STATE OF MICHIGAN
DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
LANSING

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Memorandum

DATE: 5/17/2017

TO: Energy Waste Reduction (EWR) Potential Study Workgroup Interested Parties

FROM: Patricia Poli, Manager Energy Waste Reduction Section

SUBJECT: Seeking input from interested parties on two matters related to energy waste reduction potential: 1) additional data on energy waste reduction potential to inform staff's assessment of statewide energy waste reduction potential, and 2) input on how to reflect energy waste reduction in Integrated Resource Plan (IRP) draft modeling assumptions and scenarios.

1. Seeking input from interested parties on statewide Energy Waste Reduction Potential

As you know, on December 16, 2016, the Michigan Legislature enacted PA 341 and PA 342, which amended our 2008 energy laws, PA 286 and PA 295, respectively. Specific language in the new energy legislation relative to an energy waste reduction potential assessment is described in Section 6t(1) of PA 341 where it states:

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

In order for Michigan Public Service Commission (MPSC) staff to conduct an assessment, we are seeking input from interested parties on additional information relative to assessing the energy waste reduction potential in the state. In the spirit of this undertaking, for the prior two months, staff has been working with interested parties to identify types of information helpful in assessing the statewide EWR potential, and in particular, suggestions for supplemental data relative to the recently conducted Michigan energy efficiency potential studies for the Lower Peninsula service territories. The interested parties identified that additional scenarios in these existing potential

studies would be helpful for assessing the statewide energy waste potential, including: 1) increasing the incremental cost of incentives from 50% to 100%; 2) estimating optimum energy waste reduction potential by considering optimal program design including increased incremental incentive, increased program participation rates, inclusion of all low-income measures and inclusion of certain emerging technologies; and 3) estimating optimum potential by considering a scenario with an environmental constraint such as an emission reduction reflected as a high carbon price. A fourth suggestion was to seek an energy waste potential reduction estimate specific for the Upper Peninsula (UP) which either included current load forecast data and customer counts for load serving entities in the UP, or in the absence of that data, included a prorated estimate of the energy waste reduction potential in the LP to be used as a proxy for the UP potential using a higher avoided cost number to reflect the higher energy prices in the Upper Peninsula.

Staff welcomes all input and data relative to these suggested areas and any other data sources that interested parties believe would inform the staff's statewide assessment of energy waste reduction potential.

DTE's Comments: DTE Electric (DTE) is supportive in providing additional data to understand the impact of the proposed scenarios in the state-wide potential study as identified in the memorandum issued MPSC Staff.

DTE understands that the scenarios identified in the memorandum will result in the creation of data points for savings potential in addition to the existing technical, economic and achievable potentials. Upon completion of the state-wide potential study, DTE will review the study including the additional data points. DTE reserves the option to utilize the most reasonable and prudent data in its IRP modeling efforts.

2. Seeking input from interested parties on how to incorporate Energy Waste Reduction in the Integrated Resource Plan draft modeling assumptions and scenarios.

On Tuesday May 16, the Forecasting Work Group provided six draft scenarios to be incorporated into proposed statewide IRP modeling assumptions and scenarios, three of which are specific to the Lower Peninsula (MISO Zone 7), and three specific to the Upper Peninsula (part of MISO Zone 2). These draft scenarios are included in this document. The Forecasting Work Group has tasked each of the other IRP-related work groups, to provide input on how best to incorporate their relevant subject matter into each scenario – in the case of the EWR workgroup, energy waste reduction.

For example, the first scenario for each peninsula involves a Business As Usual (BAU) case. The question for interested parties is to provide feedback on what a BAU case means relative to EWR levels. For instance, it is conceivable that a BAU case for an investor owned utility (i.e., an entity eligible to earn a financial incentive for exceeding electric energy savings targets under PA 342) would have a BAU expectation of electric energy savings of 1.5% incremental savings per year. At the same time, a BAU case for a load serving entity not regulated by the Commission (i.e., and by law not eligible to earn a financial incentive for incremental electric energy savings) might be considered 1.0% incremental savings per year.

Additional considerations for each scenario: what are the EWR sensitivities to be considered in each draft scenario? For example, specific sensitivities relative to EWR might be an estimate of maximum achievable potential beyond what is incentivized or required by statute.

Other matters to address concern how to 'load' energy waste reduction into a resource model. Should a supply curve be developed allowing energy waste reduction to be considered as a supply resource? Alternatively, should a certain level of energy waste reduction be 'forced' to be selected by the model in lieu of a supply side resource? Other ideas?

DTE's Comments: It should be up to each utility to develop Energy Efficiency modeling techniques that work the best for them with the modeling software and IRP processes they use. Each utility may be using different models and/or have different IRP modeling processes set up. As such, it is difficult to specify a common modeling practice for everyone, because different models/processes have pro and cons with the various methods of EE modeling.

Each IRP could then include discussion on how EE was modeled and the benefits of choosing that particular method.

Timeline

The timeline has been in flux and I have appreciated your patience as this process has unfolded. Your feedback and input is important as staff conducts the assessment of statewide EWR potential, but also as the workgroup develops a workgroup proposal for how to include EWR in the IRP statewide modeling assumptions and scenarios. Below is a revised timeline reflecting due-dates for workgroups to complete their analyses.

June 2nd	Interested parties to provide data for staff's assessment of statewide EWR potential. Interested parties to provide recommendations to incorporate EWR into IRP modeling assumptions and scenarios.
June 9th	EWR workgroup draft of information compiled by June 2, distributed to workgroup stakeholders for review.
June 12th	Stakeholder Conference Call. Final recommendation discussion. Dial-in: (877)336-828, Access Code: 2220392
June 19th	All IRP Workgroup recommendations are due to staff.
July 10th	Staff compiles Workgroup recommendations into a strawman proposal.

Please provide responses to Karen Gould (gouldk1@michigan.gov) and me (polip@michigan.gov).

Thank you for all the participation received thus far. Your input is invaluable.

Pat

IRP – Forecasting, Fuels, and Reliability Sub-Group

Local Resource Zone 7 Scenarios

1. **Business as Usual**

The existing generation fleet is largely unchanged apart from new units planned with firm certainty or under construction. No carbon regulations are modeled, though some reductions are expected due to age-related coal retirements and renewable additions driven by renewable portfolio standards and goals as well as economics.

- Natural gas prices remain low due to increased well productivity and supply chain efficiencies.
- Footprint wide, demand and energy growth rates remain at low levels with no notable drivers of higher growth; however, as a result of low natural gas prices, industrial production along the Gulf Coast increases.

DTE's Comments:

- Footprint wide - Is the footprint going to be specified as MISO? How does this tie to the Utility's BAU load forecast? Will the MISO loads be specified for each scenario, based on some MISO forecast, or is this left up to the Utility?
- demand and energy growth rates remain at low levels with no notable drivers of higher growth - Usually BAU is the 50-50 forecast or Utility's most recent filed forecast. Is this supposed to be different from Scenario 2 below? If this demand and energy growth rate is supposed to be lower than "BAU" this scenario should be called something else. The Utility's 50-50 forecast could be low enough to "remain at low levels with no notable drivers of higher growth." In that case, the same forecast could be used for both scenario 1 and 2.
  DTE would prefer to specify the demand growth rates for our own Service territory ourselves.
- industrial production along the Gulf Coast increases - Specify what happens to Michigan. Gulf coast is not relevant.

- Low natural gas prices and low economic growth reduce the economic viability of alternative technologies.
- Thermal generation retirements are driven by unit age-limits and announced retirements.
- Specific new units are modeled if under construction or with regulatory approval (CONs)
- Tax credits for renewables continue until 2022 to model existing policy.
- Technology costs remain stable and escalate at low to moderate escalation rates

2. **Environmental Policy**

Carbon regulations targeting a XX% reduction (by mass for existing and new sources) from X year to Y year across all aggregated unit outputs are enacted driving some coal retirements and an increase in natural gas reliance. Increased renewable additions are driven by renewable portfolio standards and goals, economics, and business practices to meet carbon regulations.

- Demand and energy growth rates are modeled at a level equivalent to a 50/50 forecast.

DTE's Comments:

- 50/50 forecast- Same comment as above pertaining to load forecast

- Natural gas prices are consistent with industry long-term reference forecasts.
- Current demand response, energy efficiency, and distributed generation programs remain in place and grow to help comply with additional regulations.
- Non-nuclear, non-coal generators will be retired in the year the age limit is reached and driven by announced retirements. Coal units will be retired reflecting economics of carbon regulations. Nuclear units are assumed to have license renewals granted and remain online.
- Specific new units are modeled if under construction or with regulatory approval (CONs)
- Tax credits for renewables continue until 2022 to model existing policy.

3. **Accelerated Emerging Technologies**

A robust economy drives technological advancement and economies of scale resulting in a greater potential for demand response, energy efficiency, and utility-scale and customer-level distributed generation as well as lower capital cost for renewables reflected in the maturity cost curves.

DTE's Comments: DTE supports running this scenario with optimistic cost and potential assumptions that drive these technologies to be selected economically in an IRP. This is opposed to dictating which technologies are allowed as alternatives.

No carbon reductions are modeled, but some reductions occur due to higher levels of renewables, demand response, and energy efficiency.

- Natural gas prices are high due to increased demand.

  DTE's Comments: DTE recommends leaving it up to the Utilities to generate their own "Increased demand Natural gas forecast." DTE would handle this by increasing the demand for Natural Gas in our National Model and generating the prices for energy, fuel, and other commodities through a fully integrated modeling process. This is a more robust methodology than simply using higher natural gas prices as an input.

- Robust economy leads to increased demand & energy consumption. Footprint wide, demand and energy growth rates are high due to a robust economy; however, as a result of high natural gas prices, industrial production along the Gulf Coast decreases.

  DTE's Comments:
- increased demand & energy consumption - How does this compare to the 50-50 forecast? Again, DTE would prefer to specify the "increased demand and energy consumption" ourselves.
- Gulf Coast decreases - The gulf coast references don't really apply to Michigan. Would recommend deleting this or saying what will happen to the Michigan economy.

- A robust economy drives technological advancement and economies of scale resulting in a greater potential for demand response, energy efficiency, and distributed generation as well as lower capital cost for renewables.
- Non-nuclear generators will be retired in the year the age limit is reached and driven by announced retirements. Nuclear units are assumed to have license renewals granted and remain online.

  DTE's Comments: To the extent that specific unit retirements are to be a factor in this scenario, please specify them more precisely. This statement is too vague.

- Specific new units are modeled if under construction or with regulatory approval (CONs)
- Tax credits for renewables continue until 2022 to model existing policy.

Local Resource Zone 2 Scenarios

4. **Business as Usual**

The existing generation fleet is largely unchanged apart from new units planned with firm certainty or under construction. No carbon regulations are modeled, though some reductions are expected

due to age-related coal retirements and renewable additions driven by renewable portfolio standards and goals as well as economics.

- Natural gas prices remain low due to increased well productivity and supply chain efficiencies.
- Footprint wide, demand and energy growth rates remain at low levels with no notable drivers of higher growth; however, as a result of low natural gas prices, industrial production along the Gulf Coast increases.
- Low natural gas prices and low economic growth reduce the economic viability of alternative technologies.
- Thermal generation retirements are driven by unit age-limits and announced retirements.
- Specific new units are modeled if under construction or with regulatory approval (CONs)
- Tax credits for renewables continue until 2022 to model existing policy.
- Technology costs remain stable and escalate at low to moderate escalation rates

5. **High Market Price Variant**

An increase in economic activity drives higher than expected energy market prices. The existing generation fleet is largely unchanged apart from new units planned with firm certainty or under construction. No carbon regulations are modeled, though some reductions are expected due to age-related coal retirements and renewable additions driven by renewable portfolio standards and goals as well as economics.

- Fuel Prices rising due to increased economic activity / electric demand.
- Footprint wide, demand and energy growth rates moderate/ robust with notable drivers of higher growth; however,
- Moderate/high natural gas prices and moderate/robust economic growth increase the economic viability of alternative technologies.
- Thermal generation retirements are driven by unit age-limits and announced retirements.
- Specific new units are modeled if under construction or with regulatory approval (CONs)
- Tax credits for renewables continue until 2022 to model existing policy.
- Technology costs remain stable and escalate at low to moderate escalation rates

6. **Accelerated Emerging Technologies**

A robust economy drives technological advancement and economies of scale resulting in a greater potential for demand response, energy efficiency, and utility-scale and customer-level distributed generation as well as lower capital cost for renewables reflected in the maturity cost curves. No carbon reductions are modeled, but some reductions occur due to higher levels of renewables, demand response, and energy efficiency.

- Natural gas prices are high due to increased demand.
- Robust economy leads to increased demand & energy consumption. Footprint wide, demand and energy growth rates are high due to a robust economy; however, as a result of high natural gas prices, industrial production along the Gulf Coast decreases.
- A robust economy drives technological advancement and economies of scale resulting in a greater potential for demand response, energy efficiency, and distributed generation as well as lower capital cost for renewables.
- Non-nuclear generators will be retired in the year the age limit is reached and driven by announced retirements. Nuclear units are assumed to have license renewals granted and remain online.
- Specific new units are modeled if under construction or with regulatory approval (CONs)
- Tax credits for renewables continue until 2022 to model existing policy.