



# Stakeholder Feedback Request

MISO MTEP18 Futures

## MISO MTEP18 Futures: Uncertainty Variables and Futures Narratives

MISO is soliciting feedback from stakeholders on their thoughts, ideas, concerns, and/or recommendations regarding the materials presented during the April 4<sup>th</sup>, 2017 MTEP18 Futures Workshop. Posted materials can be viewed from the MISO website at the following link: <https://www.misoenergy.org/Events/Pages/FuturesDevelopmentMTEP1820170404.aspx>

### To assist in the feedback solicitation, MISO is posing the following questions/requests:

1. What are your views on MISO's proposed MTEP18 Futures names and narratives?
2. Are the proposed matrix variables reasonable? If not, what specific attributes should be modified?
3. Do you support updating natural gas price transportation adders with increased granularity as proposed? If not, what additional feedback do you have on the proposal?
4. Please provide any additional comments/questions associated with the MTEP18 Futures Development process.

In providing feedback, please be as specific as possible. MISO intends to publicly post all responses to this feedback request with the MTEP18 Futures materials, unless otherwise specified.

Please submit feedback to: [MTEPFutures@misoenergy.org](mailto:MTEPFutures@misoenergy.org)

Please submit feedback by: **Feedback Request Form Due May 3<sup>rd</sup>, 2017**

### Stakeholder feedback:

#### 1. Futures

*Distributed and Emerging Technology (DET) Future:* The rationale for a separate future to reflect a significant market presence of distributed energy resources is to understand the impact of a high penetration of these technologies on the need for new transmission. A review of the penetration reached by these technologies in states that offer easy interconnection rules and ample net metering caps (i.e.: CA 5% of peak demand), suggest that, given similar conditions and sufficient customer disposable income, penetrations higher than those assumed in MISO's current proposal are possible.

As currently proposed by MISO, the DET Future assumes the same overall penetration of renewable energy at the historical trend of 15%, as the Continued Fleet Change (CFC) Future, but assumes that 2/3 of the penetration by solar energy will be sited at the local level. While this CFC future, as proposed by MISO, considers a reasonable 1% incremental demand for electric vehicles and 2 GW of battery storage, we would like to see an additional 5% penetration by solar energy, for a total of 20% RE share, and including the 2/3 share of the penetration of solar energy assigned to locally sited resources.

The rationale for this request rests on the rapid market penetration of market driven solar energy observed in certain states and on the finding that this rapid rise seems to be primarily driven by "early adopters" in the residential and the commercial/industrial customer segments, who, will also likely drive the initial stages of solar market development in the MISO footprint. This rationale is supported by the rapid rise of solar roof top installations in MISO states of Texas, Illinois and Missouri. While current MISO state net metering and other compensation rules for behind the meter distributed generation limit participation of these technologies to levels well below the proposed 5% additional solar penetration, public policies in the DET Future are expected to evolve to accommodate growth similar to that already experienced in some states. Utility RE programs are expected to continue, albeit at a slower pace, after RPS goals have been met; as is already the case in some MISO states.



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*Accelerated Fleet Change (AFC) Future:* The increased renewable additions in this future, driven beyond renewable portfolio standards by need for new generation, technological advancement, and carbon regulation, should be sited in a manner consistent with, while not identical to, the DET Future. The low wind speed technology that prompted MISO to include higher tier wind resources in the South in the DET future should perhaps also be considered in this AFC future, and a higher percentage of the incremental solar and wind energy sourced within each LRZ. Furthermore, if we all agree that some degree of distributed resource penetration would occur in any future with conditions conducive to additional renewable resources, perhaps 1/3 of these resources should be distributed within this future

## **Future Narratives**

Consistent with the request for a more aggressive penetration of DERs, the narrative for the DET Future should reflect in its 4<sup>th</sup> bullet that: “Renewable additions reach about 20% of MISO energy by 2032”.

The narrative for the AFC Future should reflect the recognition of some degree of distributed incremental renewable resources (if adopted).

Please add to the tables for the futures the base and delta GW and GWh for all generation sources in each of the study years.

Add a sensitivity on base load generation (nuclear and coal) pushing the closed down in next 10 years based on the pricing issue with natural gas and renewables displacing baseload. These futures and sensitivity are being used in Regional Transmission Overlay Study. In the RTOS workshop please provide some additional modeling information on how PROMOD manages the energy flow constraints with the transmission system.

## **2. Proposed Variables Matrix**

We are not clear on what the impact of the requested increase in the penetration of solar energy in the DET Future will have on the Uncertainty Variable Matrix, as the value of the Renewal Portfolio Standards (RPS) variable in that scenario would no longer be 15% but 20%. Also, while not specified in the Matrix, there should be a maturity curve for battery storage as prices for the various battery technologies are widely expected to continue to decrease. For example, prices for automotive lithium-ion batteries are expected to decline by 30% from today’s prices by 2022. Thus, it would be reasonable to assume that the cost of other batteries technologies/configurations applicable to stationary battery applications will decrease in a similar manner. Lazar predicts an average price drop between 24% and 38% over the 5-yr period between 2017 and 2022 (page 20, Levelized Cost of Storage Analysis 2.0, Dec 2016).

Additionally, the photovoltaic and battery costs in the uncertainty matrix for the DET Future should be changed from M to L for consistency with the penetration levels assumed for the Future. Finally, we request confirmation that, regardless of economically selected levels of storage, MISO will add a minimum of 2 GW of storage by 2032 in the DET Future.



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Moreover, if the recommendation of recognizing a certain penetration of distributed renewables resources in the AFC Future is adopted (see response to question 1), the Variables Matrix should reflect it.

3. The proposal to have more accurate delivered natural gas prices is reasonable and will improve the results of production cost modeling using PROMOD.
4. The proposal to include higher tier renewable zones and the adoption of local siting based on LRZ load will result in a more accurate forecast of the future location of renewable resources, in particular in South MISO. However, MISO’s proposal to site distributed solar to the top 10 load buses in each LBA will result in the best rooftop solar siting while it may not yield a reasonable siting of distributed solar facility, given that the top 10 load buses will often be in high density Metro areas, which is lacking of contiguous available land. While some high load bus industrial and commercial areas can have potential for rooftop mounted distributed solar, the total available capacity can be limited. The siting of sufficient land to build distributed solar could be improved by considering GIS-based screening of load buses by availability of contiguous land, by seeking input from the LSEs for the best load buses to host distributed solar, or consult with state regulatory staffs who has experience with distributed generation siting.

Legal name of organization submitting feedback:	OMS Transmission Planning Work Group –
MISO sector membership:	<a href="#">State Regulatory Authorities</a>
Feedback submitted by:	Name: <a href="#">Don Neumeier and Dave Johnston</a> Title: <a href="#">Co-chairs of OMS Transmission Planning Work Group</a> E-Mail Address: <a href="mailto:Don.neumeier@wisconsin.gov">Don.neumeier@wisconsin.gov</a> ; <a href="mailto:djohnston@urc.in.gov">djohnston@urc.in.gov</a> Telephone #: <a href="tel:(608)267-9304">(608) 267-9304</a> , <a href="tel:(317)232-4234">(317) 232-4234</a>
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