



**Making the Most of Michigan's Energy Future**

# **MIRPP & Filing Requirements**

Advanced Planning Stakeholder Meeting  
January 31, 2022



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**Michigan Public Service Commission**

# Workgroup Instructions

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Agenda Items		
9:00 a.m.	Introduction	Naomi Simpson (MPSC)
9:10 a.m.	Integrated Resource Plan Filing Requirement Comments Overview	Megan Kolioupoulos (MPSC)
9:40 a.m.	Michigan Integrated Resource Planning Parameters Comments Overview	Karsten Szajner (MPSC)
10:10 a.m.	Break	
10:20 a.m.	Base Case Scenario Deep Dive Discussion	Naomi Simpson & Jesse Harlow (MPSC)
11:05 a.m.	Break	
11:15 a.m.	Climate Change Discussion	Naomi Simpson & Jesse Harlow (MPSC)
12:00 p.m.	Questions & Closing	Naomi Simpson (MPSC)
12:30 p.m.	Adjourn	



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# Phase III Tentative Timeline



# Phase III Stakeholder Meetings – Tentative Plan

- **Meeting #1 December 16<sup>th</sup>**
  - Initial Staff Drafts, Review Potential Study Results, Solicit Feedback
- **Meeting #2 January 31<sup>st</sup>**
  - Review Stakeholder Feedback Highlights on MIRPP and Filing Requirements, Base Case Scenario Stakeholder Discussion, Climate Change Stakeholder Discussion.
- **Meeting #3 February 28<sup>th</sup>**
  - Review Environmental Rules/Laws in MIRPP, Review Environmental Considerations in Filing Requirements, Demo EJ Tool, Electrification and Decarbonization Scenario Discussion including Carbon Counting.
- **Meeting #4 Late March**
  - TBD
- **Meeting #5 Late April**
  - Review Refined Drafts with Stakeholders and Solicit final Feedback Due in May.

# Major Changes to Highlight

## Staff is proposing:

1. The MIRPP contain 2 scenarios.
2. Eliminating the UP only scenario.
3. Inclusion of Environmental Considerations developed by EGLE in the IRP Filing Requirements.(Further Discussion at February Meeting)
4. Scale back the IRP Report to a public facing summary.
5. Present the detail currently in the IRP Report and supporting data in the actual filing.



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# **Integrated Resource Plan Filing Requirements Comments Overview**



Megan Kolioupoulos



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# Clarification Requests

- **Approval of Costs**

- (o): *“A description of the decommissioning process, costs, and how the utility intends to provide assurance of proper disposal with consideration of material salvage and recycling.”*

- Clarification on this addition **-DTE**

- Is it only when adding new resources in the first three years due to retirement?
  - **Answer: Only new resources**
- Is this specific to power plants or all generation assets?
  - **Answer: All generation assets**



# Clarification Requests

- **IV) Demand Response and Distributed Generation Programs**
  - Clarification on what is meant by Distributed Generation -**DTE**
  - Include a definition
    - Answer: Staff is still debating on the use of DER or DG and will include a definition
  - (c): *“Maximum single event demand reduction;”*
    - Clarification on if this is what is expected to be achieved? -**DTE**
      - Answer: To understand what the performance of the DR is expected to be

# Clarification Requests

- **V) Analytical Approach**

- (d): “... A comprehensive risk assessment should at least include optimized build plans from the required MIRPP scenarios, for the proposed resource plan and any alternative resource plans presented by the utility.”

- Is this statement focused on build plan comparisons against each other with regards to risk, or is it focused on a requirement to include each of these build plans in a risk analysis of the selected risk variable(s)? Or both? –**Consumers Energy**

- **Answer: To understand how the proposed build plans and other build plans compare in a risk assessment.**

# Clarification Requests

- **VIII) Demand-Side Resources:**

- (a) (ii): *“Historic performance of existing demand-side programs and how the utility used such information in its demand response resource decisions;”*

- Define “historic performance” -**DTE**

- Provide examples
- Would test runs to evaluate pilots and programs need to be included?
  - **Answer: Yes**
- What is the timeframe?
  - **Answer: Entirety of past data**

# Clarification Requests

- **X) Peak Demand and Energy Forecasts**

- (b) (viii) *“Detail information about distributed energy resource adoption and operation, including distribution connected generation and storage.”*

- Can you define operation in this section? -DTE

- Answer: How it is used on the grid, i.e. how it reduces the need for dispatch of generation or how it contributes to satisfying consumer capacity needs.

- Does this refer to load shape? -DTE

- Answer: Yes, could impact load shape and peak demand

- Please define “distribution connected generation and storage”? -DTE

- Answer: Generation and storage connected at the distribution level

# Clarification Requests Cont'd

- **XII) Transmission Analysis**

- (j): *“Provide RTO reports or web links to report locations that contain information relied upon to support model assumptions or other IRP decisions.”*

- Is this specifically referencing transmission specific model assumptions, or is this designed to be more broad? –**Consumers Energy**
  - **Answer: More broad. Any transmission assumptions that could affect utility planning.**
- Clarification on what this section is referring to -**DTE**
  - Is this referring to the queue?
    - **Answer: No. It is referring to any transmission study that may be available.**

# Clarification Requests

- **XIV) Resource Screen**

- (b) (v): *“Development costs and operating assumptions for combinations of resources constructed as a single facility.”*

- Clarification on what is meant by “development costs” -DTE

- Answer: Will be edited to “capital costs.”

# Clarification Requests

- **XVIII) Environmental Considerations and Environmental Justice**

- (f): *“Hold a technical conference with MPSC and EGLE staff within 30 days of the filing to discuss the environmental and emission related data included in the filing testimony, exhibits, and workpapers.”*

- Clarification on if this is referring to 30 days after the filing is made -DTE
  - Answer: Yes.

# Clarification Requests

- (g): *“Identify, quantify, and provide testimony that compares the expected changes in criteria pollutants, mercury, VOCs, and GHG emissions of the proposed resource plan in the base case to the previously approved build plan in the base case. Illustrate how the proposed resource plan will comply with state and federal GHG goals.<sup>2, 3</sup> The previously approved build plan may include a refresh that takes into account the updated load forecast and additional resources to meet any increase in load but leave the previous base generation assumptions in place. The Company will use a proxy to determine the emissions from MISO purchases and will run the base case scenario with two build plans: the previously approved base build plan and the proposed resource plan.”*
  - It is unclear how this language is different from language earlier in this paragraph of “... of the proposed resource plan in the base case to the previously approved build plan in the base case.” –**Consumers Energy**
    - If it is referring to the same comparison, then it be clearer if it was deleted.
    - **Answer: This language was altered in subsequent EGLE discussions and will be discussed further in the February meeting.**
  - Could you provide clarification and examples on how to illustrate the proposed resource plan complies with the state and federal GHG goals? Are you requesting a utility to show that reductions meet the economy-wide goals or does the utility need to show compliance another way? Can a demonstration be that a plan meets the federal goal at a company level (e.g. 50% by 2030 and net zero by 2050)? - **DTE**
    - **Answer: Trajectory showing overall utility emissions with data points for goals to compare.**
  - Clarification on what “base case” is referring to -**DTE**
    - suggest removing reference to base case
      - **Answer: Referring to scenario one**



# Clarification Requests

- (h): *“Analyze multiple build plans, including the proposed resource plan and the optimal build plan from the MIRPP required scenarios to identify and both qualitatively and quantitatively assess the potential impacts to vulnerable communities. This assessment should address water quality, water use, water discharge, waste disposal, air emissions, public health, climate, environmental justice, early retirement, and other considerations that were taken into account in the Company’s decision. The Michigan Environmental Justice Screening Tool or equivalent such as the EPA’s EJSCREEN tool should be used for the identification of potential vulnerable areas.”*

- Define “vulnerable communities” -DTE
  - Answer: Working with EGLE to determine if “vulnerable” is the appropriate word to use.
- Language is vague -DTE
- Clarification on if utilities are required to look at generating sources they have within a certain distance of a vulnerable area and do a comparison if the source wasn’t there? -DTE
  - Answer: Still working with EGLE and this will be discussed in the February meeting.

# Clarification Requests

- (k): “...*Include metrics to quantify health benefits related to air emission reductions in the scenarios listed above.*”
  - Does "include metrics to quantify health benefits" using the tools reference actually mean "quantify health benefits"? -DTE
    - Would be more clear instruction if that is intention vs. just providing inputs for someone else use to quantify.
    - **Answer: Yes, but this will be further discussed in the February meeting.**

# General Comments from Stakeholders

- Table of contents and table of figures are unnecessary and should be removed –**Consumers Energy**
- Strongly support the additions to Subsection (X) regarding DERs, the alignment of the IRP with distribution planning, as well as EV and beneficial electrification (items (vii) through (x)). –**Michigan EIBC**
- Support the Commission’s effort to recognize emission reduction and environmental justice targets as set out by Governor Whitmer’s Executive Directive 2020-10 and President Biden’s economy-wide emissions reductions targets. –**Michigan EIBC**
- The environmental benefits of power generation from sustainable organic feedstock like forest residual and mill byproducts, may be overlooked –**Michigan Biomass**

# Comments from Stakeholders

- **Risk Assessment Methodology**

- Include a Local Reliability Requirement (LRR) analysis for LRZ 7 at every five-year increments for the entire IRP outlook period. –**ITC**
- Must provide a detailed demonstration that its Proposed Resource Plan and any alternative resource plans will meet all applicable resource adequacy requirements. –**ABATE**
  - The resource plans need to meet or exceed the 1-in-10 loss of load probability standard under resource dispatch assumptions similar to actual operations within the utility's RTO, rather than assuming the utility's balancing area is an island with access to outside resources via transmission.
- Should seek to maximize participation of independent power producers to drive competition and reduce costs and risks for customers –**Michigan EIBC and AEE**
- Risk assessment should include risk associated with extreme weather and potential clean energy and GHG targets. –**Michigan EIBC and AEE**
  - The Commission make explicit recommendations detailing the most effective tools and models for conducting risk assessment.

# Comments from Stakeholders

- **II) Renewable Resources item**

- (I): *“A general description of the potential decommissioning process, costs, and disposal.”*

- A depreciation case is a more appropriate place for this information -  
**Consumers Energy**

- **IV) Demand Response and Distributed Generation Programs**

- *“The utility shall provide the following information in relation to demand response programs, energy waste reduction programs, and distributed generation programs cost approval recovery. For each individual program or group of programs, provide...”*

- Does not believe breakout is necessary –**Consumers Energy**
- DR and DG Should be treated equally –**Consumers Energy**

# Comments from Stakeholders

- **Section XII Transmission Analysis**

- Add language throughout this section to require utilities to work with their local transmission owner -ITC

- (b): *“Include an analysis of any transmission system benefits associated with transmission interconnected storage”*

- TO or third-party is best to address this requirement rather than utility. -ITC

- (g): *“(2) recent studies that indicate ways in which the capacity import or export capabilities can be increased or may change and the resulting impacts to the local clearing requirement.”*

- The studies indicated may not always be available. Just because the capabilities can be increased does not mean that those increases are justified. Projects need to be justified by MISO’s Tariff, NERC TPL Requirements, or State requirements. –Consumers Energy

- (h): *“Any transmission studies that support the resource plan proposed by the utility”*

- Outside of a transfer analysis performed by the local transmission owner showing whether or not there are impacts on CIL, specific siting assumptions would have to be assigned to the resource plan –Consumers Energy

# Comments from Stakeholders

- **Section XVIII Environmental Considerations and EJ**

- General comments:

- A lot of language is too vague –**Consumers Energy**
- Characterize the magnitude of harms in the communities -**5 Lakes Energy**
  - Harms be estimated as a fixed proportion of social cost of emissions
- Environmental benefits of power generation from sustainable organic feedstock are being overlooked -**Michigan Biomass**
- Commission should adopt EJ modeling submitted by experts Krieger and Bilsback –**MNS**
- Population proximity analysis should be conducted to assess who lives near or downwind from existing or proposed plants -**MNS**
- Energy burdens quantified to discuss energy affordability included in the IRP process -**MNS**
- Require mapping impacts of emissions overlaying relevant demographics -**5 Lakes Energy**
- Non-attainment can change over time, so a year prior to the IRP due date should be the point in time which it is evaluated –**Consumers Energy**
- Concerns about inclusion of VOCs –**Consumers Energy**
- Comparing base case optimal plan with the proposed plan gives you an idea of whether the proposed plan is performing the same or better than the base case plan or status quo. –**Consumers Energy**
  - The approach listed here introduces misalignments in comparisons, creating more work to explain why you can't compare the two plans direct and attempting to close the gap through explanation.
  - It would be preferable to request a regression line of sorts showing declines that can compare the previous emission reduction projection to a proposed plan. This removes variability in assumptions and meets the overall goal of seeing ongoing performance in mitigating emissions.
- Use U.S. EPA's Co-Benefits Risk Assessment Health Impacts Screening and Mapping Tool (COBRA) or Intervention Model for Air Pollution (InMAP) -**MNS**
- Rather than require dispersion modeling as the method to compare impacts, introduce it as an example of how it can be done. If the utility analysis shows that this comparison of impacts can be completed using emissions data, why conduct air dispersion modeling. -**DTE**





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# **Michigan Integrated Resource Planning Parameters Comments Overview**



Karsten Szajner



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# Scenario #1 Comments

- Remove high load growth sensitivity from Scenario 1 and include in Scenario 2. / Annual Growth Rate of 0.5% is too high.
  - *“The Scenario 1 high load growth sensitivity is proposed to be removed. Instead, a high load growth sensitivity is proposed for Scenario 1 that evaluates the high load growth assumed in Scenario 2. Because Scenario 2 assumes ‘electrification drives a total energy growth by 2040 that is consistent with the most recent MISO Future 3’, ...we believe it is reasonable to reduce the number of load forecasts required, and rely on MISO Future 3 to drive the assumptions for high load growth in this sensitivity (which is approximately 1.5% growth).” –Consumers Energy.*
  - **DTE suggests allowing each utility to determine its load forecast specific to its service territory.**
- Clarification on MISO Futures and data used.
  - *“Please define exactly how the MISO futures are to be used. Which parameters from the MISO futures are to be used in the Utility's Capacity expansion models?” –DTE*
  - *“Further clarification is requested as to whether the 2021 or 2022 MISO Futures would be used, or if a utility would use a ‘most recent’ MISO Futures publication. If “most recent” is utilized, it is unclear how changes to MISO’s Future outlooks will impact various utility filings.” –Consumers Energy*

# Scenario #1 Comments Continued

- Clarification on modeling best practices regarding the modeling of Energy storage resources.
  - *“DTE is not aware of best practices for modeling...how is best practice determined when considering that each model has different capabilities and applicability is not standardized?” –DTE*
  - *“...we ask that Staff clarify how it intends to define available best practice methodologies for storage modeling” – Michigan EIBC*
    - Michigan EIBC offers recommendations in this regard in their comments.
- EV adoption and customer electrification blended rates should be removed.
  - *“The requirements of 3-years of historical levels, blended for 2 years and consistent with MISO Future1 has been proposed for removal. In its place, the Company proposes that utility assumptions for EV adoption and customer electrification rates must be at Electrification Growth rates consistent with MISO Future 1, or higher (by year 5 of the planning horizon).” –Consumers Energy*
  - *“The requirement for **footprint wide** demand and energy growth rates related to EV adoption and customer electrification have been proposed for removal. The Company does not support this requirement on regional load forecast development. Adjusting regional demand forecasts is a highly complex undertaking.” –Consumers Energy*
  - *“Should include a footnote to MISO Futures; how do you determine 3-year average and blending and what does this represent? Does this include EWR, etc?” –DTE*
  - *“EV load - including EV load is going to exacerbate early evening peaks unless managed charging can also be modeled. It would be important to encourage the utilities to model that EV load as something other than just a block of load that increases evening energy consumption.” –Union of Concerned Scientists*

# Scenario #1 General Comments

- **DTE suggests to deleting item #5 under Scenario #1 Sensitivities:** *“How will this be determined? Will there be a study commissioned by the MPSC from METC/ITC and/or will MISO be providing something that can be used the utilities? There is a lot going on with different transmission projects and construction timelines as well as ambiguity about what is the starting point/baseline to determine this. In addition, our model don't differentiate which zone MISO purchases come from.”*
- *“AEE and Michigan EIBC generally support the changes proposed to Scenario #1. We believe that Staff’s decision to require utilities to incorporate non-legislatively mandated state and utility emissions reduction goals at 85% of their respective announcements is a more accurate representation of the State’s and MISO’s energy future than the existing planning parameters that do not require any carbon reductions to be modeled.”* –**AEE/Michigan EIBC**
- *“Given that this 85% hedge represents a baseline assumption for the scenario, AEE and Michigan EIBC strongly recommend that Staff remove sensitivity number 4 that requires utilities to perform a model run that only considers legislatively mandated carbon goals. AEE and Michigan EIBC also recommend that Staff incorporate a sensitivity that reflects weather in an atypical year. Without this sensitivity, the IRP is unlikely to identify a portfolio that remains least cost under the range of weather conditions that are likely to occur.”* –**AEE/Michigan EIBC**

# Scenario #1 General Comments

- *“For scenario #1 Base Case, the Load projections include three sensitivities. The draft report states for the option high load growth as “...Increase the energy and demand growth rate by at least a factor of two above the base case energy and demand growth rates...” It is unclear, however, if this sensitivity includes:*
  - *The likelihood of significant load increases due to having more large industrial customers choosing to relocate to Michigan; or*
  - *Increasing electricity demand because of the shift toward electrification of product lines and automation?” –City of Ann Arbor*
- *“We recommend adding the High Distributed Renewable Generation Growth Sensitivity analysis to Scenario 1. The massive growth of distributed renewable energy generation since 2000 will likely continue in the next decade because of rapidly declining solar costs, rising utility rates, growing calls for resilience and energy independence, and increasing awareness of the need for a massive shift to clean energy to address the climate crisis.” - City of Ann Arbor*

# Scenario #2 Comments

- Electrification scenario too aggressive.
  - *“This is an extremely aggressive assumption. It’s unclear what the basis is used to determine the amounts assumed in this case and how those would be allocated to each utility’s service territory. What is the intent of using this assumption in the scenario?... DTE suggests allowing each utility to determine an aggressive load forecast specific to its service territory.” –DTE*
  - *“AEE and Michigan EIBC are supportive of the requirements described in Scenario 2. Specifically, we support the inclusion of EV adoption and customer electrification adjustments that are more consistent with the most recent MISO Future 3.” –AEE/Michigan EIBC*
- Questions regarding minimum penetration of wind and solar, consistent with MISO Future 3.
  - *“For Scenario 2, we weren’t clear how “requires a minimum penetration of wind and solar across the MISO region consistent with MISO Futures 3” would be applied. Does this just apply to the mix of resources needed in the representation of MISO or Zone 7? Or does this dictate the utilities’ own system mix as well?” –Union of Concerned Scientists.*
  - *“The Company does not support requirements in Scenario 2 requiring minimum penetrations of wind and solar to be consistent with the MISO Future 3. The resource expansion plans should be an output of the economic resource selection modeling and not a required input.” –Consumers Energy*

# Scenario #2 Comments Continued

- **Carbon Price Sensitivity**

- *“Suggest deleting as there is a low carbon sensitivity in #3. If desired, #3 could have a second milestone in addition to 80% by 2030, it could have XX% by 2035 as well. Hard emissions caps are typically met in models by establishing a shadow price for CO<sub>2</sub>, so #3 and #6 are very similar and could be handled together in one sensitivity instead of two.” – **DTE***
- *“The Company’s recommendation would be to not specify in the filing or modeling requirements which forecast to use but leave the chosen forecast to the discretion of the utility, with justification for the forecast used.” – **Consumers Energy***
- *“AEE and Michigan EIBC encourage Staff to require IRP parameters to include a low or no carbon price, as well as medium and high carbon price sensitivities to accurately consider the potential for a legislatively mandated carbon price, either at the state or federal level, over the timeline of the IRP planning horizon. We recommend that Staff incorporate a phase-in of these carbon price scenarios over a 10-year period to simulate how a mandated carbon price could be introduced.” – **AEE/Michigan EIBC***



# Scenario #2 Comments Continued

- Carbon Price Sensitivity Continued

- *“We recognize there is regulatory uncertainty around carbon price legislation but it’s impact would be significant if passed. Given that it takes years to plan and build new generation capacity and that ratepayers are currently committed to paying for existing generation, we feel it would strongly behoove the Commission, rate payers, and the utilities to assess the impact a carbon price could have on utility rates, generation, and operations.” –City of Ann Arbor*
- *“I would argue that any electric utility IRP these days should include some factor for a carbon cost, but most certainly this should be included in anything referred to as an “Electrification and Decarbonization’ scenario. A carbon cost (and other quantifiable related emissions) should be a core component of that scenario, with perhaps an additional ‘sensitivity’ looking at different levels of carbon cost.” -ACEEE*

# Scenario #2 General Comments

- *“In addition to the suggested changes to the natural gas price forecast options utilized in this scenario, under this type of scenario coal prices may actually increase from historical values. This scenario may also need to consider changes or sensitivities “associated with coal prices.” –*  
**Consumers Energy**
- *“AEE and Michigan EIBC are supportive of the requirements described in Scenario 2. Specifically, we support the inclusion of EV adoption and customer electrification adjustments that are more consistent with the most recent MISO Future 3.” –***AEE/Michigan EIBC**
- The City of Ann Arbor suggests adding a Carbon price sensitivity and Growth of Voluntary Green Pricing Programs and Renewable Power Purchase sensitivity to this scenario.



# Scenario #2 General Comments

- *“The ‘Electrification and Decarbonization’ Scenario should have assumptions supporting an enhanced EWR resource impact in that scenario. An Electrification and Decarbonization scenario would presumably feature a set of conditions where decarbonization is an enhanced public policy goal, and presumably there would be increased attention, communication, and action by both government and private sector actors to use clean energy resources to achieve GHG reduction.” –**ACEEE***
- *“Related to that, MISO Futures 3 include a requirement that CO2 is reduced by 80% by 2040, but that's not part of Scenario 2. The rationale for the penetration in newly electrified load in this scenario is arguably a product of the desire to reduce emissions system wide, so why wouldn't the emissions reduction requirement also be included? And similarly, Futures 3 includes some distributed solar, should that be a part of Scenario 2 as well?” – **Union of Concerned Scientists***

# General MIRPP Comments

- Scenarios #1 & #2 should focus on proper analysis of Behind the Meter resource.
  - *“A serious effort be applied to project under each scenario (and relevant sensitivities), the customer uptake of electric vehicles, building electrification, on-site solar, on-site fuel cells, on-site space and water heat storage, and on-site battery storage in light of the projected customer economics of those resources.” -5 Lakes Energy*
- Approaches to Emissions in Modeling.
  - *“I recommend that an understanding of tradeoffs between emissions harms and utility revenue requirements can best be achieved by contrasting the build plans, revenue requirements, and emissions costs under two modeling approaches:*
    - 1) *Minimizing net present value revenue requirements subject to the usual considerations, and*
    - 2) *Minimizing net present value of the sum of revenue requirements and social costs of emissions subject to the usual considerations.” -5 Lakes Energy*

# General MIRPP Comments Continued

- **Transmission comments.**

- *“With regards to the new item added under transmission analysis regarding transmission systems benefits of interconnected storage, the Company is interested in further discussions regarding the specific filing requirements in this area and the elements that analysis should include. If transmission benefits of storage are to be included in IRP filings, there are several concerns with how this item is currently written.” –Consumers Energy*
- *“Further clarification and definition are requested for the transmission congestion sensitivities proposed in both scenarios. The items below represent the Company’s suggestions at this time; however, those suggestions may change as more clarity is gained on this sensitivity.” –Consumers Energy*
- *“The TO or an outside party is best suited to address benefits to the transmission system; in addition, the IRP is not site specific for resource additions therefore site-specific transmission benefits would not be quantifiable.” –DTE*

# General MIRPP Comments Continued

- **Transmission comments continued.**
  - *“Upon PCA approval by the Michigan Public Service Commission, the transmission owner shall request the RTO to conduct 20-year forward-looking transmission study on an agreed upon frequency. These studies should identify needed transmission infrastructure to address economic, reliability, and energy adequacy issues arising from anticipated generation additions (including location, scale, and timing) and retirements, as well as load changes due to electrification and growth in energy efficiency and demand response programs, and evaluate resulting GHG emissions reductions achievable in pursuit of Michigan’s carbon neutral by 2050 goal.” –ITC (suggested addition)*
  - *“Specifically, we’d like to understand if the grid handle the intermittency of renewable energy? And what role does storage play to help address this intermittency? Additionally, does this modeling provide insights into where grid upgrades are needed and how best to phase investments in system improvements to ensure efficiency and cost effectiveness?” –City of Ann Arbor*

# General MIRPP Comments Continued

- *“In general, the Company is supportive of reducing the number of scenarios required in the MIRPP from three scenarios to two. It is key that the Base scenario differ significantly from the second defined scenario in terms of assumptions in order to allow for a more valuable comparison of potential futures in utility planning and understand the different impacts associated with different assumptions.... continued discussion and clarification is needed on these two specific MIRPP scenarios regarding alignment with the MISO Futures process and how rate regulated utilities model an IRP for their service territory using this information.” –Consumers Energy*
- *“In general, DTE is supportive of streamlining and updating the scenarios to reflect a more current state of the energy industry and the most current policy. In addition, DTE is supportive of going to two bookend scenarios instead of three. This leaves flexibility for the utilities to run additional scenarios if they desire to. This approach is also aligned with the recommendations of the Michigan Council on Climate Solutions. As mentioned in the response to Q1, more discussion is needed on what the MIRPP scenarios are and how these are modelled.” – DTE*
- *“AEE and Michigan EIBC are supportive of the two MIRPP scenarios for all rate regulated utilities. While we have provided comments above to adjust and consider additions to both scenarios, we believe that the two scenarios can accurately portray a planning future for utilities that incorporates new technologies, cost-effective investments, and improves reliability and resilience.” –Michigan EIBC*

# General MIRPP Comments Continued

- **There were multiple comments but both utilities to use the most recent EWR/DR potential studies when the MIRPP requirements reference the 2021 potential study.**
- **DTE suggests deleting the paragraph following the Revised USEPA CSAPR rule noting that it's: "not applicable to the planning parameters".**
- *"These scenarios do not help with the question of the distribution of utility-owned or independently-owned grid-connected resources. In both scenarios, resources considered should include distribution-grid connected solar and storage resources as well as transmission-connected resources."* – **5 Lakes Energy**
- *"There is a statutory requirement to assess fuel-price risks. This risk should be called-out for separate analysis and included in all analyses. Current use of fuel-price scenarios fails to capture risks associated with "normal" variation in fuel prices.... Risk analysis should be performed specifically with respect to asset life and the depreciation rates used in evaluating the revenue requirements should be adjusted accordingly. Essentially, an investment that is risky due to potential regulatory or technological obsolescence should be depreciated rapidly while one that is lowrisk should be depreciated based on wear-out."* – **5 Lakes Energy**

# General MIRPP Comments Continued

- *“It is clear that in current IRP models with hourly resolution, the value of storage is systematically undervalued, and IRPs based on these models select less storage than is actually optimal. There exist several solutions that the Commission could adopt to address these concerns as part of the IRP filing requirements.” – Michigan EIBC*
- *“Models should use tools that represent a full year of grid operations. This is necessary to accurately capture the effects of high renewable penetration on future resource needs, reliability, and the full value of long duration energy storage resources.” – Michigan EIBC*
- *“Michigan Biomass generally agrees with the content and direction of the planning parameters documents, particularly Sec. VIII. Additional IRP Requirements and Assumptions, item 4 that stipulates the IRP analysis must consider environmental benefits and risks. Our concern here, similar to previous comments, is that the environmental benefits of power generation from sustainable organic feedstock like forest residual and mill byproducts, may be overlooked, given the demonstrated tendency for utilities to disregard facilities already a part of their portfolio, and having shown a propensity to consider the maturation of a PPA as a facility “retirement” when, in fact, the facility likely has decades of useful life and environmental contributions to make.” – Michigan Biomass*





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## **Break**

Please mute your microphone and turn off your camera during break.



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# **Base Case Scenario Deep Dive Discussion**



Jesse Harlow



Naomi Simpson



**MPSC**

**Michigan Public Service Commission**

# Scenario #1 – Base Case

- (Applicability: Utilities located in the Michigan portion of MISO Zone 2 and MISO Zone 7. Also, encourage multi-state utilities to utilize this scenario )
- This scenario reflects substantial achievement of state and utility announcements. The Base Case incorporates 100% of utility integrated resource plan (IRP) announcements throughout the MISO footprint. Outside of Michigan, state and utility announced goals that are not legislated are applied at 85% of their respective announcements to hedge the uncertainty of meeting these goals and announcements at their proposed respective timelines. Emissions decline as driven by state goals and utility plans throughout the MISO footprint creating a trajectory of 63% reduction in carbon emissions by 2039 from the baseline year of 2005 for the MISO region.
- This scenario assumes that demand and energy growth are driven by existing economic factors, with modest increases in EV adoption, resulting in an annual energy growth rate of 0.5% outside of Michigan. Utilities may develop their own demand and energy forecasts with description and detail about why and how this forecast would be different from the rest of MISO with a particular focus on EV adoption, electrification, and the impacts of climate change.
- \*Note: This Base Case aligns with MISO Future 1 from the December 2021 MISO Futures Report. If, in the future, MISO Futures significantly change in future reports, regulated utilities will work with Staff to determine the most appropriate future to use for the Base Case.

# Scenario #1 - Base Case

- Natural gas prices utilized are consistent with **the Reference Case** projections from the United States Energy Information Administration's (EIA) most recent Annual Energy Outlook.
- **Moderate EV adoption and customer electrification** result in moderate footprint-wide<sup>24</sup> demand and energy growth rates.
- Within Michigan, EV and electrification forecasts should be blended historical sales with reputable EV and electrification forecasts such that after 5 years, Michigan's load and demand increase to reflect the source forecast. Load profiles of EVs as well as any electrification technologies should be clearly delineated and presented such that it is clear how they impact the overall energy and demand forecast.



# Scenario #1 - Base Case

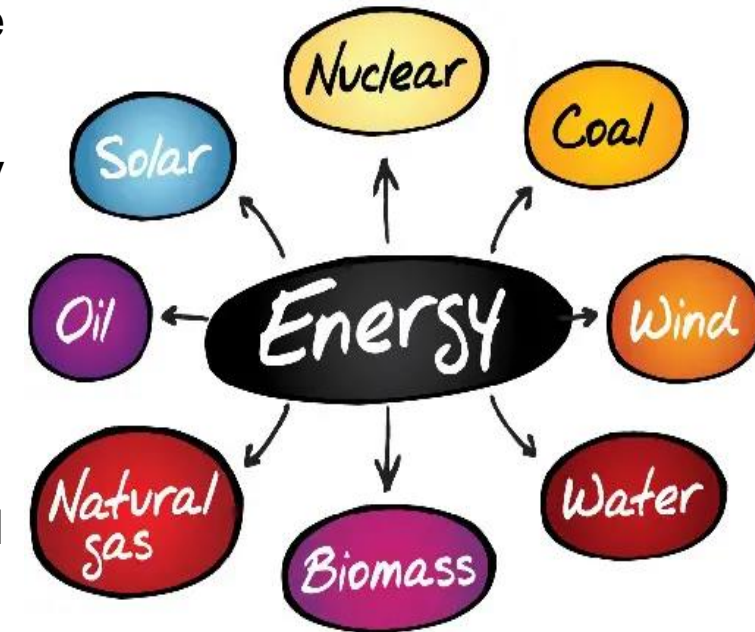
- Resource assumptions:
  - **Resources outside MI** – MISO futures retirements published by MISO should be used when available along with maximum age assumption by resource type as specified by applicable regional transmission organization (RTO). Specific new units are modeled if under construction or with regulatory approval (i.e., Certificate of Necessity (CON), IRP cost pre-approval, or signed generator interconnection agreement (GIA). Generic new units for the MISO wide region should be chosen based upon economics.
  - **Resources within MI** – Thermal and nuclear generation retirements in the modeling footprint are driven by a maximum age assumption, public announcements, or economics. Specific new units are modeled if under construction or with regulatory approval (i.e., CON, IRP cost pre-approval, or signed GIA). Generic new resources, market and company-owned resources are assumed consistent with the scenario descriptions and considering anticipated new resources currently in the MISO generation interconnection queue.

# Scenario #1 - Base Case

- Not less than 35% of the state's electric needs should be met through a combination of EWR and renewable energy by 2025, as per MCL 460.1001 (3).
- **The optimized build plan must meet current state GHG emission goals and show progress toward federal GHG goals to the extent reasonable.** *ED2020-10, 2030 GHG Pollution Reduction Target.*
- For all in-state electric utilities that are eligible to receive the financial incentive mechanism for exceeding mandated energy saving targets of 1% per year, EWR should be based upon the maximum allowed under the incentive of 1.5% and should be based upon an average cost of MWh saved. The model should include an EWR supply cost curve to project future program expenditures beyond baseline assumptions without any cap.
- Existing renewable energy **and storage** production tax credits and renewable energy investment tax credits continue pursuant to current law.
- Incorporate any distribution or transmission system co-benefits associated with DER's and demand-side resources that have been identified as outputs of those respective planning processes. Ensure co-benefits are considered when evaluating those resources throughout the IRP process.

# Scenario #1 - Base Case

- **Long and short duration storage** resources are considered. Energy storage resources are modeled using available best practice methodologies to the extent that such guidelines exist. Incorporate any **distribution or transmission co-benefit** identified and allow for multiple revenue streams where practical.
- Technology costs for thermal units and wind track with mid-range industry expectations.
- Technology costs and limits to the amount available for EWR and demand response programs will be determined by **the most recent state-wide** potential studies.
- Technology costs for solar, **storage**, and other emerging technologies decline with commercial experience.
- Existing PURPA contracts are assumed to be renewed.





# Scenario #1 Sensitivities

## 1. Fuel cost projections

- Increase the natural gas fuel price projections from the base projections to at least **the high EIA gas price in the most recent EIA Low Oil and Gas Supply forecast** natural gas fuel price projections at the end of the study period.

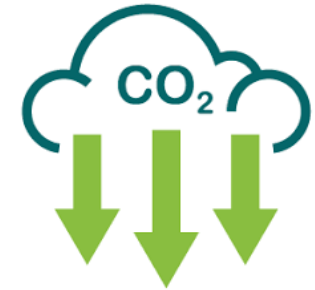
## 2. Load projections

- **High load growth:** Increase the utility energy and demand growth rates by at least a factor of (2) above the base case energy and demand growth rates. Assume load and demand profiles consistent with increased EV and electrification. If doubling the energy and demand growth rates results in less than a 1.5% annual growth rate, then assume a 1.5% annual growth rate for energy and demand. Due to the increase in load growth, utilities voluntarily raise the DG cap to accommodate the rapid change and increased customer adoption rates.
- **MISO load growth:** A load growth scenario that replaces the utility specific load and demand growth with one that is consistent with the most recent MISO Future 1 that represents a continuation of current trends.
- **Low load growth:** EV adoption and electrification are slower than expected and the demand and load growth stay at historic levels.

3. If the utility has **retail choice load** in its service territory, model the return of 50% of its retail choice load to the utility's capacity service by the next capacity demonstration after the existing 4-year forward demonstration.

# Scenario #1 Sensitivities Cont.

4. Ramp up the utility's EWR savings to at least 2.0% of prior year sales over the course of four years. EWR savings remain high throughout the study period.
5. Perform a model run that optimizes the resource build that considers only legislatively mandated carbon goals for the MISO region and does not consider non-legislatively mandated carbon goals for outside of Michigan. Demonstrate a path to Michigan's carbon goals and the impact to energy imports.
6. Out-of-State transmission congestion cost increases due to changing resource mix across the region. This results in a higher cost added for out of state resources. Work collaboratively with the incumbent transmission owner to develop the appropriate cost adder.







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## **Break**

Please mute your microphone and turn off your camera during break.



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# Climate Change Discussion



Naomi Simpson



Jesse Harlow



**MPSC**

**Michigan Public Service Commission**

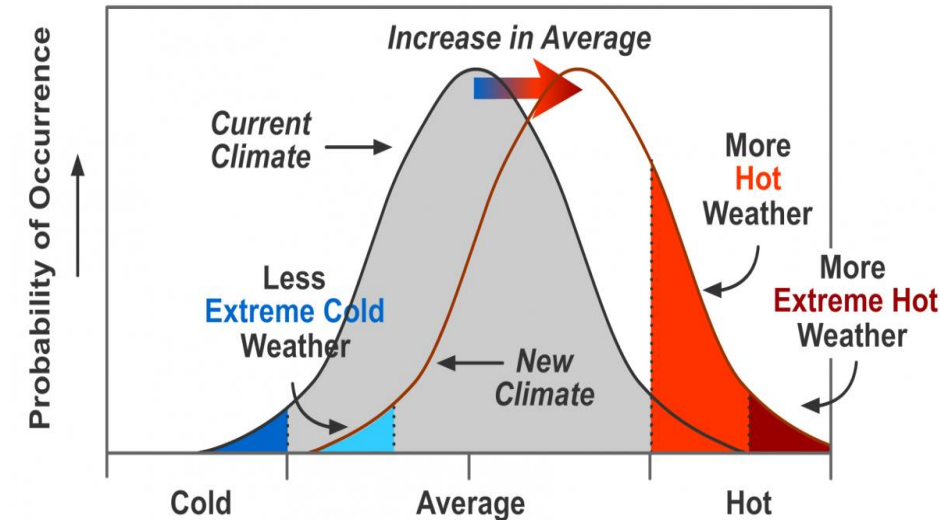
# Climate Change Discussion

Throughout Phase II discussion, it seemed there were two parts to climate change.

1. First, the impact to heating & cooling degree days that come with more polarizing weather.
2. The extreme weather that comes more frequently, but still not “normal”.

Staff proposes impacts of climate change be analyzed two ways.

1. Analyze the overall effect of climate change on “normal” weather to heating & cooling degree days. This impact can be integrated into the utility load and demand forecasts and profiles as well as the impact to renewable resource generation.
2. Analyze the impact of extreme weather. This seems to fit better into a risk assessment where correlated variables tie together in a stochastic model.



# Climate Change Discussion

- Do stakeholders think that this two part approach represents a reasonable approach to integrating the impacts of climate change into the IRP?
- Where can we get publicly available data about expected temperature probability in the region throughout the planning period?
- What extreme weather conditions should be tested in a stochastic risk assessment (what variables should tie together)?





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## **Closing - Stakeholder Feedback Request**



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# Written Feedback Request

Staff encourages all stakeholders to provide written feedback that recaps their feedback during discussion.

Staff would like feedback on the following:

1. Please provide any further feedback on Scenario #1 – Base Case and corresponding sensitivities.
2. Do Stakeholders generally agree with a two-part approach to climate change impacts?
3. Staff seeks input about publicly available forecasts and load profiles for electric vehicles and electrification, specific to this region, that could be used to develop energy and demand forecasts in IRPs.
4. Staff seeks input about publicly available normal and extreme weather forecasts related to the impacts of climate change that are specific to the region.

# Feedback Request

We look forward to your written comments in response to Staff's feedback request. Your participation is critical.

Please submit responses to the stakeholder feedback comments received to Kayla Gibbs by

**February 9, 2022, 5pm ET.**

[GibbsK2@Michigan.gov](mailto:GibbsK2@Michigan.gov)





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# Thank You

Upcoming Advanced Planning Stakeholder Meetings

February 28<sup>th</sup>, 2022 (Afternoon)

March TBD

April TBD



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