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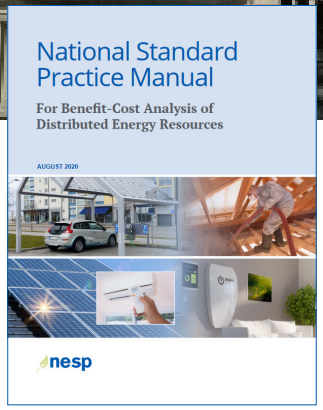
National Standard Practice Manual

CASE STUDY:

Michigan



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NATIONAL ENERGY SCREENING PROJECT

Michigan NSPM BCA Case Study

Introduction

The National Standard Practice Manual™ (NSPM), a project of the National Energy Screening Project (NESP™), uses a multi-step process to develop a (or modify an existing) cost-effectiveness test for one or more distributed energy resources (DERs). This process produces a primary benefit-cost analysis (BCA) test, which regulators use to help answer the question: ***Which resources have benefits that exceed costs and, therefore, merit utility acquisition or support on behalf of their customers?***

The purpose of this case study is to provide an example of how one state, Michigan, applied the NSPM. Michigan is a unique example of NSPM application in terms of the process used by the Michigan Public Service Commission (MPSC) for stakeholder input. Typically, commissions will convene a stakeholder group through a series of 6-10 stakeholder meetings to apply the NSPM multi-step process to develop a jurisdiction specific test (JST). These meetings, facilitated and informed by technical experts, culminate with a final report to the commission recommending a JST for the state. The MPSC used a different approach, whereby it directed the utilities to submit a proposed JST using the NSPM guidance. The utilities filed their proposal with the MPSC, and intervenors were invited to comment on the utilities' proposed JST by responding to a series of Commission questions. The process was guided by NSPM's core principles shown in Table 1.

Table 1. NSPM BCA Principles

Principle 1: Treat DERs as a Utility System Resource. Recognize that DERs can provide energy/power system needs and should be compared with other energy resources and treated consistently for BCA.

Principle 2: Align with Policy Goals. A jurisdiction's primary cost-effectiveness test should align with applicable policies and goals that serve as basis for investing in or supporting energy resources.

Principle 3: Ensure Symmetry. Benefits and costs should be treated symmetrically for any given type of impact of a resource to avoid bias in investment decisions.

Principle 4: Account for Relevant, Material Impacts. Cost-effectiveness tests should include all relevant (per applicable policy goals), material impacts including those that are difficult to quantify or monetize.

Principle 5: Conduct Forward-Looking, Long-term, Incremental Analyses. BCAs should be forward-looking, long-term, and incremental to scenario without the DER to allow for comparison with alternatives.

Principle 6: Avoid Double-Counting Impacts. BCAs can present a risk of double-counting benefits and/or costs. All impacts should therefore be clearly defined and valued to avoid double-counting.

Principle 7: Ensure Transparency. Transparency helps to ensure engagement and trust in the BCA process decisions, and thus practices should ensure documentation of assumptions, methods and results.

Principle 8: Conduct BCAs Separately from Rate Impact Analyses. BCA answer fundamentally different questions than rate impact analyses, and therefore these should be conducted separately.

Background and Commission Process

In October 2019 (Case No. U-20645), the MPSC established the Michigan Power Grid initiative (MI Power Grid), a multi-year stakeholder initiative aimed at maximizing the benefits of the transition to clean, DERs for Michigan residents and businesses. Ultimately, the initiative seeks to engage key stakeholders, including utility customers, to help integrate new clean technologies and optimize grid investments for reliable, affordable electricity service. The initiative includes outreach and education as well as changes to utility regulation designed to advance the state's clean energy future.

In October 2020 (Case No. U-20898), the MPSC Staff launched the New Technologies and Business Models stakeholder workgroup as a part of Phase II of MI Power Grid. After extensive stakeholder input, MPSC Staff recommended to the Commission that an expedited pilot review process be implemented to: (1) explore the applicability of new technologies and business models in Michigan, (2) allow for testing and refinement of new models through the use of pilots, and (3) provide support for the rapid transformation of the energy system required to meet Michigan's energy goals.

Starting in 2021, the MPSC addressed cost-effectiveness testing for DERs in Case No. U-20898 as part of the Michigan Power Grid New Technologies and Business Models workgroup.

Historically, Michigan has used four cost-effectiveness tests:

1. the Utility Cost Test (UCT), as their primary test
2. the Participant Cost Test (PCT) as a secondary test
3. the Ratepayer Impact Measure Test (RIM) as a secondary test
4. the Total Resource Cost Test (TRC) as a secondary test

The MPSC issued a July 2022 Order requiring the utilities to develop a Michigan specific benefit-cost test for pilot DER programs, guided by the NSPM. DTE Electric Company and Consumers Energy ("the Companies") submitted a joint Proposed Requirements and Further Guidance on Benefit-Cost Analyses for Pilot Initiatives using the NSPM 5-step process to develop a JST. Intervenors in the docket were invited to provide comments on utilities' proposal specific to a set of MPSC questions. This culminated in an October 2023 MPSC Order adopting a primary BCA test for Michigan. The full process is summarized in Table 2, including initial education provided to the MSPC staff and its Distribution System Planning workgroup in November of 2021.

Table 2. Summary of NSPM Process in Michigan

Michigan
1. NESP presentation to Commission staff and stakeholders about NSPM BCA framework in the context of distribution system planning (DSP)
2. Commission staff make recommendation to the Commission to use the NSPM to develop a consistent BCA test for all DERs
3. Commission issues order for utilities to develop BCA for DER pilots guided by the NSPM. Utilities retain a consultant to develop BCA using NSPM multi-step process and files proposal with commission, recommending the proposed MI jurisdiction specific test (JST) be applied at scale.
4. Commission invites public comment on the utilities' proposed BCA, focusing on key questions including impacts to include in a consistent BCA test, methodologies to account for impacts, and whether to develop a transparent BCA spreadsheet tool.
5. Interested stakeholders file comments responding to the Commission's set of questions.

6. Commission issues order adopting a benefit-cost test based on the utilities' proposed JST with modifications per stakeholder comments, ensuring alignment with Michigan's energy goals.
Timeframe: Fall 2021 – Fall 2023

The Companies' BCA Proposal and Intervenor Comments

The Companies proposed a set of Michigan-specific BCA requirements for evaluating utility pilot proposals. The Commission defines pilots as "a limited duration experiment or program to determine the impact of a measure, integrated solution, or new business relationship on one or more outcomes of interest." The Companies' framework responds to the MPSC July 2022 Order, which requires utilities to establish uniform BCA requirements, including a societal cost test, informed by the NSPM and tailored to Michigan's regulatory structure.

The framework emphasizes assessing pilots "at scale" to evaluate the pilot's potential impacts at full deployment, considering scalability and technology maturity. This ensures the analysis reflects the broader benefits and economies of scale that might not be evident in a small-scale pilot. While the JST serves as the central cost-effectiveness test, supplemental analyses may be included for additional perspectives. The proposal reflects the Companies' efforts to align with NSPM principles and five-step process while addressing Michigan-specific conditions, as shown in the table below.

Table 3. Summary of DTE-Consumers Energy BCA Proposal

NSPM 5-STEP PROCESS		PROPOSED REQIUIREMENTS AND FURTHER GUIDANCE ON BCA FOR PILOT INITIATIVES
STEP 1	**Articulate Applicable Policy Goals.** Articulate the jurisdiction's applicable policy goals related to DERs.	In Step 1, the Companies examined and documented overarching policy goals and accompanying discussion. The policy goals and objectives therefore relevant to Michigan utility pilots (recognizing their diversity) are: • Safety • Reliability • Affordability • Resiliency • Environmental Justice and Equity • Decarbonization
STEP 2	**Include All Utility System Impacts.** Identify and include the full range of utility system impacts in the primary test, and all BCA tests.	For Steps 2-5, the Companies examined the full impacts inventory provided in the NSPM to identify which impacts to include in the JST. Per NSPM guidance in Step 2, the Companies included all utility impacts.

STEP 3	**Decide Which Non-Utility System Impacts to Include.** Determine whether to include host customer, low-income, other fuel, and water, and/or any societal impacts based on alignment with policy goals.	In Step 3, the Companies followed MPSC guidance to employ a societal test, which informs the scope of non-utility impacts for inclusion in its proposed JST. This means that in addition to utility impacts, the Companies explored the applicability of host customer and societal impacts to the policy goals. While the whole NSPM impacts inventory has merits for qualitative and quantitative consideration, these were refined based on the applicable policy goals.
STEP 4	**Ensure that Impacts are Properly Addressed.** Ensure that the impacts identified in Steps 2 and 3 are properly addressed e.g., ensure symmetrical treatment of costs and benefits, relevant impacts are accounted for (even if hard to quantify); and avoid double counting of impacts.	In Step 4, to address the topic of relevant and material impacts, the Companies proposed examining impacts at "pilot at scale", as pilots will inherently be challenged to have material impacts. Additionally, the Companies carefully examined each impact to identify potential instances where double counting could occur and made note to guide a practitioner.
STEP 5	**Establish Comprehensive, Transparent Documentation.** Ensure clear and understandable documentation and reporting of test development, input assumptions and BCA results. *This step is applied throughout NSPM process.*	

The MPSC requested public comments on the utilities' proposal – via an April 2023 Order – focusing on the six questions below about the utilities' plan. Comments were submitted by utilities, the Midwest Energy Efficiency Alliance (MEEA), Recurve Analytics, Inc., the NYU Institute for Policy Integrity, and the American Council for an Energy-Efficient Economy (ACEEE).

MPSC's April 2023 Order (Case U-20898) – Questions for Intervenors

1. Are there necessary elements that are missing from the [utilities'] 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)?
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?
3. The BCA proposal includes an assumed discount rate of the after-tax WACC. Is this an appropriate discount rate?
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?
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?
6. Are there regulatory examples of JST or BCA developments in other states that could be instructive for use in Michigan?

Intervenor comments emphasized the need for Michigan's BCA framework to be inclusive, transparent, and aligned with broader policy goals. They highlighted the exclusion of energy efficiency measures from pilot projects, urging clarification that such measures should be included under the new framework. Additionally, intervenors criticized the use of the weighted average cost of capital (WACC) as a discount rate in this context, advocating instead for a societal discount rate in line with NSPM guidance.

Other key comments included prioritizing equity and environmental justice, ensuring comprehensive emissions assessments (beyond GHGs, and adopting a transparent, open-source framework. Intervenors also stressed the need to maximize net benefits, improve alignment with decarbonization goals, and integrate innovative metrics like total system benefits and performance-based market access programs.

MPSC Decision on New BCA Test

Based on the Companies' proposed BCA test and intervenor comments, the Commission issued an October 2023 Order adopting a new BCA test for Michigan. A summary of the BCA impacts included in Michigan's approved JST (which the commission also refers to as the "Societal Test") is provided in Table 5. The table also illustrates the direction on methodologies for accounting for impacts—whether monetization, quantitative or qualitative. The cells highlighted in green indicate impacts that were not included in the Companies' proposed BCA, but that the Commission ordered to be included based on stakeholder input and to ensure alignment with Michigan's policy goals (consistent with NSPM principles).The cells highlighted in yellow indicate impacts that were proposed in the Companies' proposed BCA, but where the Commission ordered the approach to accounting for the impact to be different than what the Companies' proposed.

Table 4. Michigan's Jurisdiction Specific Test

Impact Categories	Approach (Monetized, Quantified, and/or Qualitative)	Impact Categories	Approach (Monetized, Quantified, and/or Qualitative)
ELECTRIC UTILITY SYSTEM		**GAS UTILITY SYSTEM IMPACTS**	
Energy Generation	Monetized	Fuel and Variable O&M	Monetized
Capacity	Monetized	Capacity	Monetized
Environmental Compliance	Monetized*	Environmental Compliance	Monetized*
RPS Compliance	Monetized*	Market Price Effects	Monetized*
Market Price Effects	Monetized*	Financial Incentives	Monetized
Ancillary Services	Monetized	Program Administration Costs	Monetized
Transmission Capacity	Monetized	Utility Performance Incentives	Monetized
Transmission System Losses	Monetized	Credit and Collection Costs	Monetized*
Distribution Capacity	Monetized	Risk	Monetized*
Distribution System Losses	Monetized	Reliability	Monetized
Distribution O&M	Monetized	Resilience	Monetized*
Distribution Voltage	Qualitative		
Financial Incentives	Monetized		
Program Administration Costs	Monetized		
Utility Performance Incentives	Monetized		
Credit and Collection Costs	Monetized*	**HOST CUSTOMER/PARTICIPANT IMPACTS**	
Risk	Monetized*	Measure Costs	Monetized
Reliability	Monetized	Transaction Costs	Monetized*
Resilience	Monetized**	Interconnection Fees	Monetized
SOCIETAL IMPACTS		Risk	Qualitative
Resilience	Monetized*	Reliability	Qualitative
Greenhouse Gas Emissions	Quantitative	Resilience	Qualitative
Other Environmental	Monetized*	Tax Incentives and Donations	Monetized
Public Health	Monetized*	Non-Energy Impacts (Low Income)	Monetized*
Economic Development / Jobs	Monetized*	Non-Energy Impacts (Non-Low Income)	Qualitative
Energy Security	Monetized*	Other Fuel	Monetized

Indicates impacts that were not included in the utilities' proposed BCA, but that the commission ordered be included based on stakeholder input and to ensure alignment with Michigan's policy goals.

Indicates impacts that were included in the utilities' proposed BCA, but where the commission ordered the approach to accounting for the impact be different than what the utilities proposed.

*Quantified, if monetization is not possible

**Qualitative or quantified, if monetization is not possible

The Commission also decided on a **societal discount rate from 0-3%**, rather than a weighted average cost of capital (WACC), as the utilities had been ordered to develop a test based on societal impacts, rather than the impacts on a utility (for which the WACC would be more appropriate)—again, consistent with NSPM guidance.

Next Steps - BCA Modeling Tool

The MPSC directed the Staff to launch the development of a flexible and transparent spreadsheet-based tool or similar open-source tool to measure the cost-effectiveness of DER programs, through a collaborative process including commission staff, utilities, and stakeholders. It also supported the use of additional resources such as NESP's Methods, Tools and Resources (MTR) Handbook and forthcoming guidance on conducting a Distributional Equity Analysis (see separate article). In a November 2024 Order, the MPSC extended the deadline for its ongoing collaborative, with a goal of the tool being ready for use in 2026. In the interim, any pilot proposal analysis should include all inputs, assumptions, and calculations, and must be accompanied by a non-proprietary, accessible, and transparent working model.

Appendix

MPSC Orders and Timeline

10/29/2020	U-20890-0001	Established the collaborative, provided direction for the Commission Staff and stakeholders, and set a date for the filing of the first status report
07/27/2021	U-20898-0002	Extended the deadline for the filing of the Commission Staff's initial status report to December 1, 2021
07/27/2022	U-20898-0005	Responded to the recommendations in the Commission Staff's MI Power Grid: New Technologies, Business Models, and Staff Recommendations Report filed in this docket; solicited comments on two proposals; and directed investor-owned electric utilities to submit proposed benefit cost analysis requirements
08/23/2022	U-20898-0009	Extended the deadline for submission by investor-owned utilities of a benefit cost analysis applicable to pilot programs to February 1, 2023, and approved a phased approach for this effort.
01/19/2023	U-20898-0019	Solicited comments on additional questions addressing behind the meter distributed energy resources
02/23/2023	U-20898-0030	Approved a voluntary expedited pilot approval process
04/24/2023	U-20898-0033	Established a period for the filing of comments on the February 1, 2023 benefit cost analysis proposal and six related questions described in the order. Comments are due no later than June 23, 2023
10/12/2023	U-20898-0040	Provided guidance on the substance of the benefit cost analysis and announced a future collaborative planned for 2024 for the purpose of developing a jurisdictional specific societal cost test and utility cost test
08/22/2024	U-20898-0042	Clarified the Commission's February 23, 2023 order in Case No. U-20898 and set a deadline for interested persons to file comments regarding DTE Electric Company's proposed workplan in Case No. U-21653
11/21/2024	U-20898-0044	Extends the deadline for producing a spreadsheet-based tool or other open-source tool for use with benefit-cost analyses