidentiality provisions;
>
> e) Any information provided by the transmission owner(s), including cost and timing, indicating potential transmission options that could impact the utility's IRP by:
>
> (1) increasing import or export capability;
>
> (2) facilitating power purchase agreements or sales of energy and capacity both within or outside the planning zone or from neighboring RTOs;
>
> (3) transmission upgrades resulting in increasing system efficiency and reducing line loss allowing for greater energy delivery and reduced capacity need; and
>
> (4) advanced transmission and distribution network technologies affecting supply-side resources or demand-side resources.[337]

[337] See Integrated Resource Plan Filing Requirements, December 20, 2017 order in Case No. U-15896 and U-18461, Attachment A, pages 17-18.

METC is a transmission owner with Consumers Energy as its customer. In section XIV of the filing requirements, under the heading "Resource Screen," utilities are also required to describe the utility's options of resources, including the following elements: "Transmission resources: (i). Overview; (ii). Existing important and export capability; iii. Transmission network upgrade assumptions for the IRP; and iv. Import an export impact on resource strategy."[338]

A review of Mr. Lynd's direct testimony for Consumers Energy shows that Mr. Lynd relied on Consumers Energy's meetings with METC in advance of its filing, as shown in Exhibit A-96, and the preliminary analysis METC performed as shown in Consumers Energy's Exhibit A-97, to meet its filing requirements. Mr. Lynd also provided a network upgrade cost estimate of $54,000/MW, which Consumers Energy used in its modeling across the board for all supply-side capacity additions.[339] Mr. Lynd, however, acknowledged that Consumers Energy did not provide METC with the company's PCA:

> The scenarios utilized by METC were provided to METC by the Company early in the IRP evaluation process and were based on possible generation fleet changes. While METC was completing its study, the Company's internal IRP analyses, which contained alternate scenarios to those used by METC, were simultaneously performed. The Company's scenarios used to develop its PCA in its IRP, thus, ultimately indicated alternate scenarios to those METC studied.[340]

Mr. Lynd testified that nonetheless, the results of METC's analysis were still "informative."

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[338] See *id*., pages 18-19, subsection f.
[339] See Walz, 6 Tr 451-452.
[340] See 6 Tr 674.

Mr. Marshall disputed Mr. Lynd's assertion. As noted in section III above, Mr. Marshall is Director of Transmission Planning for ITC Holdings Corporation, the parent corporation of METC. Mr. Marshall testified that the IRP that Consumers Energy filed differs "substantially" from the plans that Consumers Energy shared with METC prior to filing its IRP. He further testified:

> Consumers Energy did request that METC assess the retirement of Karn Units 1—2. However, from a transmission assessment perspective, the most meaningful details of Consumers Energy's PCA were omitted. Most noteworthy, METC was never made aware of the PCA that includes a 2032 resource mix of 5,100 MW of solar development and 550 MW of wind. This skewed what was studied by METC. *Having this knowledge at the time of the studies would have changed the course of work METC was able to conduct*.[341]

After Consumers Energy filed its application in this case, Mr. Marshall conducted further analysis. He testified that the absence of additional details from Consumers Energy precluded an analysis of the estimated investment required to support interconnection of the new resources.[342] Mr. Marshall testified that he was able to conduct a Capacity Import Limit (CIL) analysis following the approach and methodology used by MISO, and incorporating other expected Michigan generation additions and retirements in addition to Consumers Energy's proposed resource mix.[343] He concluded that CIL would fall from its 2018/2019 level of 3,785 MW to 1,321 MW by 2032. He also performed a LOLE study based on this CIL evaluation, and concluded that the PCA is resource deficient, and absent an improvement to CIL, the target LOLE cannot be achieved for Michigan. He also testified that in recent years, Michigan has successively increased

[341] See 8 Tr 2518 (emphasis added).
[342] See 8 Tr 2518-2519.
[343] See 8 Tr 2497.

annual imports to meet the state's electrical demand, citing a number of metrics, and testifying that periods of heavy import are not just at summer peak times.[344]

As part of Staff's direct case, Ms. Beck testified that Staff concluded Consumers Energy's transmission analysis met the filing requirements. She provided additional testimony indicating that Consumers Energy assessed the need to construct new, or modify existing transmission facilities to interconnect new generation by meeting with METC, but did not provide METC with scenarios consistent with the company's proposed course of action, other than the potential retirement of Karn Units 1 and 2.[345] She testified:

> Staff understands the preliminary nature of the transmission analysis 6 relative to the development of the Proposed Course of Action; however, the Proposed Course of Action includes solar installations that may vary in size and may be installed in a variety of locations across the METC footprint. The Company could have specified proxy locations for the injection of solar energy into the transmission system to gain relevant information about the impact of a resource configuration that resembles the Proposed Couse of Action and its impact to the electrical system.[346]

Her testimony cast doubt on the reasonableness of the company's cost estimate:

> According to Company witness Lynd, the Company used a cost assumption of $54,000/MW of generation capacity for all generation technologies located in Michigan. Witness Lynd's direct testimony details how Consumers Energy made the transmission upgrade cost estimate based on the average cost of all network upgrades for projects in the ITC Holdings Transmission and METC territories with recently executed generation interconnection agreements. Consumers Energy also explains, as part of a response to Staff's audit request, that the Company does not plan to re-evaluate transmission upgrades as part of this current IRP, as it believes the current method of estimating costs is reasonable. Although the estimation method used by the Company does provide a cost estimate, it may not represent a reasonable cost estimate given the amount of intermittent resources the Company has included in the Proposed Course of Action throughout the study period. Staff

[344] See 8 Tr 2514-2515.
[345] See 9 Tr 1599.
[346] See 9 Tr 2600.

> recommends that Consumers Energy work with METC to determine more specific interconnection costs by resource type, specifically solar generation, to be used in future IRPs.[347]

Ms. Beck made several recommendations for further analysis,[348] and consistent with Staff's recommendation that approval of the PCA be granted for three years only, testified: "Staff expects that the limited number of resources the Company is seeking approval for in the initial three years of its IRP will have a minimal impact to the overall transmission system."[349] In her rebuttal testimony, Ms. Simpson provided Staff's additional recommendations based on Mr. Marshall's testimony, as noted above in section III, again emphasizing that Staff believes the Commission should limit its approval of the company's plan to the first three years, and also recommending that the Commission require Consumer Energy to present a CIL analysis in its next IRP: "The Company's PCA includes significant planned purchases in the form of power purchase agreements and market purchases in later years. Given Consumers PCA, the Commission should order the Company to continue to investigate transmission improvements that facilitate the import of both capacity and energy, including the impact to the CIL and provide those details in the Company's next IRP."[350] Mr. Makinde's testimony also reflects Staff's concern with the company's reliance on market purchases in the later years of its plan:

> From 2014 to 2017 the Company purchased on average of 4,366 GWH, approximately 10% of its annual energy from the MISO energy market, as reported by the Company in annual PSCR-R filings. As shown in Staff`s Confidential Exhibit S-5.3, the annual amounts of energy purchased

[347] See 9 Tr 2601.
[348] See 9 Tr 2603-2605.
[349] See 9 Tr 2603-2604.
[350] See 9 Tr 2664-2667.

increase during the 2020`s and continue to increase significantly during the 2030's.[351]

In his rebuttal testimony, Mr. Blumenstock also acknowledged that although Consumers Energy met with METC before filing its plan, it did not develop its plan in time to provide it to METC for analysis in advance if the filing; he also cited confidentiality concerns regarding the company's potential plant retirement.[352] Responding to Ms. Beck's recommendations targeted at improving the analysis of transmission system impacts in future filings, he agreed that Consumers Energy would collaborate with METC in the future, but he was dismissive of the concept of specifying proxy solar generation locations to facilitate this analysis, dismissing the effort as "nothing more than speculation," agreeing to provide the information in future filings only "if it is known."[353] In his view, METC's analysis would be relevant "for context only," and would not be relevant to the question whether the company's plan should be approved. He testified: "Actual CIL analysis and recommendations for transmission system upgrades should be conducted by, and through, MISO."[354]

Mr. Blumenstock further responded to Mr. Marshall's testimony regarding increases in the company's historical reliance on imports by disputing that was a credible projection of future imports, asserting that the energy price is the critical determinant of MISO dispatch, and that in the future, MISO may elect greater amounts of generation from Michigan, reducing imports. Several other witnesses responded to Mr. Marshall's testimony in rebuttal. Mr. Lynd emphasized that MISO has responsibility

[351] See 9 Tr 2645.

[352] See 6 Tr 282.
[353] See 6 Tr 265-266.
[354] See 6 Tr 266-267.

to ensure the reliability of the transmission system, and testified that many modifications can affect the CIL, including generator decisions in Michigan as well as modifications made by PJM.[355] He took issue with Mr. Marshall's comparison of his 2018 LOLE results to the most recent MISO study, and objected to his modeling a 4-hour rather than a 3-hour shift in the generating profile for Ludington.[356] Mr. Lynd objected that Mr. Marshall provided no support for suggesting that CIL should increase to 4,000 MW, and disputed that Mr. Marshall identified a cost-effective solution to increase CIL. [357]

MEC-NRDC-SC witness Dr. Milligan and SEIA witness Mr. Lucas also responded to this testimony in his rebuttal. Dr. Milligan, an economist who has worked extensively on modeling in the energy field, considered METC's analysis "technically sound," but took issue with some of the assumptions, in particular what Dr. Milligan believed to be a reliance on the performance of older solar and wind technologies, and also the lack of geographic diversification of resources.[358] Dr. Milligan generally agreed that Mr. Marshall's proposed enhancements were reasonable and cost-effective, but also testified that better modeling of the capabilities of Ludington should be considered, explaining that "the analysis of Ludington opens the door to a more robust analysis of the potential role of storage to mitigate CIL reduction."[359] Dr. Milligan presented a clear explanation of the importance of the CIL:

> The METC testimony includes some interesting data on the increasing levels of electricity imports into Michigan from MISO. The near doubling of MWh imports from ~9 million in 2015 to ~16 million in 2017 indicates the existence of significant levels of cost-effective resources outside the state. These economic transactions occur because of the market dispatch

[355] See 6 Tr 684-685.
[356] See 6 Tr 685-685.
[357] See 6 Tr 687-689.
[358] See 8 Tr 1938-1941.
[359] See 8 Tr 1942-1943.

> mechanism, facilitated by available transmission, which relentlessly seeks the lowest-cost portfolio of energy at all time, subject to many institutional and physical constraints. It is common for transmission constraints to be binding, and thus limit the capacity and energy that can be imported from low-cost areas. In fact, were the CIL into Michigan to decline, two factors would conspire to increase electricity costs for Michigan consumers: (1) less low-cost energy would be available for import, and (2) Michigan would need to build, and pay for, additional resource capacity.[360]

Mr. Lucas took issue with METC's analysis, acknowledging that he did not review the analysis in detail,[361] but objecting to a lack of available information regarding the CIL and LOLE modeling. He took issue with Mr. Marshall's reliance on certain information about future generation retirements and additions, with wind and solar generation profiles and DR assumptions used in the modeling, and with Mr. Marshall's use of the MISO generation interconnection queue as a proxy for new generating resource locations. He also cited Mr. Marshall's discovery response showing Fermi 2 as the most limiting resource, which when resolved would substantially restore the CIL projection. [362]

In its brief, METC argues there is a "hole" in the company's plan:

> METC's analysis identified that the current PCA makes an incorrect assumption about the impact of the PCA on the Capacity Import Limit ("CIL"). This is a crucial finding because the CIL is an essential reliability element in serving load, and an appropriate CIL level will ensure the reliability of the transmission system in a changing generation future. The record shows that the CIL must be considered in the context of the IRP and that, when considered in this case, the PCA will result in a need to increase the CIL in order to ensure the reliability of the transmission system given the State of Michigan's resource mix.[363]

METC urges the Commission to encourage increased collaboration. METC also dismisses Mr. Lucas's critique, disputing his qualifications.

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[360] See 8 Tr 1943-1944.
[361] See 8 Tr 20161.
[362] See 8 Tr 2061-2082; also see Exhibit SEIA-23.
[363] See METC brief, page 1.

Consumers Energy's brief characterizes the utility's communications with METC as a "transmission outreach" effort, but acknowledges that it contacted METC to request METC's analysis of various future transmission scenarios and assessment of the effects on the transmission system."[364] Consumers Energy relies on Mr. Lynd's and Mr. Blumenstock's rebuttal testimony.[365] It argues: "While the Company is willing to communicate and collaborate with METC as requested, METC's LOLE study has a number of deficiencies that make the study informative but should not be substituted for the information and analyses provided by MISO. Staff also addressed the transmission system in its brief, relying on the utility's commitment to file another IRP in three years, and generally recommending the measures recommended by Ms. Beck and Ms. Simpson.

SEIA did not address transmission issues in its initial brief, but in reply to METC's recommendations, SEIA cited Mr. Lucas's testimony, and argued that the concerns Mr. Marshall identified are unlikely related to the solar build out in the company's plan and will likely be remedied by MISO to address an issue related to Fermi. [366]

Based on a review of the record and the arguments of the parties, the ALJ finds that Consumers Energy has not established that it complied with MCL 460.6t(5)(h) and (j) or the Commission's filing requirements related to transmission and has not established that it has reasonably considered capacity import restrictions it its plan. The first significant point is that Consumers Energy did not give METC a meaningful opportunity to review its plan in advance of filing. The Commission should find it unacceptable that Consumers Energy relied on an analysis, Exhibit A-97, that reflected

[364] See Consumers Energy brief, page 15.
[365] See Consumers Energy brief, pages 15-16, 53-56, 249-254.
[366] See SEIA reply brief, pages 14-15.

only a part of the company's actual plan. That the company significantly revised its plan with no time remaining before its filing deadline is unpersuasive. Several utilities sought an extension of its IRP filing deadline, and in addition, Consumers Energy has sought multiple extensions of similar filing deadlines in the past. Mr. Blumenstock's claim that confidentiality prevented sharing additional information with METC due to the sensitive nature of plant retirements is not compatible with the information Consumers Energy did provide METC, potential plant retirements.[367] Moreover, the need for Consumers Energy to evaluate the early retirement of the Medium 4 was clearly a matter of public record,[368] as reflected in Exhibit A-96.[369] The time METC spent in meetings from November to April was essentially wasted, and now Consumer Energy seeks to discredit METC's analysis. For essentially the reasons stated in METC's reply brief, the ALJ does not find Consumers Energy has proposed a basis to disregard Mr. Marshall's analysis. In particular, the 2018 projection Mr. Marshall used to validate his modeling is not undermined by study results from different time periods.

Turning to SEIA's analysis, the ALJ agrees with SEIA and METC that the concerns Mr. Marshall identified are not likely related to the company's plan to procure solar energy, but that does not resolve the utility's obligation to present the analysis required by the statute and the filing requirements. The ALJ also agrees with METC that Mr. Lucas did not establish he was sufficiently familiar with the modeling, including the Monte Carlo simulations used, to be able to critique the modeling on the basis that

[367] See 6 Tr 282 ("The Company was not in a position to fully inform METC of its PCA when it started and completed most of its interaction with METC. Specific retirement information was confidential because employees and communities had not yet been notified of the company's retirement plan.")
[368] See, e.g., the Commission's February 28, 2017 order in Case No. U-17990 calling for such an analysis.
[369] See, e.g., Exhibit A-96, page 1 ("For Impact on Coal Plant Retirements (XII(d)), Rick shared publically available information is in the Company's past two electric rate cases regarding the potential retirement of Karn Units 1 and 2 or Campbell Unit 1 or Campbell Unit 2.").

the model does not produce the output he was seeking.[370] The ALJ finds that Dr. Milligan's testimony validated Mr. Marshall's modeling. Additionally, SEIA appears to have misunderstood the point of Mr. Marshall's analysis, which was not intended to criticize the company's plan to rely on renewable energy. A review of Exhibit A-96 provides a useful framework for METC's analysis, showing that Consumers Energy brought the IRP filing requirements to METC and sought its analysis, including the exploration of opportunities to increase CIL. Mr. Blumenstock acknowledges that the company intends to rely on market resources;[371] a good illustration of the company's plans is shown in Ms. Walz's rebuttal testimony, Figures 1 and 2.[372]

Several parties argue that MISO will determine the CIL and LOLE requirements and suggest that because MISO will ensure reliability requirements are met, no further consideration is warranted. As Consumers Energy argued in the context of its competitive bidding proposal, however, it is important to consider "hidden" costs in evaluating alternatives. The ALJ finds Mr. Marshall's testimony persuasive that costs can be minimized with early action to anticipate issues. He explained:

> Utilizing the existing processes, the current MISO generator interconnection process and communication channels, when better information is known, will result in a transmission system build out in a suboptimal and piecemeal fashion that is more costly, has greater impacts on property owners, and is operationally inferior to a coordinated system that recognizes and considers future generation.[373]

No one refuted this testimony, which reinforces the importance of the Commission's filing requirements. In adopting the filing instructions, the Commission rejected DTE Electric's recommendation to limit the transmission analysis:

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[370] See, e.g., 8 Tr 2066, 2083, and Exhibit SEIA-26.
[371] See 6 Tr 278-279.
[372] See 6 Tr 500-501.
[373] See 8 Tr 2519.

> The Commission agrees with ITC and rejects DTE Electric's proposed footnote. Sections 6t(h) and (j) require that, in its IRP, the utility shall include an "analysis of potential new or upgraded electric transmission options for the electric utility" and "[p]lans 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." As asserted by ITC, due to its position, the transmission owner has the unique ability to determine whether and how the IRP will potentially affect the transmission system. Therefore, a thorough transmission analysis would not be possible if the analysis was limited to projects proposed in the RTO planning process. For the same reason, the Commission believes that it is appropriate to retain the portion of subsection e) that requires transmission owners to consider PPAs as potential transmission options that could impact the utility's IRP.[374]

The potential costs and opportunities should not be ignored merely because MISO is the ultimate decision-maker. Consumers Energy makes many projections in this case that it acknowledges may not prove to be accurate. The usefulness of any analysis of course depends on the accuracy of the underlying information, and as Mr. Marshall testified, he was not able to obtain all potentially available information from Consumers Energy, including some generalized information regarding the likely location of new generation.

The ALJ also finds that the $54,000/MW transmission upgrade cost the company used in its modeling was arbitrary, reflecting essentially a meaningless average from a broad range of network upgrade costs taken from Generator Interconnection Agreements that may not be required for or applicable to the generation at issue. Ms. Beck did not find the estimate reasonable. Mr. Marshall indicated that with additional information, better estimates could be obtained.

2. <u>Storage in the Intermediate Term</u>

[374] See December 20, 2017 order in Case No. U-15896 and U-18461, page 19.

In his direct testimony, Mr. Clark testified that no storage additions are planned for the intermediate-term PCA.[375] Although Mr. Troyer testified that Consumers Energy would evaluate storage along with energy efficiency prior to a competitive solicitation "to determine if they can be implemented to offset any projected generation capacity need,"[376] Consumers Energy's PCA does not call for the addition of energy storage until the far term, 2031-2040 portion of its plan. The testimony of several witnesses calls this decision into question.

Mr. Matthews testified that Consumers Energy failed to adequately consider energy storage in its IRP:

> When developing its IRP, the Company relied on modeling software to model different scenarios to determine the most prudent future investments. In its analysis, Staff found that the Company's model was incapable of coupling renewables and battery storage together for co-optimized dispatch as shown in Staff Exhibit S-16. Staff believes that battery storage offers significant benefits when coupled with renewable energy resources as well as when used in demand response programs. The Company's model failing to couple these resources could potentially lead the model to disfavor energy storage resources even when the costs are competitive with other resources. Staff has also found information on the Company's website supporting Staff's opinions about energy storage. In a September 2018 news release the Company acknowledges that renewable energy resources will depend on battery storage to be reliable energy resources, "Our Clean Energy Plan calls for more solar and wind electric generation facilities that will depend on battery storage to be dependable sources of energy for our customers for when the wind isn't blowing or the sun shining." Given the flexibility that energy storage provides to both the Company and its customers, Staff believes that there are many benefits to energy storage outside of just capacity requirements that the Company did not explore in its IRP. Based on the fact that the Company's model was unable to properly model energy storage in conjunction with other resources, the Company may have prematurely pushed battery storage to later years in its IRP.[377]

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[375] See 7 Tr 910.
[376] See 8 Tr 1251.
[377] See 9 Tr 2816-2817.

He explained that based on Staff's review of energy storage projects in Michigan and across the country, Staff believes the potential benefits of storage are greater than captured by Consumers Energy's modeling.[378] He recommended that Consumers Energy rework its modeling to include co-optimized dispatch of renewables and battery storage. Ms. Walz, in her rebuttal testimony, responded from a modeling perspective that Consumers Energy is pursuing more flexible modeling software.[379] Ms. Haugh testified that storage costs have fallen in recent years.[380] Dr. Milligan testified that storage costs have been falling rapidly and combined with wind and solar can be the least-cost new resource.[381] He cited two studies in Exhibits MEC-36 and MEC-37. Mr. Lucas also commented on use of storage in conjunction with wind and solar, providing results from a recent competitive solicitation in Colorado:

> Pricing for the proposals was extremely robust, with wind and solar farms bidding at a median price (meaning half of the bids were below this level) of $18.10/MWh and $29.50/MWh, respectively. Interestingly, the median incremental cost of storage on these bids was only $2.90/MWh and $6.50/MWh for wind and solar, respectively.[382]

Based on the record and arguments of the parties, the ALJ finds that Consumers Energy did not properly evaluate storage as an accompaniment to the renewable resources included in its plan.

3. Demand-Side Resources

Consumers Energy proposes to rely on demand-side resources including demand response (DR), conservation voltage reduction (CVR), and energy waste

[378] See 9 Tr 2817.
[379] See 6 Tr 498-500
[380] See 8 Tr 1455.
[381] See 8 Tr 1943.
[382] See 8 Tr 2030.

reduction (EWR) throughout its plan. Mr. Ennis and Mr. Fratto provided direct testimony discussing the company's demand response program, as discussed in section III above.

Some parties expressed concerns with the company's plans related to one or more of these resources. Mr. Pollock equated the size of the company's DR program to the size of its required reserve margin, and testified to the risks he perceived:

> The risk is that DR customers could be called upon much more frequently and for longer durations than in the recent past to replace generating resources that are not available due to either forced and/or scheduled outages. These curtailments could also occur on less sunny days when the proposed solar units are not fully operational or on sunny days when the sun begins to set. Thus, if DR supplies Consumers' entire reserve margin (and more), DR customers may experience curtailments of both greater frequency and duration. Thus, the PCA will place DR customers at much greater risk. At the very least, they will require additional compensation to offset the greater risk.[383]

Ms. Smith characterized the company's proposed DR performance after the first three years of the PCA as "ambitious," testifying that Staff is somewhat concerned, and would like to evaluate the ramp-up timeframe in the next IRP filing.[384] Staff reiterates this intent in its brief, citing Ms. Smith's testimony that Staff has only concluded the initial 607 MW reduction by 2022 is reasonable and feasible.[385] Mr. Lucas also noted the magnitude of the company's demand-side management program.

Mr. Ennis addressed Mr. Pollock's concern in his rebuttal:

> The Company has included increased compensation for customers participating in the C&I DR program. As the DR capacity increases, compensation for C&I DR customers is increased incrementally every other year. This incremental increase in customer compensation is primarily to address the supply of customers willing to participate in a C&I

[383] See 8 Tr 2127.
[384] See 9 Tr 2757; Staff also states that the Commission need not resolve in this case the dispute between Staff and the company over residential demand program specifics, explained by Mr. Isakson. See Staff brief, page 39.
[385] See Staff brief, pages 36-38.

> DR program and is not due to the increased risk the customer will be called upon to curtail in the event of a MISO declared event. Additionally, current DR programs are limited to a certain number of interruptions per year and are limited in duration to four hours per event. Assuming these programs and their limits continue, participating customers will not experience greater frequency and duration of interruptions.[386]

He also responded to Ms. Smith and Mr. Lucas, reiterating that the company's proposal is consistent with the statewide potential study, and also cited the discussion of execution risk in his and Mr. Fratto's direct testimony.

Mr. Ortiz presented testimony in support of the company's reliance on CVR, as discussed in section III above. Mr. Becker, while generally supportive of CVR, expressed the following concerns regarding the company's plan:

> However, the Company has ongoing CVR pilots in 2018 and 2019 utilizing 20 and 30 circuits respectively. Staff is concerned with the fact that the Company has not provided evidence through pilot results that support the Company's ability to stay within voltage range and avoid "infrequent fluctuations." Nor has the Company provided pilot evidence to support that circuits enabled with CVR have the ability to effectively accommodate customer generation such as solar and wind without impacting the CVR scheme. In addition, the Company has not provided evidence showing that the substation and circuit upgrades such as DSCADA, regulator controllers, ADMS and ESME will communicate on the same platform with existing equipment such as smart meters and the electric GIS system while optimizing the potential of each investment to meet the CVR program's objective. Although other electric utility companies within the country have implemented CVR and could likely serve as a resource for lessons learned for the deployment, each Company's CVR program will likely have unique and different CVR objectives. *These differences make each individual Company's pilot program findings vital to the success of the full-scale program*.[387]

In his rebuttal testimony, Mr. Ortiz explained the company's plan to keep its system within voltage range, testifying that "[I]f frequent fluctuation voltage violations occur, the Company will take corrective action to resolve the issue." He testified that the pilot

[386] See 8 Tr 1543. Mr. Ennis also testified that DR was not providing the reserve margin *per se*.
[387] See 9 Tr 2781-2782 (emphasis added).

circuits initially selected have voltage levels above the minimum threshold, and he cited the company's EDIIP in Exhibit A-118 in support of his testimony that the communications components of the installed equipment would be compatible.[388]

Explaining Staff's recommendation that the Commission approve the projected three-year capital costs for CVR, Staff's brief states in a footnote: "If the pilot programs do not produce projected MW reductions, Staff would want to revisit the program to evaluate whether it continues to have merit."[389] Staff also notes that the company agreed to provide Staff reporting as requested, although not necessary in the format requested by Staff.[390] Staff also asserts that Mr. Ortiz in his rebuttal testimony did not address Staff's concern about the impact of CVR on customer-owned generation, indicating that Staff would like this issue addressed in future reports.

SEIA argues that Consumers Energy's demand-side management programs are expected to deliver 1,391 ZRCs of reduction in 2023, while it actually added 120 ZRCs of demand-side resources from 2013 to 2016:

> To achieve its planned level of DSM, Consumers is going to need proper support, funding and execution to become a national leader in the deployment of DSM resources. Consumers' heavy reliance on DSM resources to meet its capacity needs introduces new risks that should be mitigated through complimentary strategies.[391]

The Attorney General does not object to the company proceeding with DR and EWR as long as they prove cost-effective, and as long as the company provides an evaluation in its next IRP.[392] The Attorney General expressly indicates it does not object to the CVR proposal because the projected savings appear reasonable relative to

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[388] See 8 Tr 1637-1638.
[389] See Staff brief, page 40 at n8.
[390] See Staff brief, pages 88-89.
[391] See SEIA brief, pages 9-10.
[392] See Attorney General brief, pages 5-7.

the cost.[393] Addressing EWR, Mr. Coppola expressed a concern that it could be more expensive than supply-side resources. In his rebuttal, Mr. Troyer agreed that the company should pursue supply-side resources if EWR is more expensive.[394] The Attorney General's brief reiterates a concern with the cost but does not object to continuation of the EWR program in the IRP as long as it is cost-effective[395].

ABATE's briefs reflect a continuing concern with the level of DR in the company's IRP.[396] In its reply brief, it argues:

> ABATE has been a long-time advocate for increased access to Demand Response ("DR") programs but is concerned with how filling Consumers' entire reserve margin resources ("RMR") with DR resources may impact costs. Consumers sidesteps this concern by stating that it does not allocate the planned amount of DR or any other resource to Consumers' RMR. (Consumers' Initial Br, p 140.) Consumers' argument ignores the reality that it maintains a bid stack, which includes DR. Owned generation and other capacity resources are at the "bottom" of the bid stack, meaning that Consumers looks to deploy these resources ahead of DR because they are readily available. However, in the event that generation is unavailable (i.e., scheduled or forced outages or lack of sunlight), Consumers will have no choice but to rely on the DR resources that are at the "top" of the bid stack. So, the loss of any generation will result in the deployment of DR. It logically follows that Consumers will deploy DR more frequently and for longer durations.[397]

Additionally, it argues:

> The Commission should be skeptical about authorizing an IRP that relies so heavily on DR resources – especially because Consumers may become the first utility in the nation to use DR to provide the entirety (and more) of its RMR. Given the novelty of Consumers' approach, it is disconcerting that Consumers has not conducted an analysis of the potential frequency and duration of DR curtailments following the approval of its IRP. Therefore, the Commission should refrain from approving the IRM without a showing from Consumers that it can maintain reliability and quality of service while completely relying on DR with its current program

[393] See Attorney General brief, page 7.
[394] See 8 Tr 1284.
[395] See Attorney General brief, page 7.
[396] See ABATE initial brief, pages 16-17.
[397] See ABATE reply brief, page 5.

> interruption limits to provide over 100% of its RMR. Without the proper assurances, Consumers' ambitious plan may end up being a very costly experiment. Given the ramifications, the Commission should require Consumers to conduct a thorough investigation into how reliability and quality of service may be impacted by its unparalleled reliance on DR and other soft resources.[398]

Consumers Energy addressed Mr. Lucas's concern and Staff's concern with the ambitious goals in its DR plan in its brief, arguing that neither Mr. Lucas nor Ms. Smith "provided a basis to conclude that the Company cannot achieve the targeted 1,250 MW reduction through DR as reflected in the PCA."[399] Citing Mr. Fratto's testimony and Mr. Ennis's rebuttal testimony, Consumers Energy states that it "looks forward to working with Staff and others to evaluate the ramp-up timeframe in the next IRP."[400] Consumers Energy also relied on Mr. Ennis's rebuttal testimony as quoted above in responding to ABATE, stating that based on current programs and the continuation of their limits, "participating customers will not experience greater frequency and duration of interruptions." [401]

Based on a review of the record, the ALJ finds that the company's DR targets are ambitious but does not find a basis to reject the company's plan due to its reliance on demand-side resources generally. Regarding its DR program, it is difficult to fault the company for relying on the statewide study of DR potential, also reviewed by an independent consultant to adapt the study results for Consumers Energy. In addition, in reaching this finding, the ALJ notes that as part of the company's plan and consistent with prior Commission orders, the company's demand response programs will be subject to ongoing Commission review. The ALJ considers Consumers Energy's

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[398] See ABATE reply brief, page 6.
[399] See Consumers Energy brief, page 163.
[400] See Consumers Energy's brief, pages 163-164.
[401] See Consumers Energy brief, pages 165-166.

representations that it will not increase the frequency and duration of customer interruptions to be a part of its plan, and thus concludes that Consumers Energy will need additional approval to modify its DR programs, rather than approvals granted in this case.

Regarding the company's CVR program, however, the ALJ finds that the PCA's reliance on CVR is premature and should not be approved until the company's next IRP, when the results of the ongoing pilot program can be reviewed.

4. Solar Generation

The company's PCA calls for 425 MW of solar generation by 2023, and 2,275 MW by 2030.[402] Regarding the solar component of the IRP, Mr. Coppola expressed a concern that: "[S]olar generation is not controlled by the Company, it only occurs when the sun shines which varies with seasons, cloud cover and certainly is not available at night or in the darkness." [403] He testified that because MISO looks at capacity factors based on generation during the summer months between 3:00 and 5:00 p.m., "in reality the Company may not have sufficient resources to meet demand in the middle of the winter."[404] Mr. Coppola expressed a concern that land resources in Michigan would not be adequate to support the solar capacity in the plan.[405] He also expressed a concern that the projected cost declines would not materialize.[406] He acknowledged Ms. Walz's testimony that the company's modular approach provides flexibility.[407] He did not recommend that the company's IRP be rejected, but recommended:

[402] See Clark, 7 Tr 908.
[403] See 8 Tr 2366.
[404] See 8 Tr 2367.
[405] See 8 Tr 2368.
[406] See 8 Tr 2369.
[407] See 8 Tr 2369.

> I recommend that the Company, in its future IRPs, continue to closely monitor and perhaps reassess its strategy of relying so heavily on solar and wind generation for two main reasons. One, the reliability factor and the inability for these resources to provide consistent power supply, particularly during winter peak demand periods. Two, the assumption that solar costs can decrease by as much as 35% needs to be revisited and the portfolio modeling should be done conservatively on the assumption that that capital costs will be flat to rising in the future.[408]

Mr. Pollock also expressed a concern regarding the potential cost of solar energy, questioning whether technological improvements would materialize at a commercial scale, or provide a cost advantage over technological advances in fossil fuel generation.[409] He moderated his concern by acknowledging that the company can protect customers from this and certain other risks he identified through reliance on competitive bidding, with performance guarantees.[410]

Mr. Harlow testified that Staff found the company's reliance on IHS Markit data for solar energy to be reasonable. He testified that Staff does have a concern that MISO may reduce its capacity credit for solar energy, also citing Ms. Simpson's testimony.[411]

Consumers Energy presented rebuttal testimony as described above in section III, including testimony from Ms. Walz, Mr. Blumenstock, and Mr. Thomas. Mr. Blumenstock testified that Consumers Energy's PCA meets the MISO resource adequacy requirements in every year, winter demand is typically much less than summer peaks, and Consumers Energy has been able to import energy reliably from the MISO market. He also testified that the company may be able to use Ludington as a storage asset to generate during periods when renewable resources are not

[408] See 8 Tr 2376.
[409] See 8 Tr 2112.
[410] See 8 Tr 2132.
[411] See 9 Tr 2713.

operating.[412] He also noted that changes in underlying assumptions are always a risk and testified that if MISO reduces its capacity credit for solar energy, Consumers Energy will factor the credit into its next IRP and adjust accordingly. Ms. Walz explained that the capacity credit is used to meet the PRMR, while energy requirements in every hour of the year are net by a combination of supply-side and demand-side resources as well as MISO market purchases.[413] Mr. Thomas also addressed Mr. Coppola's concerns regarding available land and other siting concerns.

Consistent with his concern with the company's reliance on demand-side resources, Mr. Lucas recommended that Consumers Energy advance its purchase of solar capacity. In part Mr. Lucas based his concern on his recommendation that Karn Units 1 and 2 retire in 2021 rather than 2023. Ms. Walz recommended against this proposal.

In its brief, Staff agrees with Consumers Energy that the plan's flexibility naturally mitigates concerns about economic and reliability risk and argues that the plan can be closely monitored in future IRP filings, as recommended by Staff and by Mr. Coppola.[414] The ALJ agrees with Staff's analysis.

5. Capacity Surplus

Consumers Energy characterizes the PPA as modular because it plans to add capacity annually. Mr. Blumenstock reviewed the company's capacity position in a series of charts in his direct testimony. He testified:

> The Company's capacity position achieves a significant surplus in the late 2020s, and again to a lesser extent in the late 2030s, as the Company

[412] See 6 Tr 279. Mr. Blumenstock also took issue with Mr. Coppola's description of MISO's capacity factor calculation for solar generation, but the distinction is not significant to Mr. Coppola's contentions.
[413] See 6 Tr 507-508.
[414] See Staff brief, page 83.

> builds its resource portfolio in preparation for the capacity losses from terminating or retiring supply resources. This surplus, particularly in the late 2020s, gives the Company flexibility to further evolve its resource portfolio, such as retiring existing generating units before they reach their design lives. The surplus also serves as a prudent hedge against potential execution and delivery risks with adding significant amounts of DR and solar resources.[415]

Mr. Torrey testified:

> This approach-as opposed to building a large baseload generating station-will allow the Company to be nimbler in its capacity planning and resource procurement activities. The Company will be able to take advantage of declining technology costs, new technologies, and changes in load. This scalable model allows for closer correlation of demand and supply in small increments over time, minimizing the potential for surplus capacity paid for by Consumers Energy's customers.[416]

The Attorney General and ABATE also raise concerns that Consumers Energy's IRP builds in a capacity surplus that is not necessary. Mr. Pollock presented a chart at 8 Tr 2124 (Table 4) to show surplus capacity with and without the Karn Units beginning in 2023. Mr. Coppola presented a similar chart at 8 Tr 2371 (Figure 5), showing the level of surplus over the period 2020 to 2030. Mr. Coppola recommended that in future IRPs, the company make a more concerted effort to reduce levels of surplus capacity.

Mr. Blumenstock responded in his rebuttal, reiterating his earlier-expressed view that there is flexibility in the company's plans: "As the Company approaches and proceeds through the period in which, unaddressed, a capacity surplus develops, the Company will analyze options such as terminating the MCV PPA in 2025 or retiring generating units before they reach their end of design life."[417] Dr. Woychick presented rebuttal addressing Mr. Coppola's testimony, characterizing his concern with a capacity

[415] See 6 Tr 256.
[416] See 8 Tr 1467.
[417] See 6 Tr 278.

surplus as contradictory to his concern regarding the reliability of variable resources.[418] He emphasized the modular nature of the company's plan:

> The basic logic and the purposes of the integrated resource plan are to 1) balance the full set of resources, including energy, capacity, and voltage needs, 2) integrate all resources, including demand-side resources, with loads, and 3) directly enable flexible planning and operational responses over time to manage risks. Consumers Energy over time seeks to balance the use and withdrawal of resources, new resource procurement, and adjustments to short-term operations that are needed for reliability and power quality. This requires some periods in which the capacity provided by flexible renewable resources coming on line is in excess of forecasted capacity needs. This capacity surplus is then eliminated over time as resources are taken offline. Consumer Energy's design provides a resource plan that both accommodates variable energy resources and remains flexible over time, to ensure reliability and low cost.[419]

Consumers Energy emphasizes a need to account for the timing of development and construction in the solar build out, and contends the potential surpluses provide added flexibility. It also argues that its modeling shows savings of $0.5 billion to $2 billion over an all-market-purchase strategy.[420] The ALJ does not find a basis to reject the company's plan due to the surpluses associated with the solar ramp-up, given the flexibility built into the company's plan.

6. <u>MCV</u>

Consumers Energy's PCA reflects the company's PPA with MCV extended to 2030. In addition to MCV's argument that this plan constitutes a constructive contract extension that is legally binding on Consumers Energy, an argument that is not addressed in this PFD, MCV and ABATE argue that the Commission needs to consider the MCV as an available resource following the projected 2030 termination date of the

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[418] See 8 Tr 2345.
[419] See 8 tr 2345.
[420] See Consumers Energy reply brief, pages 18-20, 76-77.

PPA.[421] GLREA also argues that the Commission should address the status of the PPA.

In his rebuttal testimony, Mr. Blumenstock testified that due to the contract termination, the MCV cannot be considered a resource in 2030.[422] Ms. Walz testified that MCV will still be considered part of the "existing owned nonrewable" supply that would be available through the MISO market.[423] Ms. Walz uses this to show that the addition of renewable energy will not reduce the dispatch of the company's coal units or MCV. Consumers Energy also notes that MCV can submit proposals to the Commission as part of the IRP process.[424] GLREA's arguments relate primarily to the capacity need and avoided cost issues related to PURPA and the company's proposed FCM, which are discussed below.

The ALJ finds no basis to reject Consumers Energy's plan based on the potential availability of MCV as a resource after 2030.

7. Electric Vehicle Growth

In forecasting the baseline energy and demand requirements, Mr. Breuring did not forecast electric vehicle growth, and contended there is insufficient information to project an increase.[425] Mr. Lucas took issue with company's forecast, comparing it to the EIA AEO 2018 forecast for Michigan, and concluding that AEO projects a six-fold increase in EV energy sales by 2030, while Consumers Energy projects a reduction between 2018 and 2022, before EV sales increase somewhat through 2030.[426] He

[421] See Pollock, 2125-2126; Medine, 9 Tr 2916-2918.
[422] See 6 Tr 275.
[423] See 6 Tr 500-501.
[424] See Consumers Energy's reply brief, pages 20-25.
[425] See 8 Tr 1654, 1663.
[426] See 8 Tr 1961-1962.

testified that electric vehicle sales comprise almost 2% of total sales in the AEO forecast for 2030, while they comprise less than one-hundredth of 1% (0.007%) in Consumers Energy's forecast. He also testified that other industry analyses support the AEO projection. SEIA argues this forecast deficiency calls into question the company's capacity need forecast.[427]

SEIA also questions the company's DSM targets in comparison to the AEO forecast, but as Mr. Ortiz and Mr. Ykimoff testified, the company is proposing a level of effort to attain its DSM targets that would not be reflected in that projection.[428]

In Consumers Energy's recent rate case, the Commission approved a pilot foundational infrastructure program for Consumers Energy "intended to support the growing electric vehicle (EV) market in the utility's service territory."[429] The Commission explained:

> The Commission finds that it is appropriate to incentivize the utility, at this stage of EV adoption, to think proactively and innovatively on this issue. Consumers' proposal is grounded in its desire to avoid reactive and expensive capital infrastructure investments in the future when EV adoption reaches the point where the utility must provide incremental generation, distribution, and transmission support. EV adoption is in its infancy in Michigan, but all indicators point to continued expansion. This expansion may result in increased load, but it may also result in more efficient use of excess generation and distribution capacity during off-peak hours to the benefit of all customers, as well as provide new modes of storage. None of this will materialize until EV chargers become more prevalent and accessible.[430]

The ALJ finds that Consumers Energy's forecast is deficient in failing to recognize projected increases in electric vehicles but lacks a basis on this record to conclude that the deficiency is material to the company's plan. As discussed below, a

[427] See SEIA brief, pages 8-9.
[428] See Breuring, 8 Tr 1664.
[429] See January 9, 2019 order, Case No. U-20134, page 3.
[430] See January 9, 2019 order, Case No. U-20134, page 8.

well-regulated competitive bidding program should provide an opportunity for the Commission to make regular evaluations of the company's capacity need in advance of the solicitations.

VI.

MEDIUM 4 RETIREMENT ANALYSIS

A key element of the company's plan, and an issue the Commission singled out for particularized analysis, is the determination whether any of the company's "Medium 4" coal plants, Karn Units 1 and 2 and Campbell Units 1 and 2, should be retired prior to their originally scheduled retirement dates of 2031. In prior cases, Consumers Energy has presented analyses of the potential early retirement of these units that the company has found inconclusive. Most recently, in Case No. U-18322, the Commission directed the company to present a retirement analysis in this case. As reviewed in section III above, Mr. Blumenstock, Mr. Clark, Mr. Kapala, and Ms. Walz testified in support of the company's analysis, and Mr. Adkins presented the results of his firm's independent analysis. As Mr. Blumenstock explained, Consumers Energy is proposing to retire Karn Units 1 and 2 in 2023 and has included in its PCA replacement of the capacity costs. The company is also seeking a regulatory asset for the undepreciated plant balances of these units as of its retirement date in 2023, as well as for the net salvage costs, which include the cost of removal. The company's request for a regulatory asset is discussed below in section X.

This section addresses both concerns that the company has failed to establish that early retirement is a reasonable and prudent option, as well as the contentions by that the company's analysis underestimates the benefits of early retirement for the units.

The retirement of Karn Units 1 and 2 is discussed in section A below, and the retirement of Campbell Units 1 and 2 is discussed in section B.

A. Karn Units

Mr. Blumenstock testified that the company's analysis indicates it is nearly break-even for retiring Karn Units 1 and 2 in 2023, with replacement capacity from solar and demand-side resources. He explained that the company's retirement decision is based on consideration of other planning objectives, including diversifying retirement dates away from significant retirements slated for the early 2030s, minimizing execution risk of replacing a large amount of capacity in 2031, and the results of the considerations required in the Commission's mandated retirement analysis. [431]

Only the Attorney General, ABATE, and MCV disputed Consumers Energy's proposed early retirement of Karn Units 1 and 2. Mr. Coppola focused on the company's analysis showing potential benefits but also potential costs from retirement, and testified that the potential for the company to lower its environmental compliance costs would make continuing to operate the plants more attractive. He viewed the non-financial considerations identified by Mr. Blumenstock as secondary.[432] In its reply brief, Consumers Energy relies on Mr. Clark's direct testimony to show that the potential environmental cost savings would not make a material difference in the analysis.

Mr. Pollock first focused on the magnitude of the unrecovered plant balances, and also testified that the potential benefits of retirement depend on whether the company's solar cost projections are realistic, and also testified that just as technological development can lead solar generation costs to fall, technological

[431] See 6 Tr 249-250.
[432] See 8 Tr 2378-2382.

development can improve non-renewable generating plant efficiency.[433] ABATE argues that if the Commission approves the 2023 retirement of the Karn Units, it should deny Consumers Energy a return on the undepreciated plant balance.[434] Mr. Kapala presented rebuttal testimony disputing Mr. Pollock's suggestion that technological improvements might increase the efficiency of the units and make them more cost-effective as speculative.[435] Mr. Clark also addressed Mr. Pollock's concern with the unrecovered costs, testifying that the economic analysis is designed to show whether customers would be better off even though they continue to pay the "stranded costs." [436]

Ms. Medine testified that the company's analysis did not consider potentially reduced coal transportation costs and contended Consumers Energy had not used the EIA AEO gas price forecast. Mr. Clark testified in rebuttal, characterizing the rail cost savings as speculative and testifying that the company did consider the EIA AEO gas price forecast, citing Exhibit A-20.[437] Consumers Energy maintains, as Mr. Blumenstock testified, that the economics for retirement or continued operation are not overly compelling, but believes the significant economic investment otherwise required in 2023 justifies the retirement decision.[438] Consumers Energy responded to ABATE's arguments

MEC-NRDC-SC argues that the units should retire not later than 2023. Staff endorses the company's analysis. Mr. Heidemann explained Staff's review of the company's analysis, discussing several of the different scenarios and sensitivities. He

[433] See 8 Tr 2112
[434] See ABATE brief, pages 2-4.
[435] See 8 Tr 1172-1173.
[436] See 7 Tr 959-960.
[437] See 7 Tr 956-957.
[438] See Consumers Energy reply brief, pages 38-39.

testified that all model runs show savings when Consumers Energy's gas price is used with a capacity replacement cost of 75% of CONE. He presented some of the company's modeling results, and performed additional modeling to show the results of assuming all replacement capacity comes from DR. Mr. Heidemann testified that the decision to retire the units is not a high-risk decision. He also testified that although additional savings are shown for a 2021 retirement date, "the Company must balance the needs of the workforce and the communities that serve Karn Units 1&2 when those units are retired. The 2023 retirement date allows the Company additional time to transition when the units retire."[439] He also reviewed Mr. Adkins's analysis.

SEIA argues that the ratepayers would benefit from retiring the Karn Units in 2021 rather than 2023. Mr. Lucas testified that retiring the Karn Units in 2021 rather than 2023 would save $77.8 million. Mr. Kapala addressed Mr. Lucas's analysis in his rebuttal testimony, taking issue with several of his assumptions. In its brief, SEIA acknowledges that Mr. Lucas overstated the savings attributable to the earlier retirement date. In its briefs, Consumers Energy maintains that retiring the units earlier than 2023 is not feasible.

The ALJ finds Staff's analysis sufficient to conclude that it is reasonable for Consumers Energy to plan to retire the Karn Units 1 and 2 in 2023.

B. Campbell Units

While MEC-NRDC-SC argue that the company failed to seriously consider the retirement of the Karn Units in 2021,[440] based on a belief that a four-year transition would be required before any retirement, MEC-NRDC-SC devote the bulk of their brief

[439] See 9 Tr 2685-2686.
[440] MEC-NRDC-SC cite Kapala's rebuttal at 8 Tr 1163, 1190. See MEC-NRDC-SC brief at page 30.

to arguing that Consumers Energy failed to properly analyze the early retirement of the Campbell Units, and that a reasonable analysis would show it is economic to retire both units, or Campbell 2 alone, by 2023.[441] MEC-NRDC-SC argue that the company's modeling is deeply flawed and deficient.

MEC-NRDC-SC claim that Consumers Energy built into its analysis an assumption that not more than 2 units would retire before 2031, characterizing this as a 2-unit cap. They argue that the company's modeling did not consider the economics of retiring all four units.[442] MEC-NRDC-SC acknowledge Mr. Clark's claim in rebuttal that the NPV results for retiring Karn Units 1 and 2 and Campbell Units 1 and 2 are not additive. They argue that unreasonable assumptions in modeling skewed the results. MEC-NRDC-SC object that Consumers Energy did not consider any alternate retirement dates for the Campbell Units between 2023 and 2031. MEC-NRDC-SC argue that in stakeholder meetings held as part of the company's planning process, they argued for a more extensive analysis of retirement dates.[443]

MEC-NRDC-SC argue that Consumers Energy's analysis relied on two key erroneous assumptions. The first of these assumptions is that non-environmental capital expenses at Campbell 1 and 2 would be higher in 2018 and 2019, under a 2023 retirement scenario than 2031. They cite Mr. Comings's testimony at 8 Tr 1847, considering this to bias the company's analysis, in contrast to Mr. Kapala's rebuttal testimony at 8 Tr 1167, contending that the additional capital expenditures under the retirement scenario are intended to buttress the reliability of the units. MEC-NRDC-SC

[441] See MEC-NRDC-SC brief at pages 27-82.
[442] See MEC-NRDC-SC brief, pages 28.-29, citing Clark at 7 Tr 883-886; Walz at 6 Tr 618.
[443] See MEC-NRDC-SC brief, page 31, and n123.

argue that Mr. Kapala could not defend this contention under cross-examination,[444] disputing his assertion that spending "pulled up" or advanced, because both budgets were developed at the same time.

The second assumption they challenge is Consumers Energy's assumption that the capital and major maintenance expenses for Campbell Units 1 and 2, were they to operate through 2031, would be lower than the company usually projected in rate cases. MEC-NRDC-SC have a comparison of the capital expense budget from U-18322 to the budget the company used in its retirement analysis in this case, shown in Figure 5 at 8 Tr 1847. They also cite Exhibits MEC-62(confidential), the 2017 assumption book, and Exhibit MEC-61(confidential), the 2018 IRP assumptions book.[445] They argue that in cross-examination, Mr. Kapala did not deny the accuracy of Figure 5. They argue that in discovery, Exhibit MEC-86, the company provided only a cursory response to questions about changes in the assumptions, and in its discovery response in Exhibit MEC-87, stated there were no documents explaining the changes.[446]

MEC-NRDC-SC also argue that Consumers Energy's assumptions about Campbell 1 and 2 operations are optimistic. They focus on the heat rate assumptions, which reflect the efficiency of the plant. They argue that the heat rates are now projected to be lower than forecast in the company's 2017 analysis. MEC-NRDC-SC compare the heat rates as shown in Exhibits MEC-61(confidential) and MEC-62 (confidential). MEC-NRDC-SC argue that it asked Consumers Energy about this change, in Exhibit MEC-86, and the company did not support its revised projection. And MEC-NRDC-SC argue that the company's response to discovery in Exhibit MEC-87 and

[444] See 8 Tr 1196, 1197-1198, 1198-1199.
[445] See 8 Tr 1845-1846.
[446] See MEC-NRDC-SC brief, pages 37-38.

Mr. Kapala's testimony at 8 Tr 1221 state that the company has no documents supporting the change in assumption. [447]

MEC-NRDC-SC also take issue with the company's analysis claiming it uses a capacity price projection of 75% of CONE that is too high, higher than the 34% CONE that Ms. Haugh used. They cite Mr. Comings's testimony that it is unlikely future capacity prices will remain at 75% of CONE through the planning period.[448] At page 44 of their brief, MEC-NRDC-SC take issue with Mr. Clark's testimony that the retirement of Karn Units 1 and 2 would drive up capacity prices. They contend that Consumers Energy has used a uniform capacity price of 75% of CONE throughout the period of its analysis, 2019-2040.

MEC-NRDC-SC also argue that Consumers Energy cannot rely on Mr. Adkins's analysis of interim retirement dates because the company did not rely on his analysis in making their decision, and because his analysis is not credible.[449] In taking issue with Mr. Adkins's analysis, MEC-NRDC-SC argue it is not credible because: 1) his modeling was inconsistent with Consumers Energy's modeling in ways that skewed the results to 2031 retirement; and 2) because he ended his analysis in 2032 and because he looked only at gas plants as replacement resources.[450] They also identify several other concerns, including a concern that he did not disclose in his direct testimony that his modeling showed the least cost option for the Campbell Units would be retiring them both in 2029. [451] More technical objections include his assumption that the Karn Units

[447] See MEC-NRDC-SC brief at page 40.
[448] See 8 Tr 1840. See MEC-NRDC-SC brief at pages 41-43.
[449] See MEC-NRDC-SC at pages 32-33.
[450] See MEC-NRDC-SC at pages 45-54.
[451] See Adkins, 6 Tr 334.

would retire in 2021, that he did not properly correct for the coal price error or fixed cost assumptions.

MEC-NRDC-SC also disagree with Consumers Energy regarding potential replacement portfolios to use in the analysis. They argue that Consumers Energy failed to consider wind as a replacement resource beginning in 2023, and wrongly dismiss consideration of bilateral agreements are not supported. [452] MEC-NRDC-SC address Ms. Walz's claims that Mr. Evans's modeling had two errors, primarily relating to the PTC/ITC timing. MEC-NRDC-SC claim that the modeling results Ms. Walz presented in in rebuttal omitted key price sensitivities, relying on Consumers Energy's gas forecast, and two capacity price forecasts, one of which was 75% CONE.

MEC-NRDC-SC argue that Mr. Comings's analysis showed savings from retirement in 2023 in 28 of 30 model results, and argue that at the very least, retirement of Campbell 2 should be recommended in 2023, with $34 million to $708 million savings in 30/30 runs. They also address Mr. Kapala's claim that separating Campbell 1 and 2 would add additional O&M costs, contending that Mr. Kapala acknowledged he had no study to back up his claim, citing 8 Tr 1208-1209. They also argue that his claim of additional "isolation costs" is not credible because Consumers Energy did not use in its analysis, citing 8 Tr 1211. MEC-NRDC-SC argue that at a minimum, the company should be required to reevaluate retirement next year.

Consumers Energy argues that a retirement date of 2021 would not be feasible given a need for a four-year transition plan. Consumers Energy argues that it would not be in the best interest of customers to retire all four plants at once. Consumers Energy also argues that the economics of retiring any of the units was not overly compelling. It

[452] See brief, pages 54-69, 72-74.

argues that the savings associated with Karn Units 1 and 2 retiring ($54 million) cannot be added to the costs of Campbell Units 1 and 2 because the results of the Company analysis are dependent on the specific capacity replacement options leveraged to replace the retiring capacity:

> The Company's Medium 4 Retirement Analysis shows that the additional 105 MW of capacity provided by Campbell Units 1 and 2 costs customers about $117 million NPV. 7 TR 952-953. The unfavorable economics associated with the retirement of Campbell Units 1 and 2 would therefore only worsen if all Medium 4 units were retired at once. 7 TR 952. If Karn Units 1 and 2 were retired in addition to Campbell Units 1 and 2 in 2023, it would have the effect of retiring an additional 515 MW and would therefore drive up reliance on higher cost capacity resources and result in significant costs to customers. 7 TR 953.[453]

Consumers Energy also argues that there was no need to consider interim retirement dates between 2023 and 2031, given unique restrictions related to the payment terms of the Company's PPAs with Non-Utility Generators ("NUGs") and the date by which significant environmental investments must be made. It argues that material environmental investments need to be made in 2023 and would not make those investments if the economics favored early retirement. It also relies on the sensitivities it conducted to show that even if the capital expense assumptions are lowered, the result does not support early retirement. Consumers Energy also relies on Mr. Adkins as an independent analyst.

Addressing MEC's argument that the capital and fixed O&M cost assumptions that Consumers Energy used in its modeling were unreasonable, Consumers Energy defended its assumption of front-loaded capital costs under a 2023 retirement scenario, and disputed MEC's contentions that Mr. Kapala did not support the company's

[453] See Consumers Energy reply brief, page 48.

assumption.[454] It argues: "MEC's assertion that the Company intended to skew its results is an unsupported theory, based purely on speculation, and belied by the record evidence. Consumers Energy also objects to MEC's comparison of its capital expense and major maintenance expense projections to the expenses presented in Case No. U-28322, contending that the expense variations are merely updates.[455]

Regarding the improved performance projected for the Campbell Units, it also argues that MEC do not cite any record evidence that the Company cannot achieve reduced heat rates at Campbell Units 1 and 2 with the projected expenditures reflected in the IRP nor does it identify a single expenditure reduction that would inhibit the projected heat rates.

Consumers Energy also defends the capacity values it used its analysis, arguing that even though Ms. Haugh used capacity values at 34% of CONE, she testified that the company's use of 75% was reasonable. It also argues that its prior use of a lower value does not establish that the value it used is unreasonable:

> Pace Global's projection of capacity prices is fundamentally different from the Company's projection and does not discredit the Company's CONE assumption. The Company relies on the MISO calculated CONE, which represents the most that the Company would pay for capacity under current capacity market constructs, and Pace Global relies on an estimate of CONE which is developed in-house.[456]

Further, it argues, in developing its CONE value, Pace Global relied on significantly different assumptions related to asset life, reflected new corporate tax rates that became effective after the IRP assumptions were input into the model, and relied on an

[454] See Consumers Energy brief, pages 180-182, reply brief, page 50-51, also citing Kapala at 8 Tr 1226.
[455] See Consumers Energy brief, pages 180- 181, reply brief, page 52, citing Kapala, 8 TR 1166.
[456] See Consumers Energy reply brief, page 54.

independent forecast of MISO's reserve margins, which may be different when considering zone specific resources. Consumers Energy also argues:

> Furthermore, while the Company has utilized different CONE values in the past, such as in the analysis in Case No. U-18322, the Company had confidence at the time of those analyses that sufficient lower cost resources could be utilized to meet the need created by retiring two of the Medium 4 units. 7 TR 950. The confidence that sufficient lower cost resources could be utilized came from the Company's recent work on the Palisades PPA Buyout Replacement Plan. 7 TR 950-951. However, the Company's modeling in this case made clear that retirement of additional capacity resources would require the addition of less cost-effective new resources.[457]

Consumers Energy contends that the MISO PRA results should not be relied upon as representative of long-term capacity replacement costs because they represent "only a snapshot in time" and occurred in a period where continued operation of the Palisades and Karn Units 1 and 2 existed.[458]

In support of Mr. Adkins's analysis, Consumers Energy argues that Mr. Adkins's credentials and independence support his analysis. Consumers Energy disputes that his use of a natural gas generating unit as a replacement for the plants skewed his analysis, arguing that he used the table of resources at 6 Tr 322, and that the natural gas units were the least cost technologies in terms of their marginal cost of firm capacity. Consumers Energy argues that since his analysis was independent, he could not use Consumers Energy's actual replacement plan.

Regarding his use of uncorrected coal prices, Consumers Energy argues that Mr. Adkins ultimately made the corrections in Exhibits A-100 and A-102.[459] The company also contends that there is no merit to MEC's criticism that Mr. Adkins should have

[457] See Consumers Energy reply brief, page 55.
[458] See Consumers Energy reply brief, page 56, citing 7 Tr 951.
[459] See Consumers Energy reply brief, page 58.

modeled projected costs and revenues through the 2040, contending Mr. Adkins explained that a 2040 time horizon would not change his retirement analysis, because all of the Medium 4 units will be retired by 2032 and replaced with new resources.

Addressing MEC's claim that Mr. Adkins's analysis of the Campbell unit retirements assumed the Karn Units retired in 2021, Consumers Energy argues that is not correct:

> If Mr. Adkins had not evaluated the potential retirement of Karn Units 1 and 2 in 2023, it would not be possible to compare the savings achieved by retiring Karn Units 1 and 2 in 2021 to 2023.[460]

Consumers Energy also cites Staff's brief in support of its claim that MEC's was replete with flaws. It argues the flaws in MEC's retirement analysis included: the overstatement of purported savings related to unit retirement; modeling runs which failed to account for network upgrade costs; the failure to properly update capital investments and O&M expenses in certain modeling runs; and the incorrect application of PTCs and ITCs. MEC's attack of Mr. Adkins' modeling is not credible given the numerous flaws in MEC's own modeling.

Consumers Energy further disputes MEC's argument that the company should have considered wind as an available resource. It explains that it ruled out additional Michigan wind because it already has a 550 MW wind expansion planned for 2021, that local moratoriums on wind construction and lower capacity factors in the central part of the state mean additional wind in Michigan is not feasible of cost effective, and that production tax credits are expiring:

> While MEC points to the Company's recent wind RFPs in 2017 and 2018 as support for the use of in state wind resources as replacement

[460] See Consumers Energy reply brief, page 59.

> resources for Campbell Units 1 and 2 (MEC's Initial Brief, pages 58-63), this argument was based on technical bid forms in response to the Company's RFP. This information may be deceptive as the bid forms were prepared and submitted by developers. 8 TR 1442. While the Company has no reason to offhandedly disagree with information contained on the technical bids, these forms provide initial information about a project. And after further evaluation occurs, these forms can contain inaccuracies. This is, in part, due to changes that occur over time since the bid form was completed and difference in interpretations related to the requested information. 8 TR 1442. For this reason, projects submitted are subject to a due diligence review by the Company.[461]

And it explains that it ruled out out-of-state wind due to non-economic risks:

> Although the Strategist model selected 3.2 GW of out-of-state wind, the Company identified several non-economic risks with the expansion of wind in Iowa, including: (i) wind produced and sold in Iowa would provide no RECs necessary to comply with Act 342's REC portfolio standard; (ii) wind project development in Iowa provides no economic benefit in Michigan; (iii) the Company does not have experience working with local regulations, requirements, and communities in Iowa to develop and operate wind facilities; and (iv) the Company does not have experience with state regulatory bodies in Iowa. 6 TR 453. Company witness Clark also explained that the model selected out-of-state wind in 2023 because the energy value of the wind effectively buys down the cost of the capacity. 7 TR 923. Constructing 3.2 GW of out-of-state wind represents a high risk in a number of scenarios, including where energy prices do not materialize, energy cost spreads between in-state and out-of-state are greater than forecast, materially higher transmission costs are incurred to construct the wind, or greater capacity price separation between MISO Local Resource Zone ("LRZ") 7 ("LRZ7") and the zone where the out-of-state wind is constructed.[462]

Nor does Consumers Energy believe it should have considered the use of bilateral contracts, relying on Ms. Walz's testimony that MISO's local clearing requirement (LCR) limit the company's ability to rely on purchasing significant amounts of capacity from other zones.

> MEC's contention that the Company should rely on unspecified purchases of ZRCs also creates a risk of a determination that the Company has a capacity need that must be filled with PURPA contracts. 6 TR 526. The

[461] See Consumers Energy reply brief, pages 61-62.
[462] See Consumers Energy reply brief, pages 62-63, also citing 7 Tr 923.

> costs for long-term PURPA contracts would be potentially higher than the single-year purchase of ZRCs and could be incurred by customers for a contract term length of up to 25 years. 6 TR 526. MEC did not analyze the cost impact of this considerable risk to customers, and as such did not fully consider the economics of using market purchases in support of the retirement of the Campbell Units in 2023. 6 TR 527. It would not be appropriate to rely on market purchases, including bilateral contracts, as a replacement resource for the Campbell Units in 2023.[463]

Consumers Energy also raises other concerns with MEC-NRDC-SC's modeling. It contends the modeling should have used the company's assumed higher capital costs under a 2023 retirement assumption "to account for the full recovery of capital investments by the end of the operating life of the units," increasing the NPV of retirement for both units by $63 million and the NPV of retiring only Campbell unit 2 by $42 million. It also contends that the modeling should have reflected certain site-common O&M expenses reallocated to the remaining Campbell Units, increasing the NPV of retirement for both units by $17 million and the NPV of just Campbell unit 2 by $28 million:

> Making these corrections changes MEC's economic results to replace Campbell Units 1 and 2 in 2023 to vary from a potential increase in customer costs of $173 million NPV to a potential cost savings of $384 million NPV. 6 TR 519; Exhibit A-104 (STW-26), lines 9-10. Similarly, the economic results to replace just Campbell Unit 2 in 2023 are changed to vary from a potential cost increase of $2 million NPV to a potential cost savings of $371 million NPV. 6 TR 519; Exhibit A-105 (STW-27), lines 9-10.[464]

Consumers Energy also takes issue with MEC-NRDC-SC's modeling of replacement resources for the 2023 retirement scenarios, contending that the modeling overstated the PTCs and ITCs available for the wind and solar resources:

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[463] See Consumers Energy's reply brief, pages 65-66; also see reply brief, pages 70-71.
[464] See Consumers Energy reply brief, page 68.

> MEC's modeling recommended placing 800 MW of wind resources into service in 2023, which under current law would be expected to be eligible for a 40% PTC. 6 TR 519. However, MEC modeled costs that assumed PTC levels of 60% to 80%, which are more consistent with wind resources placed into service in 2021 or 2022, not 2023. 6 TR 519-520. This results in costs for the additional wind capacity that are $187 million NPV too low. 6 TR 520. MEC also modeled 400 MW of incremental solar in 2023 but assumes construction of those resources would begin in 2019 to receive 30% ITC. 6 TR 520. This faster ramp up of solar is not practical and correcting the ITC levels for the initial 400 MW of solar increases costs for the 2023 retirement of Campbell Units 1 and 2 by $8 million. 6 TR 520.[465]

Consumers Energy also objects to the assumptions in MEC-NRDC-SC's modeling of a market purchase portfolio to replace the Campbell unit capacity:

> In years where the MISO market region has minimal surplus capacity, purchases of capacity would be made possible by new capacity additions, and these capacity additions would be expected to result in a network upgrade cost. 6 TR 498. MEC's modeling did not include the approximately $54/kW network upgrade cost, which would result in an economic carrying charge of $31 million NPV for market purchases to replace Campbell Units 1 and 2 in 2023 and $11 million NPV for market purchases to replace Campbell Unit 2 in 2023. 6 TR 498. In addition, MEC's assumed ZRC cost of 56% of CONE is too low; the price of ZRCs is likely to increase to at least 75% of CONE. 6 TR 526. MEC's unreasonably low capacity price understates the purchase of ZRCs presented in Mr. Comings' surrebuttal testimony by $10 million for the retirement of Campbell Units 1 and 2 and by $4 million for the retirement of Campbell Unit 2. 6 TR 526.[466]

Addressing MEC's alternate recommendation regarding the retirement of Campbell unit 2 alone in 2023, Consumers Energy argues:

> As MEC notes in its Initial Brief, page 78, Company witness Kapala testified that separating Campbell Units 1 and 2 would result in increased O&M costs due to the loss of efficiencies that the Company gains by operating Campbell Units 1 and 2 as a single facility. While MEC states that Mr. Kapala's assertion was "largely unsupported" (*id.*), its argument does not square with the record in this case. No party rebutted or otherwise challenged Mr. Kapala's testimony that Campbell Units 1 and 2

[465] See Consumers Energy reply brief, pages 68-69.
[466] See Consumers Energy reply brief, page 71

> operate as a single facility, with a common staff, and share internal systems (e.g., fuel supply and water supply).[467]

Consumers Energy also makes clear it objects to conducting additional retirement analyses. It argues:

> At the outset, MEC's request for a new retirement analysis for Campbell Units 1 and 2 in 2019 should be rejected because it assumes that the Company's Medium 4 Retirement Analysis, as presented in this case, is somehow incomplete or deficient. That is not the case. As explained in the Company's Initial Brief, the Company's analysis established that it is in the customers' best interests to operate Campbell Units 1 and 2 until 2031, consistent with the design lives of those units. Therefore, no further analysis of the potential retirement of these units is required, particularly in 2019.

Consumers Energy also argues that MEC-NRDC-SC are relying on evidence not in the record by proposing that an additional study be conducted in 2019, contending that Mr. Comings's testimony did not explicitly propose that such an analysis would be conducted in 2019 and did not include the specific parameters provided in MEC's brief:

> The Michigan Administrative Procedures Act and the Michigan Constitution require decisions of administrative agencies, such as the Commission, to be based *exclusively* upon the record evidence entered onto the record in the case and any matters officially noticed. MCL 24.285; Const 1963, art VI, § 28. When a party violates administrative rules by arguing from information that is not contained in the record of the case, it is procedurally unfair to the other parties because it deprives them of an adequate opportunity to respond. As such, it also implicates federal and state constitutional standards of due process.[468]

Consumers Energy also argues a 2019 retirement analysis would be needlessly burdensome, requiring additional modeling. Consumers Energy states that it will agree to file an updated analysis in its next IRP, and that it will file its next IRP in three years if the Commission approves its IRP as filed, but "if the Company's IRP is modified, the

[467] See Consumers Energy reply brief, pages 71-72, citing Kapala, 8 Tr 1127, 1171-1172.
[468] See Consumers Energy reply brief, page 74.

Company reserves the right to file its next IRP consistent with the five-year schedule established pursuant to MCL 460.6t(20)."[469]

Staff endorses Consumers Energy's arguments, relying on Ms. Walz's testimony at 6 Tr 516-522 in arguing that MEC-NRDC-SC's analysis failed to account for network upgrade costs, failed to update capital costs to reflect the 2023 retirements would come on top of Karn unit 1 and 2 retirements, and the production tax credits were overstated.[470] Staff argues that the IRP modeling parameters will require the company to present a more holistic analysis of retirement of its generating units in its next IRP.

After the reviewing the record, the ALJ notes that the time limits in this case have particularly interfered with developing a comprehensive record on the potential retirement of the Campbell unites, notwithstanding the efforts of Consumers Energy and MEC-NRDC-SC to narrow the issues in dispute on the Medium 4 modeling, including their agreement to brief surrebuttal and sur-surrebuttal testimony. For the reasons discussed below, while the ALJ believes the question whether Campbell units 1 and 2, or Campbell unit 2 alone, could economically retire in 2023 will ultimately turn on the seeming infeasibility of retiring more than two of the Medium 4 units by that date.

Mr. Blumenstock explained the company's concerns that not more than two of the Medium 4 units can feasibly be retired by 2023:

> If Campbell Units 1 and 2 were retired simultaneously with Karn Units 1 and 2, there would be detrimental impact on supply portfolio balance, excessive remaining book balance, and a more significant customer rate impact. Additionally, retirement of the entire Medium 4 in the next 5-years would potentially require the Company to resort to generator additions, costly PPA(s), or costly capacity purchases since there would be insufficient time to ramp up demand-side management and solar

[469] See Consumers Energy reply brief, page 75, citing Blumenstock, 6 Tr 271.
[470] See Staff brief, page 31.

> resources. Therefore, Campbell Units 1 and 2 will be operated until the end of their design lives in 2031. Potential retirement of all Medium 4 units, which the Company does not support, would require the redevelopment of the PCA and the resources which the Company plans to rely on.[471]

Mr. Clark also testified to the difficulties associated with the retirement of an additional unit, explaining that capacity costs would be expected to increase, and that if both Karn and Campbell modeling produced savings, they would not be additive.[472] In addition, the company has non-economic and operational concerns as Mr. Kapala and Mr. Clark explained.[473] Mr. Kapala testified:

> As I stated there, the entire Campbell site has common fuel handling equipment, a tripper deck, and ventilation and heating equipment. If Campbell Units 1 and 2 are retired, that equipment would be retained but would need to be repowered from Campbell Unit 3. The structure housing Campbell Units 1 and 2 would remain in place and would therefore require ongoing maintenance. Additionally, Campbell Units 1 and 2 would not actually enter the cold and dark phase, and it would be difficult to pursue any redevelopment opportunities at the site to make up for the lost economic activity in the community when the units retire.[474]

Nevertheless, as MEC-NRDC-SC argue, some critical assumptions underlying the company's modeling are not well-supported, including the company's heat rate assumptions, which particularly for Campbell 2 vary without explanation between the 2017 assumption book in Exhibit MEC-62 and the 2018 assumption book in Exhibit MEC-61. Since the 2018 assumption book was prepared in June of 2018, it would have access to the 2017 actual heat rates, but the 2017 heat rate shown for Campbell 2 in Exhibit MEC-61 is higher than the 2017 value presented in Exhibit MEC-62, yet the

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[471] See 6 Tr 250.
[472] See 7 Tr 952-953.
[473] See 7 Tr 895; 8 Tr 1143-1154, 1170-1172.
[474] See 8 Tr 1170.

projected values for the remaining years are lower. Mr. Kapala acknowledged that no documents support the company's revised assumptions.[475]

Mr. Kapala's testimony about pulling forward capital expenditures in the event of a 2023 retirement scenario is also troubling.[476] Consumers Energy has presented no cogent reason why the non-environmental capital expense assumptions through 2023 in both the retirement and non-retirement case should differ.

In addition, the company's reliance on 75% of CONE as the capacity replacement cost, shown in Ms. Walz's rebuttal exhibits A-104 (for both Campbell units) and A-105 (for Campbell unit 2) is a key driver of different results. In his surrebuttal testimony, Mr. Comings presented revised modeling results that continue to show significant savings from retiring one or both units in 2023, with the biggest savings attributable to the retirement of Campbell unit 2.[477]

While Ms. Walz disputed Mr. Comings's revised modeling in his surrebuttal based on a disagreement over potential replacement resources, Ms. Walz testified:

> For a number of non-modeling and some non-economic reasons discussed in both 23 the Company's direct and rebuttal testimonies, the Company did not evaluate alternative build plans to fill capacity needs created by the early retirement of more than two of Karn 2 Units 1 and 2 and Campbell Units 1 and 2 (collectively, the "Medium 4"). As a result, a fully optimized model simulation was not performed by the Company for the early retirement of more than two of the Medium 4 coal units.[478]

While the concerns Mr. Blumenstock, Mr. Clark, and Mr. Kapala presented may well justify the company's decision not to retire more than the two Karn units in 2023, the ALJ recommends that the Commission call for a revised analysis to review the potential

[475] See 8 Tr 1220-1221.
[476] See 8 Tr 1194-1199
[477] See 8 Tr 1858-1862.
[478] 6 Tr 529-530.

savings associated with retiring Campbell unit 2, with updated and documented heat rate assumptions, with parallel non-environmental capital spending, and with a model that reflects the company's assessment of its best replacement plan.

While one option is to require the company to present an updated analysis in a future rate or IRP case, the only opportunity to avoid the environmental capital expenditures that made 2023 a focus of the analysis is in the near term, and the ALJ notes that despite their differences, Consumers Energy and MEC-NRDC-SC witnesses made significant progress narrowing modeling disputes throughout this case. Had additional time been available to the parties, the ALJ believes a consensus as to the expected costs or savings associated with each of the key modeling assumptions would be available for the Commission's review. Attempting to resolve the modeling issues now should provide guidance for future analysis, since as Staff notes, the company will be required to provide another analysis in its next IRP.

VII.

COMPETITIVE SOLICITATION

Another key element of the company's IRP is its plan to obtain needed capacity through a competitive solicitation. The company considers this part of its "lean and modular" strategy and has indicated that it may meet its capacity needs not otherwise addressed through demand-side resources with solar energy resources obtained through PPAs. Mr. Troyer was the company's principal witness presenting the company's competitive bidding procedures. His rebuttal exhibit, Exhibit A-107, depicts the process from the preparation phase to the approval phase. As reviewed in section

III above, Consumers Energy proposes to retain an independent evaluator, so that the company can also bid, and intends to seek FERC approval for its affiliates to bid as well.

While many of the parties are generally laudatory of the company's goals and the use of competitive solicitations, as discussed above, the same parties also express concerns with the transparency and fairness of the process, noting that Consumers Energy intends that its own self-build proposals as well as affiliate proposals will be considered along with third-party bids. Several parties focus in part on whether the company's plans are consistent with its obligations to QFs under PURPA, and also on its proposed Financial Compensation Mechanism, both of which are discussed separately below. Putting aside the FCM and the QF concerns, several parties raise concerns with the company's proposed competitive solicitation to meet its future capacity needs.

Many witnesses stressed the need for the process to fair and transparent. Mr. Coppola recommended that the proposals not exclude any resource type, and he testified:

> Although the RFP process will be administered by an independent third party, the Company needs to put in place appropriate safeguards to ensure that its affiliates, who may want to submit bids for generation capacity or energy, do not get an advantage and would compete fairly with other interested parties. In this regard, the Commission should instruct the Company to maintain total separation between its power generation affiliates and Company employees with no exchange of information outside of the Request for Proposal.[479]

Dr. Sherman presented extensive testimony with numerous recommendations, including a recommendation that the RFP not be limited to a specific technology:

[479] See 8 Tr 2386-2387.

> According to NARUC and business members of the Michigan EIBC, the competitive bidding process should be "designed to encourage a competitive response from the market." Public Act 295 of 2008 (MCL 460.1001 Sec.1(2)(c)) similarly establishes the goal of "[encouraging] private investment in renewable energy and energy efficiency." This can be done by ensuring an objective process wherein potential bidders are confident that their offers will be considered fairly and by providing sufficient information to potential participants. For example, potential participants need to understand factors including "product specifications, model contract terms, credit and collateral requirements, relevant transmission constraints, costs to integrate generators into the transmission system, and evaluation criteria." In addition, the Company is likely to receive a more robust and competitive response from the market if it is less specific regarding the technologies requested in a given RFP. Rather than pre-determining the outcome, it is important to find the most cost-effective, appropriate, and advantageous solution for a given capacity or resource need.[480]

In his rebuttal testimony, Mr. Troyer objected to opening the competitive solicitation to all technologies: "Increasing the scope of a competitive solicitation will increase the administrative cost and create unnecessary delays in implementation. The Company's IRP provides the necessary direction to select the type of resource for the competitive solicitations."[481]

Dr. Sherman also expressed a concern with the company's control over the bid specifications:

> According to Direct Testimony from Keith Troyer, "[proposals] will be selected based on the criteria within the competitive solicitation (RFP) and the attributes of the proposal including, but not limited to, performance standards, contract terms, technical competence, capability, reliability, creditworthiness, past performance, and other applicable criteria." Although several of these criteria are clear and likely objective, others such as "past performance" and "other applicable criteria" are vague and likely subjective. These subjective, non-transparent criteria could create significant uncertainty and limit trust between potential bidders and the Company. According to NARUC, the use of similar "non-price factors"

[480] See 9 Tr 2840.
[481] See 8 Tr 1284.

> requires careful regulatory oversight. It is important that the Company and the independent third-party administrator clearly describe exactly how bids will be evaluated on the basis of these non-price factors. The third-party administrator should clearly and publicly describe any applicable scoring for each factor and indicate how these non-price factors will be objectively compared between bids. [482]

Dr. Sherman recommended that the Commission establish rules to govern the competitive bidding process, and that the Commission review proposed RFPs with an opportunity for stakeholder input before Commission approval and before the RFP is issued.

Mr. Troyer rejected this recommendation in his rebuttal:

> The Company has successfully conducted competitive solicitations in the past and negotiated mutually agreeable contracts with independent power producers. Further, any project selected as part of the solicitation will be filed for Commission approval along with a description of the solicitation process. The Commission's pre-approval of the solicitation is not necessary.[483]

In its brief and reply, Consumers Energy argues that the competitive solicitation process has not been created in such a way that it could manipulate the system, and expresses a concern that prior Commission review could delay its capacity solicitations. It further argues that the company has successfully conducted competitive capacity solicitation before, negotiating contracts with independent power producers.

Staff argues that it "supports competitive bidding with unbiased and open annual solicitations."[484] It acknowledges the concerns of some of the other parties and cites Mr. Troyer's testimony in asserting that the process will be blind until its final phase.

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[482] See 9 Tr 2841-2842.
[483] See 8 Tr 1290.
[484] See Staff brief, page 50.

Staff explains that it is satisfied that Consumers Energy's proposed process will be unbiased, citing Mr. Troyer's rebuttal testimony:

> [T]he Company said it plans to use a third-party, independent evaluator to administer the RFP and that this evaluator will oversee solicitations, evaluate bids, and ultimately select the best projects. Specifically, the evaluator will release the RFP, field all questions related to the RFP, and be responsible for evaluating the responses. Once a shortlist has been determined by the evaluator, it will submit this list to the Company who will select projects in merit order. These contracts will be submitted to the MPSC for review in what the Commission and the Company deem to be the most appropriate case. (8 TR 1289.)
>
> For the Company, the competitive-bidding process is a blind process until its final phase. (8 TR 1288-1289.) The Company will not know the identity of bidders until after is has selected projects based on their merit. During the selection process, "Only the information necessary to make the determination will be visible to the Company...." (8 TR 1288.) And "identifying information for the projects not selected would not be made available to the Company." (Id.) Additionally, the Company proposes to let Staff review the scope of RFPs and the evaluation criteria before the independent evaluator issues the RFP. (8 TR 1287.) On top of all this, Act 341 requires utilities to overcome a presumption that costs are not reasonable and prudent if they exceed the Commission-approved IRP costs, (8 TR 1283), so once future solar costs are incorporated in an IRP, this protection will apply as well.
>
> Staff supports the safeguards that the Company has proposed for its RFP process. As proposed, it will be an open and unbiased process. It will be open to all QFs up to 20 MW regardless of the generation technology requested in the RFPs. (8 TR 1254.) Any remaining capacity not filled with through competitive solicitations will be offered to QFs. And should the Company not have a capacity need between RFPs, QFs would still be able to receive an avoided energy price for a five-year contract based on a forecast of MISO LMP or a 15-year contract using actual LMP, and they would receive a capacity price using the MISO PRA for both options. (8 TR 1256.) Existing QFs that currently have contracts would be compensated at the most recently approved full avoided cost regardless of capacity need, in keeping with the Orders in Case No. U-18090. (8 TR 1257.)[485]

[485] See Staff brief, pages 53-54.

In reply, it agrees the Commission should adopt uniform standards, but objects to a delay in the RFP to develop such standards, arguing it would be changing the rules while other utilities have yet to file their first IRP.[486]

Citing Dr. Sherman's testimony, Michigan EIBC and IEI urge the Commission to ensure rules and regulations are in place before approving the bid structure, and to ensure the process is fair and objective before implementation.

SEIA recommends that the Commission establish a stakeholder process led by Staff to establish competitive bidding procedures that are fair and transparent. SEIA points to the Guidelines for Competitive Request for Proposal for Renewable and advanced Cleaner Energy, Attachment D to the Commission's December 4, 2008 order in Case No. U-15800 as a good baseline that does not address all the procedures necessary. SEIA argues that the procedures need to specify how the independent administrator will be selected and how it will be compensated, as well as what its responsibilities will be. It argues that clear bid evaluation criteria and a defined selection process to be used by the independent administrator should be approved by the MPSC, that developers should have the option to include RECs in their bids with a standard REC price forecast developed by Staff and included in the RFP, and that certain restrictions should be put on the capacity price bidding, including the use of a single clearing price auction method and a prohibition on negative capacity bids.[487] SEIA presents a more detailed list of procedures in Attachment A to its brief.

MEC-NRDC-SC argue that although Consumers Energy adopted many of Mr. Jester's recommendations, they also support an opportunity for stakeholder review and

[486] See Staff reply, pages 2, 13-16.
[487] See SEIA brief, pages 33-34.

input regarding the RFP. Also citing Mr. Jester's testimony, ELPC et al argue that competitive bidding must be fairly implemented.[488] ABATE's brief also argues that it supports competitive bidding provided it is inclusive, transparent, and unbiased.[489] GLREA argues that the procedures must be strictly independent, transparent, and separate from Consumers Energy.[490] The Attorney General argues that all technologies should be included and safeguards should be put in place.[491] In its reply brief, Energy Michigan argues that it supports competitive bidding with modifications to make it an open and transparent process, including public input into the solicitation format and process.[492] The Michigan Chemistry Council supports the Attorney General's recommendation to open the solicitations to all technologies:

> In order to ensure that in fact the utility's ratepayers are getting the benefit of the lowest cost generating technology that can provide the needed power, the RFP must be open to any technology capable of providing that power. It should not matter whether that technology is solar, wind, gas, hydroelectric, cogeneration, or some new technology that we have not yet seen. Having an open process provides opportunities for true competition and innovation. Closing the process based on pre-determined technologies is a recipe for stifling innovation and provides an opportunity to game the process through making the predetermined requirements narrow enough that few projects, or perhaps only one project, can meet those requirements. MCC therefore believes that it is important for the competitive bidding process as implemented to be open to all technologies capable of supplying the power needed, not just small PURPA QFs and whatever technology the utility identifies in its IRP.[493]

It also argues that additional Commission and public scrutiny is warranted and recommends a public comment period before each solicitation.

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[488] See ELPC brief, page 14.
[489] See ABATE brief, page 21, reply brief, page 9.
[490] See GLREA brief, pages 20-26.
[491] See Attorney General brief, pages 27-28.
[492] See Energy Michigan reply brief, pages 6-7.
[493] See Michigan Chemistry Council reply brief, page 5.

Based on a review of the record and the arguments of the parties, the ALJ finds that Consumers Energy has not demonstrated that its current plan to acquire capacity through competitive bidding is reasonable and prudent because it lacks sufficient safeguards to ensure ratepayer interests are protected. The record shows that the company retains significant discretion to decide what the solicitation will be, both as to ownership structure and as to technology, and to determine what additional non-price criteria will be considered. The ALJ finds that this does create a potential advantage for the utility and/or its affiliates.

Consumers Energy has led the parties to believe that it will primarily pursue solar energy in its solicitations, but it has not committed to doing that, since its specific proposal is that it will decide on "the technologies that are most reasonable to procure," in advance of each solicitation."[494] Likewise, Consumers Energy has led the parties to believe it will pursue potential PPAs, but its actual proposal allows it to limit its solicitations to projects that the company will ultimately own. The company's plan as described does not commit to include PPAs in the solicitations. Note Mr. Troyer's testimony at 8 Tr 1253 (emphasis added):

> The Company would conduct its competitive solicitation in a similar manner as it currently undertakes RFPs. These RFPs would be tailored to the specific needs of the Company. *Depending on the need identified, the Company may request proposals for development asset acquisitions, build-transfer options, partnerships, joint ventures, and/or PPAs*. Requesting proposals based on these various options will allow the Company to undertake a review of a variety of proposals to determine which option, if any, is the most reasonable and prudent choice for customers. *If PPAs are included in the options* that the RFP seeks and are selected as the best option available, the Company anticipates that it will file for approval of the FCM discussed in the direct testimony of Company witnesses Torrey and Maddipati.

[494] See Troyer, 8 Tr 1251.

Assuming the company does proceed with an RFP that solicits PPAs, Consumers Energy indicates that it will have the opportunity to bid in response to the RFP, but it also says that bids will be evaluated against the cost of utility build options, which would have been submitted by the company.[495] In this regard, it is important to note Mr. Thomas's testimony indicating the extent of work the company intends to undertake prior to the RFP:

> Q. How does the Company propose to develop and submit bids in the competitive solicitation?
>
> A. The Company would perform early stage development – acquiring real estate and local permits, applying for generator interconnection agreements, performing preliminary engineering, obtaining firm prices for the acquisition of equipment and construction services, and establishing plant performance expectations such that firm construction costs and levelized costs of delivered energy would be used as benchmarks for evaluating bids by others. See 8 Tr 1381.

Mr. Thomas's testimony also indicated that the company intends to create manufacturing alliances to enhance the supply chain for construction labor and materials, testifying that the company expects to use a competitive bidding process with third parties to develop and execute such alliances.[496] He also testified: "To the extent the Company builds solar, the Company will manage such a construction program in regions, forming multiple teams during the ramp up years such that lessons learned in development and construction will be applied locally to improve future year's construction performance. A regional program will effectively promote the geographic diversity of the solar facilities throughout the PCA, to reduce significant electric system disruptions due to cloud cover, meet electric system standards, and be safely integrated

[495] See, e.g., Consumers Energy brief, pages 113-114, citing Troyer at 8 Tr 1252.
[496] See 8 Tr 1385.

into existing electrical infrastructure."[497] Mr. Thomas also testified that the company would include siting criteria in the competitive solicitations: " to seek sites . . . in reasonably close proximity to high voltage distribution and transmission lines, and locate the solar facilities across a broad geographic footprint."[498]

Thus, the company is proposing to make significant investments in advance of bidding. As SEIA and Michigan EIBC and IEI argue, the company's reservation to itself of the ability to specify the additional non-price criteria that will be used in the evaluation process is a concern. While Consumers Energy cites its reverse auction bidding to show that it has successfully undertaken bidding in which its affiliates are allowed to participate, as shown by the company's response to SEIA discovery requests in Exhibit SEIA-31, that solicitation did not involve these "value added" criteria.

Another concern is the company's ability to narrowly confine the technology to be solicited. While the company argues it would be complicated to compare the bids resulting from an open solicitation, it also plans to allow QFs up to 20 MW to bid without regard to the technology solicited.[499]

Because the company has to address comparing technologies if its claim that all QFs can participate in the competitive bidding process is to be in any sense a meaningful one, the ALJ is persuaded by Mr. Coppola's, Mr. Jester's, and Dr. Sherman's testimony that the RFPs should not be restricted as proposed.

The ALJ also recognizes that the Commission has directed Staff to evaluate the best practices for competitive bidding. Consumers Energy argues that the Commission did not require Staff to do anything with its evaluation. Staff argues that the

[497] See 8 Tr 1385-1386.
[498] See 8 Tr 1386.
[499] See Troyer, See 8 Tr 1290.

Commission should open a separate docket to consider best practices, but not delay the company's implementation of competitive bidding.

Given that the company's proposal is to begin to acquire capacity above what is strictly required to meet its planning reserve through annual or periodic solicitations, and build up to the time of plant retirements, there appears to be time available to ensure the competitive process is fair and reasonable. The ALJ does not perceive any benefit to providing for a bid process to move forward that may well appear unfair down the road, after the results are revealed. Rather than allowing the company to choose a single technology, an ownership structure, and "value-added" criteria for each competitive solicitation, either the company should be required to obtain the advance approval of the Commission for the solicitation criteria, with the opportunity for stakeholder input, or the Commission should establish greater advance protections to ensure both the fairness and transparency of the process and ensure that the results reflect a competitive process. The concern raised by several parties that the company's use of its proposed FCM in the competitive bidding process will create additional unfairness is discussed separately below.

VIII.

FINANCIAL COMPENSATION MECHANISM

A. Background

MCL 460.6t(15) and MCL 460.6s(6) provide that the Commission "shall consider and may authorize a financial incentive" for power purchase agreements. In particular, MCL 460.6t(15) states:

> 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.

Consumers Energy has requested approval of a financial incentive it labels the "Financial Compensation Mechanism" or FCM. As discussed in more detail below, it argues that its proposed FCM is an integral part of its IRP, meets the statutory requirements, and should be approved. As also discussed in more detail below, several parties object to the company's proposal, and some parties have proposed alternatives.

1. Consumers Energy's proposal

Mr. Torrey testified that the FCM is required to support the company's "lean and modular" strategy.[500] He characterized the traditional rate model as having a bias towards growing rate base through asset ownership with a related earnings potential.[501] He asserted: "One might argue that any IOU management decision to forego an earnings opportunity would violate their fiduciary obligation to the IOU's owners." He testified that the FCM meets the statutory criteria, without explaining why. He explained the company's need for the FCM as follows:

> But a competitive bid methodology presents significant risks to the Company's ability to attract capital investment for needed infrastructure investments and provide sustainable returns to investors unless there is an incentive for the Company to enter into PPAs. Otherwise, the Company's credit ratings could become stressed and the Company would have a bias towards constructing its own projects to own, or entering into "build-transfer" agreements for the ownership of projects, whereby a developer builds the project and then sells it to Consumers Energy. Accordingly, if the Company's proposed FCM is not approved by the Commission in this proceeding, the Company does not propose to go forward with the competitive bidding of future capacity needs.[502]

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[500] See 8 Tr 1472-1473.
[501] See 8 Tr 1473.
[502] See 8 Tr 1474.

Then, referring to Mr. Maddipati's testimony, he characterized the FCM as "fair compensation for the incremental burden to the Company's financial profile related to lower cost, long-term PPAs that would not exist without access to utilities with strong balance sheets such as Consumers Energy."[503] He testified:

> The compensation provided by the FCM will help maintain the financial health of the utility. The FCM also provides an incentive for Consumers Energy to overcome the inherent bias in favor of utility-owned assets under the traditional regulatory model. Customers benefit through increased access to lower cost supply alternatives that may exist as the Company executes its IRP over the next several years. Without approval of the FCM, the Company would be removed from the traditional utility model that has served utilities, investors, and customers well for many decades and placed in an environment that is financially unsustainable as PPAs that exist only because of Consumers Energy's strong balance sheet rapidly increase while that same balance sheet is stressed by the imputed debt from the PPAs. This Commission should carefully consider how the utility model should evolve to serve the best interests of financially healthy utilities, investors that view Michigan as an attractive place to allocate capital, and to benefit customers through a clean, lean, and modular approach as proposed by Consumers Energy.[504]

Mr. Maddipati presented the specific financial compensation mechanism Consumers Energy proposes, and additional testimony in support of the mechanism. He testified that because PPAs have characteristics of long-term debt, credit rating agencies will consider PPA obligations in their credit analyses, "since the fixed payments, similar to interest payments, reduce financial flexibility and increase the risk of default for the utility."[505] He testified that while each of the three major credit rating agencies, S&P, Moody's, and Fitch, have different methods, each considers the impact of "imputed debt" created by PPAs. He also cited a report by The Brattle Group, a consulting firm, to show that several states have "incorporated the impacts of imputed

[503] See 8 Tr 1475.
[504] See 8 Tr 1475.
[505] See 7 Tr 722-2-723.

debt." See 7 Tr 724. He testified that the costs associated with imputed debt are unfairly borne by the company and its customers:

> [T]he presence of PPAs increases the financial support provided by equity capital and impacts the credit of a utility as a result of the imputed debt from PPAs. This increased financial burden and these credit costs are borne by customers and investors of the Company and unless addressed, unfairly shifts costs from the PPA provider to these stakeholders.[506]

Mr. Maddipati contrasted the company's investment in a generating plant, which it funds with debt and equity capital, to PPA's, contending that "while the debt may not [sic] be raised directly by Consumers Energy, the financial support for the capital ultimately remains with the utility."[507] He cited in support of his contention arguments presented in the company's recent PURPA case, Case No. U-18090, in which the need for Qualifying Facilities to obtain financing for their projects was an issue.[508] He also testified that capital raised by an independent power producer "competes directly" with the capital raised by Consumers Energy and can, in turn, increase the cost of capital for the company.[509] In furtherance of his claim that PPAs unfairly shift costs from PPA provides to the company and its customers, he testified: "To the extent that the Company enters into PPAs, the equity capital provided by Consumers Energy's shareholders will also support the credit of the capital raised by the PPA provider. However, absent a proper compensation mechanism, equity capital providers will be subsidizing PPA providers."[510] Thus, he concluded: "If the Company had not raised equity capital, the Company's credit would not be sufficient to support long-term

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[506] See 7 Tr 724.
[507] See 7 Tr 724. He also characterized PPA projects as "[using] the balance sheet of Consumers Energy (including equity capital) and [increasing] the competition for finite capital."
[508] See 7 Tr 725.
[509] See *id.*
[510] See 7 Tr 726.

obligations imposed by a PPA. This is hardly surprising, as a PPA provider would be unable to raise capital without the credit-worthiness of Consumers Energy which is supported by equity capital."[511]

Mr. Maddipati then explained the mechanism he proposes to compensate for the additional costs he attributes to PPAs, providing a three-step process that he explained 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 Company's authorized ROE from its most recent general electric rate case for PPAs supported by non-renewable 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 Company's revenue requirement in its most recent electric rate case.[512]

Regarding the first step, the determination of imputed debt, he testified:

> The most simple and straightforward methodology, which I propose 4 the Commission adopt, would be to calculate the NPV of the PPA payments using the Company's Weighted Average Cost of Capital ("WACC") and apply a risk weighting of 25% to determine the percentage of the NPV that would be treated as debt. Given that PPA payments are similar to debt payments, calculating the NPV of those PPA payments would be akin to determining the face value of the debt being issued. This methodology is consistent with the methodology used by rating agencies and offers simplicity in determining the imputed debt of the PPA.[513]

He further justified the approach by stating:

> The imputed debt created by the presence of PPAs is supported by the equity capital of the company and, in order to maintain a balanced capital structure, the Company would need to have incremental equity available

[511] See 7 Tr 726.
[512] See 7 Tr 727.
[513] See 7 Tr 728.

> to support this imputed debt or, alternatively, the Company would need to have incremental earnings to support the Company's credit and ensure a fair return. The proposed incentive compensation mechanism would calculate the imputed debt of the PPA and allow the utility to earn compensation equal to the rate of return for the incremental equity used to support the PPA.[514]

Mr. Maddipati then explained that as an additional step, he levelizes the compensation calculated using this method across the period of PPA payments as a $/MWh value. He presented an example applying this method in his Exhibit A-52. He also testified that his method would not exceed the statutory cap: "The compensation mechanism first calculates the imputed debt of the utility – this incremental debt is balanced with equal equity to which the authorized ROE is applied, thus ensuring the compensation to the utility is weighted equally between equity and debt and therefore no greater than its WACC."[515]

Mr. Troyer also testified to the company's proposed implementation of the financial compensation mechanism:

> The RFP will be administered by an independent third party, which will allow the Company to submit proposals in response to the solicitation for the specified technology as well. All of the proposals received in the RFP (including any FCM applicable to the proposals) will be evaluated against the cost of utility build options, which would have been submitted by the Company.[516]

He testified that the company would subsequently file for approval of the FCM:

> These RFPs would be tailored to the specific needs of the 6 Company. Depending on the need identified, the Company may request proposals for development asset acquisitions, build-transfer options, partnerships, joint ventures, and/or PPAs. Requesting proposals based on these various options will allow the Company to undertake a review of a variety of proposals to determine which option, if any, is the most reasonable and prudent choice for customers. If PPAs are included in the options that the

[514] See 7 Tr 728.
[515] See 7 Tr 729.
[516] See 8 Tr 1252.

> RFP seeks and are selected as the best option available, the Company anticipates that it will file for approval of the FCM discussed in the direct testimony of Company witnesses Torrey and Maddipati.[517]

He testified that the FCM would apply only to new PPAs, not already approved by the Commission:

> The Company will request approval of an FCM specific to each new PPA that is approved by the Commission. The Company's Application for approval of the PPA will include the applicable inputs for the FCM calculation to reflect the appropriate level of compensation at the time the PPA was filed for approval with the Commission. The FCM approved in the Commission's Order approving the PPA will be applied to the contract for the full contract term.[518]

He further explained that the company intends to recover the FCM from customers through base rates, although it will treat it as part of the booked cost of energy on a $/MWh basis:

> As the Company books the generation and associated expense according to the terms of the PPA on a monthly basis, the FCM will be added to the total PPA expense booked for the month. The counterparty will receive the compensation associated with the rates included in the PPA and the Company will retain the financial compensation. The FCM is determined on a $/MWh basis, so the Company will multiply the approved FCM for the PPA by the amount of generation booked for the month, including any prior period adjustments.[519]

2. Staff

Staff witnesses Mr. Proudfoot, Mr. Nichols, and Mr. Harlow testified that the Commission should not approve the FCM.

Mr. Nichols testified that Staff does not support the company's proposed financial compensation mechanism. He endorsed Mr. Torrey's explanation of the traditional regulatory model, and his explanation of how PPA costs are reflected in customer rates.

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[517] See 8 Tr 1253.
[518] See 8 Tr 1275-1276.
[519] See 8 Tr 1276.

He also reviewed Mr. Maddipati's and Mr. Troyer's testimony regarding the company's proposal. Mr. Nichols presented the Brattle Group report that Mr. Maddipati relied on as Exhibit S-15.3, and reviewed the options listed in the report for addressing imputed debt as well as the discussion of six state public utility commissions explicitly considering imputed debt. Mr. Nichols also presented in Exhibit S-15.0 the company's response to an audit request seeking the monetary impact of the company's proposal over the next five years. Stating that Consumers Energy responded that it could not provide a total, but could provide a unit cost by contract rate and contract length, Mr. Nichols presented a summary chart in his testimony at 7 Tr 2804 showing the financial compensation mechanism ranging from a value of $3.35 per MWh for a 5-year contract at a $40 per MWh rate (8.38%) to a value of $12.92 per MWh for a 20-year contract at a $60.00 per MWh rate (21.53%), based on an assumed return on equity of 10%, and an assumed weighted average cost of capital of 5.89%. Mr. Nichols also testified that Consumers Energy currently has PPAs with a capability of 2,954 MW and a PSCR cost of approximately $1 billion.[520] He testified that based on the 2017 energy generated by these PPAs of 14,179,128 MWh, the range of results shown in the chart would produce a total financial compensation of $48 million to $183 million. See 9 Tr 2805. He also cited the company's current credit ratings, as reflected in Exhibit S-15.1, page 13, and cited an exhibit from the company's recent rate case, Case No. U-20134, included in Exhibit S-15.5, showing the company's 2017 return on equity on both a financial and ratemaking basis.

Mr. Nichols recommended that the Commission consider imputed debt in the context of setting a reasonable cost of capital, stating "The minority of states that

[520] See 9 Tr 2804.

explicitly consider imputed debt on PPAs (three states according to the 2008 Brattle Group report) do so in cost of capital proceedings."[521] He offered as an alternative that the Commission determine it is too early to include a financial compensation mechanism for PPAs based on imputed debt, on the basis that in 2017, Consumers Energy "with no FCM on 2,954 MW of PPAs, earned a reasonable return and maintained a reasonable credit rating."[522] As a second reasonable alternative, he referred to the imputed-debt-related calculations presented by Mr. Harlow. And as third reasonable alternative, he testified, the Commission could consider a method not based on imputed debt, such as by including half of qualifying PPA expenses as a regulatory asset in the working capital component of rate base, thereby providing for a return on the PPA expenses. See 9 Tr 2807-2808. He testified that assuming a pretax cost of capital of 7.88% as proposed in Consumers Energy's filing in Case No. U-20134, and a $1 billion of PPA expense annually that would result in a test year regulatory asset of $500 million, the resulting financial compensation would be $39.4 million.[523]

Mr. Harlow also testified that Staff does not support the company's proposed financial compensation mechanism but does not oppose "a reasonable financial incentive for PPAs."[524] He testified that it is not always necessary to offset imputed debt to protect a utility's credit rating:

> The debt obligation from future PPAs is only a very small component of the overall outlook of a Company's financial health. An imputed debt calculation tries to predict how much weight credit rating agencies will give to future PPA debt obligations. It is extremely difficult to determine if/when future PPA obligations require imputed debt offsets when other aspects of the business will simultaneously affect future capital structure and

[521] See 9 Tr 2806.
[522] See 9 Tr 2806.
[523] See 9 Tr 2808.
[524] See 9 Tr 2714, 2715.

> ultimately the cost of capital. Company decisions such as the termination of current PPAs, financing Company owned facilities, and regulatory decisions, to name a few, all play a role in the capital structure calculation.[525]

He presented in Exhibit S-9.0 what he characterized as "a very simplified example of the impact of 6,300 megawatts (MW) of $60.00 solar PPAs on the Company's current debt to equity ratio as viewed by S&P for purposes of credit rating." In his example, he calculates that the impact would be a reduction in the equity ratio in the company's capital structure as presented in Case No. U-18322, from 52% to 50%.[526]

He also testified that the company's proposal does not align with the requirements of MCL 460.6t(15) because it results in a return that is much higher than the company's weighted average cost of capital, citing Mr. Maddipati's Exhibit A-52, which calculated a financial compensation mechanism of $8.28 for each $60-per-MWh payment under the example PPA, or a percentage compensation of 13.8%, in comparison to the weighted average cost of capital of 5.89% assumed in the example.[527]

Mr. Harlow also testified that because Mr. Maddipati's formula looked at the entire PPA payment, rather than only the capacity portion, it overstates what S&P would consider imputed debt.[528] He also critiqued the use of a 25% risk factor, citing Standard & Poor's Encyclopedia of Analytical Adjustments for Corporate Entities as supporting a risk factor of 0% to 15% for legislatively-mandated recovery mechanisms such as the PSCR clause. He further explained:

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[525] See 9 Tr 2714.
[526] See 9 Tr 2714.
[527] See 9 Tr 2715-2716.
[528] See 9 Tr 2717.

> Staff opines that a blanket approval of a 25% risk factor going forward for all PPAs is inappropriate as S&P could update its methodology at any time to reflect Michigan's legislatively established PSCR recovery and the reduced risk to the Company that this presents. Additionally, since only S&P has clearly defined a methodology for calculating imputed debt, it is still unclear how the other two credit rating agencies view the PSCR process with respect to PPA cost recovery risk.[529]

Mr. Harlow presented a revised version of Mr. Maddipati's financial compensation mechanism by using a 15% risk factor and assuming only 50% of the PPA payments are for capacity. He noted, too, that Consumers Energy can use the MISO market to sell unneeded energy, characterizing it as a "straight pass through transaction with no risk associated with it other than minor market fluctuations."[530] He also presented a calculation using the 25% risk factor and the same capacity value assumption in his Exhibit S-9.2.

Mr. Proudfoot testified that Staff recommends that the Commission address imputed debt in its holistic review of the company's cost of capital, as Mr. Nichols proposed. He testified that if the Commission decides to adopt a financial compensation mechanism, Staff recommends it not be tied to imputed debt, with an alternative explained by Mr. Nichols.[531] As a second alternative, should the Commission decide to adopt a financial compensation mechanism tied to imputed debt, Mr. Proudfoot recommended that the Commission adopt the method sponsored by Mr. Harlow.

Mr. Proudfoot reviewed the Commission's June 2, 2009 and September 14, 2010 orders in Case No. U-15806, explaining that in reviewing DTE Electric's arguments regarding the consideration of imputed debt in the context of renewable energy

[529] See 9 Tr 2718.
[530] See 9 Tr 2719.
[531] See 9 Tr 2545.

contracts, the Commission ultimately decided that review should occur in the context of a general rate case.[532] He also presented in Exhibit S-1 a summary of Staff's research as to how certain other states handle imputed debt. Mr. Proudfoot recommended that in the event the Commission decides to consider imputed debt outside of a general rate case, it be considered on a contract-by-contract basis, when a contract is submitted for approval as opposed to the preapproval of a formula as requested by Consumers Energy.

Mr. Proudfoot testified that Staff generally supports the concept of an incentive for Consumers Energy to enter into power purchase agreements, because "Staff expects that fostering competition for new resources will help keep Michigan's rates low."[533] He explained that Staff does not believe an incentive should be applied for contracts required to the meet the company's renewable energy obligations under Act 295, or to meet its requirements under PURPA.[534] He also testified that Staff agrees that a financial incentive approved by the Commission that would be attached to a particular PPA be included in the company's buy-or-build decision process.

And as a third alternative, Mr. Proudfoot presented a different approach, a modification of the company's proposed course of action to provide for the company to own 50% of total capacity additions.[535] He explained:

> One such measure that could allow the utility to own, rate base and earn a return on a portion of the new solar resources would be the continuation of the fifty percent limitation on company-owned resources that was included in PA 295. The fifty percent limitation on company-owned resources led to increased competition and drove prices down for customers in Michigan, including lower prices for Company-owned renewable resources. In lieu of

[532] See 9 Tr 2559-2560.
[533] 9 Tr 2561.
[534] See 9 Tr 2562-2563.
[535] See 9 Tr 2545-2546, 2564-2565.

> a PPA incentive, the Commission could allow the Company to own a portion of the proposed new solar resources, provided that the Company would agree to source at least fifty percent of the new solar resources through PPAs. Staff expects that sourcing at least fifty percent of the new resources through PPAs will result in increased competition and exert downward pressure on costs.[536]

3. Attorney General

Mr. Coppola testified that the company has not established it needs an incentive to address imputed debt:

> First, although rating agencies impute certain fixed obligations that the Company has with counter-parties, it does not mean that additional equity capital is necessary to bolster the balance sheet of the Company with additional equity capital. The Company currently enjoys an A credit rating, or equivalent, from the three major rating agencies that rate its senior secured debt. That rating has gone up two notches from BBB+ to A since 2012. During this period, the Company has added several PPAs worth hundreds of millions of dollars on a present value basis. Yet, the so-called imputed debt from these PPAs has not had a detrimental impact on the Company's debt rating.[537]

He testified that the rating agencies have also considered capital leases, operating leases and other fixed obligations that company has with other parties and through their debt ratings "have confirmed that the equity capital on the books of the Company is more than adequate."[538]

Citing details from the company's PCA, Mr. Coppola testified that most of the new PPAs Consumers Energy anticipates will replace existing PPAs. He disputed Mr. Maddipati's claims that investors and customers are being negatively affected by the PPA obligations:

> Mr. Maddipati provides no quantifiable evidence to support these assertions. In response to discovery, Mr. Maddipati failed to provide any new evidence to support his statements. Exhibit AG-6 includes the

[536] See 9 Tr 2564.
[537] See 8 Tr 2389.
[538] See 8 Tr 2389-2390.

> responses received from discovery. It is difficult to imagine how investors have been negatively affected by PPAs when the Company has earned returns on equity in the past decade at or above its allowed return on equity. During the same period, the common stock price of CMS Energy, its publicly-traded parent company, has reached all-time highs. Similarly, customers have benefited from lower power prices under the PPAs because they have been entered into at a price lower than the Company's avoided cost as set by the Commission.[539]

Mr. Coppola also identified what he labeled design flaws in the mechanism proposed by Consumers Energy, including reliance on a 25% risk factor, the failure to distinguish between fixed and variable payments, citing Exhibit AG-7, the charge to expenses based on a $/MWh cost, the company's intend to apply the incentive to contract amendments, renewals and extensions, and the use of the pre-tax return on equity, which Mr. Coppola testified results in a mechanism above the statutory cap. He also testified that if the Commission sees merit in such a mechanism, it should be structured to apply only when a threshold of PPA capacity is reached and the company's return on equity falls below its authorized level.[540]

4. MEC-NRDC-SC

Mr. Jester reviewed the company's proposal in his testimony. Addressing Mr. Torrey's contention that in the absence of an incentive, the company has a fiduciary duty to investors to make capital investments that earn a return, Mr. Jester noted that Mr. Torrey had not addressed the company's obligation to show that its costs are reasonable and prudent in order to recover those costs:

> [T]he Company has not adequately shown why its obligation to provide energy to its customers at a reasonable and prudent cost is not sufficient to warrant procurement from independent power producers even without an incentive when the cost of contracted power is materially less than it

[539] See 8 tr 2391-2392.
[540] See 8 Tr 2359.

> would be from Company-owned resources. The utility's franchise is also subject to its PURPA obligations to purchase power from qualified facilities under certain terms. It is clear that the Commission is not obligated to, nor should it, provide the utility incentive compensation that matches the earnings that would be available to the utility if it operated exclusively with utility ownership of generation resources. Rather, the Commission should strive to establish an incentive scheme that reflects both the need to incent the utility to forego earnings on Company-owned resources and the utility's obligations to be prudent and to comply with PURPA.[541]

Mr. Jester also testified that he was not persuaded by Mr. Maddipati's rationale or his method for determining an incentive. He noted that MCL 460.6j allows the company to recover 100% of the prudently-incurred costs of a PPA, also expressly citing subsection (13)(b). He testified that if the stream of payments under an approved PPA are to be considered debt-like, the stream of revenues should be considered asset-like.[542] He acknowledged that it is likely that PPA obligations affect the company's financial profile, but testified that Consumers Energy would recover the costs through the general ratemaking process:

> If the Company's PPAs increase the risk of default on the Company's debt, that should be reflected in the Company's debt rates which then become costs recovered from customers. If the Company's PPAs increase risk that the Company will be bankrupted and value of common stock will be lost or the PPAs simply reduce the certainty of projected dividend payments, that should be reflected in the valuation of common stock relative to the discounted value of expected dividends. The Company will then be authorized a higher expected return on equity in order to maintain its authorized ratio of equity to capitalization.
>
> The Company has for many years carried very considerable PPAs, most notably for power from the Palisades nuclear plant and the Midland Cogeneration Venture gas cogeneration plant. Any debt or equity costs of those PPAs are certainly incorporated into the Company's current weighted average cost of capital. And the Company has not shown that those PPAs have impaired its ability to raise capital at the compensation levels for debt and equity that have been authorized by the Commission. The Company's testimony in this case does not demonstrate that these

[541] See 8 Tr 1793-1794.
[542] See 8 Tr 1794.

> costs are borne by investors, as the Company has not demonstrated any inefficiency in capital markets that results in investors bearing more risk than they are being paid to bear. Thus, if the Commission authorizes an FCM on the basis that it compensates for increased cost of capital, the FCM revenue should be counted as part of the Company's recovery of the costs of capital.[543]

Mr. Jester also disputed that there is any "unfair" cost-shifting associated with a PPA:

> If the Company has a higher cost of capital due to the use of PPAs and that is reflected in the Company's authorized rates, that is not an unfair shift of costs from the PPA provider to customers. It is simply recovery of costs. The Commission may then consider whether the benefits of the PPA sufficiently offset any implied increase in the Company's cost of capital.[544]

Mr. Jester reviewed methods for addressing "imputed debt" as described in a California PUC staff report, characterizing the method selected by Mr. Maddipati as the most expensive, i.e. imputing additional equity to offset imputed debt.

While testifying that PPAs do not shift costs onto the company's shareholders, Mr. Jester testified that if it makes sense for policy reasons to increase the use of PPAs to meet the company's capacity and energy needs, an incentive may be helpful.[545] Mr. Jester proposed an alternative approach to an incentive based on an imputed-debt consideration, using a percentage multiplier at or below the weighted average cost of capital, presenting his method in comparison to Consumers Energy's method, and in comparison, to the other methods identified in the California PUC staff report he cited, in Exhibits MEC-4 and MEC-5. Mr. Jester testified that he generally supports the company's proposal to consider an incentive in bid evaluations but testified that in no circumstances should ratepayers pay more than they would pay under a company-build model.

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[543] See 8 Tr 1795-1796.
[544] See 8 Tr 1796.
[545] See 8 Tr 1800.

5. SEIA

Mr. Lucas objected to the company's proposed FCM, characterizing it as a tax that is unsupported and biased against third-party projects, and burdensome to customers. He testified:

> The FCM tax is unjustified; despite its efforts to concoct support, CE is forced to rely on a hypothetical "parade of horribles" argument that is clearly undermined by the behavior of actual market participants. Additionally, CE has misapplied the actual methodology used by S&P Global to calculate the impact of imputed debt and incorrectly assumes an impact nearly 50 times higher than it theoretically might be.[546]

Mr. Lucas disputed that the FCM Is required to offset regulatory incentives to build assets. After reviewing the significant (55%) increase in the company's rate base between 2010 and 2017, Mr. Lucas acknowledged that the traditional utility regulatory model provides incentives to increase assets and earning, but testified:

> However, the regulatory compact that provides utilities with monopoly control over its customers does not contemplate a guaranteed level of earnings by the utility, let alone perpetual earnings growth, nor is the Commission obliged to provide utility investors the opportunity to earn returns above and beyond what is appropriate to maintain safe and reliable service.[547]

Noting that SEIA is not averse to alternative regulatory structures, he testified that Consumers Energy's proposed financial compensation mechanism is highly problematic. He addressed the company's argument that the mechanism is required to offset negative treatment of PPAs by credit rating agencies, contending that Consumers Energy has exaggerated the risk to its credit rating posed by PPAs:

> Each of the three credit rating agencies (S&P, Moody's, and Fitch) treat imputed debt differently, and each consider the actual factors affecting the utility when making decisions. Company Witness Maddipati acknowledges

[546] See 8 Tr 1955.
[547] See 8 Tr 1993.

> that "Moody's in some instances may not explicitly calculate imputed debt", although he states that it does consider it. His testimony and data responses do not cover Fitch's methodology, although one data request includes a 2008 attachment that does discuss how Fitch handles capital leases (which differ from PPAs). This attachment also notes that:
>
> > Both Moody's and Fitch discuss the impact of PPAs in their publications regarding electric utilities although both seem to generally be less concerned about the impact of PPAs than is S&P. In addition, it is noteworthy that utilities generally have comparable ratings from the different rating agencies, and utilities frequently furnish the same non-public information regarding their PPAs to all credit rating agencies.
>
> In other words, even though S&P has the most well-defined methodology for calculating imputed debt, and that all agencies are working off of the same public and non-public information, the additional rigor of S&P's imputed debt methodology infrequently results in a material impact on the credit rating of the utility.[548]

He also cited the California PUC staff report indicating that "Moody's does not apply a formula. Instead Moody's conducts qualitative assessment of inherent risk to determine the degree to which the company's financial flexibility is affected by PPAs."[549] Mr. Lucas noted that this report also states that Moody's recognizes that PPAs may provide positive risk mitigation. Mr. Lucas also indicates that Fitch also has a non-formulaic approach, quoting the report as follows:

> Fitch assigns risk factor, which can range between 0 and 100%, based on (1) PPA cost relative to market (market to market value is calculated based on forecast), (2) likelihood of cost recovery taking into account lags in regulatory recovery and probability of disallowances, (3) counterparty credit quality i.e. risk of seller's default. Fitch focuses on out-of- money positions with low cost recovery prospects. For California, Fitch does not always assign debt equivalency due to high probability of cost recovery.[550]

Mr. Lucas concluded from his review of this report:

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[548] See 8 Tr 1994-1995.
[549] See 8 Tr 1995.
[550] See 8Tr 1996.

> In both of these cases, the impact on the credit rating will be tempered based on other 1factors. Moody's recognizes the value in locking in a long-term price for energy through a PPA, which protects the off-taker from price volatility. PPAs selected in competitive solicitations are likely to be closer to market prices and developed by strong developers, both of which reduce the chance they will fall into Fitch's focus on out-of-money positions with low cost recovery prospects. In other words, the rating agencies do not simply plug in numbers and output a result. This may explain why credit rating agencies often land on the same results even with very different treatments of imputed debt.[551]

He testified that Consumers Energy has not shown that signing PPAs will hurt its credit rating, and contended that the company's responses to discovery questions showed that the company could not establish a legitimate threat.[552] Indeed, Mr. Lucas took issue with Mr. Maddipati's claim that four bankruptcies have been related to power purchase agreements, testifying that two of them were not bankruptcies but defaults "resolved without restructuring," three of the four were related to the Enron scandal in California, and the one not related to Enron was from 1991, and involved a utility contract with a subsidiary.[553] Mr. Lucas testified that despite Consumers Energy's statement that its current imputed debt levels range from $992 million to $1,286 million, "the Company's S&P, Moody's and Fitch debt ratings have all improved between 2010 and 2017."[554]

Mr. Lucas also testified that Mr. Maddipati incorrectly applies S&P's methodology for calculating imputed debt and overstates the risks of entering PPAs.[555] Mr. Lucas testified that S&P uses a 7% discount rate, and only considers the capacity portion of

[551] See 8 Tr 1996.
[552] See 8 Tr 1996-1997, also citing Exhibits SEIA-10 and SEIA-11.
[553] See 8 Tr 1997.
[554] See 8 Tr 1998.
[555] See 8 Tr 2001-2003.

PPA obligations. Mr. Lucas presented the company's response to discovery in Exhibit SEIA-21 indicating that Mr. Maddipati was not aware of this distinction:

> When specifically asked whether CE was "aware of S&P utilizing an imputed debt methodology for a solar PPA which assigns an amount less than 100% of the total PPA cost to capacity?" the response was "No."[556]

Mr. Lucas explained that the costs paid to project developers through a PPA include interest on debt and a return on equity:

> By adding an FCM tax to this transaction, CE is asking its customers to pay more for risk and return (expressed through the project financing that was used to build the project) that was already incorporated into the PPA price. CE also wants its customers to pay the Company for purchasing the output. As discussed earlier, the premise for the FCM tax is to compensate CE's shareholders and bondholders for the supposed increase in risk of being a counterparty to PPAs. But CE has offered no evidence and performed no analysis to show whether this risk even exists. It simply presents a "parade of horribles" scenario where capital investors would flee, borrowing costs would increase, and CE's customers would be left paying the bill.[557]

Mr. Lucas disputed Mr. Maddipati's testimony that the company's FCM would earn 3.35% of the NPV of the PPAs:

> In fact, the impact on the PPA is not only much higher than 3.35%, it increases as the contract term lengthens. In the example provided by Company Witness Maddipati, a hypothetical $60/MWh, ten-year PPA would result in an FCM tax of $8.28/MWh. In this simple example, the FCM tax adds 13.8% to the cost of the PPA. However, as shown in Figure 13 below, as the duration of the PPA increases, the FCM tax becomes more and more penal for an equivalent value PPA (i.e. the NPV of the lifetime PPA payments is held constant). For a 25-year PPA, CE's proposal would be equivalent to a 24.2% tax on the PPA. It is highly unlikely that, even with aggressive pricing, a third-party PPA be able to would absorb this tax and still beat out company-owned projects in competitive solicitations.[558]

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[556] See 8 Tr 2003.
[557] See 8Tr 1999.
[558] See 8 Tr 2000.

6. GLREA

Mr. Peloquin objected to Consumers Energy's proposed financial compensation mechanism in his testimony for GLREA. He acknowledged as a general principle that long-term fixed-payment obligations create a greater risk of financial default, citing Sears, Roebuck & Co. as an example. He disputed that PPAs Consumers Energy enters into "reduce financial flexibility and increase the risk of default" for the company because it recovers its PPA costs through its PSCR clause:

> Consumers does not have to use its own capital or issue bonds or stock to fund the PPA obligations. Other than the remote possibility that the MPSC might disallow a PPA's purchased power expense, a Purchased Power Agreement does not increase the risk of default for a jurisdictional utility. In fact, they have less risk than a company owned facility, such as the Midland Nuclear Plant that almost bankrupted Consumers.[559]

He also testified that if the PPAs did add risk, the company would be adequately compensated through the ratemaking formula:

> Consumers has many PPA agreements and several very large ones, i.e., the Palisades Nuclear PPA and Midland Cogeneration Venture PPA. The Return on Equity (ROE) is set by the MPSC to yield the return investors demand. If PPAs actually increased investor's perceived utility risk, the ROE would already compensate Consumers' investors for that perceived risk. They don't need a FCM.[560]

Mr. Peloquin expressed a concern that the use of the company's proposed FCM, with a 13.8% adder as shown in Exhibit A-52 for a ten-year PPA, would make many PPAs uneconomic.

Mr. Richter also took issue with the company's proposed FCM, disputing the extent to which PPAs created credit pressure for Consumers Energy:

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[559] See 9 Tr 2473-2474.
[560] See 9 Tr 2474.

> By entering into a PPA, the utility avoids these risks. For example, the risk of stranded assets, which utilities have encountered in the past, or the risk of plant catastrophes (e.g. tornados, lighting strikes, extreme hailstorms, sabotage, vandalism, theft, equipment failure, etc.), or the risk of future environmental regulations, which have hit coal-powered assets. See 9 Tr 2450.

He also posed the question whether performance-based ratemaking should be considered.

Mr. Rafson testified that any FCM should not be applied to PURPA contracts, characterizing PURPA as a legal obligation of all utilities:

> Michael Torrey seems to think that Consumers has the right to fill capacity with in-house facilities and thus allow the FCM to recover for their shareholders profit as if they own any PPA contract. It is a serious deception that FCM will reduce rates. We expect that an RFP with FCM and all benefits accounted will produce higher 16 rates than MPSC priced PURPA contracts.[561]

He disputed the idea that Consumers Energy should be compensated as if it had made capital investments in the seller: "NPV is based upon payments made for power generated and thus does not reflect 'Capital' investment but power generated. We ask the Commission that the FCM be based upon actual "Capital" invested either by Consumers or their PPA contractors."[562]

7. <u>ABATE</u>

Mr. Pollock also addressed the proposed financial compensation mechanism, expressing a concern that it would make the cost of future PPAs more expensive. While he testified that it is premature to adopt a financial incentive at this time because the company is not seeking approval of any specific PPAs, he also took issue with the company's use of a 25% risk factor in its imputed debt calculation, recommending a risk

[561] See 9 Tr 2440.
[562] See 9 Tr 2440.

factor between 0% and 15%.[563] Mr. Pollock also identified an alternative incentive mechanism based on net savings from a proposed PPA in comparison to a rate base addition, recommending that any incentive mechanism be deferred to a future rate case.[564]

8. Independent Power Producers

Mr. Stockhausen addressed the financial compensation mechanism in his rebuttal testimony. While not taking a position on the company's proposed methodology, he took issue with Staff's recommendation that the financial compensation mechanism not apply to PURPA contracts:

> [U]tilities, such as Consumers, are otherwise resistant to entering into 20-year long-term contracts with PURPA QFs, including renewing long-term PURPA PPAs with Michigan's existing PURPA facilities, such as IPPC members' facilities. Therefore, the IPPC supports a reasonable PPA incentive for a utility, such as Consumers, that is willing to enter into a long-term (20-year) PPA with a PURPA facility, including a renewed long-term PPA with an existing PURPA facility. It would, in fact, create an economic disincentive for Consumers to enter into PPAs with PURPA QFs if it could earn a return on PPAs with non-QFs but not on those with QFs.[565]

9. Michigan EIBC and IEI

Ms. Sherman testified that financial incentives for Consumers Energy to build its own generation exist currently, with no incentives for the utility to contract for electricity using PPAs.[566] Thus, she testified, there are benefits to non-utility developers from incorporating a financial mechanism into future PPAs. She articulated principles she believes should apply to such incentives, including that they be transparent and understandable to all potential participants in a given competitive bidding process. She

[563] See 8 Tr 2102, 2138-2141.
[564] See 8 Tr 2141-2142.
[565] See 9 Tr 2897-2898.
[566] See 9 Tr 2844.

testified that the company's proposal would make it difficult for a developer proposing a PPA project to calculate the expected financial compensation mechanism that would be applied, and recommended both that the company provide more detailed information about the values used in each step of the calculation, and provide estimated calculations as part of each RFP for the financial compensation mechanism associated with different PPA terms.[567] She presented as Exhibits EIB-2 and EIB-3 discovery responses from Consumers Energy regarding the application of its mechanism to difference scenarios. She testified that the response in the first exhibit was primarily in graph form, while the subsequent response in the second exhibit did include a more granular comparison that showed an example PPA with a financial compensation mechanism as a more competitive option than a company build option.[568]

10. ELPC

In his testimony for ELPC, Mr. Jester asserted there is no rationale for an incentive mechanism for PURPA contracts, because the company is legally obligated to comply with PURPA.[569] He also testified that the financial mechanism could be problematic in evaluating bids.

11. Rebuttal

In his rebuttal testimony, Mr. Torrey reiterated that the FCM is required to support the company's proposed course of action.[570] He responded to Mr. Jester's concerns by stating that the FCM would not result in unreasonable costs to customers, relying on Mr. Troyer's explanation as to how the FCM will be considered in bidding:

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[567] See 9 Tr 2845-2846.
[568] See 9 Tr 2846.
[569] See 8 Tr 2267.
[570] See 8 Tr 1479.

> All of the proposals received in the RFP, including any FCM applicable to the proposals, will be evaluated against the cost of utility build options. The competitive solicitation process will allow the Company to undertake a variety of proposals to determine which option, if any, is the most reasonable and prudent choice for customers. The Company will seek approval from the Commission of the results of any RFP. Any cost differential between the options considered in the RFP may be examined in the MPSC's approval process.[571]

Further addressing the rationale, and referring to Mr. Maddipati's testimony, he stated that "the competitive bid methodology presents significant risks to the Company's ability to attract capital investment for needed infrastructure investments and provide sustainable returns to investors unless there is an incentive for the Company to enter into PPAs."[572] He testified:

> Absent approval of the FCM in this proceeding, the Company does not propose to go forward with the competitive bidding of future capacity needs and the determination of Public Utility Regulatory Policies Act of 21 1978 ("PURPA") avoided cost rates based on competitive bidding.[573]

Mr. Torrey also responded to Mr. Jester's testimony that the Commission is not obligated to compensate the utility to match the earnings it would receive through building its own generation by asserting that the company is not seeking equivalent compensation:

> The Company has not requested through the FCM an incentive mechanism that provides compensation equivalent to a scenario where it owned all generation resources. The FCM helps align the Company's and customers' interests by removing potential bias towards utility-owned assets. The results of the RFP competitive bidding process described by Company witness Troyer will reveal the impact of the FCM incentive on an applicable PPA and compare that result to a utility-owned resource. This alignment of interests in a transparent process allows customers to access potentially lower cost supply alternatives while providing a fair return and ensuring the financial soundness of the utility.[574]

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[571] See 8 Tr 1479-1480.
[572] See 8 Tr 1480.
[573] See 8 Tr 1480.
[574] See 8 Tr 1481.

He further testified that the company's labeling of this as a financial compensation mechanism does not mean the company is seeking compensation rather than an incentive.[575]

Responding to Mr. Lucas in his rebuttal testimony, Mr. Torrey testified that Mr. Lucas's proposal that the company's recovery be limited to administrative costs, with other incentives to be considered in the cost of capital review in a rate case, Mr. Torrey testified that the recovery of administrative costs would be "grossly inadequate" to allow the company to move away from what he characterizes as the traditional regulatory model: "As discussed in my rebuttal of SEIA witness Gignac, Consumers Energy will not abandon the traditional regulatory model and move forward with the new avoided cost methodology and RFP process without approval of the FCM incentive as proposed in the PCA."[576] As to the magnitude of the company's proposal, Mr. Torrey testified that the company's PCA is likely to result in the company contracting for up to 6,350 MW of solar by 2040 "that currently have no earnings potential."[577]

Responding to Mr. Rafson, he acknowledged the company's obligation to comply with PURPA, he testified that MCL 460.6t(15) does not distinguish the type of contract eligible for an incentive, and reiterated his earlier testimony that the company's RFP process is expected to lower costs.[578] Responding to Mr. Proudfoot, he acknowledged that Consumers Energy ownership of up to 50% of the renewables included in the company's plan would "lessen the concern" moving away from the "traditional business

[575] See 8 Tr 1482.
[576] See 8 Tr 1487.
[577] See 8 Tr 1488
[578] See 8 Tr 1489.

model," but indicated the company is "not willing to abandon the tradition[al] regulatory model for such a significant portion of its business."[579]

In his rebuttal, Mr. Maddipati also took issue with the testimony and recommendations of Staff and intervenor witnesses. After restating the company's reasons for seeking the FCM, both as an incentive to achieve the policy objectives identified by Mr. Torrey and to incorporate the financial impacts of imputed debt, he disputed that the company's ability to recover FCM costs under Act 304 eliminates the need to consider imputed debt:

> PPAs are a direct obligation of the Company, not customers. The same is true for the Company's first mortgage bonds (debt) and equity – these are not direct obligations of the customers but the Company. The Commission authorizes revenue through general rates that are ideally sufficient to cover operating expenses, service debt, and allow its owners to earn its authorized ROE. To the extent rates are insufficient, the Company's debt would be serviced first and any remaining revenues would flow to equity holders. The same is true of PPAs – while the Company expects to collect revenue sufficient to recover PPA costs through its PSCR mechanism, if insufficient revenue were collected, PPA payments would in fact still be made.[580]

He also presented a drawing to illustrate his testimony, showing both "imputed PPA debt" and "imputed PPA equity," as part of the following priority of payments: first debt would be paid, then "imputed PPA debt," then "imputed PPA equity," and then "CE equity."[581] He did acknowledge that the PSCR process "allows for more timely revenue recovery relative to general rates and a true-up mechanism". He also contended that the comparison of a PPA to company-owned generation is "not necessarily on a level playing field," with the FCM because:

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[579] See 8 Tr 1489.
[580] See 7 Tr 736.
[581] See 8 Tr 734.

> [T]he PPA provider is accessing capital that has the equity of the Company supporting it. Whereas the Company is subject to economic conditions, sales, and potential future general rate case revisions, the PPA provider is guaranteed a payment stream from the Company.[582]

He presented Exhibit A-111 to illustrate "the potential disparity in profit between the Company's proposed FCM, a traditional owned generation facility, and a hypothetical scenario which drastically lowers the Company's capital cots, Return on Equity . . . and equity ratio."[583] Mr. Maddipati testified that this illustration shows that the company is not solely motivated by profits because the FCM "Is not preferred from an economic perspective relative to the Company owning its generation facilities."[584]

Addressing Staff's testimony on this topic, Mr. Maddipati contended that Staff would have the company enter into PPAs that on the surface appear cheaper but would ultimately result in higher costs. He also testified that consideration of imputed debt in a rate case would "be too late," asserting that the "incremental equity needed to support PPAs" should be evaluated as part of the buy-or-build analysis.[585] He disputed the significance of Mr. Nichols's recognition that the company currently has 3,000 MW of PPAs, contending that under its proposed course of action, the company could potentially see 6,000 MW of PPAs.[586] Mr. Maddipati also took issue with Mr. Harlow's testimony on the basis that he did not consider the net present value of PPA payments in estimating the impact of imputed debt on the company's capital structure, presenting a revised version in his Exhibit A-113.[587] He also took issue with Staff's alternative

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[582] See 7 Tr 738.
[583] See 7 Tr 738.
[584] See 7 Tr 738.
[585] See 7 Tr 742.
[586] See 7 Tr 743.
[587] See 7 Tr 743-744.

proposals as inadequate and unacceptable to Consumers Energy.[588] Among his contentions, Mr. Maddipati responded to the claim he had misapplied the S&P method for estimating imputed debt by asserting: "[W]hile my methodology most closely aligns with the methodology used by S&P, it is not intended to mimic the methodology for any particular agency or investor."[589] He also asserted that the 25% risk factor he used in his calculations would be used by S&P, presenting an email exchange in his Exhibit A-115 to support his contention that S&P "uses a 25% risk factor for Consumers Energy."[590] While acknowledging that he is not an attorney, Mr. Maddipati also presented his view that section 6t(15) does not limit the company's financial incentive to the weighted average cost of capital as a percentage of PPA payments:

> While I am not a lawyer, if, as indicated by Mr. Harlow, the law intended to cap any FCM as the PPA expense times the Company's WACC it could have said so explicitly. Rather, it notes that "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." Such a statement would only make sense if you were to treat a PPA as creating a capital asset, which is what I have done by calculating the imputed debt of the PPA. By using the authorized ROE and an equity-to-debt ratio less than currently authorized, I have ensured that the resulting FCM would, by definition, be less than WACC.[591]

Responding to Mr. Lucas, in addition to repeating many of the contentions noted above, Mr. Maddipati urged the Commission to give little weight to his testimony based on Mr. Maddipati's contention that Mr. Lucas had misrepresented and mischaracterized the company's position.[592] He further testified:

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[588] See 7 Tr 744-753.
[589] See 7 Tr 750.
[590] See 7 Tr 751.
[591] See 7 Tr 753.
[592] See 7 Tr 753.

> Mr. Lucas' criticism of the Company's position appears to be that I did not confirm that 9 there is a bright-line test for which a rating agency would potentially downgrade a utility based on imputed debt from PPAs. 12 10 Managing the credit and financial health of any 11 company is a complex process, and the analysis conducted by credit analysts and rating 12 agencies is equally nuanced. In my experience, decisions regarding the credit of any 13 company are rarely made solely on a single issue but involve the interplay between 14 numerous factors. That there is a financial impact from the long-term obligations created 15 by PPAs should hardly be controversial – if there was no impact, as Mr. Lucas seems to 16 imply, why would any criteria or consideration be published by any credit rating agency?[593]

Mr. Maddipati contended that Mr. Lucas "completely confuses the risk the Company faces when entering a PPA," explaining:

> Mr. Lucas suggests that the risk faced by the Company's investors is that it would continue to pay PPA providers in the event they were to stop performing under the contract. Mr. Lucas has it backwards. The Company is reducing risk for PPA providers by guaranteeing payment. As noted previously, like any business, the Company expects to collect sufficient revenue to cover its expenses and earn a fair return. However, to the extent revenues were insufficient, PPA providers would be paid before equity holders as illustrated in Figure 1. PPA providers are removed from any risk of revenue collection, since their sole risk is to the Company, which is backed by the equity provided by its owners.[594]

He also disputed that there should be any concern with the company's proposed FCM because the costs of the PPA implicitly include the financing costs for the third-party seller:

> The equity of the Company is used to finance its owned assets on which it earns a fair return. If the equity is also used to support the ability of a third party to raise financing, thus using the Company's balance sheet, then that cost should be incorporated when evaluating if a PPA is the most cost-effective solution. If the credit worthiness of Consumers Energy was not being used by PPA providers, then there would be no need for the Company to provide a long-term contract.[595]

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[593] See 7 Tr 754.
[594] See 7 Tr 755.
[595] See 7 Tr 756.

Responding to Mr. Jester, Mr. Maddipati disputed that Mr. Jester's description of methods to mitigate the effects of imputed debt were accurate, contending that two of the methods would "result in degradation of credit ratios," and objecting that Mr. Jester had not communicated with anyone at S&P. Responding to Mr. Coppola and Mr. Pollock, Mr. Maddipati reiterated his view, as noted above, that the company needs to consider that the proposed PCA and competitive bidding could dramatically alter the company's mix of owned generation.[596] Mr. Maddipati also noted that Mr. Rafson, Mr. Peloquin, and Mr. Richter had also disputed the need for the FCM, relying on his prior testimony as discussed above.[597]

In his rebuttal testimony, Mr. Troyer also offered the following regarding the PPA costs the company intends to use in its FCM formula:

> Mr. Maddipati explains that marginal costs are related to contract options, while fixed costs are both energy and capacity payments that the Company is required to purchase under the contract. When filing the contract for approval with the Commission, the Company will specify what portion of the projected payments of the contract have fixed cost obligations, and what portion of the payments are not fixed cost obligations. The FCM would only be calculated based on the fixed portion.[598]

He deferred to Mr. Torrey for an explanation why the FCM should apply to PURPA contracts.[599]

In his rebuttal testimony, Mr. Troyer responded to Mr. Lucas's concerns regarding the use of the FCM in evaluating bidding. Referencing his rebuttal testimony regarding the bid evaluation process, Mr. Troyer testified:

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[596] See 7 Tr 761-762.
[597] See 7 Tr 762-763.
[598] See 8 Tr 1292-1293. [Also see Mr. Troyer's cross-examination at 8 Tr 1318-1323, and Exhibit SEIA-28.]
[599] See 8 Tr 1293; Subsequently, in cross-examination, Mr. Troyer deferred the explanation to Mr. Maddipati's rebuttal testimony. See 8 Tr 1359.

> The total FCM and PPA price is the cost that the Company's customers would incur, so it is appropriate to consider both in the evaluation process. This is necessary to make a reasonable price comparison. The Company's intention to limit the acquisition structure is based on its workforce limitations, not an effort to prohibit opportunities. For example, if the Company's Enterprise Project Management organization is fully utilized and unable to take on additional projects, it would not be reasonable to include development asset acquisition proposals in the competitive solicitation due to implementation risk. Regarding the inclusion of RECs, MCL 460.6(t) directs the Company to consider renewable energy supply as part of its IRP cases. Since renewable energy is to be considered as part of the IRP, it is necessary for the RECs to be included as part of the competitive bid. Lastly, a clearing price is not feasible because the Company will include value-added criteria in the evaluation matrix used by the Independent Evaluator. These value-added considerations result in projects being selected based on more than just the cost of the facility. I do not agree with Mr. Lucas's concerns.[600]

He then provided his understanding why it should apply to a PURPA contract as follows:

> Q (By Mr. Keskey): And if in certain circumstances under federal law you are required to enter into a PURPA contract, then how is incentive relevant?
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> A Because that PURPA facility is displacing either a PPA that the Company would be able to apply an FCM to or a Company-owned asset which the Company would have an authorized return on. See 8 Tr 1360-1361.

At another point, he testified:

> So, it's possible that PURPA QFs would get all of the capacity in the solicitation, and that wouldn't be any different than having non-QFs receive the capacity in the solicitation as far as what earnings the Company would get on its own assets. So put the PURPA projects and the non-PURPA projects on a level playing field, they would both have the FCM added to them.[601]

Mr. Troyer continued to emphasize that the FCM was an alternative to what Consumers

Energy would get if it built a generating plant or asset:

> If we were entering into a PPA with either a PURPA or a non-PURPA, it means that we are not building a Company asset, therefore, this change in

[600] See 8 Tr 1291-1292.
[601] See 8 Tr 1362-1363.

> our business model is a reduction in the ROE that we may have on a Company asset, and so our proposal is to get an FCM as an alternative to building the Company asset.[602]

Asked if the FCM would change the authorized return on equity in a rate case, Mr. Troyer testified that he did not know how the FCM would be used in a rate case.[603] He also did not know whether the FCM would apply to contract extensions, e.g. the MCV contract, stating that it "may" apply if a contract amended is required, but not if no amendment is required. [604]

Mr. Coppola also provided rebuttal testimony, agreeing with Staff witnesses that the impact of PPAs should be considered in a general rate case: Mr. Coppola cited MCL 460.6t(6) in objecting to an incentive for Consumers Energy to consider competitive options for capacity additions:

> However, Section 6t(6) of Act 341 requires that before filing an integrated resource plan, each electric utility needs to issue a request for proposals to provide any new supply-side generation capacity resources needed to serve the utility projected electric load during the initial 3-year planning period in each integrated resource plan filed. By the very nature of the request for proposals ("RFP") procedure, the Company receives competitive bids for capacity. There is no need to provide an incentive when the Company is already required under the IRP procedures to seek comparable bids. See 9 Tr 2421-2422.

He also characterized as "anticompetitive" Staff's alternative proposal to set aside 50% of capacity additions for Consumers Energy to build, further tending it would defeat the RFP and competitive bidding process outlines in section 6t(6) of Act 341:

> The Commission should not subsidize the Company's profits at the expense of ratepayers through a set-aside mechanism, when the Company's proposals cannot compete with the alternatives of purchasing power and capacity through PPAs.[605]

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[602] See 8 Tr 1363.
[603] See 8 Tr 1363.
[604] See 8 Tr 1353-1354.
[605] See 9 Tr 2422.

Mr. Coppola also objected to another Staff alternative option of creating a regulatory asset for a portion of the company's PPA payments:

> There are at least three problems with the regulatory asset proposal. First, a regulatory asset is typically established to accumulate costs that would otherwise be expensed by the utility in the current period, but instead a determination is made that those costs should be deferred and recovered in rates in a future period. However, in this situation, the PPA payments are costs that are incurred in the current period and also are recovered nearly contemporaneously through the Power Supply Cost Recovery ("PSCR") mechanism. Therefore, there are no costs to defer for the entire year that would accumulate in a regulatory asset which would be included later in working capital and rate base. Second, the proposal would appear to require some phantom accounting by the Company to maintain a memo record of the monthly payments to the regulatory asset account with no contra credit. Any contra credit booked to a short–term regulatory liability account would offset the regulatory asset in the working capital determination for inclusion in rate base, thus defeating the purpose of the regulatory asset. Third, a return on the average balance of the regulatory asset would compensate the Company with a return on the entire amount of PPA payments. This would be excessive.[606]

12. Briefs

Consistent with the number of parties filing testimony on this issue, several parties filed briefs opposing the proposed FCM.

Staff relies on the testimony of Mr. Proudfoot, Mr. Harlow, and Mr. Nichols in arguing that imputed debt should be addressed holistically in rate cases, when the myriad factors influencing a utility's cost of capital can be considered. Staff also identified several alternative approaches to provide an incentive for the utility to enter into PPAs, expressing its preference that such incentives not be tied to imputed debt. Staff also cites Mr. Lucas's testimony in arguing that the company's proposal could have an adverse impact on competitive bidding and on ratepayers. Staff's alternatives

[606] See 9 Tr 2423-2424.

include: deferring a determination on a financial incentive based on imputed debt to a later date, after the company has added to its portfolio; approving an incentive not based on debt, such as Mr. Nichols's proposal to treat an amount equivalent to annual PPA payments as a regulatory asset; using a modified version of an imputed-debt mechanism as described by Mr. Harlow; determining Consumers Energy will be able to build 50% of new capacity additions as described by Mr. Proudfoot; or modifying this last alternative to one in which Consumers Energy pursues a "build-transfer" solicitation, with competitive bidding, to take advantage of tax incentives not available to the utility.[607]

The Attorney General argues that an incentive is not warranted, contending that Consumers Energy should not need an incentive to procure energy for customers at the best prices, and contending that the imputed debt theory does not support the need for the FCM. The Attorney General cite the company's current good credit ratings, while maintaining PPAs, and argues that imputed debt levels are already incorporated in the company's credit ratings.[608]

SEIA quotes Mr. Lucas's testimony extensively in arguing that Consumers Energy should not need an incentive to comply with the regulatory framework that requires it to make reasonable and prudent decisions, also noting alternatives such as performance-based ratemaking to provide incentives. SEIA argues that Consumers Energy has exaggerated the effect of PPAs on its credit ratings, contending that Mr. Maddipati could not identify a single utility whose credit rating was downgraded due to PPAs, and noting that magnitude of PPAs in the company's current portfolio. It further

[607] See Staff brief, pages 75-76.
[608] See Attorney General brief, pages 30-35.

argues that the company is misinterpreting how credit agencies calculate imputed debt. Citing Mr. Lucas's testimony that the company's proposed FCM would be 24.2% for a 25-year PPA, SEIA contends that the proposed incentive needlessly increases costs for ratepayers, and to the detriment of third-party developers. Summarizing its view that Consumers Energy is putting the interests of shareholders above customers, SEIA states:

> Consumers' threat to withhold the benefits of its PCA absent approval of its FCM is a demonstration of the exercise of monopoly market power to the detriment of ratepayers. A robust QF market where independent power producers can sell their output to the utility at Commission-approved avoided cost rates determined through a competitive solicitation is good for ratepayers.[609]

Citing Mr. Jester's testimony, ELPC et al also argue that the FCM exceeds the statutory cap and argues that the Commission has discretion under the statute to reject the mechanism. They characterize the decision as calling for a careful balancing of competing policy concerns, and argue that an alternate compensation mechanism can be considered in the company's next IRP or through a workgroup.[610] Michigan EIBC and IEI rely on Dr. Sherman's testimony, emphasizing that bidders should be able easily to calculate any incentive, and that incorporation of an incentive should not make PPA proposals more expensive than other proposals.[611]

MEC-NRDC-SC believe that some incentive may be appropriate but argue that the type and magnitude of incentive requested by Consumers Energy should be rejected. MEC-NRDC-SC argue that the company's proposal exceeds the statutory

[609] See SEIA brief, page 30.
[610] See ELPC brief, pages 14-15.
[611] See Michigan EIBC and IEI brief, pages 10-12.

cap, citing Mr. Jester's and Mr. Harlow's testimony. These parties dispute that PPA obligations should be considered debt-like given the recovery provided for by statute:

> Regardless of the number of PPAs the Company enters into, Michigan's PSCR statute particularly reduces the financial risk to the utility associated with PPAs because the Commission is limited in finding PPA costs to be imprudent (and therefore unrecoverable) once the Commission has approved the PPA. Accordingly, Mr. Maddipati agreed in cross examination that the PSCR mechanism mitigates the "risk of recovery of the PPA."67 While he did not agree that Commission pre-approval of PPAs essentially guarantees cost recovery because it is still "subject to a reasonable and prudent standard of review," he was not aware of "any instance in which the Commission has approved a PPA for recovery through the PSCR and then at some subsequent time period has disapproved that agreement for recovery under PSCR[.]" Mr. Maddipati also indicated in a discovery response that "[t]he Company has not developed an estimate of the probability that cost recovery of any portion of its PPAs will be disallowed by the Commission and does not have any reasonable basis for making such an estimate." In short, the Company has no reasonable basis for treating PPAs as unrecoverable "off-balance-sheet" debt.[612]

MEC-NRDC-SC contend that while Mr. Maddipati relied heavily on S&P as support for the FCM, his methodology leads to higher payments than if S&P's method for calculating imputed debt were used, citing his use of different discount rates and his use of all firm PPA payments for energy and capacity rather than only capacity payments.[613]

ABATE argues that given the legislatively mandated cost recovery for PPAs in MCL 460.6s(6), Consumers Energy should not base an imputed debt calculation on a 25% risk factor, as Mr. Pollock testified. It also contends that are alternatives such as an award based on a sharing of net savings from a proposed PPA between the utility and its customers.[614]

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[612] See MEC-NRDC-SC brief, pages 17-18.
[613] See MEC-NRDC-SC brief, pages 11-21.
[614] See ABATE brief, pages 24-26.

In its briefs, Consumers Energy argues that the Commission should adopt its proposed financial compensation mechanism in this case, relying primarily on Mr. Torrey's and Mr. Maddipati's testimony. It argues based on Mr. Torrey's testimony that Consumers Energy as a regulated utility relies on equity investment to generate earnings, in contrast to an unregulated business that can increase earnings by lowering the cost of goods sold.[615] It also argues that PPAs generate hidden costs for utilities that should be recognized and accounted for, arguing that the costs are similar to long-term debt, and that they reduce financial flexibility and increase the utility's risk of default.[616] Consumers Energy further argues that without the financial compensation mechanism, "equity capital providers (i.e. the Company and its customers) will be subsidizing PPA providers."[617] And it argues that it would "seriously threaten the financial stability of the company" without its financial compensation mechanism.[618] After reviewing the calculations underlying its proposed mechanism, as explained by Mr. Maddipati, Consumers Energy also argues that the mechanism should be considered in evaluating bids in the company's competitive solicitation process. Consumers Energy generally responds to the testimony of Staff and intervenor witnesses by arguing that without the financial compensation mechanism, incentives for investors to put their money into the utility will be inadequate or non-existent.[619] It presents additional arguments in response that generally track Mr. Maddipati's and Mr. Torrey's rebuttal testimony discussed above.

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[615] See Consumers Energy brief, page 123.
[616] See Consumers Energy's brief, pages 123-124.
[617] See Consumers Energy brief, page 124.
[618] See Consumers Energy brief, page 125.
[619] See Consumers Energy brief, pages 228-229.

B. Discussion

Subsection 15 of Section 6t, MCL 460.6t(15), requires the Commission to consider a financial mechanism for the utility, but does not require the Commission to authorize one. For the reasons discussed below, the ALJ finds that Consumers Energy has failed to justify its proposed financial compensation mechanism.

1. Consumers Energy has not demonstrated a need for its proposed financial compensation mechanism.

The ALJ finds that Consumers Energy has not demonstrated a need for its proposed financial compensation mechanism because the current rate setting process provides an opportunity for the utility to fully recover its costs of capital (see section a), because Consumers Energy recovers the costs of approved PPAs under Act 304, with no material risk of underrecovery (see section b), and because the utility's plans as presented in its IRP do not call for an increase in the power supplied through PPAs for more than five years (see section c). The company's claims that its financial stability will be threatened without the financial compensation mechanism are pure hyperbole (see section d).

a. The company's cost of capital as set in a general rate case reflects the cost of both debt and equity capital, in consideration of both business and financial risks facing the company.

The cost of capital determination the Commission makes in a general rate case considers all risks facing the utility, business and financial. The Commission sets a rate of return on equity and an overall weighted average cost of capital that is appropriate for Consumers Energy and consistent with *Hope* and *Bluefield* in each rate case. In the standard ratemaking formula, the weighted average cost of capital--which reflects both

a capital structure and cost elements for equity and debt--is applied to rate base to determine the income required.

As Staff argues, in determining the weighted average cost of capital, the Commission looks holistically at all the risk elements facing the utility. Note that in its last several rate cases Consumers Energy has argued the Commission should consider imputed debt in determining the capital structure to use in determining the overall weighted cost of capital. The company argued that if its credit ratings were adversely affected, ratepayers would pay the additional debt costs. The company also argued that its continued need for capital to fund utility plant investments such as its distribution system justified a higher equity percentage in its capital structure and a higher return on equity. In its February 28, 2017 order in Case No. U-17990, the Commission explained Consumers Energy's arguments as follows:

> Consumers added that an equity ratio slightly above 50% is prudent in light of the significant capital investments the company intends to undertake in the next few years. Consumers also disputed that its proposed 52.87% equity ratio was out of line with the equity ratios in the company's proxy group, explaining that the Attorney General had used capital structures from the holding companies, rather than the regulated utilities, in the group. According to Consumers, when the correct values are assumed, the average equity ratio of the proxy group is about 53%. 5 Tr 488; Exhibit A-92.
>
> Consumers pointed out that the various credit rating agencies make adjustments to debt balances to include items like power purchase agreements and leases in calculating debt to equity ratios. Thus, "[i]ncorporating the projected equity infusions in 2016 and 2017 in the common equity balance enables the Company to maintain reasonable ratios after such adjustments.[620]

Mr. Maddipati claimed in his initial testimony in this case that "without compensation for these additional factors, I do not believe a fair rate of return for equity

[620] See order, pages 61-62 (citations omitted).

capital provided would be ensured."[621] He presented no evidence, however, that the Commission-determined returns on equity have been inadequate: indeed, despite a longstanding legal requirement that the Commission include an adequate allowance for the cost of capital setting utility rates, Consumers Energy has not appealed any of the Commission's recent rate orders, and has most recently settled a rate case. Also, as recently as June 2018, Moody's characterized the company's authorized return on equity as above average.[622]

As shown by the company's June 2018 credit analysis by Moody's, with 30% of its supply portfolio attributable to PPAs, Consumers Energy has maintained good credit ratings. The Moody's report states: "Consumers Energy Company's . . . credit profile reflects its operations as an integrated electric and gas utility in an above average regulatory environment that allows for predictability of cash flows and results in strong credit metrics, even while the utility has been making significant investments into its electric and gas utility systems."[623] Rather than objecting to the level of PPAs in the company's portfolio, the report identifies as credit strengths: "Supportive regulatory environment with prescriptive suite of recovery mechanisms," and "Financial metrics expected to remain adequate despite tax reform and heightened capex." It indicates as credit challenges: "Parent leverage remains relatively substantial," and "Continued regulatory support will be needed to recover ongoing investment programs."[624]

b. Consumers Energy has not established any material risk of underrecovery of payments made pursuant to a PPA.

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[621] See 7 Tr 726.
[622] See GLREA-3, attachment, page 4.
[623] See Exhibit GLREA-3, attachment, page 1.
[624] See Exhibit GLREA-3, attachment, page 1.

Recovery of costs paid under approved PPAs is provided through the Act 304 PSCR process, with other additional statutory protections such as those found in MCL 460.6t. In addition to cost recovery that is fully reconciled through the Act 304 reconciliation process, which thus provides for recovery to the dollar, with interest based on the date PSCR expenses are booked, the company's general rates contain a working capital allowance, which is included in rate base, that provides for the company to have access to capital to pay PSCR and other expenses before revenues are received from customers to cover those expenses. For example, in Case No. U-17990, the Commission adopted the ALJ's recommendation to approve the company's requested working capital balance, explaining:

> The ALJ recommended approval of Consumers' working capital balance, relying on company testimony that a lower cash balance would expose Consumers to inadequate liquidity for operations and to volatility in the capital market. The ALJ also considered testimony that the cash balance representing 1% of revenues was necessary for operational considerations. Finally, the ALJ was persuaded by testimony that the company's cash balance reflects the seasonality of its cash flows, ability to obtain lower interest rates for bond financing and refinancing, and that its large capital expenditure program requires liquidity in the event of delays in obtaining long-term capital.[625]

Notwithstanding statutory and rate protections, Mr. Maddipati asserted more than once that the company was ultimately responsible for any costs the Commission does not allow the company to recover through rates, also ignoring that many of the company's PPAs have contained what are referred to as regulatory out clauses. Thus, for example, in the standard offer tariff approved in Case No. U-18090, the following provision appears:

[625] See February 28, 2017 order, Case No. U-17990, page 58.

7.4 Regulatory Disallowance

If the MPSC has ruled in an order that Buyer will not be permitted complete recovery from its customers of the capacity and energy charges to be paid pursuant to Section 7, Compensation, then Buyer shall have the right to require that the charges to be paid by Buyer under Section 7 be adjusted to the charges which the MPSC indicates Buyer can recover from its customers. Any such adjustment shall be effective no earlier than the date of such MPSC order. Pending appellate review of such order and final determination of the charges that may be recovered by Buyer pursuant to this Agreement, the amounts not paid to the Seller due to any such adjustment shall be placed by Buyer in an interest-bearing separate account with the administrative costs incurred by that account to be borne by the account. The balance in the separate account, less administrative costs, shall be paid to the appropriate Party upon the completion of appellate review which establishes the charges that Buyer will be permitted to recover from its customers. Future capacity and energy charges to be paid by Buyer shall be no greater than will be recoverable from Buyer's customers pursuant to such final appellate determination.

Seller shall refund to Buyer any portions of the capacity and energy charges paid by Buyer to Seller under this Agreement which Buyer is not permitted, for any reason, to recover from its customers through its electric rates, or at Buyer's sole option, Buyer shall offset said amounts against amounts owed Seller by Buyer as provided in Section 9, Billing.

Buyer shall not seek a Disallowance Order and shall use good faith, commercially reasonable efforts to oppose any proposal to disallow costs included in the Agreement. Nothing in the Agreement shall constitute a waiver of any rights Seller may have to appeal or collaterally challenge a Disallowance Order as a violation of Seller's rights or as otherwise unlawful.

Notwithstanding the foregoing, Seller shall have the right to terminate this Agreement without further liability at any time following a Disallowance Order up to sixty (60) Days following final resolution of any appeal of or collateral challenge to such order by giving Buyer thirty (30) days' notice of such termination.

The provisions of this Subsection 7.4 shall govern over any conflicting provisions of this Agreement.

Regulatory out clauses are not new to the PPA world. Thus, not only could the company not show any significant risk of underrecovery through the PSCR clause, it

has contractual means to protect itself and has relied on those in the past. In addition, Consumers Energy has other contractual means to protect itself. Note, for example, that it frequently requires sellers to post security for performance through an escrow account or letter of credit.

Thus, Consumes Energy has failed to demonstrate any need to address imputed debt through a financial compensation mechanism tied to each Power Purchase Agreement. As several witnesses testified, the company simply has not shown that it has any material risk of not recovering PPA-related costs not recovered through rates.

c. Consumers Energy is not proposing to increase its portfolio of PPAs above current levels until 2025 or later.

The company's request is reasonably characterized as premature by Staff and other parties because the company is not seeking approval of specific PPAs in this case. Under its proposed course of action, Consumers Energy will not exceed the level of PPAs in its current portfolio for quite some time. The company does not intend to fully replace Palisades when that PPA expires in 2021 and intends to replace half of the capacity from Karn Units 1 and 2 with demand-side resources when they retire in 2023. A review of the company's proposed course of action as shown in Exhibit A-2, page 166, shows graphically that the company does not plan to have added solar capacity equivalent to the level of the expired Palisades PPA until 2025, approximately 6 years from now. Since the company proposes that it and its affiliates also bid for that capacity, it is doubtful even those levels will be reached. Consumers Energy has indicated that it intends to file another IRP in 2021.

d. The company's claim that its financial stability is threatened without the Financial Compensation Mechanism is hyperbole.

Mr. Maddipati addressed Staff's and Mr. Lucas's recommendation to defer adoption of an incentive mechanism by contending these parties would wait until the company was "on the precipice or a downgrade or completely unable to access capital" before deciding to act.[626] This is a grossly unfair hyperbole unsupported by the record. Indeed, a review of MCL 460.6a shows that rate cases are required to be completed within 10 months, unless Consumers Energy agrees to an alternative schedule. The utility is also allowed to file annual rate cases.

Because revenues are provided expressly to cover PPA costs through the PSCR, with working capital included in rate base to address any lag between payments and booked PSCR expenses, and in addition because Consumers Energy has substantial contractual protections from paying for capacity or energy that is not produced, Consumers Energy has not established that a rational credit evaluation would consider the company's approved PPAs to present a material risk of the company defaulting on its credit obligations.

2. Consumers Energy has not shown that it has properly identified or isolated the financial costs that may theoretically be associated with a power purchase agreement.

As discussed above, the company's proposed mechanism relies on a calculation of the imputed debt credit agencies may ascribe to Consumers Energy's balance sheet associated with the PPA. The record in this case shows that Mr. Maddipati has not supported his calculation of imputed debt, which exceeds the calculation performed by S&P, and has exaggerated the significance of the calculation.

a. The company's calculation of imputed debt exceeds the level S&P would use.

[626] See 7 Tr 755.

Several witnesses testified that the company's calculation of imputed debt exceeds the level S&P would use. S&P is the only credit rating agency with an explicit method for measuring imputed debt. At 7 Tr 724, Mr. Maddipati characterized his measure of imputed debt as consistent with standard rating agency and market practices but did not support that assertion.

As Staff, MEC-NRDC-SC, ABATE and others argue, the differences between the method Mr. Maddipati chose and the S&P method all increase the imputed debt estimate. First, Mr. Maddipati used a lower discount rate to measure the NPV of future PPA payments, which inflates the net present value of those payments. Second, he did not differentiate between capacity and energy payments, but included essentially all PPA payments in his calculation, while S&P uses only capacity payments. In his rebuttal, Mr. Maddipati claimed that he only included "fixed obligations" under the PPA agreements, including capacity and energy payments that were not incurred at Consumers Energy's option. Nothing in his earlier testimony had hinted at this distinction. Indeed, he described his method as simple:

> This methodology provides a simple approach to calculate the compensation mechanism as all the inputs for the calculation would be readily available at the time a PPA is signed. The Company's WACC and ROE will already be determined through a contested proceeding in the Company's general rate cases and would therefore minimize the administrative burden of determining a fair compensation charge. In fact, *the only inputs that would be subject to consideration are the PPA payments and length which will be pre-determined by the PPA agreement or the Company's avoided cost for PURPA contracts*.[627]

As Mr. Lucas explained, S&P's explicit guidance is that imputed debt is calculated only for the capacity payments required by the contract. The difference is not

[627] See 7 Tr 731.

trivial, as Mr. Lucas illustrated at 8 Tr 2002-2003. Mr. Lucas also presented a discovery response from Mr. Maddipati that shows he did not consider the distinction between capacity and energy payments that S&P makes and iseemingly was not even aware of the distinction.[628] While Mr. Maddipati acknowledged that he did not use the same method as S&P, his explanation for the differences he acknowledged, including the different discount rate and the inclusion of essentially all PPA costs, was that different analysts can apply different approaches. He also acknowledged, however, that the other rating agencies do not have an explicit methodology, and he provided no additional support for significantly inflating his imputed debt estimates above the levels S&P would derive.

Third, while S&P does use a 25% risk factor under certain circumstances, Mr. Maddipati's incorporation of this risk factor is not well supported on this record. In his initial testimony, Mr. Maddipati indicated that a 25% risk factor would be used for costs not collected through general rates, then claimed 25% would be for costs collected through the PSCR process. As noted above, Mr. Pollock and Mr. Harlow testified that use of 25% was erroneous. Rather than addressing the underlying risk, Mr. Maddipati presented an email from "Gabe" at S&P that contained no details or explanation in agreeing that S&P would use a 25% risk factor for PPAs "for Consumers Energy." Clearly, as Mr. Harlow explained, context is important. The ALJ finds that Exhibit A-115 is not persuasive that a 25% risk factor appropriately considers risks associated with PPAs recovered through Act 304. The ALJ also finds that Mr. Pollock, Mr. Harlow, and Mr. Jester persuasively explained the unreasonableness of using 25%. Note that states that explicitly consider imputed debt in ratemaking may reserve to themselves a

[628] See Exhibit SEIA-21.

determination of the risk factor to use in following the S&P approach. For example, in *Application of Madison Gas and Electric Company for Authority to Change Electric and Natural Gas Rates (*Docket No. 3270-UR-121, December 15, 2016 order*)*, 2016 WL 7373791, the Wisconsin Commission explained:

> In calculating capital structures, on a financial basis, this Commission has imputed debt associated with obligations not reported on balance sheets. The imputed debt results in additional costs to ratepayers because MGE is required to add sufficient common equity to maintain its target equity level, and the higher return earned on the additional equity increases the weighted cost of capital. Adjustments for these off-balance sheet obligations are made by Standard and Poor's (S&P) and other financial analysts when calculating various financial ratios, including the total debt to total capital ratio. Imputing debt for off-balance sheet obligations is not a common practice of other state utility commissions. The Commission is not obligated to adopt the risk assessment of an outside agency and will independently examine off-balance sheet obligations, based on this Commission's assessment of risk.
>
> To independently examine off-balance sheet debt obligations, it is reasonable to require to MGE submit detailed information regarding all off-balance sheet obligations for which the financial markets will calculate a debt equivalent. The information shall include, at a minimum: (1) the minimum annual lease and PPA obligations; (2) the method of calculation along with the calculated amount of the debt equivalent; and (3) supporting documentation, including all reports, correspondence and any other justification that clearly established S&P's and other major credit rating agencies' determination of the off-balance sheet debt equivalent, to the extent available, and publicly available documentation when S&P and other major credit rating agencies' documentation is not available.

b. The company's proposed financial compensation mechanism also overstates the cost associated with imputed debt.

As discussed above, there is no direct relationship between an estimate of imputed debt and Consumers Energy's cost of capital. Credit rating agencies consider whether imputed debt does materially increase the risk of default. And the company's cost of debt, as well as its cost of equity, may be affected both by imputed debt and by

capital investment. As quoted above, Consumers Energy has argued that its proposed level of capital investment justifies a higher equity ratio in its ratemaking capital structure in order to maintain its credit rating.

Thus, even if Consumers Energy reasonably estimated imputed debt associated with a PPA, as discussed above, there is not a direct correlation between imputed debt and credit risk, credit rating, or the cost of debt. In contrast, Consumers Energy's financial compensation mechanism is based on the mistaken premise that the cost of imputed debt equates to the cost of an equivalent amount of equity capital. The company has wholly failed to support this claim.

Of course, Consumers Energy does not actually require an additional equity investment equal to the imputed debt amount. The company's permanent capital structure finances the company's actual assets. The ratemaking capital structure used to determine the weighted average cost of capital used in setting rates is then applied to the company's approved rate base, which does not include imputed equity.

Most importantly, putting aside how imputed debt should be calculated, Mr. Maddipati has not established that there is a direction connection between an increment of imputed debt—measured somehow—and the company's overall cost of capital. As Mr. Lucas and others explained, rating agencies evaluate the company's credit worthiness without reliance on the mechanical application of an imputed debt formula, with a goal of holistically evaluating the credit risk.[629] Mr. Maddipati himself quotes Moody's for recognizing that PPAs may not warrant treatment as a debt obligation, and "the totality of the impact of the PPA" will be considered as part of its assessment of the issuer's probability of default:

[629] See Lucas, 8 Tr 1994-1996.

> Regardless of whether we consider that a PPA warrants or does not warrant treatment as a debt obligation, we assess the totality of the impact of the PPA on the issuer's probability of default. (Regulated Electric and Gas Utilities Rating Methodology- June 24 2017)[630]

3. The mechanism the company proposes exceeds the statutory cap and would unduly burden ratepayers.

As Staff and other parties argue, the mechanism the company proposes exceeds the statutory cap, which limits the incentive mechanism to the company's weighted average cost of capital.[631] Mr. Maddipati's claim that his calculation is limited by the company's weighted average cost of capital was fully refuted by Mr. Lucas's testimony, showing that for a 25-year PPA, Mr. Maddipati's FCM would constitute 24.2% of the PPA payments on a levelized basis. Thus, the company's claim that the NPV of the incentive payments would equal the weighted average cost of capital is absurd. If 24.2%of every dollar of PPA expenditure is matched by a 24.2% financial incentive, the NPV is going to be the same 24.2%.

4. The company has not shown on this record that it needs an incentive to pursue a least-cost strategy of supply acquisition.

Consumers Energy has not established that it has pursued a business model of exclusively company ownership of assets, since its current generating plant makes up only 70% of supply portfolio. Indeed, there are many reasons why the company would act in its shareholders' best interest by pursuing a mix of supply resources. First, owning and operating generating plant carries a variety of risks that may be borne solely by shareholders. The Commission is not required to approve cost recovery for capital

[630] See 7 Tr 723.
[631] See Harlow, 9 Tr 2715-2716; Coppola, 8 Tr 2393; Lucas, 8 Tr 2000; Jester, 8 Tr 1801.

investments that are not reasonable and prudent. Consumers Energy has suffered numerous disallowances for unreasonable and imprudent decision making. Rate recovery for capital investment is through general rates, which carries a variety of risks, including risks associated with the accuracy of sales forecasts the with weather, while the costs of power purchase agreements are collected through Act 304 and essentially recovered to the dollar. Note the statements in the June 2018 Moody's report that acknowledge risks associated with the utility's capital investments.

Several requirements of law obligate Consumers Energy to consider alternate sources of energy rather than self-built generation. Consumers Energy insists that it is reasonable to apply its proposed incentive mechanism to PURPA contracts, although such contracts are required by federal law, and subject to Commission oversight. Thus, Act 341 requires the Commission to set PURPA avoided costs periodically and provides for cost recovery under Act 304. Mr. Torrey's response in rebuttal as to why it should receive an incentive for entering into contracts required by federal law was only to argue that subsection 6t(15) does not limit an incentive to non-PURPA contracts, and the company's contention that overall its costs will be lowered by the incentive:

> In his direct testimony, Company witness Troyer explains there are over 1.2 GWs of QF projects interested in selling capacity to the Company at current avoided cost rates, a significant portion of the Company's supply resources. The Company acknowledges its requirement to comply with PURPA as implemented by the MPSC. The Company also acknowledges that it is not willing to abandon the traditional regulatory model for such a significant portion of its business. As noted above, the PCA includes a competitive solicitation process to select new capacity resources and set the PURPA avoided cost based on a three-year outlook. Entering into PURPA agreements with new QFs displaces either Company-owned or purchased capacity, forgoing the Company's opportunity to earn a return on its capital investment or an FCM on a PPA. The RFP process is expected to result in lower costs by allowing the Company to leverage lower cost technologies or avoid procuring capacity in the event demand

> does not materialize as forecasted in this IRP. Further, MCL 460.6(t) does not restrict the type of PPA on which the Company can earn a return. The FCM is an integral part of the PCA and RFP process. In order to move away from the traditional regulatory model, the FCM should apply to all PPAs.[632]

Mr. Torrey did not provide any explanation how the company could avoid complying with PURPA by relying on "the traditional regulatory model." The company's briefs also do not explain this, but simply rely on Mr. Torrey's testimony.

Rate cases ordinary require a utility to show its decisions are reasonable and prudent, including requests for recovery of capital expenses. In seeking a certificate of necessity for a power purchase agreement under section 6s, Consumers Energy must show the agreement is the result of competitive solicitation. Moreover, whether the company seeks a certificate of necessity for a power purchase agreement or to build an electric generation facility, the company must show that its costs are reasonable. Subsection 5 also states:

> The commission may consider any other costs or information related to the costs associated with the power that would be supplied by the existing or proposed electric generation facility or pursuant to the proposed purchase agreement or alternatives to the proposal raised by intervening parties.

And subsection 13 states:

> An existing supplier of electric generation capacity currently producing at least 200 megawatts of firm electric generation capacity resources located in the independent system operator's zone in which the utility's load is served that seeks to provide electric generation capacity resources to the utility may submit a written proposal directly to the commission as an alternative to the construction, investment, or purchase for which the certificate of necessity is sought under this section. The entity submitting an alternative proposal under this subsection has standing to intervene and the commission shall allow reasonable discovery in the contested case proceeding conducted under this section. In evaluating an alternative proposal, the commission shall consider the cost of the alternative

[632] See 8 Tr 1488-1489.

> proposal and the submitting entity's qualifications, technical competence, capability, reliability, creditworthiness, and past performance. In reviewing an application, the commission may consider any alternative proposals submitted under this subsection. This subsection does not limit the ability of any other person to submit to the commission an alternative proposal to the construction, investment, or purchase for which a certificate of necessity is sought under this section and to petition for and be granted leave to intervene in the contested case proceeding conducted under this section under the rules of practice and procedure of the commission. This subsection does not authorize the commission to order or otherwise require an electric utility to adopt any alternative proposal submitted under this subsection.

Although the Commission cannot require the utility to adopt an alternative proposal under this subsection, evidence of more reasonable alternatives to the company's proposal is a basis for the Commission to withhold the requested certificate of necessity.

Among the company's arguments is a claim that the incentive is necessary to compensate it for the earnings it would have the opportunity to obtain if it built generation rather than contracting for generation. The company's analysis ignores fundamental differences between its proposal and the ratemaking treatment of utility-owned generating plant. While Consumers Energy proposes to apply a return on equity to 25% of essentially all PPA costs, if the company were to build a generating plant, it would only be allowed to earn a return equivalent to the weighted average cost of capital (i.e. financing with both debt and equity) on its capital investment in generating plant; it would not earn any return on the O&M costs associated with maintaining its investment, or any fuel required to generate energy. Also, as Mr. Lucas points out, the third-party suppliers also need to recover a return on equity and interest on debt for the capital required for the plant. Consumers Energy's formula also assumes it will earn a return on that cost element.

5. <u>There is no obvious "unfairness" to remedy through an incentive payment</u>

As discussed above, the company's arguments for the FCM include a claim that debt costs to the utility and its customers will increase because PPAs are considered by rating agencies as a form of debt, and a claim that the company needs a financial incentive because its shareholders demand the additional opportunities for earnings. In addition, the company argues it should receive the incentive payments to remedy a perceived unfairness due to the claimed use of the company's capital structure by the PPA suppliers. In furtherance of this last point, Mr. Maddipati testified:

> Mr. Lucas suggests that the risk faced by the Company's investors is that it would continue to pay PPA providers in the event they were to stop performing under the contract. Mr. Lucas has it backwards. The Company is reducing risk for PPA providers by guaranteeing payment. As noted previously, like any business, the Company expects to collect sufficient revenue to cover its expenses and earn a fair return. However, to the extent revenues were insufficient, PPA providers would be paid before equity holders as illustrated in Figure 1. PPA providers are removed from any risk of revenue collection, since their sole risk is to the Company, which is backed by the equity provided by its owners.
>
> Mr. Lucas' claim that the customers are paying twice is inaccurate. The equity of the Company is used to finance its owned assets on which it earns a fair return. If the equity is also used to support the ability of a third party to raise financing, thus using the Company's balance sheet, then that cost should be incorporated when evaluating if a PPA is the most cost-effective solution. If the credit worthiness of Consumers Energy was not being used by PPA providers, then there would be no need for the Company to provide a long-term contract.[633]

The figure he referenced is at 7 tr 737, and purports to show the company's risk associated with PPAs by illustrating a "capital priority" that would require Consumers Energy to make PPA payments "before earnings can be received by equity holders."[634]

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[633] See 7 tr 755-756.

[634] This figure seems to show Consumers Energy paying debt first, then "imputed debt," then "imputed equity," and then "Consumers Energy equity." Consistent with the discussion above, in the event of a Consumers Energy bankruptcy, it would not be required to pay two times the amount of "imputed debt"

This perceived unfairness claim is unsupported. In entering into a contract with a third-party supplier, the fact that the supplier may rely on that contract to obtain financing is merely commerce, not any "unfairness." When Consumers Energy enters into a contract with a power producer, it receives benefits in the form of energy and capacity. Consumers Energy also avoids the need to raise additional capital, as discussed above, and the corresponding risks associated with investment in utility plant. As Mr. Maddipati acknowledged, the PPA contracts have remedies for failure of the supplier to perform, and the company will not be obligated to pay for capacity or energy that is not provided in accordance with the terms of the contract.[635]

At one point in his testimony, Mr. Maddipati claims that the third-party sellers are competing with the company's debt financing. He cites an example of an investor who stated that he did not want to additional Consumers Energy debt to his portfolio. While this example does not support the claim that Consumers Energy's ability to issue debt is limited due to the existence of u projects, which wold be expected to have different risk profiles, the company's reliance on the "traditional model" in which the utility builds it own generation does not seem to recognize any limit on its ability to attract equity investment.

6. <u>The company's plans to use the FCM in evaluating bids from third parties would create an unfair advance for the company and its affiliates.</u>

A separate question is whether the cost of imputed debt and/or any financial compensation mechanism should be considered in evaluating bids. It is of course appropriate to evaluate the true cost to ratepayers of each proposal under

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associated with PPAs before its equity holders would be paid. There is no reason to believe Consumers Energy will ever have to pay for energy or capacity under a PPA that it does not receive.

[635] See, e.g., 7 Tr 819, 823.

consideration, if it can be measured accurately. If Consumers Energy's financial compensation mechanism accurately captured true costs, which it does not, and if Consumers Energy could also accurately capture the true costs of all alternatives under consideration, it would be appropriate to use those costs in comparing proposals. This is true even if the Commission did not adopt an incentive mechanism based on such costs. However, this theoretical ideal of considering all costs associated with each proposal does not translate to using the company's proposed financial compensation mechanism to evaluate third-party bids for comparison with Consumers Energy build proposals and affiliated-party bids.

Consumers Energy's claim that its proposed financial compensation mechanism is the appropriate measure to use in evaluating PPAs versus a company-build model is unconvincing. First, the company acknowledges that isolating the costs caused by one PPA is difficult. As discussed above, not only has Consumers Energy overstated the imputed debt rating agencies would ascribe to PPAs, it has overstated the impact of imputed debt on its cost of capital in claiming the cost equates to the cost of an equivalent value of "imputed equity." Moreover, the company has failed to include an evaluation of the potential additional financial or business risk associated with an increase in company-owned generation, which would ordinarily be considered in determining the cost of capital in a rate case. Its proposal to use the FCM in evaluating bids by third parties not only exaggerates the potential costs of the third-party agreements but ignores potential costs of the company-build alternative.

Second, the company's acknowledgement that it would not obtain compensation for entering into a contract with an affiliate—MCL 460.6t(15) precludes this result--

undermines its claim that the actual costs of contract and build options need to be considered. The company's testimony makes clear that it does intend that its affiliates be able to bid for capacity in RFPs.

Additionally, the company's proposal fails to consider any additional risk that may be associated with company-built generation, including operational risks. Note that the company's authorized return on equity is based on comparable risk, and the extent and nature of company-owned generation is a factor that may be considered. If PPA bids are inflated to cover the company's estimated cost of imputed debt, company-build projects should be inflated to reflect additional risk. And given Mr. Maddipati's insistence that PPA sellers are using the company's capital structure, any financial compensation mechanism for affiliated companies should be paid for by those companies--if Consumers Energy company does not charge rate payers, by the company's reasoning there would still be a hidden cost. A review of the June 2018 Moody's report in Exhibit GLREA-3 and a review of the California PUC staff report cited in Mr. Lucas's testimony show that credit agencies also recognize that company-owned generation carries risks for creditors.

As far as bidding goes, Consumers Energy is seeking an incentive that paradoxically will make PPAs more expensive relative to company owned generation, all else equal, than without the incentive. Up to this point, Commission review of cost alternatives in evaluating utility capital expenditures, as well as other requirements of law, have restrained the incentives the company has identified to build its own generation. Use of the FCM in evaluating bids, however, would make potentially cost-minimizing third-party PPAs more more expensive, all else equal, prior to a comparison

to Consumers Energy construction or affiliate PPA options. That is, in addition to candidly acknowledging an institutional bias against power purchase agreements, Consumers Energy is seeking a cost adder for those contracts that will thus tend to make them appear more expensive to ratepayers and thus further favor company-owned generation or contracts with affiliates. And as shown from the discussion above, the magnitude of the cost adder is on the order of 13%-25%, not a trivial difference. Consumers Energy does not discuss whether ratepayers have subsidized its affiliates though prior PPAs.

California is one of the states Mr. Maddipati has cited for recognizing imputed debt. Staff has explained California's approach in Exhibit S-1. A case in point is the California Commission's determination that imputed debt or "debt equivalence" cannot be taken into account when the company or its affiliates are competing with third party bidders. *In Re Integrate Procurement Policies and Consider Long-Term Procurement Plans*, Decision 07-12-052, December 20, 2007, 2007 WL 4934134, the California Commission explained:

> The Commission currently considers debt equivalence [DE] in two contexts. First, debt equivalence is one of several considerations that rating agencies factor into their assessment of a utility's overall risk profile. The Commission considers the rating agencies' credit ratings in the cost of capital proceeding and thus considers debt equivalence when it determines the IOUs' cost of capital. For example, in the current cost of capital applications [A.07-05-003 (SCE), A.07-05-007 (SDG&E), A.07-05-008 (PG&E)] the IOUs cite DE among a host of other factors that affect their credit risk, including loss of load due to direct access, community choice aggregation, and municipalization, high levels of capital spending and construction, high retail rates, and fuel price volatility, among others.
>
> The second context is the use of DE in evaluating offers in competitive solicitations. In D.04-12-048, the Commission concurred with the utilities' proposal to base the debt equivalence adder on S&P's approach, 'because it is the most developed and transparent approach to calculating

DE.‘ The Commission modified the S&P approach, however, because the 30% risk factor that S&P then applied was ‘too high to be reasonable and fair to all PPAs,‘ and the Commission did not want ‘to create an unfair burden on or a disadvantage for independent power sources over utility-owned … .‘ For those reasons, the Commission elected to discount S&P's risk factor by one-third from 30% to 20% for purposes of evaluating bids in competitive solicitations.

Based on the record of this proceeding, we agree that DE in and of itself is not a cost that the utilities directly incur by entering into a PPA. DE, which is also referred to as imputed debt, is a term rating agencies use to describe the potential financial risks a utility may incur when it enters into a long-term PPA. Under certain specific circumstances, a rating agency may treat some portion of the utility's obligation under the PPA as equivalent to debt, rather than an operating cost, and may adjust the utility's credit metrics and financial ratios to reflect increased levels of debt.

When the Commission considered this issue in the last procurement proceeding [R.04-04-003], it authorized the utilities to ‘take into account the impact of DE when evaluating individual bids …‘ and directed the utilities to use a 20% ‘risk factor‘ for all PPAs, based on a discount of the 30% risk factor developed by Standard and Poor's (S&P) for the California utilities. The Commission also acknowledged, however, ‘As the rating agencies' views on DE change or as we gain more experience with DE evaluation in the [cost of capital] proceedings, we may adjust the DE methodology used in [the] future. Since the issuance of D.04-12-048, the Commission has gained more experience with debt equivalence.

The preceding discussion demonstrates that the Commission's approach to debt equivalence creates a disparity between the treatment of PPAs and utility-owned projects in the procurement process, in direct contradiction to the Commission's stated goal of promoting head-to-head competition between PPAs and utility-owned options. The evaluation of bids by PPAs in competitive solicitations includes a DE ‘bid adder ‘in an attempt to quantify potential risks presented by IPP projects, while the evaluation of utility-owned projects includes no similar upfront bid adder, even though utility-owned projects present incremental risks to ratepayers and utility shareholders. We believe that to further encourage fair, head-to-head competition between PPAs and utility-owned projects, as stated in D.04-12-048 and numerous times throughout this decision, the bid adder for PPAs should be eliminated. Based on an examination of all three of the rating agencies' treatment of DE, recent changes to these treatments, and the improved credit ratings of the California utilities, we find that no DE adder is warranted.

We recognize that at some point, DE *may* reach a point where it can affect the utilities' credit ratings and cost of capital, and it is not disputed in this

> proceeding that the potential effect of DE on credit ratings, if any, is an appropriate topic for the utilities' cost of capital proceedings. Today's decision focuses on the evaluation of PPA bids received in utility request for offers and in no way presupposes any related cost recovery, or adjustments to capital structures in future cost of capital proceedings. We continue to direct the IOUs, especially SDG&E, to raise any individual concerns it has with the impact of a particular PPA on its debt to equity ratio in its Cost of Capital proceeding. (footnotes omitted)

In *Order Instituting Rulemaking to Integrate Procurement Policies and Consider Long-Term Procurement Plans. (U 39 E),* Decision 08-11-008 (November 6, 2008), 2008 WL 4948592, the California Public Utilities Commission reconsidered this earlier ruling. At pages 8-9, it explained:

> Because the DE associated with a PPA is a factor considered by rating agencies and is a factor the Commission evaluates when it determines an IOU's return on equity in the IOU's [Cost of Capital] proceeding, we find it is appropriate in some cases for the IOUs to recognize the effects of DE in their bid evaluation processes.
>
> Specifically, we find that it is appropriate to consider DE in cases in which the bids included in the solicitation are sufficiently similar that a comparison of relative DE-effects would not in turn suggest the need to consider other, potentially countervailing risk-related effects of selecting one bid over another. Consequently, we will allow the use of the 20% DE adder in head-to-head competition between PPAs where no UOG [Utility Owned Generation] projects (including EPC [Engineering, Procuring, and Construction] or PSA [Purchase and Sale Agreement] bids) are being considered. We empower the utilities to develop in their bid evaluation protocols, in consultation with their IEs [Independent Evaluators] and PRGs [Procurement Review Groups], to ensure that in head-to-head competition, the use of the DE adder does not disadvantage bids for renewable and innovative low-carbon resources that may have higher capital costs than traditional gas-fired generation.
>
> As pointed out by IEP, though, there are a number of both risk-creating and risk-mitigating effects associated with an IOU signing a PPA rather than building UOG, as indicated by the following lists compiled by a Standard and Poor's representative:
>
> **<u>Benefits of PPAs</u>**
>
> • Construction risk is borne by the supplier

• Operating risk is typically shifted to the supplier if certain threshold availability and/or heat rate targets are not met
• Recovery of costs may be simplified through the use of a power cost adjustment mechanism
• Avoid taking a long view of the market
• Asset diversity
• Temper exposure to technology risk

Risks of PPAs

• Forego rate base treatment and the opportunity to earn a return
• Debt imputation is viewed as increasing operating leverage for analytical purposes, which can erode the financial metrics used to measure creditworthiness
• Potential need to provide collateral to the supplier

The complexity of the risk-related pros and cons associated with PPA versus UOG ownership suggested by these two lists (and the fact that, presumably, neither list is exhaustive) suggests that it would be inappropriate to single out and consider only one specific risk-related effect (i.e., the risk associated with the additional DE within a particular regulatory framework) of a PPA bid on the potential impact to an IOU's credit ratings when comparing PPA and UOG bids. Consequently, we will continue to prohibit the use of the DE adder in solicitations that include both PPA and UOG (including PSA or EPC) bids.

C. Conclusion

For the reasons stated above, the ALJ finds the testimony of Mr. Harlow, Mr. Nichols, Mr. Jester, and Mr. Lucas persuasive that Consumers Energy does not need a financial incentive to address imputed debt, which is best addressed through rate cases when all utility risks can be holistically evaluated. Additionally, the ALJ agrees that the company's FCM substantially overstates the cost of imputed debt, and calculates a financial incentive significantly in excess of the statutory cap. Applying the proposed FCM to the competitive bidding process as the company proposes would create an uneven playing field that benefits Consumers Energy projects and affiliate projects

without justification. The ALJ recommends that the Commission reject the proposed FCM.

The ALJ notes that alternative incentive mechanisms proposed by some parties that are based on a sharing of savings created by the selection of a low-cost bidder, would not have the undesirable effect of distorting the company's choice among competing sources of supply. Instead, the savings would be determined after the selection of a supplier and would thus not distort the economic analysis. The alternatives suggested by parties to the company's proposal are not addressed in detail in this PFD, however, since the company has made clear only its proposed mechanism is acceptable, and reiterated throughout its evidentiary presentation that it will not be willing to execute its PCA unless the Commission approves its FCM.

IX.

PURPA AVOIDED COST AND RELATED ISSUES

Among the most contentious of the issues in this case are the disputes surrounding Consumers Energy's proposal to modify the determinations made in Case No. U-18090, including the use of competitive bidding to determine avoided cost, reductions to the length of the contracts to be offered to QFs that are not selected as a result of the competitive bidding process, reduction in the size of project that will qualify for the standard offer tariff, and reduction in the timeframe over which a capacity need is determined.

A. Background

The Commission initiated multiple dockets to address PURPA requirements, including Case Nos. U-18090 and U-20095. In Case No. U-18090, the Commission

recognized that different cost rates should apply depending on whether the company has a need for capacity. In that case, the Commission also adopted Staff's recommendation to use a "hybrid proxy plant" to determine avoided cost. In its filing in this case, Consumers Energy contends that as shown in its IRP, it is not proposing to build a natural-gas fired plant, and also that it believes its current avoided costs of capacity are significantly lower. Mr. Clark presented the company's cost analysis.

Mr. Troyer presented the company's proposal to use two different methodologies depending on whether or not it has a capacity need, a full avoided cost rate when a capacity need exists and a market based avoided cost when no capacity need exists. He testified that when Consumers Energy needs capacity, it proposes to set avoided cost rates through the competitive solicitation process discussed above:

> In preparation of future IRP filings, the Company will determine if it has a need for new generation capacity over the next three years and the type(s) of generation that is most reasonable and prudent to procure (e.g., solar, wind, natural gas). Energy waste reduction measures (energy efficiency, demand response, etc.) and energy storage would be evaluated to determine if they can be implemented to offset any projected generation capacity need. The remaining capacity need would be offered through a competitive solicitation for the technologies that are most reasonable to procure. [636]

Mr. Troyer explained that the capacity and energy cost of the last project selected would become the full avoided-cost rate for any remaining capacity needs, and further explained how the capacity need determination would be integrated with the IRP process:

> If the capacity need is not filled entirely through the RFP, there will be a capacity need determined by the Commission in the IRP set for the next three years. QFs could fill the remaining capacity need at the avoided cost as set by the RFP. If the RFP fills all capacity needs and the Commission

[636] See 8 Tr 1251.

> determines in its final order that the Company's IRP is the most reasonable and prudent manner to meet the Company's energy and capacity needs, no further capacity need exists, and the capacity avoided cost for QFs during the three-year period will be PRA rates. If the Commission determines in a final IRP order that the Company has a capacity need greater than the need presented by the Company in the IRP, the Company will conduct another RFP following the Commission's order to address that incremental need. This RFP will be conducted in the same manner as the RFP process outlined above.[637]

Thus, Consumers Energy proposed to use a three-year outlook to determine whether it has a capacity need. When the company has a capacity need and avoided-cost and energy rates have been established through a competitive solicitation, Consumers Energy proposes to offer QFs the option to choose the MISO LMP in lieu of the competitively-established energy rates. If the QF chooses the competitively-established energy rate, the contract term would be 5 years; if the QF chooses the MISO LMP, the contract term would be 15 years. When the company does not have a capacity need, the company proposes that in addition to the PRA rate as the capacity rate, QFs can similarly choose between a five-year contract with a fixed forecast energy rate or a 15-year contract with a variable energy rate equal to the MISO LMP. Consumers Energy also proposed to reduce the size of project eligible for the standard offer tariff from 2 MW to 150 kW, but proposed to compensate all QFs 150 KW or less at the full avoided-cost rate regardless of its capacity need. Mr. Torrey provided the following explanation:

> Standard Offer Tariff rates are most appropriate for small developers and customers that lack the experience and resources needed for larger forays into the electricity generation business. The current Standard Offer Tariff size extends to developers who have significant experience and resources that do not need to have their contracting facilitated through a Standard Offer Tariff. From December 1, 2017 through the end of April 2018, the Company has received requests for contracts up to 2 MW in size for 210

[637] See 8 Tr 1253-1254.

> QFs totaling 411 MW. The majority of these requests come from large sophisticated solar project developers.[638]

He then further explained that Consumers Energy proposes the standard offer tariff apply to projects the size of distributed generation projects under MCL 460.1173,

> 18 CFR 292.304(c) requires the Company to implement a Standard Offer Program for QFs up to 100 kW in size. However, MCL 460.1173 specifies that the limit for the size of generators that customers are eligible to participate in the distributed generation program is 150 kW. It appears by this limit that the State of Michigan intends to treat facilities of this size differently than facilities of a larger generating capacity. To ensure that the Standard Offer Program aligns with the intent of the law for customer-owned distributed generation, the Company proposes to use the same size criteria for the Standard Offer Program as well. [639]

As reviewed in section III above, several parties objected to one or more elements of the company's recommendations. Parties also raised concerns regarding the extent to which the Commission's decisions in Case No. U-18090 would apply to existing QFs with expiring contracts, if the Commission revises the avoided cost rate in this case.

In response to Staff's recommendation that the outlook for a determination whether the utility has a capacity need be set at five years, and in response to witnesses pointing out that with its annual obligation under MCL 460.6w to make a 4-year capacity needs demonstration and would correspondingly never need capacity over a three-year horizon, Consumers Energy revised its recommendation to a 5-year outlook in its rebuttal testimony, with a proviso. Mr. Troyer testified:

> The Company recognizes that there are conflicts between its proposal to use a three-year window and the State Reliability Mechanism ("SRM") four-year planning horizon. A five-year demonstration period would be acceptable. However, there are potential issues with the implementation of

[638] See 8 Tr 1274.
[639] See 8 Tr 1274-1275.

> the Company's PCA if a five-year demonstration period is utilized. For example, if a five-year demonstration shows a capacity need and PURPA QFs were able to claim the entire capacity amount, there would not be a competitive solicitation to reset the avoided costs. The Company's customers would likely pay more for the QF capacity than what would have been available if the Company conducted the competitive solicitation. [640]

He then explained the company's proviso with reference to a discovery response in Exhibit A-110 provided by Staff witness Mr. Harlow, who presented Staff's recommendation that the company use a five-year horizon to determine capacity, stating Staff's view that if Consumers Energy is pursuing competitive bidding, it does not have a capacity need. Mr. Troyer presented Exhibit A-106 to show a summary of the company's proposal.

Mr. Jester and Mr. Harlow recommended that the length of the contract offered to QFs when the company has a capacity need should match the term of the contracts solicited in the RFP. As shown in Exhibit A-109, Mr. Troyer agreed to that modification in his rebuttal.

Mr. Jester made a recommendation tying the avoided cost determination to the capacity need determination as follows:

> Q. How would you determine whether the Company has a capacity need?
>
> A. I would simply look to see if there are any future capacity additions that can be deferred or avoided, and I would also see if there is a projected shortfall between capacity supply and projected load plus reserve margin.
>
> Q. Where would you draw the line between a future capacity addition that can be deferred or avoided and a future capacity addition that cannot be deferred or avoided?
>
> A. I think a good dividing line is whether or not the Commission has approved cost recovery for future capacity additions. For example, the Company typically requires multiple years of time between initial

[640] See 8 Tr 1304.

> Commission approval of a generating resource until that resource is constructed and begun operation. It would be unfair to customers and the Company to argue that a capacity addition with cost recovery approved is still "deferable." Conversely, a planned future capacity addition that is projected to begin operation in the future but has not yet been approved by the Commission can be deferred or avoided by incremental qualifying facility contracting. This approach would be more workable if, as I earlier recommended, the Company's competitive solicitation to meet its capacity needs is done in an annual rather than 3-year cycle. [641]

Mr. Torrey rejected this in his rebuttal testimony, contending it is incompatible with the three-year limit on the company's ability to obtain cost approval in an IRP:

> Mr. Jester's recommendation to consider any capacity addition not yet approved for cost recovery by the Commission as a need would likely result in most of the Company's future capacity plan always being characterized as a need and subject to fulfillment by QFs. Mr. Jester does not recognize that the Company is unable to obtain cost recovery approval for any portion of its capacity plan beyond the near term.[642]

In its initial brief, Consumers Energy argues the Commission should adopt its proposed competitive bidding and its new approach to PURPA avoided cost determination. Consumers Energy proposes to replace the capacity and energy avoided cost rates set in Case No. U-18090 with a program for determining avoided cost through competitive solicitation, and in addition to limit the size of the standard offer tariff to 150 kW rather than 2 MW as set in Case No. U-18090, to change the capacity demonstration period from 10 years as set in Case No. U-18090 to five years, and to change the length of any contract offered to QFs outside the 150 kW standard offer tariff or the competitive solicitation.[643]

Consumers Energy adopts the five-year capacity need determination Mr. Troyer endorsed in his rebuttal testimony, conditioned on the Commission finding "that the

[641] See 8 Tr 2257-2258.
[642] See 8 Tr 1483.
[643] Also see Consumers Energy brief page 217.

Company has no PURPA capacity need so long as the Company is implementing the PCA, as approved by the Commission, which includes a competitive bidding process for all future capacity needs."[644] Consumers Energy explains the process as follows, citing Mr. Troyer's testimony:

> In undertaking a competitive solicitation, prior to the filing of an IRP, if Consumers Energy determines that it has a persistent need for new supply-side generation capacity at any point over the first five years that the IRP would address, the Company will initiate a competitive solicitation for a specific amount and type(s) of new generation capacity needed in accordance with MCL 460.6t(6). 8 TR 1252. Independent power producers may submit bids in response to the RFP for the specific type(s) of new generation capacity identified by Consumers Energy for the requested type of generation. 8 TR 1252. The Company would also have an opportunity to submit a bid in response to the RFP. Accordingly, the RFP will be administered by an independent third party. 8 TR 1252. All of the proposals received in the RFP will be evaluated against the cost of utility build options, which would have been submitted by the Company, and the established FCM would be added where appropriate. 8 TR 1252. Proposals will be selected based on the criteria within the competitive solicitation and the attributes of the proposal including, but not limited to, performance standards, contract terms, technical competence, capability, reliability, creditworthiness, past performance, and other applicable criteria.
>
> These competitive solicitations would be undertaken in a similar manner as to how the Company currently undertakes RFPs. Solicitations would be tailored to the specific needs of the Company; and depending on the need identified, proposals could be requested for development asset acquisitions, build-transfer options, partnerships, joint ventures, and/or PPAs. 8 TR 1253. Requesting proposals based on these various options will provide an opportunity to determine what options are the most reasonable and prudent choice for customers.[645]

The company argues that based on the avoided cost rates set in Case No. U-18090, the cost associated with 1.8 GW of solar projects that have requested interconnection is

[644] See Consumers Energy brief, page 112 at n 17.
[645] See Consumers Energy brief, pages 112-113.

$263.3 million annually over a 20-year period, citing Mr. Troyer's testimony at 8 Tr 1248-1249.[646]

IPPC, whose members are certified QFs with existing PPAs with Consumers Energy, argues that the Commission should not override its prior determinations in Case No. U-18090 as applying to its members. IPPC notes that litigation in that case spanned a two-and-a-half-year period. IPPC's brief reviews the requirements of PURPA, including the requirement that rates set for QFs not discriminate against small power producers. IPPC cites FERC decisions for the principle that a utility may not favor its own generation over that of a QF.[647] It also notes that the Commission is required by state law, MCL 460.6v, to implement PURPA in accordance with FERC rules and regulations.

IPPC challenges Consumers Energy's claim that the Commission's orders in Case No. U-18090 directed at existing QFs with expiring contracts were intended to apply only to existing contracts that expire prior to the conclusion of this IRP case. It characterizes the company's interpretation as based on "an overly restrictive and inaccurate understanding" of the Commission's orders and the legal rights of IPPC members. IPPC argues that a proper interpretation of the Commission's May 31, 2018 order requires Consumers Energy to pay the full avoided cost determined in that case in renewing both "expired" and "expiring" contracts.[648] IPPC also cites language from the August 30, 2018 motion hearing in this docket, contending that Consumers Energy

[646] Also see Consumers Energy brief, pages 218-219, with figure of "added cost" of $175.6 million annually at an average cost of $99.69 MWh over a 20-year contract length, also citing Troyer, 8 Tr 1249.
[647] See IPPC brief, pages 3-4.
[648] See IPPC brief, page 5.

indicated it was not intending its new avoided cost method to apply to expiring PURPA contracts.[649]

IPPC acknowledges that the Commission has opened a docket, Case No. U-20344, to determine when a "legally enforceable obligation" arises under PURPA but contends that federal law is clear that IPPC members have a legally enforceable obligation, and thus Consumers Energy may not delay contracting with members until the avoided cost set in Case No. U-18090 is revised.[650] IPPC contends that applying a new avoided cost method to IPPC members would be discriminatory in violation of PURPA. It also challenges the company's claim that avoided costs set in Case No. U-18090 are excessive, disputing that the company's reliance on the levelized cost of energy from certain wind farms is the relevant comparison, and citing Mr. Stockhausen's testimony. It argues its members are entitled to 20-year contracts at the rates set in Case No. U-18090.

In addition to a concern with capacity need horizon, SEIA argues that the company's proposed competitive solicitation process is biased against third-party producers, contending that aspects of its proposal remain unclear, and several aspects give cause for concern. SEIA argues that while it conditionally supports competitive solicitations for setting avoided costs, existing projects in the company's interconnection queue have the right to contract with Consumers Energy at its current avoided cost:

> At the time of filing Staff and intervenor testimony in this case, there was approximately 1.8 GW of projects in queue, and that volume has grown to over 3 GW today. Although many of these projects will no doubt never be built for various reasons, many others are ready to proceed with contracts with Consumers at the MISO PRA price for capacity and one of the

[649] See IPPC brief, pages 5-6.
[650] See IPPC brief, pages 7-8.

> Commission-approved avoided energy rates, and under terms and conditions reflected in Consumers' standard offer PPA – and have the right to do so under PURPA and the MPSC's October 5 Order issued in MPSC Case No. U-18090. Consumers has attempted to pretend that these projects, and the rights they have under PURPA and the October 5 Order, do not exist. Any transition to a new PURPA regime must recognize the rights of projects formed under the existing PURPA regime.[651]

SEIA also argues that in using a competitive solicitation to set energy prices, the energy price must be based on a projection of LMP prices through the full term of the solicitation, and reflect the specific technology, so as to recognize that solar production will align more heavily with on-peak than off-peak hourly prices. SEIA also disputes the company's calculation of avoided cost based on demand-side resources, citing Mr. Lucas's testimony in support of its contention that the company has erroneously used a 12-year cost for a 25-year savings estimate.

SEIA opposes Consumers Energy's proposed elimination of the 20-year fixed price PURPA PPA, noting the two-and-a-half years of litigation in Case Nos. U-18090, U-20095, and U-18491. It specifically objects to limiting the contract length to five years if a QF chooses fixed energy costs based on an LMP forecast, and to limiting the contract length to 15 years if a QF chooses energy costs based on actual day-ahead LMPs. SEIA contends that PURPA and FERC rulings implementing PURPA require contract lengths that allow QFs a reasonable opportunity to attract capital from potential investors. It also argues that the Commission has ruled three times that a 20-year contract length is appropriate, and that Consumers Energy's arguments in this IRP case merely rehash arguments that the Commission has already rejected. SEIA also responds to the company's concerns regarding the potential deviation of forecast prices

[651] See SEIA brief, pages 35-36.

from actual prices by noting that prices fixed by reliance on forecast values also provide price certainty to Consumers Energy given the possibility that actual prices rise above forecast values.[652]

SEIA also opposes the company's proposal to base a determination of capacity need on a review of each upcoming three-year period. SEIA cites Consumers Energy's agreement with Staff's proposal in Case No. U-18090 to use a 10-year period, its revised position in Case No. U-20095 in support of a five-year period, to its three-year proposal in this case. In arguing that the ten-year period adopted in Case No. U-18090 should be continued, SEIA acknowledges that under the company's proposal, capacity needs will be met through competitive solicitations, and argues "under the PCA the PURPA capacity planning horizon serves no purpose and becomes irrelevant" unless Consumers Energy does not conduct the capacity solicitations called for in its plan.[653]

SEIA opposes the company's proposal to limit the standard offer tariff to projects of 150 kW or less, rather than the 2 MW limit the Commission established in Case No. U-18090. Citing Mr. Lucas's testimony at 8 Tr 2024-2025, SEIA argues that the standard offer tariff reduces transaction costs and disputes the company's claim that the size of projects eligible for the standard offer tariff should mirror distributed generation program project size.[654]

SEIA also opposes the company's proposal to reduce the energy price paid to QFs by the market value of RECs, arguing that the Commission has already rejected the company's arguments in Case No. U-18090, and arguing that the company should

[652] See SEIA brief, page 40, citing Lucas, 8 Tr 1270.
[653] See SEIA brief page 42.
[654] See SEIA brief, pages 42-43.

pursue the most cost-effective means of acquiring RECs to meet its renewable energy portfolio obligations, including separately contracting for RECs.[655]

ELPC et al also object the company's PURPA-related proposals. They argue that the company's proposals subvert PURPA's intent and prior Commission orders. They expressly dispute the company's proposal to change from a 10-year to a three-year or five-year capacity need horizon, contending that the proposal discriminates against QFs because the company will never have a capacity need. ELPC et al recommend Mr. Jester's approach, to consider whether Consumers Energy has any plans to build or acquire capacity within the 10-year planning horizon, ignoring capacity additions for which costs have already been approved by the Commission and that cannot be deferred or avoided. They contend that Mr. Jester's proposal also addresses the company's concern that it will be required to pay full avoided cost rates for capacity for years prior to need, because his proposal calls for QFs to be made the MISO planning reserve auction (PRA) rate until the first year capacity would be needed.[656]

ELPC et al also argue the standard offer tariff should continue to apply to projects of up to 2 MW, citing the Commission's May 31, 2017 order in Case No. U-18090, and emphasizing the value of reducing transaction costs. Noting the witnesses testifying that the company's proposed reduction to 150 kW is unsupported, ELPC et al dispute that the statutory limit on distributed generation in MCL 460.1173 is not relevant, citing MCL 460.6v as the pertinent statute regarding PURPA.[657] It also argues that PURPA projects up to 2 MW should receive 20-year contracts consistent with the

[655] See SEIA brief, pages 43-45.
[656] See ELPC et al brief, pages 4-7.
[657] See ELPC et al brief, pages 7-8.

Commission's May 31, 2017 decision in Case No. U-18090.[658] It argues that Consumers Energy is raising the same arguments the Commission rejected in that decision.

Citing Mr. Rafson's and Mr. Richter's testimony, GLREA argues that the company's IRP is not consistent with PURPA, and argues that the Commission should retain the determinations it made in Case No. U-18090. Focusing on the contract length, GLREA argues that a 20-year contract term is appropriate and consistent with PURPA, while the company's proposal to shorten the term is discriminatory, also citing the T.E.S. Filer City contract Consumers Energy negotiated with its affiliate, as well as the MCV contract, which was with an affiliated company at the time it was entered. See GLREA brief, pages 8-12. GLREA argues that the standard offer contract should be available to projects up to 2 MW as approved in Case No. U-18090, or increased to 3 MW as Mr. Jester proposed, emphasizing the value of the reduced transaction costs associated with the standard offer tariff. And GLREA argues that the Commission should add an option for Consumers Energy to obtain RECs with a long-term PURPA contract.[659]

Addressing the company's proposed capacity determination process, GLREA characterizes the company's three-year horizon as overly limited, and disputes the company's claim that has no capacity need given the expiration of the Palisades PPA and the need to determine whether to extend the MCV PPA, just outside the three-year time period.[660] GLREA argues that PPAs offer benefits to customers, and argues that

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[658] "The need for long-term, fixed rate contracts to develop small QFs has not changed, and therefore the reasoning of the Commission's decision of 20-year standard offer contracts in Case No. U-18090 remains valid. 8 TR 2019-20 (Lucas); 9 TR 2861-62 (Pauley); 9 TR 2869 (Mueller); 9 TR 2896 (Stockhausen); 8 TR 2437-38 (Rafson). Twenty years is also shorter than Consumers proposal of up to 25 years for competitive solicitations. 8 TR 1303." See ELPC et al brief, page 9.
[659] See GLREA brief, pages 12-14.
[660] See GLREA brief, pages 14-18.

greater controls are needed to ensure that Consumers Energy's bidding process is independent, fair and transparent, citing testimony of Mr. Peloquin, Mr. Richter, and Mr. Rafson.[661] As discussed below, GLREA also objects to the proposed FCM.

Michigan EIBC and IEI do not specifically address the company's proposed PURPA avoided cost calculations, explaining that their recommendations are "meant to provide overarching guiding principles supported by advanced energy companies in the case that the Commission approves the Company's request to institute a competitive bidding process to source large-scale energy resources." [662]

ABATE generally supports the company's competitive bidding proposal, including reliance on competitive bidding to determine PURPA prices, also emphasizing the need for an inclusive, transparent, and unbiased process.[663]

Staff generally supports the company's proposal to replace the PURPA avoided cost determinations made in Case No. U-18090 with a revised method based on competitive bidding. Staff argues it is "imperative to address the avoided cost rate in this proceeding to update the rate to reflect current cost trends," also citing "the unexpected and overwhelming volume of interconnection requests" otherwise entitled to the avoided cost rates set in Case No. U-18090. See Staff brief, page 49. Staff argues that the company's proposed competitive bidding process should be used to procure solar capacity in the future, contending it will foster competition and drive down prices, competitively procure energy and capacity, reduce waste, and leverage demand-side resources.[664]

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[661] See GLREA brief, pages 20-26.
[662] See Michigan EIBC and IEI brief, page 3.
[663] See ABATE brief, pages 20-21.
[664] See Staff brief, page 50.

Staff recommends that the Commission rely on the proposed competitive bidding process to set avoided cost rates as Consumers Energy proposes. Staff argues:

> Since the only capacity being added in the Company's plan is solar generation, the best proxy for avoided costs is now a solar generation facility. (8 TR 1299.) It makes sense to use this proxy and the annual RFP results [to] set avoided cost rates, as this will ensure that the rate is based on the most recent costs for a like-for-like contract (i.e., a PURPA contract similar to a competitively bid project). Staff proposes setting avoided costs using the highest priced winning bid in each RFP tranche and using this price to compensate all PURPA QFs providing capacity necessary to fulfill any capacity need not filled through responses to the competitive solicitation. (9 TR 2721.) This is the most accurate representation of the price that the Company would have otherwise paid had it not entered in the PURPA contract. See 18 CFR § 292.101(b)(6).[665]

In a footnote, citing Mr. Troyer's testimony at 8 Tr 1298, Staff states: "Staff assumes most PURPA projects will be solar generating facilities since most PURPA projects proposed recently are for solar facilities."[666] Staff argues the avoided cost rates approved in Case No. U-18090 are higher than avoided costs would be using a competitive solicitation, again citing Mr. Troyer's testimony comparing a $99/MWh rate from Case No. U-18090 with a $74/MWh rate from the company's 2018 RFP, increased to include the company's proposed FCM, and also identifying levelized wind energy costs of $45-$46/MWh for wind projects approved in 2015, 2016 and again more recently.[667]

Staff also supports the company's proposal to limit the size of projects eligible for the standard offer tariff to 150 kW, endorsing Consumers Energy's contention that this will align the PURPA standard offer tariff with the maximum size for distributed

[665] See Staff brief, page 55.
[666] See Staff brief, page 55 at n18.
[667] See Staff brief, pages 56-57.

generation projects, and "likely reduce the complexity of interconnections."[668] Staff states that "the most recently approved full avoided cost" will be offered to QFs on a first-come basis if capacity needs are not met through an RFP, and will be offered to all QFs with an expiring contract and all QFs with a project size up to 150 kW.[669] And Staff supports a reduction in the time horizon for a capacity needs determination from 10 years to 5 years, citing Mr. Troyer's change of position in rebuttal from his earlier testimony that a 3-year horizon was critical to the company's proposal.[670] Nonetheless, Staff states that it is skeptical of concerns that the company could avoid ever identifying a capacity need if a 3-year time horizon is used.

The Attorney General supports competitive bidding to attain lower costs for ratepayers, but recommends changes as proposed by Mr. Coppola, including reliance on energy waste reduction in lieu of new capacity only if it is more economical than resources available through a competitive solicitation, consideration of all technologies in each RFP, with diversity of generation sources a secondary consideration to further supply reliability, and additional safeguards on the RFP process to avoid providing company affiliates with an advantage. The Attorney General also argues that if the company finds it is obligated to purchase power from QFs when it has no need for power, it should seek a waiver of its purchase obligations from FERC. As discussed above, the Attorney General also objects to the company's proposed FCM.

In its reply brief, SEIA reiterates its concern that the company's proposal is inconsistent with PURPA rights secured by federal and state law.[671] Michigan EIBC and

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[668] See Staff brief, page 58.
[669] See Staff brief, page 58.
[670] See Staff brief, page 59.
[671] See SEIA reply brief, pages 11-13.

IEI argue that the Commission should adopt Staff's proposed 50% ownership limit as an alternative to a competitive bidding process in which the utility and independent power producers compete, believing that the process proposed by the company would not create equal opportunity for all entities. [672]

B. Discussion

Most parties support or do not object to the concept of using competitive bidding to set avoided cost. The general concerns regarding the fairness of the bidding procedures are discussed above. SEIA also argues that in setting avoided cost, the specific attributes of technologies such as solar need to be taken into account, citing 18 CFR 292.304(e). Consistent with the recommendation in section VII above, the ALJ finds that SEIA's concerns are best addressed through Commission oversight and public review of the RFPs or through rulemaking.

Turning next to the size of project eligible for the standard offer tariff, in its May 31, 2017 order in Case No. U-18090, the Commission determined that the standard offer tariff should apply to projects 2 MW or less. The Commission indicated that the size should be revisited in future avoided cost proceedings. In accordance with that and subsequent Commission orders, an evidentiary proceeding was conducted in Case No. U-18090 to determine the terms of the standard offer tariff. Not until its October 5, 2018 order did the Commission approve the terms of the standard offer tariff, which Consumers Energy filed on October 12, 2018.

Based on this record, the ALJ concludes that Consumers Energy has not offered persuasive evidence that a cap below 2 MW is reasonable. As SEIA and other parties

[672] See Michigan EIBC and IEI reply brief, page 2.

argue, there is no logical connection between the size of the standard offer tariff that should be made available under PURPA and the size of the distributed generation program. The express statutory provision addressing distributed generation, MCL 460.1173, provides:

> (1) The commission shall establish a distributed generation program by order issued not later than 90 days after the effective date of the 2016 act that amended this section. The commission may promulgate rules the commission considers necessary to implement this program. Any rules adopted regarding time limits for approval of parallel operation shall recognize reliability and safety complications including those arising from equipment saturation, use of multiple technologies, and proximity to synchronous motor loads. The program shall apply to all electric utilities whose rates are regulated by the commission and alternative electric suppliers in this state.
>
> (2) Except as otherwise provided under this part, an electric customer of any class is eligible to interconnect an eligible electric generator with the customer's local electric utility and operate the eligible electric generator in parallel with the distribution system. The program shall be designed for a period of not less than 10 years and limit each customer to generation capacity designed to meet up to 100% of the customer's electricity consumption for the previous 12 months. The commission may waive the application, interconnection, and installation requirements of this part for customers participating in the net metering program under the commission's March 29, 2005 order in case no. U-14346.
>
> (3) An electric utility or alternative electric supplier is not required to allow for a distributed generation program that is greater than 1% of its average in-state peak load for the preceding 5 calendar years. The electric utility or alternative electric supplier shall notify the commission if its distributed generation program reaches the 1% limit under this subsection. The 1% limit under this subsection shall be allocated as follows:
>
> (a) No more than 0.5% for customers with an eligible electric generator capable of generating 20 kilowatts or less.
>
> (b) No more than 0.25% for customers with an eligible electric generator capable of generating more than 20 kilowatts but not more than 150 kilowatts.

(c) No more than 0.25% for customers with a methane digester capable of generating more than 150 kilowatts.

(4) Selection of customers for participation in the distributed generation program shall be based on the order in which the applications for participation in the program are received by the electric utility or alternative electric supplier.

(5) An electric utility or alternative electric supplier shall not discontinue or refuse to provide electric service to a customer solely because the customer participates in the distributed generation program.

(6) The distributed generation program created under subsection (1) shall include all of the following:

(a) Statewide uniform interconnection requirements for all eligible electric generators. The interconnection requirements shall be designed to protect electric utility workers and equipment and the general public.

(b) Distributed generation equipment and its installation shall meet all current local and state electric and construction code requirements. Any equipment that is certified by a nationally recognized testing laboratory to IEEE 1547.1 testing standards and in compliance with UL 1741 scope 1.1A, effective May 7, 2007, and installed in compliance with this part is considered to be compliant. Within the time provided by the commission in rules promulgated under subsection (1) and consistent with good utility practice, and the protection of electric utility workers, electric utility equipment, and the general public, an electric utility may study, confirm, and ensure that an eligible electric generator installation at the customer's site meets the IEEE 1547 anti-islanding requirements or any applicable successor anti-islanding requirements determined by the commission to be reasonable and consistent with the purposes of this subdivision. If necessary, to promote reliability or safety, the commission may promulgate rules that require the use of inverters that perform specific automated grid-balancing functions to integrate distributed generation onto the electric grid. Inverters that interconnect distributed generation resources may be owned and operated by electric utilities. Both of the following must be completed before the equipment is operated in parallel with the distribution system of the utility:

(i) Utility testing and approval of the interconnection, including all metering.

(ii) Execution of a parallel operating agreement.

(c) A uniform application form and process to be used by all electric utilities and alternative electric suppliers in this state. Customers who are served by an alternative electric supplier shall submit a copy of the application to the electric utility for the customer's service area.

(d) Distributed generation customers with a system capable of generating 20 kilowatts or less qualify for true net metering.

(e) Distributed generation customers with a system capable of generating more than 20 kilowatts qualify for modified net metering.

(7) Each electric utility and alternative electric supplier shall maintain records of all applications and up-to-date records of all active eligible electric generators located within their service area.

As quoted more fully above, there is also an express statutory provision addressing the Commission's implementation of PURPA. Subsection 4(c) directs the Commission to:

> Require electric utilities to publish on their websites template contracts for power purchase agreements for qualifying facilities of less than 3 megawatts that need not include terms for either price or duration of the contract. The terms of a template contract published under this subsection are not binding on either an electric utility or a qualifying facility and may be negotiated and altered upon agreement between an electric utility and a qualifying facility.

Note that both these statutory provisions had been enacted when the Commission issued its order in Case No. U-18090, with numerous opportunities for the parties to seek reconsideration or to appeal. A review of the standard offer contract adopted in Case No. U-18090 shows that it is not written with small customer-owned distributed-generation-type projects in mind. Among the provisions in the agreement is a requirement that the project owner or seller provide and maintain "Early Termination Security" to "safeguard Buyer against undue financial risk associated with loss of Seller-provided capacity during the Contract Term," in the form of a surety bond, letter of

credit, or one-time or monthly escrow payment.[673] The seller also warrants that is has or will achieve QF status by the start date of the project, and agrees to use "commercially reasonable efforts" to ensure the plant maintains its QF status.[674] Paragraph 6 includes requirements that seller "operate and maintain the Plant in accordance with Prudent Utility Practices and MISO (or any successor thereto) standards and tariff requirements which apply to generating units such as Seller's Plant."[675] Seller is also required to "promptly provide to Buyer all material information relating to Plant outages and significant derates of Plant generating capacity which would affect Seller's ability to deliver electric energy from the Plant to the Point of Delivery."[676] The capacity payment provision includes a liquidated damages provision "[i]n the event that Resource Adequacy Capacity for any Planning Year during the term of this Agreement fails to be greater than or equal to Contract Capacity Target, including but not limited to such failure that results from an early termination of this Agreement."[677] Other provisions include a $1/MWh administrative fee, a system access charge, and a binding arbitration clause that presumes each party will have a "senior representative," and that arbitration will be conducted "in accordance with the Commercial Rules of the American Arbitration Association."

In addition to the lengthy time spent on developing the standard offer tariff for PURPA, which would be substantially wasted by the significant reduction in project size now proposed, neither Consumers Energy nor Staff has persuasively refuted the positive benefit from the standard offer tariff of reducing transactions costs, which are a

[673] See Consumers Energy's October 12, 2018 filing, paragraph 2.2.
[674] See id., paragraph 2.3.
[675] See id., paragraph 6.1.
[676] See id., paragraph 6.2.
[677] See id, paragraph 7, page 16.

real costs at least some of which will be borne by ratepayers. Nor has Consumers Energy or Staff articulated any harm from subjecting the larger projects to the standard offer contract, recognizing that the Commission will determine the appropriate avoided cost rates under that contract. Mr. Troyer's generic assertion, unsupported by analysis, that the QFs proposing projects of 2 MW are sufficiently sophisticated to conduct negotiations, is not persuasive, was previously rejected by the Commission, and does not address the fundamental inefficiency from jettisoning the standard offer tariff that has already been litigated.

Moreover, Consumers Energy is obligated to pay a QF when a legally enforceable obligation exists, whether the QF signs a contract or not; this argues in favor of a standard offer tariff that includes, inter alia, protections for the utility as well as the QF, some of which are discussed above. Maintaining a standard offer tariff also insulates the utility from QF claims of discrimination.

In its reply brief, Consumers Energy cites the Commission's December 20, 2018 decision addressing DTE Electric's standard offer tariff, which was established for projects of approximately .5 MW.[678] Consumers Energy has not established that the circumstances in that case apply here, where the Commission has already approved a standard offer tariff for projects of 2MW, and as shown above, clearly not written for "customer-owned" projects or for customers who lack the sophistication to negotiate their own contracts. Moreover, Consumers Energy stipulated to most of the terms of that contract.[679] And finally, nothing prevents the utility from designing a separate,

[678] See Consumers Energy reply brief, pages 92-93.
[679] See Joint Statement of Concurrence filed July 13, 2018, in Case No. U-18090.

simplified contract, with different provisions and different rates, for small customer-owned projects. The company has not offered such a contract in this case.

Turning to the proposed time horizon for a capacity needs demonstration, Consumers Energy has revised its proposed time horizon for ia capacity need determination from three years to five years, subject to a proviso that it will not be deemed to have a capacity need as long as it is pursuing capacity through a competitive solicitation, as stated in Exhibit A-110.

ELPC et al argue that the Commission should adopt Mr. Jester's recommendation that would find a capacity need when Consumers Energy has avoidable plans to obtain capacity. They respond to Consumers Energy's argument that this would result in more capacity for QFs by contending that a method is no less valid merely because it results in a finding that the company does not prefer.[680]

It appears that the parties arguing for a determination that the company has no capacity need as long as it is soliciting capacity through a competitive solicitation process are conflating two questions: does the utility have a capacity need; and how will avoided costs be determined when a capacity need exists. It seems counter-intuitive to adopt a model that allows the company to procure capacity that it expects ratepayers to pay for, while still asserting it does not need capacity. Perhaps there is such an artificial determination permitted under PURPA, but no party has presented legal argument to support that. The company's initial argument for shortening the time horizon from ten years to three years was a belief that it would be required to obtain capacity for a long time period in the run up to that ten-year mark, when it did not need capacity until then, or might only need short-term capacity in that interim time. Now, as the company's

[680] See ELPC et al reply brief, page 2.

position and plans have evolved, it seems the competitive solicitations the company is proposing are clearly for long-term capacity and will arise much closer in time than the 10-year horizon the company was initially worried about. None of the parties supporting this approach have fully explained how the five-year period would relate to the company's plan to conduct capacity solicitations on an annual or somewhat less frequent basis. SEIA suggested in its brief the issue of time horizon for the capacity need determination is essentially moot,[681] and Consumers Energy did not provide an explanation in response, merely stating that the "link between a utility's capacity need and the planning horizon" supports a five-year window.[682] Thus, while the ALJ does not find a five-year horizon unreasonable, the ALJ has no basis on this record to speak to the proviso, that as long as Consumers Energy plans to meet its capacity needs through competitive solicitation, it has no capacity need. Thus, looking at the company's plans as presented in Exhibit A-106, the ALJ finds that the company has a capacity need because it is planning to acquire long-term capacity as shown in that exhibit.

Turning to the contract length, again the parties have provided little guidance to the Administrative Law Judge regarding the requirements of PURPA. In a March 20, 2014 decision addressing an enforcement petition brought by Hydrodynamics, Inc. and others, FERC reviewed a Montana rule implementing PURPA. The petitioners challenging the rule argued that it required QFs with an installed capacity greater than 10 MW to win a competitive solicitation in order to obtain long-term avoided cost rates, and also argued that the Montana utility was not conducting competitive solicitations. FERC issued a declaratory ruling explaining:

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[681] See SEIA brief, pages 41-42.
[682] See Consumers Energy reply brief, page 103.

> The Commission's regulations require that a utility purchase any energy and capacity made available by a QF. Under section 292.304(d) of the Commission's regulations, a QF also has the unconditional right to choose whether to sell its power "as available" or at a forecasted avoided cost rate pursuant to a legally enforceable obligation.... Accordingly, a QF, by committing itself to sell to an electric utility, also commits theelctric utility to buy from the QF; these commitments result either in contracts or in non-contractual, but binding, legally enforceable obligations.
>
> In [Grouse Creek Wind Park, LLC, 142 FERC 61,187 (2013)] the Commission found that the Idaho Commission's requirement that a QF file a meritorious complaint to the Idaho Commission before obtaining a legally enforceable obligation "would both unreasonably interfere with a QF's right to a legally enforceable obligation and also create practical disincentives to amicable contract formation." Similarly, we find requiring a QF to win a competitive solicitation as a condition to obtaining a long-term contract imposes an unreasonable obstacle to obtaining a legally enforceable obligation particularly where, as here, such competitive solicitations are not regularly held."[683]

In *Windham Solar*, FERC issued a declaratory ruling in response to an enforcement petition objecting to Connecticut regulations that required a QF to either offer a bundled product including RECs or to sell energy pursuant to short-term contracts:

> The Commission has previously addressed issues regarding the relationship between state-created RECs and PURPA. The Commission has stated that the states have the authority to determine who owns RECs in the initial instance and how they are transferred and has explained that the automatic transfer of RECs within a sale of power at wholesale must find its authority in state law, not PURPA. The Commission has also held, however, that a state regulatory authority may not assign ownership of RECs to utilities based on a logic that the avoided cost rates in PURPA contracts already compensate QFs for RECs in addition to compensating QFs for energy and capacity, because the avoided cost rates are, in fact, compensation just for energy and capacity. Moreover, while the Commission has made clear that states have the authority to regulate RECs, states cannot impede a QF's ability to sell its output to an electric utility pursuant to PURPA. Thus, regardless of whether a QF has previously sold its RECs under a separate contract, that QF has the right to sell its output pursuant to a legally enforceable obligation.

[683] See 146 FERC 61,193 (May 5, 2015), paragraph 32.

> The Commission has also held that "requiring a QF to win a competitive solicitation as a condition to obtaining a long-term contract imposes an unreasonable obstacle to obtaining a legally enforceable obligation." The Commission likewise has determined a state regulation to be inconsistent with PURPA and the Commission's PURPA regulations "to the extent that it offers the competitive solicitation process as the only means by which a QF can obtain long-term avoided cost rates. Accordingly, regardless of whether a QF has participated in a request for proposal, that QF has the right to obtain a legally enforceable contract."[684]

The question whether the company's proposal to revise the contract length for QFs when there is no capacity need passes muster under PURPA may thus turn on whether the contract that would be available to a QF seeking a fixed energy price, is considered a short-term or long-term contract. As noted above, Consumers Energy revised the contract length that would be available to QFs when the Commission determines it has capacity need following a competitive solicitation. When Consumers Energy does not need capacity, it proposes to limit the contract term available with a fixed forecast energy price to 5 years. Consumers Energy has not established that this contract term is consistent with PURPA. It also has not explained why the contract term should be revised from the range of contract lengths the Commission determined to be appropriate in Case No. U-18090, since the avoided capacity cost determination made in that case, which Consumers Energy argues is no longer relevant, has no bearing on the contract length when the company has no capacity need. Consumers Energy bears the burden to show that its proposal conforms to the requirements of PURPA. Regarding its proposal to limit to five years the fixed-energy-price contract term available to QFs when the utility does not need capacity, the company has not made this showing.

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[684] See 156 FERC 61,042, paragraphs 4-5 (July 21, 2016).

Consumers Energy also argues that it should be able to reduce the fixed-forecast energy price it pays to QFs based on the value of RECs. Although the Commission review process for competitive solicitations discussed above may provide an opportunity for the Commission to limit solicitations for the company's renewable energy plan to bidders willing to supply RECs, it does not appear that PURPA permits the Commission to require all solicitations for renewable energy to transfer RECs. Consumers Energy bears the burden to establish that its proposal conforms to the requirements of PURPA, and regarding its proposal to reduce the fixed energy payment to subtract the value of RECs, Consumers Energy has failed to make this showing.

X.

OTHER ISSUES

Even though the ALJ recommends that the Commission reject the company's IRP for the reasons explained above, for completeness, this section addresses some of the remaining issues not previously addressed.

A. Regulatory Asset Treatment

Regarding the company's request for regulatory asset treatment for the unrecovered plant balances and net salvage costs for Karn Units 1 and 2, the ALJ finds Staff's analysis persuasive that the company's request is outside the scope of this case. What the company is requesting does not concern costs that will be incurred over the three-year period of cost recovery provided for in section 6t. Mr. Blumenstock acknowledged that the company was only seeking approval for costs that would be incurred through June 1, 2022. In requesting the regulatory asset, however, the company's concern is with the rate recovery of unrecovered plant balances as of the

date of retirement of the plants, sometime in 2023, and with demolition costs that will not be incurred until after that date. As Mr. Proudfoot testified, the unrecovered book value is a sunk cost, rather than a future cost that can be reviewed in this IRP case.[685] Current rates already include a provision for a return of and on the company's capital investment in the Karn Units, and as Mr. Proudfoot recommended, the company's request can be addressed outside this case. The ALJ acknowledges the company's representation that its requested relief in this case is all interrelated, and denial of any element will negate the company's willingness to proceed with its plan. Nonetheless, the company did not establish a logical connection between its retirement decision, which is legitimately a part of its IRP, and the accounting treatment requested for the remaining plant balances when the units retire. Several witnesses explained that under standard depreciation accounting, the company will recover its investment, including decommissioning or net salvage costs.[686] Consumers Energy may also seek to securitize the costs, as it has recognized.

B. Cost Recovery

Staff has identified the costs it recommends be approved for recovery in this case. Staff does not recommend that O&M expenses be considered "investment" under MCL 460.6t, but rather be recovered in a rate case. Consumers Energy disputes Staff's analysis for the reasons explained in its brief. The ALJ finds that Staff's analysis should be adopted.

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[685] See 9 Tr 2547-2548

[686] See Testimony of Mr. Coppola at 8 Tr 2382-2383; Testimony of Mr. Pollock at 9 Tr at 2135; Testimony of Mr. Jester (for MEC, et al) at 8 Tr at 1778-1779; Testimony of Mr. Peloquin at 8 Tr 2487-2488; and Testimony of Mr. Gerken at 9 Tr at 2821-2827.

C. Customer Distributed Generation

As noted in section III above, Ms. Hadala recommended that 2% of each competitive solicitation should be set aside for distributed generation.[687] She explained how this proposal would fit with the RFPs, how the CDG would be priced, and presented Exhibit S-10.0. In rebuttal testimony, both Consumers Energy witness Ms. Hatcher and Attorney General witness Mr. Coppola objected to this proposal. In its brief, pages 60-66, Staff responded to Ms. Hatcher's rebuttal testimony, arguing that Consumers Energy wrongly views Staff's proposal as part of the existing distributed generation program mandated by Acts 341 and 342, whereas Staff's program is a new program, with a size limit of 550 kW. Staff also responds that the 150% of avoided cost marker is intended as a cap.

Staff also disputed Mr. Coppola's concerns that the program would create a subsidy, citing Ms. Hadala's testimony that smaller projects dispersed throughout the distribution system will have less impact on the system, and can lead to reduced line losses and improved grid reliability. Consistent with its response to Consumers Energy, above, Staff also disputes that its proposal includes a subsidy for distributed generation projects.

Nonetheless, Staff agreed with Consumers Energy that its proposal should be subject to additional time and research, as well as a stakeholder collaboration, before it is implemented. Staff indicates it will present its proposal again in the next IRP.

[687] See 9 Tr 2728-2731.

D. Reporting Requirements

Staff made several recommendations for reporting to assist it in evaluating the company's implementation of the IRP and for future IRPs. Staff identifies its requests and summarizes the company's responses in its brief at page 81. In its reply brief, beginning at page 157, Consumers Energy addressed Staff's requests, agreeing with only minor disputes over wording, with the exception of two modeling questions, whether additional retirement analyses will be required in the company's next IRP, and whether it should do a statistical analysis of each monthly peak projection. Putting aside the modeling questions, no other party objected to Staff's proposals and the ALJ finds they should be adopted as described in Staff's brief, with the following modification: because Consumers Energy objects to filing page numbers as part of Staff's initial check list, due to the difficulty of determining page numbers in advance of the filing, the ALJ recommends that the company file the checklist without the page numbers, and supply the checklist with the page numbers as soon as possible after the filing.

Turning to the modeling of potential coal unit retirements, the parties dispute the extent of the analysis that would be required in the next IRP. The ALJ recommends that the Commission require Staff and the company to confer on that analysis in advance of the filing. The ALJ notes that the Commission's review of the retirement analysis presented in this case may also lead to additional recommendations for future analyses.

Regarding the dispute over monthly peak analyses, the ALJ finds that Mr. Makinde provided a reasonable basis for the analysis, "to ensure the forecasts are within an acceptable range for all months and not only the peak day." See 9 Tr 2642.

The company's concern that results may be conflicting is a secondary concern that can be addressed when the analysis is performed.

XI.

CONCLUSION

Based on the foregoing, the findings and conclusions in this PFD are summarized as follows:

1. As discussed in Section V, subsection A, beginning at page 144 above, while the cost approval in MCL 460.6t is limited to investments commenced within three years, the statutory plan period is 15 years, and would extend in this case to June 2034.

2. As discussed in Section V, subsection B.1, beginning at page 149 above, Consumers Energy has not complied with MCL 460.6(5)(h) or (j) and the Commission's filing instructions requiring an analysis of transmission system options and anticipated costs.

3. As discussed in Section V, subsection B.2, beginning at page 161 above, Consumers Energy has not fully considered storage options for the intermediate term of its plan.

4. As discussed in Section V, subsection B.3, beginning at page 163 above, Consumers Energy's reliance on demand-side resources is reasonable, with the exception of its reliance on CVR, because the company has not completed its CVR pilot projects.

5. As discussed in Section V, subsection B.4, beginning at page 168 above, Consumers Energy's plan to acquire solar generation, with flexibility to meet changed conditions, is reasonable.

6. As discussed in Section V, subsection B.5, beginning at page 171 above, Consumers Energy's plan to ramp up its acquisition of capacity in advance of plant retirements, creating for certain time periods more capacity than required to meet planning margins, appears reasonable.

7. As discussed in Section V, subsection B.6, beginning at page 173 above, Consumers Energy's IRP is not deficient because it does not expressly model extending the MCV contract beyond the contract termination date of 2030.

8. As discussed in Section V, subsection B.7, beginning at page 174 above, Consumers Energy failed to recognize likely increases in electric vehicle energy consumption in its forecasting, but there is no basis on this record to conclude the deficiency is material to the company's plan.

9. As discussed in Section VI above, beginning at page 176 Consumer Energy reasonably plans to retire its Karn units 1 and 2 by 2023;

10. As also discussed in Section VI above, beginning at page 179, Consumers Energy's modeling of the potential early retirement of Campbell units 1 and 2 by 2023 relies on certain unsupported assumptions and certain limited modeling choices. The ALJ recommends that the company provided a revised analysis but recognizes that other non-economic and operational factors indicate that early retirement of one or more of those units by 2023 would not be feasible.

11. As discussed in Section VII above, beginning at page 195, Consumers Energy's proposed competitive solicitation is a reasonable means of acquiring capacity, but requires Commission oversight or additional rulemaking protections to ensure that the competitive solicitations are fair and transparent.

12. As discussed in Section VIII above, beginning at page 205, the ALJ finds that the company's proposed FCM is unnecessary, in excess of the statutory cap, does not properly reflect the cost to Consumers Energy and its ratepayers of imputed debt, and if used in the competitive bidding process, would unfairly favor Consumers Energy and its affiliates.

13. As discussed in Section IX above, beginning at page 265, the ALJ finds that the company's proposal to set PURPA avoided costs on the basis of competitive solicitations is reasonable; the ALJ finds the company's proposals to reduce the project size eligible for the standard offer tariff to be unsupported; the ALJ finds the proposal to reduce to 5 years the term of contract offered to a QF in the event the company has no capacity need has not been supported; the ALJ finds the company's proposal to use a five-year time horizon for determining whether there is a capacity need to be reasonable.

14. As discussed in Section X above, the ALJ recommends that the Commission adopt Staff's proposal that capital costs for the first three years for DR, EWR, and CVR be approved as reasonable in this IRP, but that O&M costs be reviewed in other proceedings; that the company's proposed regulatory asset for Karn units 1 and 2 be deferred to a rate case; and that Staff's reporting and modeling requests be generally granted as explained.

MICHIGAN ADMINISTRATIVE HEARING SYSTEM
For the Michigan Public Service Commission

Sharon L. Feldman
Administrative Law Judge

Issued and Served:
February 20, 2019

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

* * * * *

In the matter of the application of Consumers Energy Company for approval of its integrated resource plan pursuant to MCL 460.6t and for related accounting and ratemaking relief.	)))))	Case No. U-20165

PROOF OF SERVICE

Tammie Sankey being duly sworn, deposes and says that on February 20, 2019, she served a copy of the attached Proposal for Decision via email and/or first-class mail, to the persons as shown on the attached service list.

Tammie Sankey

Subscribed and sworn to before me
this 20th day of February 2019.

Lisa Felice

Lisa Felice
Notary Public, Eaton County
My Commission Expires: April 5, 2020

Case No. U-20165
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