STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

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In the matter, on the Commission's own motion, to commence a collaborative to consider issues related to implementation of effective new technologies and business models.	)))))	Case No. U-20898

At the October 12, 2023 meeting of the Michigan Public Service Commission in Lansing, Michigan.

PRESENT: Hon. Daniel C. Scripps, Chair
Hon. Katherine L. Peretick, Commissioner
Hon. Alessandra R. Carreon, Commissioner

ORDER

Background

In the October 17, 2019 order in Case No. U-20645 (October 17 order), the Commission established the MI Power Grid initiative in partnership with Governor Gretchen Whitmer. MI Power Grid is a focused, multi-year stakeholder initiative to maximize the benefits of the transition to clean, distributed energy resources (DERs) for Michigan residents and businesses. In the October 17 order, addressing the issue of integrating emerging technologies, the Commission indicated that "[e]nsuring timely and fair grid access and appropriate information exchange to support customer-oriented solutions and reliable system operations" would be a focus of the initiative and directed that one of the corresponding MI Power Grid work areas would be new technologies and business models. October 17 order, p. 7. In the October 29, 2020 order in Case No. U-20898, the Commission launched the New Technologies and Business Models workgroup

as part of Phase II of MI Power Grid, and provided guidance to the Commission Staff (Staff) and stakeholders on the Commission's objectives and expectations for this effort. Thereafter, the Staff convened numerous stakeholder sessions, distributed surveys, received written comments, and provided draft reports. On December 1, 2021, the Staff filed the "MI Power Grid: New Technologies, Business Models, and Staff Recommendations Report" (Staff Report) in this docket. The Staff Report concluded with nine recommendations.

On July 27, 2022, the Commission issued an order in this docket (July 27 order) addressing the nine recommendations and soliciting comments on specific issues related to DERs. The Commission also directed Consumers Energy Company (Consumers), DTE Electric Company (DTE Electric), Indiana Michigan Power Company (I&M), Upper Peninsula Power Company (UPPCo), Alpena Power Company (Alpena), Northern States Power Company, a Wisconsin corporation (NSP-W), and Upper Michigan Energy Resources Corporation (UMERC) to file proposed Michigan-specific uniform benefit cost analysis (BCA) requirements no later than September 1, 2022, in this docket. July 27 order, p. 20. The Commission directed that the proposal should include a societal cost test (SCT) and should be able to be used in multiple types of dockets including pilot proposals, distribution planning, and rate cases. July 27 order, pp. 8, 20. The Commission indicated that the proposed BCA requirements should be informed by the provisions of the National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources[1] (NSPM), tailored to Michigan's regulatory structure and requirements. July 27 order, pp. 7-9; *see also*, September 8, 2022 order in Case No. U-20147, pp. 71-72. On August 23, 2022, the Commission issued an order in this docket (August 23 order) extending the deadline for

[1] Available at: https://www.nationalenergyscreeningproject.org/national-standard-practice-manual/ (accessed September 7, 2023). This document is sometimes referred to by commenters as the NSPM for DERs.

the submission of the proposed BCA requirements to February 1, 2023, and narrowing the required proposal to one for use in evaluating pilots only. August 23 order, p. 3.

The Proposal

On February 1, 2023, DTE Electric and Consumers (the Companies) jointly filed Proposed Requirements and Further Guidance on Benefit-Cost Analyses for Pilot Initiatives (BCA proposal) in this docket. The BCA proposal was developed in cooperation with the Michigan Electric and Gas Association (MEGA) and the Association of Businesses Advocating Tariff Equity (ABATE). On January 31, 2023, I&M filed comments in support of the BCA proposal. On February 3, 2023, MEGA filed comments in support of the BCA proposal on behalf of Alpena, UMERC, UPPCo, and NSP-W (I&M is a MEGA member but filed separately).[2]

In the BCA proposal, as an initial matter, the Companies noted that the NSPM is intended to apply to DERs and thus does not provide guidance for pilots addressing issues such as utility-scale battery storage, undergrounding, certain grid modernization actions, or alternative fuel sources such as hydrogen. BCA proposal, pp. 9-10. They further stated that the NSPM describes the issue of discount rates as being unresolved (however, the Companies offered a recommendation which is described below).

The Companies proposed the following requirements for pilots:

> 1. The Companies will use a primary cost-effectiveness test, referred to as the Jurisdiction-Specific Test (JST), when performing a BCA for pilots. The JST takes a societal viewpoint of pilot costs and benefits in that it incorporates the relevant utility system, host customer, and societal impacts.
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> 2. Where possible and appropriate, the Companies will use a standardized set of treatment norms (i.e., monetize[d], quantitative, or qualitative) and estimation methods for the impacts captured in the JST.

[2] The April 24, 2023 order in this docket, pp. 6-7, contains a description of I&M's and MEGA's comments.

> 3. For any pilot under consideration, the Companies will perform cost effectiveness testing based on a pilot project description "at scale" in recognition of the Commission's interest in "whether the pilot program will grow into a cost-effective program when deployed at full scale."

BCA proposal, pp. 28-29 (quoting the February 4, 2021 order in Case No. U-20645, p. 10). To implement these requirements the Companies recommended a seven-step BCA methodology to be applied to each pilot proposal in order to standardize the identification of the impacts of the pilot project and the method for calculating those impacts. The seven steps emphasize the analysis of the pilot at scale rather than the pilot in its initial phase. The seven steps include: (1) assemble the BCA input information; (2) describe the pilot at scale; (3) perform cost estimations for the pilot at scale; (4) identify and classify the nature of the impacts of the pilot at scale; (5) combine the present value of the pilot-at-scale costs and benefits and perform the JST (that is, arrive at a ratio); (6) inspect/consider other secondary cost-effectiveness tests; and (7) describe the results of the BCA including the results based on cost-effectiveness tests and make recommendations. BCA proposal, pp. 11-17.

The Companies stressed that the BCA should analyze the pilot at scale because analyzing only the pilot itself could lead to skewed results and the rejection of useful pilots. The BCA proposal stated that "the size of this 'pilot at scale' should be adequate to describe the potential impacts that such a technology, approach or system may have to the energy system" in order to provide support for the NSPM impacts inventory. *Id*., p. 12. Recognizing that such estimates cannot be precise, the Companies suggested that it is preferable for cost forecasts to be converted into revenue requirements, and the dollar costs should be converted to a present value sum. The Companies proposed a present value discount factor based on the post-tax weighted average cost of capital (WACC) for the discounting of both costs and monetary benefits. *Id*., p. 14.

The Companies explained that the JST (which is derived from the NSPM) is a cost-effectiveness test based on the impacts that are deemed most relevant to the jurisdiction, and they noted that the analyst's judgment should be applied to both quantitative benefits that are not monetized and to qualitative benefits. The BCA proposal provided for the potential use of secondary cost-effectiveness tests at the discretion of the pilot sponsor, which may provide supplemental information for the JST such as information about participant costs or host costs. *Id*., pp. 16, 21-22.

The Companies stated that the proposed JST is derived from the NSPM's impacts inventory, and they recommended that a uniform method of estimated and specific treatment norms be applied to each impact. The JST begins with the identification of relevant policy goals and objectives for the jurisdiction, and the Companies stated that:

> [t]he policy goals and objectives therefore relevant to Michigan utility pilots (recognizing their diversity) are:
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> • Safety
> • Reliability
> • Affordability
> • Resiliency
> • Environmental Justice and Equity
> • Decarbonization

Id., pp. 18-19. The Companies added that this broad list comports with the Commission's direction to provide an SCT and allows for the consideration of impacts to the utility (electric and gas), host customers, participants, and society. *See*, BCA proposal, Table 1, pp. 20-21. They noted that secondary cost-effectiveness tests may be able to address the more unique features of the pilot and should be considered on a pilot-by-pilot basis. The BCA proposal contains recommendations for uniform definitions and treatment methods for the selected impacts. *Id*., pp. 22-26. Treatments include: Monetized, Quantitative, Qualitative, and Not Included. The

Companies proposed monetization of all quantitative impacts. Specific impacts that are not included in the BCA proposal involve those related to environmental compliance, renewable portfolio compliance, and market price effects. *Id*., Table 1, pp. 20-21, and Table 2, pp. 24-28. The proposed JST also excluded resilience, other environmental impacts, energy security, transaction costs (host); and there is no equity impact listed. *Id*.

On April 24, 2023, the Commission issued an order in this docket (April 24 order) finding that the BCA proposal affords a useful starting point for this process. The Commission provided an opportunity for interested persons to comment on the BCA proposal, highlighting six areas for comment that are enumerated below. April 24 order, p. 8. Comments were due by June 23, 2023. The Commission received timely comments from the Companies;[3] Michigan Energy Innovation Business Council and Advanced Energy United (MEIBC/United); ABATE; the Staff; MEGA; SEMCO Energy, Inc., d/b/a SEMCO ENERGY Gas Company (SEMCO); American Council for an Energy-Efficient Economy (ACEEE); Recurve Analytics, Inc. and Energize Strategies (Recurve); Midwest Energy Efficiency Alliance (MEEA); and New York University School of Law Institute for Policy Integrity (NYUIPI).

The Comments

1. **Are there necessary elements that are missing from the BCA proposal? Are there additional impact categories, such as environmental and health effects or equity considerations, which should be considered? If other impacts should be included, how should they be included (monetized, quantitative, or qualitative)?**

[3] For purposes of the comments, the Companies are joined by DTE Gas Company (DTE Gas).

SEMCO[4] supports the BCA proposal, and states that the BCA proposal is general enough to accommodate all project benefits. However, SEMCO recommends a focus on impact areas that have costs, stating "[i]mpact areas that do not have any associated cost should not be specifically required but could be optionally included[.]" SEMCO's comments, p. 4.

ABATE argues that "customers should not be required to pay for societal benefits they will not directly experience[,]" adding that:

> such benefits can be hard to quantify and can thus be overstated by utilities. Most utilities employ IMPLAN, an online application designed to estimate the multiplicative impact of big construction projects on local economies. (See Case No. U-20147, Filing No. U-20147-0043 (November 18, 2019), p 16.) But IMPLAN, and utility societal benefit calculations in general, suffer from two significant deficiencies. First, when assessing the purported economic development benefits of grid investment, IMPLAN calculations do not incorporate the significant detrimental impact on local economies stemming from the higher electric rates caused by those big grid investments. Any societal benefit estimate which does not take the detrimental impact of higher electric rates into account is overstated. (Id.) Second, IMPLAN does not account for the fact that many equipment manufacturers, suppliers, and consultants required to execute utility projects may not be located in the relevant utility's service territory or state (or country), leading to additional social benefit exaggerations. (Id.) The Commission should therefore prohibit subjective and ephemeral elements from being considered as part of the BCA impact categories.

ABATE's comments, p. 2. ABATE comments that the "subjective and ephemeral" elements:

> (such as environmental and health effects or equity considerations) require consideration of the following: (i) the specific risk (e.g. the environmental, health, or inequity concern); (ii) sources of the risk or threat drivers; (iii) how the pilot or project will impact that risk; (iv) an estimated cost of risk control measures; and (v) an estimate of the risk reduction value (likelihood of the risk occurring (%) x the

[4] SEMCO notes that until the April 24 order was issued, the BCA proposal was not in consideration for natural gas utilities. Thus, SEMCO adds that it supports the prior comments offered by MEGA. Specifically, SEMCO: (1) supports a whole dollar threshold for pilots requiring a minimum investment of $1 million; (2) states that the BCA process should not disincentivize small and multi-jurisdictional utilities; (3) recommends that the approved BCA become effective one year from the date that it is approved; and (4) supports regulatory accounting treatment for costs associated with developing the BCA for a pilot, whether or not the pilot itself is ultimately approved. SEMCO's comments, pp. 2-3.

consequence of the risk ($) x the reduction in the likelihood of the risk occurring as a result of the pilot or project).

Id., p. 3. ABATE avers that such costs must be quantified in order to be meaningfully considered, and that such treatment is consistent with the NSPM, Appendix C, as well as the February 4, 2021 order in Case No. U-20645 where the Commission required a quantification of expected benefits. ABATE notes that the BCA proposal already includes the impact categories of "Public Health" and "Non-Energy Impacts." ABATE urges the Commission to limit qualitative considerations, and to monetize and quantify any that are included.

MEIBC/United state that they support the Commission's use of the NSPM for DERs in developing a BCA framework, and also support the Companies' proposal to perform cost effectiveness testing at scale for the full program. However, MEIBC/United argue that there are necessary elements missing from the BCA proposal with respect to energy waste reduction (EWR). They state that EWR should be included in the pilot BCA framework and that there "may be a need to adjust the BCA calculations to account for EWR program spending, but this should not be a barrier unless there are specific statutory reasons why EWR solutions must be excluded." MEIBC/United's comments, p. 2. Referring to Table 1 of the BCA proposal and the fact that the goal of the BCA is to evaluate the pilot at scale, MEIBC/United also comment that many of the impacts that were excluded by the Companies should be included in the JST. For electric utilities, MEIBC/United recommend the inclusion (under Generation) of Environmental Compliance, Renewable Portfolio Standard (RPS) Compliance, and Market Price Effects. For gas utilities, they recommend the inclusion (under Energy) of Environmental Compliance and Market Price Effects. For societal impacts, they recommend the inclusion of Resilience and Other Environmental Impacts. And for host-customer/participant impacts, they recommend the inclusion of Transaction

Costs (Host). MEIBC/United's comments, pp. 2-3. MEIBC/United state that these impacts align with the policy goals for the BCA process.

The Staff states its belief that the Commission expected the utilities to file two proposals, one presenting a utility cost test (UCT) and one presenting an SCT, based on the Commission's statement that it "'expects all pilot proposals to present a BCA which includes a utility cost test (UCT) and a proposed societal cost test (SCT).'" Staff's comments, p. 5 (quoting the July 27 order, p. 8). The Staff recommends that the Commission clarify this point and opines that it would require little additional work to conduct two different BCAs. The Staff comments that a UCT is necessary because it represents the costs borne by ratepayers and is integral to a determination of whether a pilot should be funded by ratepayers. The Staff recommends that the Commission require a UCT along with the SCT.

The Staff also recommends that a BCA for the pilot be submitted along with a BCA for the program at scale. The Staff comments that the Commission should require the at-scale BCA to be updated after the pilot is concluded to reflect pilot learnings, resulting in a total of three BCAs.

The Staff comments that the BCA proposal's cost test does not resemble an SCT, since an SCT should include the benefits and costs of the proposed project "to the whole of society." Staff's comments, p. 6 (citing NSPM, p. xxiii). The Staff notes several differences between an SCT and a total resource cost (TRC) test, which relate to the issues of marginal costs, tax credits, and a societal discount rate. The Staff comments that the California Public Utility Commission (CPUC) uses the California Standard Practice Manual to evaluate the economics of DERs and the analysis includes environmental, health, and equity considerations in the SCT. Staff's comments, p. 6 (citing California Standard Practice Manual: Economic Analysis of Demand-Side Programs

and Projects (CSPM), October 2001, p. 19).[5] The Staff notes that these are missing from the BCA proposal. The Staff states that the NSPM directs that the JST should include all applicable policy goals and system impacts, but the BCA proposal excludes environmental compliance and other environmental impacts. The Staff comments that "potential risks and benefits to the state's air, water, and soil systems must be considered." Staff's comments, p. 7. Referring to Table 1 of the BCA proposal, the Staff recommends inclusion of environmental, equity, and decarbonization standards for both the pilot and at scale versions, including but not limited to:

- Generation: Environmental Compliance
- Energy: Environmental Compliance
- Other Environmental Impacts
- Energy Security[.]

Staff's comments, p. 8.

The Staff comments that "energy security" may need to be defined and suggests that the Energy Affordability and Accessibility Collaborative (EAAC) could be given this task. The Staff comments that the Commission "should require the Companies to include monetization and/or quantification of potential market price impacts as part of the required BCAs." Staff's comments, p. 8. The Staff also recommends inclusion of an estimate of the risk that benefits will not be realized. The Staff opines that "it may make sense for the BCA to consist of a range of potential outcomes at various reasonably likely scenarios to aid in assessing how the BCA would differ; . . . [and] to provide scenario analyses that provide an understanding of likelihood the assumed benefits and costs will [be] realize[d] or could differ." *Id*. Lastly, the Staff advocates inclusion of information on expected rate impacts for both the pilot and the at-scale program.

[5] Available at: https://www.cpuc.ca.gov/-/media/cpuc-website/files/uploadedfiles/cpuc_public_website/content/utilities_and_industries/energy_-_electricity_and_natural_gas/cpuc-standard-practice-manual.pdf (accessed September 7, 2023).

ACEEE comments that energy efficiency measures are apparently excluded, noting that the BCA proposal's definition of DER explicitly excludes "EWR" and the proposal states that the reason for the exclusion is the fact that EWR has a separate statutory scheme. ACEEE urges the Commission to clarify that energy efficiency measures that are outside of the framework of the statutory EWR program are eligible for inclusion in a DER pilot. ACEEE's comments, pp. 1-2 (applying natural pagination). ACEEE quotes MCL 460.1005(g) which provides that "[EWR] does not include electric provider infrastructure projects that are approved for cost recovery by the commission other than as provided in [Public Act 295 of 2008, as amended by Public Act 342 of 2016]." Thus, ACEEE posits that DER "pilot projects approved in rate case or other proceedings should certainly be able to include energy efficiency components implemented under the approved pilot project framework, and have approved cost recovery, separate from the conventional EWR framework." ACEEE's comments, p. 2. ACEEE adds that the JST should be applied to these components.

Recurve begins by advocating use of the total system benefits (TSB) metric developed by the CPUC. Recurve posits that utility-funded DER programs tend to artificially silo DERs, which limits the interactive and competitive aspects of multiple DERs. Recurve states that the value of DERs is becoming increasingly time-dependent but this is not captured by traditional energy metrics. Recurve asserts that the TSB metric captures the full value of DERs, and that the "combined benefit of each DER should be aligned with rigorously measured changes in energy consumption patterns on an hourly basis." Recurve's comments, p. 2 (citing the CPUC's Total

System Benefit Technical Guidance, Version 1.1, August 16, 2021) (CPUC Technical Guidance).[6]

Regarding the TSB, Recurve states that:

> [t]he benefits, aligned with measured changes in energy consumption, are totaled for each hour and can be used to represent a technology and fuel-agnostic price through a market access program model. A market access program model is designed as an open solicitation for aggregators to identify and provide the designated benefits to customers and the grid in exchange for the Commission approved valuation.

Recurve's comments, p. 3 (footnote omitted). Describing the role of the federal Inflation Reduction Act of 2022 (IRA), Recurve adds that "[i]f IRA funding becomes available directly to energy efficiency aggregators, they will be able to effectively layer both IRA and ratepayer funding in a market access program without impacting the cost-effectiveness calculations of the program. IRA funds can be added to any program budget seamlessly." *Id*. Recurve recommends adoption of the TSB metric with the identified benefits quantified "in relation to the measured changes in energy consumption on an hourly basis" and the establishment of a market access program that allows fuel agnostic prices, and where aggregators will be paid based on their delivered performance. *Id*., p. 4. Specifically in response to the first question, Recurve encourages the Commission to strive for consensus among stakeholders and to focus on hourly changes in energy consumption.

MEEA states that the NSPM is an essential tool in the current energy transition and comments that there are elements missing from the BCA proposal. Like ACEEE, MEEA comments that the proposed definition of DER appears to exclude energy efficiency. ACEEE avers that the EWR statutory scheme does not explicitly exclude energy efficiency from being considered in other

[6] Available at: https://pda.energydataweb.com/api/view/2530/DRAFT%20TSB%20Tech%20Guidance%20081621.pdf (accessed September 7, 2023).

contexts. MEEA notes that pilots may include multiple types of DERs and would "benefit from the ability to include customer energy efficiency improvements in the program design." MEEA's comments, p. 2. MEEA urges the Commission to clarify that "energy efficiency components may be included in pilot projects under this framework that are approved in rate cases or other proceedings that are not within the conventional EWR framework." *Id*. MEEA adds that the JST should be used to measure the impacts of the efficiency measures.

MEEA also comments that the Commission should provide a more detailed and consensus understanding of Michigan's policy inventory with applicable legal justification, because the policy objectives articulated thus far are only high-level and non-controversial. MEEA states that all utility system impacts should be included in the JST, or their exclusion should be clearly explained, and refers specifically to the impacts of Environmental Compliance, RPS Compliance, and Market Price Effects. MEEA adds that most of the relevant non-utility system impacts have already been included in the BCA proposal. MEEA comments that BCAs do not address equity, and that a separate analysis known as a distributional equity analysis (DEA) can perform that function. MEEA recommends guidance that is forthcoming from the Lawrence Berkeley National Laboratory (LBNL) for conducting DEA. MEEA's comments, p. 4.

NYUIPI states that Michigan's decarbonization goal, as laid out in the MI Healthy Climate Plan, should be specifically articulated in this process. NYUIPI comments that the BCA proposal does not actually "provide for utilities to incorporate equity or environmental justice into its analysis" despite listing these items as policy goals. NYUIPI's comments, p. 6. NYUIPI asserts that the BCA must consider who experiences the public health impacts and attend to disparate impacts. The institute notes that non-greenhouse gas (non-GHG) emissions are currently included in the "other environmental" category and thus treated as not material. The institute argues that

non-GHG emissions must be included in the JST because they encompass local pollutants that affect communities, or the Companies should provide evidence of their non-materiality. NYUIPI notes that they may be monetized through any of several existing models. NYUIPI also emphasizes the importance of setting baselines for emissions so that the impact can be clearly understood for both GHGs and other air emissions. NYUIPI recommends that, in setting baselines, "such a pilot should include emissions associated with the natural gas system that occur upstream of the electric generator, whether at the point of extraction or at a later point in the process, in both its baseline and its projected changes to baseline." NYUIPI's comments, p. 11. Thus, NYUIPI comments that the JST should include the impact of emissions that are not the product of combustion, such as methane emissions that occur upstream of gas-fired electric generation. Finally, NYUIPI recommends that the Commission look at the net present value (NPV) of benefits and costs rather than simply at the ratio of benefits to costs.

2. **The BCA proposal recommends three potential treatments for different impacts: monetized, quantitative, and qualitative. Are the proposed treatments for each impact appropriate? How can qualitative impacts be incorporated into a BCA?**

SEMCO states that all benefits, both qualitative and quantitative, should be considered. SEMCO's comments, p. 4.

ABATE states that qualitative impacts should be analyzed in terms of risk avoidance and risk tolerance. ABATE adds that the CPUC's Risk-Based Decision-Making Framework (RBDF)[7] provides an example of a tool that analyzes qualitative impacts and elements in terms of risk reduction in order to quantify the costs and benefits in a BCA. ABATE states that the RBDF

[7] A white paper on this topic is available at: https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/safety-policy-division/reports/paper_final_june_2022_cpuc_rdf_crri.pdf (accessed September 7, 2023).

incorporates the use of the CalEnviroScreen, which includes seven action items related to the consideration of Disadvantaged and Vulnerable Communities. ABATE's comments, pp. 5-6.

MEIBC/United state that the impact categories discussed above (in response to question 1) should be added, with the appropriate treatment. They note that the NSPM provides guidance on proxies and they state that GHG emissions and public health impacts can be monetized. They recommend use of the NSPM's Methods, Tools and Resources: A Handbook for Quantifying Distributed Energy Resource Impacts for Benefit-Cost Analysis (MTR Handbook), published March 2022.[8] MEIBC/United's comments, p. 4.

The Staff makes several recommendations for the proposed impact treatments: (1) market price effects should be included as discussed above; (2) the BCA should include a monetized estimate of the expected impact on uncollectibles/bad debt; (3) economic development impacts should be monetized or quantitively assessed; (4) the effect of monetized impacts on the cost of service for different rate classes should be evaluated; (5) safety metrics such as the number of avoided injuries or deaths should be estimated and quantified, but not monetized; and (6) estimates of impacts to reliability metrics should be quantified and provided. Staff's comments, p. 9. The Staff notes that the NSPM recommends the provision of as much quantitative evidence as possible, and adds that "regulators may create metrics to track safety and resilience changes over time. Data on these metrics over time can be used for BCAs." *Id*. (citing NSPM, p. C-5). The Staff urges the Commission to request more data from the Companies on how qualitative impacts will be incorporated into the BCA.

[8] Available at: https://www.nationalenergyscreeningproject.org/methods-tools-and-resources/ (accessed September 7, 2023).

Recurve supports monetization and suggests the use of an adder for achieving equity goals. Recurve's comments, p. 5.

MEEA suggests that there is room for improvement and advocates consideration of the inclusion of the following 12 additional impacts, all of which should, ideally, be monetized: (1) (for electricity and gas) Environmental Compliance; (2) (for electricity) RPS Compliance; (3) (for electricity) Market Price Effects; (4) (for electricity and gas) Credit and Collection Costs; (5) Societal: Resilience; (6) Societal: Greenhouse Gas Emission (GHGs); (7) Societal: Other Environmental Impacts; (8) Societal: Public Health; (9) Societal: Energy Security; (10) Host Customer: Transaction Costs; (11) Host Customer: Non-energy Impacts (low-income); and (12) Host Customer: Non-energy Impacts (non-low-income). MEEA's comments, pp. 4-5. MEEA notes that there is no explanation for the exclusion of these impacts from the BCA proposal.

NYUIPI comments that monetization should be applied wherever possible and that the NSPM strongly favors monetization. The institute comments that the Companies have not monetized as aggressively as the NSPM contemplates. NYUIPI notes that the BCA proposal indicates that a pilot may choose to monetize GHGs (at p. 14, n. 23) and specifically questions the decision not to require monetization of GHG emissions in all cases since decarbonization is one of the six policy goals of the JST. NYUIPI notes that the Social Cost of GHGs (SC-GHG) is an available metric to quantify and monetize climate effects and is widely accepted. NYUIPI's comments, p. 14. NYUIPI opines that the JST should require the monetization of all public health impacts.

3. The BCA proposal includes an assumed discount rate of the after-tax WACC. Is this an appropriate discount rate?

SEMCO supports the use of each utility's approved after-tax WACC. SEMCO's comments, p. 4.

ABATE supports the use of the after-tax WACC, which should be formulated for the BCA in the same way that it was formulated in each utility's most recently approved integrated resource plan (IRP). ABATE's comments, p. 6.

MEIBC/United state that:

> [t]he proposal to use a post-tax weighted average cost of capital ("WACC") for a discount rate is not in the spirit or intent of the NPSM [sic] for DERs, nor is it aligned with the Commission's directive to utilize a societal perspective, as found in its July 27, 2022 and August 23, 2022 Orders in this proceeding. We therefore recommend that a societal discount rate be used for the final JST to be adopted by the Commission, both for pilot DER programs and full-scale DER programs.

MEIBC/United's comments, p. 4. They argue that the NSPM contains no unresolved issues on this topic, but rather indicates that the discount rate should be decided by each jurisdiction based on its policy goals. They further observe that:

> The NSPM provides the following guidance on discount rates (NSPM 2020, Appendix G, page G-1):
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> • The discount rate reflects a particular "time preference," which is the relative importance of short-versus long-term impacts. A higher discount rate gives more weight to short-term benefits and costs relative to long-term benefits and costs, while a lower discount rate weighs short-term and long-term impacts more equally.
> • Different economic actors may have differing discount rates based on their own time preferences. However, the same discount rate should be used for assessing and comparing different DERs in order to allow for direct comparisons across all resource types.
> • There are three categories of discount rates typically considered for DER assessments: WACC, average customers' discount rate, and societal discount rate. A fourth option is some combination of these three categories.
> • The choice of discount rate is a decision that should be informed by the jurisdiction's applicable policy goals. Therefore, a regulatory perspective should be used to determine the appropriate discount rate.
> • The following steps can assist regulators in determining the discount rate for their cost-effectiveness test(s):
>
> 1. Articulate the jurisdiction's applicable policy goals.
> 2. Consider the relevance of a utility's WACC.
> 3. Consider the relevance of the average utility customer discount rate.
> 4. Consider the relevance of a societal discount rate.
> 5. Consider an alternative discount rate.
> 6. Consider risk implications.

> 7. Based on these considerations, determine a discount rate that best reflects the jurisdiction's regulatory perspective.

MEIBC/United's comments, pp. 4-5. MEIBC/United argue that Step 1 (above) has not been properly applied in the BCA proposal because the Commission has required the utilities to use a societal cost test as the JST, and thus the discount rate "should be the societal discount rate, not the post-tax WACC." *Id*., p. 5. They further aver that Step 2 has not been properly applied because the WACC simply reflects the time preference of utility investors, making it the appropriate discount rate only if the policy goal is to maximize the return to investors. MEIBC/United comment that simply because the after-tax WACC is used in BCAs for other utility investments does not make it appropriate for use in the JST, particularly in light of the Commission's expressed preferences. Finally, they state that Step 4 was not properly applied because the societal discount rate is the rate that should have been selected.

The Staff comments that the after-tax WACC is not the appropriate discount rate for an "SCT type of BCA." Staff's comments, p. 10. The Staff notes that the discount rate reflects a time preference, and a higher discount rate gives more weight to short-term costs and benefits. The Staff states that the discount rate should be related to the jurisdiction's policy goals and regulatory perspective, and opines that the after-tax WACC is not appropriate for use in Michigan because "the regulatory perspective, especially in terms of a societal cost perspective, is not aligned with utility investor preferences. Whereas utility investors focus on maximizing return on investment, the Commission's mission is to 'serve the public by ensuring safe, reliable, and accessible energy and telecommunications services at reasonable rates.'" *Id*. (citing NSPM, p. G-3 and the Commission's "About the MPSC" webpage). The Staff comments that the utility investor time preference is not appropriate for resource planning. The Staff recommends that "a discount rate in alignment with typical societal discount rates be used for the [SCT]" noting that such rates usually

range from <0% to 3%. Staff's comments, p. 11. The Staff also recommends that the Commission clarify whether it seeks a primary and secondary cost test. The Staff comments that any secondary cost test should also have a discount rate that is lower than the WACC. Finally, the Staff recommends "that no primary test be detailed and that multiple jurisdictional specific BCA tests be required to allow the Commission discretion in determining how to weight the tests in its final determinations." *Id*.

ACEEE comments that the use of the WACC is inconsistent with the NSPM and with Commission precedent in the July 27 and April 24 orders which specified the use of a societal perspective. ACEEE notes that the NSPM for DERs, Appendix G, recommends a societal discount rate in the range of 0%-3%. ACEEE's comments, p. 2.

MEEA comments that the use of the WACC is not appropriate in the context of a JST, but rather only works well with the UCT because the WACC gives more weight to short-term benefits. MEEA also quotes from the NSPM guidance provided above by MEIBC/United. MEEA's comments, p. 6. MEEA concludes that a societal discount rate matches with Michigan's policy goals.

NYUIPI comments that the WACC is not appropriate for estimating future costs and benefits and that a lower discount rate should be used. NYUIPI notes that the NSPM recommends using a discount rate that comports with the regulatory perspective, making a societal discount rate appropriate in this case because "Michigan's decarbonization and environmental justice goals incorporate a very long-term perspective[.]" NYUIPI's comments, p. 18.

4. What, if any, changes to the BCA proposal are required in order for natural gas utilities to make use of the BCA proposal for pilots?

SEMCO opines that the BCA proposal is general enough to apply to natural gas utility pilots. SEMCO's comments, p. 4.

The Companies state that the BCA proposal can be used by natural gas utilities. They propose only to:

> update the Greenhouse Gas Emissions description of the Societal Impacts Method on the bottom of page 27 of the proposal to include the following language: "Greenhouse Gas Emissions – Quantitative. Will vary by pilot. Natural gas pilots associated with clean fuel alternatives or novel decarbonization technologies should account for the emission impacts of the pilot to quantify the environmental benefit, as applicable."

The Companies' comments, p. 2.

MEIBC/United recommend use of the MTR Handbook, and they observe that the BCA framework could assist efforts to decarbonize the gas industry. MEIBC/United's comments, p. 6.

The Staff comments that "data used to evaluate natural gas pilots should be normalized in a similar method to other gas infrastructure projects, such as per-mile cost." Staff's comments, p. 12. The Staff states that natural gas pilots should consider the effect, if any, on electric production and distribution costs and supply, and benefits or cost sharing between electric and gas customers should be explored. The Staff also states that "customers ultimately should only have to pay for those pilots and projects that are required by law or from which they stand to explicitly benefit" and thus pilots should be evaluated based on whether they meet a State-mandated measure and not whether they meet a corporate goal. *Id*.

Recurve again advocates use of the CPUC Technical Guidance, and comments that the Commission "may want to consider fuel substitution load increases . . . [and] may also wish to account for avoided gas infrastructure costs." Recurve's comments, p. 5.

MEEA comments that the "NSPM principles and guidance apply equally to DER investments by electric or natural gas utilities." MEEA's comments, p. 7. MEEA also refers to the MTR Handbook and makes note of specific gas impacts associated with commodity/supply, transportation, and distribution, such as pipeline capacity and pipeline losses.

NYUIPI comments that analysis of GHG emissions needs to include emissions that are upstream and downstream of the utility's generation system, such as extraction, transportation, and leakage. NYUIPI comments that the definition of GHG emissions in the BCA proposal refers to those "created by fossil-fueled energy resources" and states that this is unclear as to whether upstream emissions should be included. NYUIPI comments that this definition requires revision for both electric and gas BCAs. NYUIPI's comments, p. 19.

5. **Do stakeholders find value in a spreadsheet-based tool with a user guide for both the Staff and utility personnel to utilize? Should the spreadsheet-based tool be developed by the Staff or outside consultants? How can the spreadsheet-based tool be used to provide additional transparency into the assumptions underlying the BCA?**

SEMCO states that the standardized tool would greatly benefit small utilities, but should be made flexible enough to account for the differences between utilities, projects, and service territories, and should be developed in consultation with utilities. SEMCO's comments, p. 5.

The Companies opine that a uniform spreadsheet-based tool is unnecessary and may even complicate the analysis, but state that, if such a tool is favored by the Commission, then utilities should be involved in its development. The Companies' comments, p. 3.

ABATE states that any spreadsheet-based tool should be made available to stakeholders and contested case intervenors. ABATE's comments, p. 7.

MEIBC/United comment that a downloadable spreadsheet-based tool and user guide would greatly benefit all stakeholders and its use by utilities should be required. They recommend using an outside consultant to develop the tool in a stakeholder process. MEIBC/United's comments, p. 7.

The Staff comments that a spreadsheet-based tool will allow for consistency and ensure shared expectations while decreasing administrative costs for utilities and increasing transparency. If the Commission does not adopt a BCA standard template, the Staff recommends that utilities be

required to provide all of their inputs, assumptions, and calculations as well as a non-proprietary working model, so that all parties may understand the analyses. Staff's comments, p. 12. The Staff notes that such a spreadsheet could be updated every few years. The Staff recommends that the tool be developed by an outside consultant with input from the Staff, stakeholders, and utilities.

Recurve recommends consideration of an open-source framework for calculating BCA outcomes rather than a spreadsheet-based tool. Recurve's comments, p. 5.

MEEA comments that a spreadsheet-based tool and user guide would be valuable and should be made publicly available. MEEA recommends the development process that was used for the Michigan Energy Measures Database, which would include a stakeholder committee. MEEA's comments, p. 8.

6. Are there regulatory examples of JST or BCA developments in other states that could be instructive for use in Michigan?

SEMCO reports that the District of Columbia is considering a standardized BCA framework. SEMCO's comments, p. 5.

MEGA states that the Public Service Commission of Wisconsin (PSCW) uses a modified TRC test as its primary BCA metric, and a third-party administrator conducts four additional BCA tests, all of which were adapted from the NSPM. MEGA's comments, pp. 2-3.

The Companies state that they reviewed the BCA frameworks used in Colorado, Minnesota, New Hampshire, and Rhode Island in development of the BCA proposal, and they provide a chart briefly summarizing those four frameworks. The Companies' comments, p. 3.

ABATE recommends review of the CPUC's December 19, 2022 decision[9] regarding a framework for BCAs, because it applies a cost-benefit approach which "consists of ranking observable aspects of risk for issues like safety or reliability (i.e., attributes) in terms of value or utility objectives, developing observable measurements, assessing risk, applying monetized value to the attributes, and applying a function or formula to express risk aversion attitudes." ABATE's comments, pp. 7-8. ABATE observes that the "focus on the aspect of risk aversion can assist in estimating the monetary value of risk reduction to customers and assist in enabling a cost comparison, particularly for more difficult to value qualitative considerations. As such the Commission should consider and implement this approach here." *Id*., pp. 8-9. Finally, ABATE states that the February 4, 2021 order in Case No. U-20645 emphasized the importance of detailing pilot costs by source, and ABATE argues that pilot costs "should be allocated to and collected from those customers which cause the costs and are expected to benefit from the pilot and not just simply allocated broadly across all customers." ABATE's comments, p. 9.

MEIBC/United comment that almost a dozen states have used the NSPM to update their cost-effectiveness tests, and they highlight Maryland and Colorado. They note that Maryland does not require BCA tests to be identical across all DERs or utilities, and Colorado's "Ratepayer Impact Measure is part of the evaluation in [a non-wires alternative (NWA)] proposal, but it is evaluated separately to show impacts on customer rates. Thus, it does not interfere with the NWA proposal's cost-effective impacts and the measurement of its broader benefits." MEIBC/United's comments, p. 8.

[9] Available at: https://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=500014668 (accessed September 7, 2023).

The Staff states that Minnesota has identified methods for quantifying impacts through workshops, and Washington provides an example of a state focused on environmental policies. The Staff notes that other examples are provided by Maryland and Colorado. The Staff states that Michigan currently relies on the UCT, but this test does not provide any perspective other than the utility and ratepayer perspectives. The Staff reports that the most common primary test in the Midwest is the TRC test, which adds the participating customer's perspective but does not cover the totality of environmental and health costs and benefits. Staff's comments, p. 14. The Staff again recommends that the Michigan jurisdictional SCT become a requirement along with the UCT. The Staff does not recommend any specific primary or secondary test but rather recommends a holistic approach.

ACEEE recommends the process used by Minnesota to develop a JST. ACEEE's comments, p. 2.

Recurve again recommends the CPUC's TSB metric with a market access program model "and a legislative requirement for tracking goals based on the hourly changes in energy consumption for energy efficiency and demand response programs." Recurve's comments, p. 5. Recurve also recommends consideration of BCA processes in New York and Texas.

MEEA cites the example of Minnesota's JST development process which involved arrival at a consensus recommendation that was later approved by the state agency. MEEA's comments, p. 8.

NYUIPI recommends the CPUC's avoided cost calculator, and New York's work on natural gas system GHGs. NYUIPI's comments, p. 20.

Discussion

The Commission thanks the commenters for their insightful and nuanced comments. In this order, the Commission provides guidance on substantive aspects of the BCA proposal and addresses the next steps.

Beginning with the substantive issues, the Commission agrees with the many commenters who noted that the BCA proposal should allow for energy efficiency measures. The Commission finds that the BCA proposal should include such measures as long as they do not fall under the statutory scheme of Subpart C of Public Act 342 of 2016, MCL 460.1071 *et seq*. This will avoid potential double counting of EWR costs and makes clear that the statutory requirements of that scheme do not apply to the BCA proposal. The definition of DER in the BCA proposal should be revised accordingly. Having been included, the efficiency measures will be subject to the cost tests including the JST.

The Commission clarifies that the Staff is correct that the Commission mandated the submission of both a UCT and an SCT in the July 27 order, p. 8. As the Staff notes, the UCT is a key component of any BCA because it reflects the costs that will be borne by ratepayers. The utility system resource cost test required under the EWR statutory scheme is a UCT, and the utilities are already familiar with this type of test. *See, e.g.*, MCL 460.1013(d), MCL 460.1089(1), and MCL 460.1073(2). The development of the UCT is discussed below.

The Commission also agrees with the Staff that the utility should present a BCA for the pilot at scale and that it should be updated at the conclusion of the pilot period to give the utility and the Commission an analysis of the performance of the pilot. The updated version should be submitted in the pilot docket within 60 days after the pilot is concluded. The Commission finds that a BCA for the pilot itself is not necessary.

Turning to the impact categories, the Commission agrees with the Staff and other commenters that the BCA proposal for the JST is lacking several of the categories that assess environmental and societal impacts. An SCT (such as the JST) seeks to include the benefits and costs of projects to the whole of society and, as described in the NSPM and the CSPM, includes environmental, health, and equity considerations. Given that the JST is intended to reflect the Commission's regulatory perspective, the Commission finds that the BCA proposal should include the following impact categories (in addition to those presented in the BCA proposal) in future BCAs: (1) for electric utility system impacts, Generation: Environmental Compliance, RPS Compliance, and Market Price Effects; (2) for gas utility system impacts, Energy: Environmental Compliance and Market Price Effects; (3) for societal impacts, Resilience, Other Environmental Impacts, and Energy Security; and (4) for host-customer/participant impacts, Transaction Costs. *See*, BCA proposal, pp. 24-26. All of these impact categories should be monetized wherever possible and quantified if monetization is not possible. The Commission is comfortable with the meanings applied to Energy Security in the tables offered throughout the NSPM. *See*, NSPM, pp. ix, 4-20, 4-23, 6-5, 8-5, 9-5, and 10-6.

The Commission disagrees with ABATE's assertion that environmental, public health, and equity impacts are subjective and ephemeral, but agrees with ABATE and MEIBC/United that, wherever possible, impacts should be quantified and monetized. The BCA proposal provides for qualitative treatment for several impact categories. However, the NSPM and Commission precedent in Case No. U-20645 favor quantification. The Commission finds that the following impact categories should be converted to monetized treatment wherever possible and quantified if monetization is not possible: (1) for electric utility system impacts, General: Credit and Collection Costs, Risk, and Resilience; (2) for gas utility system impacts, General: Credit and Collection

Costs, Risk, and Resilience; (3) for societal impacts, Public Health and Economic Development/Jobs; and (4) for host customer/participant impacts, Non-Energy Impacts (Low-Income). BCA proposal, pp. 24-26. Though it is not included in the primary cost test in the NSPM, the Commission adopts the Staff's proposal to add a category for impacts to the cost of service for all rate classes, which should be monetized for both gas and electric utilities. The cost of service impact should include both the cost of the full-scale project and the cost of the pilot. Though the Commission finds a BCA for the pilot itself unnecessary, utilities should provide the cost-based information in the BCA for the pilot. The Commission does not require the benefit-based information. The Commission also sees potential benefit in the Staff's proposal for multiple jurisdictional specific tests, ultimately testing various reasonably-likely scenarios.

Michigan's decarbonization goals are economy-wide. Thus, the Commission finds that the GHG emissions (under societal impacts) should also be monetized, and the calculation should include upstream and downstream GHG emissions limited to those emissions associated with the generation, delivery, and use (or avoided generation, delivery, and use) of the energy or fuel that is used in the piloted technology. For example, if the piloted energy source will experience leakage in its delivery under the design of the pilot, those emissions should be taken into account. The Commission seeks to avoid unintended increases in GHG emissions as a result of the increased deployment of DERs, and this addition to the BCA proposal will support that effort. Of course, as NYUIPI points out, this will require the applicant utility to identify a baseline.

With these changes to the primary cost test, the Commission does not find that a secondary cost test is necessary at this time, but notes that the Companies "recommend that the use of secondary cost tests be considered by the BCA analyst on a pilot-by-pilot basis[.]" *Id*., p. 22.

The Commission agrees with several of the commenters that the after-tax WACC is not appropriate for use with the JST because that cost test is intended to give a long-term and society-wide perspective in alignment with the regulatory perspective that has been expressed by the Commission and that is embodied in Michigan's decarbonization goals. The Commission finds that the discount rate used in the JST should comport with the NSPM's recommendation of a range of 0% to 3%. NSPM, Appendix G. The after-tax WACC may be appropriate for the UCT.

As can be seen from the discussion of impacts, the Commission finds that the BCA proposal should also apply to natural gas utilities. The Commission supports the Companies' proposal to update the GHG description, noting that GHG emissions should be monetized in instances where they are applicable. The Commission also supports the Staff's suggestion to normalize the data in a way that aligns with other gas infrastructure projects, such as by the per-mile cost. Of course, measures of compliance should only relate to statutory and regulatory compliance. Compliance with corporate goals is not relevant in this context. The Commission also adopts the Staff's suggestion that the BCA proposal for natural gas utilities consider the effect, if any, on electric production and distribution costs as a part of the analysis of the gas pilot.

Regarding ABATE's comment that pilot costs should not be allocated across all customers, the Commission notes that this is not a cost allocation or cost recovery proceeding. Presumably, as has been the case in the past, some pilots will be designed to place additional costs on customers who opt in to the pilot (and choose to receive the benefits); and other pilots will be designed to place pilot costs on all customers or certain classes of customers. One of the many uses of the BCA is to help identify whether the design and scalability of the pilot are sensible.

Turning to the next steps, the Commission agrees with the majority of the commenters that a spreadsheet-based tool or similar open source tool which is transparent, accessible to all, and relies

on well-understood standardized inputs (with flexibility) would be useful for all parties. The Commission notes that several commenters, while supporting the use of the NSPM, also recommended the use of additional guidance including the CPUC CSPM (for inclusion of equity considerations in an SCT), the CPUC Technical Guidance (for the TSB approach), the CPUC RBDF (for analysis of quantification and equity), the NSPM's MTR Handbook (for quantification and monetization), and forthcoming guidance from LBNL on DEA. The Commission supports the use of these additional resources for refinement of the BCA proposal, including to define and incorporate equity-based considerations, and for use in the collaborative aimed at creation of the spreadsheet-based tool or similar open-source tool that would assist in providing transparency of inputs, outputs, and calculation methodology. The Commission finds that equity, environmental justice, and environmental impacts should be included and monetized wherever possible and quantified if monetization is not possible. The development of the spreadsheet-based tool should involve consideration of these additional guidance documents and, where consensus arises, the opportunity should be used to improve on the SCT (referred to by the Companies as the JST) which is approved for the final BCA consistent with the regulatory perspective articulated by the Commission in this and prior orders in Case Nos. U-20898 and U-20645.

Noting that hourly data may be necessary to accurately estimate emissions reduction profiles, the Commission further directs the Staff and stakeholders to explore the feasibility and benefits of obtaining hourly data in the spreadsheet-based or similar open source tool. The Commission agrees with NYUIPI that benefits should be able to be viewed in terms of their NPV, and not simply their ratio to costs, and notes that this will be possible in the tool as NPV for both costs and benefits will be calculated and made available. Additionally, the collaborative should develop a jurisdictional specific UCT. This effort may only involve the selection of the variables included in

the jurisdictional specific SCT that should be excluded in the UCT, as well as the selection of the discount rate. The collaborative should explore whether additional variables should be included in the UCT. The spreadsheet-based or similar open source tool should have the flexibility to support the calculation of both the SCT and the UCT. The Commission is looking for clarity and transparency in both cost tests. Finally, the Commission directs the collaborative to explore the feasibility of incorporating a sensitivity analysis into the tool.

The Commission finds that the development of the spreadsheet-based tool or similar open source tool should be a collaborative process which includes the utilities, the Staff, and other stakeholders. Further information on this collaborative process will be provided via the New Technologies and Business Models workgroup webpage and listserv.[10] In the meantime, the Commission hopes to continue to see applications for innovative pilots outside of the rate case process where feasible and appropriate. *See*, November 18, 2022 order in Case No. U-20836, pp. 9-10. As the Staff notes, all interim pilot proposals shall include all inputs, assumptions, and calculations, and shall be accompanied by a non-proprietary, accessible, and transparent working model. Utilities may, in their discretion, use the framework laid out in this order in the interim until the completion of the development of the spreadsheet-based or similar open source tool.

THEREFORE, IT IS ORDERED that the Commission shall launch a collaborative for the purpose of developing a spreadsheet-based or similar open source tool which will establish a new platform as a model for the required benefit cost analysis that accompanies requests for pilots, to be ready for use in 2024. Further information on the collaborative will be provided on the New Technologies and Business Models workgroup webpage and through the associated listserv.

[10] The webpage is available at: https://www.michigan.gov/mpsc/commission/workgroups/mi-power-grid/new-technologies-and-business-models (accessed September 7, 2023). Interested persons may also sign up for the listserv on that page.

The Commission reserves jurisdiction and may issue further orders as necessary.

Any party desiring to appeal this order must do so in the appropriate court within 30 days after issuance and notice of this order, pursuant to MCL 462.26. To comply with the Michigan Rules of Court's requirement to notify the Commission of an appeal, appellants shall send required notices to both the Commission's Executive Secretary and to the Commission's Legal Counsel. Electronic notifications should be sent to the Executive Secretary at mpscedockets@michigan.gov and to the Michigan Department of Attorney General - Public Service Division at pungp1@michigan.gov. In lieu of electronic submissions, paper copies of such notifications may be sent to the Executive Secretary and the Attorney General - Public Service Division at 7109 W. Saginaw Hwy., Lansing, MI 48917.

MICHIGAN PUBLIC SERVICE COMMISSION

Daniel C. Scripps, Chair

Katherine L. Peretick, Commissioner

Alessandra R. Carreon, Commissioner

By its action of October 12, 2023.

Lisa Felice, Executive Secretary

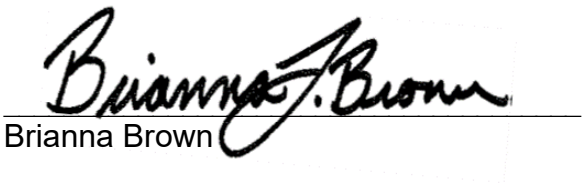
P R O O F O F S E R V I C E

STATE OF MICHIGAN)

Case No. U-20898

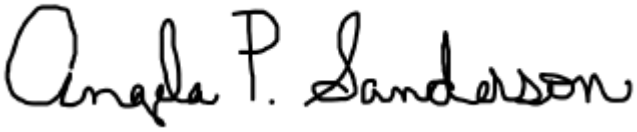
County of Ingham)

Brianna Brown being duly sworn, deposes and says that on October 12, 2023 A.D. she electronically notified the attached list of this **Commission Order via e-mail transmission**, to the persons as shown on the attached service list (Listserv Distribution List).



Brianna Brown

Subscribed and sworn to before me
this 12th day of October 2023.



Angela P. Sanderson
Notary Public, Shiawassee County, Michigan
As acting in Eaton County
My Commission Expires: May 21, 2024

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