



Stakeholder Feedback Request

MISO MTEP17 Futures Development

MISO MTEP17 Futures Development: 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 February 23rd, 2016 MTEP17 Futures Workshop. Posted materials can be viewed from the MISO website at the following link: <https://www.misoenergy.org/Events/Pages/MTEP17Futures20160223.aspx>

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

1. Do the proposed Futures definitions/narratives provide adequate projections and bookends? If not, what changes/additions are recommended?
2. Are the proposed matrix variables reasonable? What alternatives or additional sources should be considered?
3. Please provide any additional comments/questions associated with the MTEP17 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 MTEP17 Futures Workshop materials, unless otherwise specified.

Please submit feedback to: MTEPFutures@misoenergy.org

Please submit feedback by: **Feedback Request Form Due March 15th, 2016**

Stakeholder feedback:

These comments reflect the collective feedback of the staff members of the Organization of MISO States (OMS) Transmission Planning Work Group (TPWG). Individual members may hold different views on specific points.

1. The TPWG would like MISO to consider the "Non-Carbon Strategy Implementation" Future as the "Business As Usual" (BAU) Future. In the past, MISO has characterized the BAU Future as the one that contains all of the current laws and policies and trends. Considering the current judicial stay of the Clean Power Plan (CPP) rule and a likely delay of compliance at a minimum, it appears that the BAU should only contain the current States' Renewable Portfolio Standards. This would be consistent with past MTEP BAUs.

The TPWG questions the assumption that "low natural gas prices reduce the economic viability of alternative technologies". Recent experience suggests that alternative technologies are growing even as natural gas prices are very low.

The recent extension of investment tax credits for renewables should be taken into account in this Future.

Given the uncertainty provided by the stay of the CPP rule, the TPWG suggests that only two bookend Futures are necessary for the MTEP17 Futures. We have a suggestion for long-term planning and the Clean Power Plan in Question #3. The MTEP17 Futures should only be used to study possible Market Efficiency Projects (MEPs) to be approved in MTEP17. Therefore, there should be two bookend Futures, one for a lower carbon Future and one for the alternative technology Future. As it is, we believe the "Partial Carbon Strategy Implementation" and the "Carbon Reduction Target" Futures are too similar and based off the CPP rules which ignore CO2 from certain technologies. We suggest keeping the first and discarding the second.

The third Future (and second bookend to the BAU) that we support is the "Accelerated Alternative Technologies" Future. Besides the great uncertainty over the Clean Power Plan, the other substantial uncertainty is the rate of change in capital costs for several types of alternative technologies, both on the demand and the supply sides. One workshop discussion point involved how one assumption affects or drives others in the same Future. Specifically, what are "driving" or independent variables vs. resultant, dependent outcomes? For example, in the Accelerated Alternative Technologies Future, it's not clear whether or not the higher demand and energy growth, coupled to lower well productivity and higher extraction costs, lead to a 20% higher fuel price forecast; or how is it possible that in spite of such a high fuel price increase the assumed higher demand growth is sustainable for the planning horizon. Alternatively, Energy Efficiency penetration is

driven by policies or economic forces. Since a requisite for the selection of a scenario is its plausibility, understanding how the macroeconomic and other assumptions “chain” to result in the future should be a prerequisite for its adoption. The purpose of the “Futures” is for their outcomes to be weighed for Market Efficiency Transmission projects, but the scenarios are informative to the transmission planning process for reliability planning. The cases can indicate potential shifts in project voltage scales, location, or need.

More discussion should occur on the Business As Usual (BAU) model. The first workshop did not focus on that topic as the work was to determine the boundary cases.

2. The TPWG is considering the proposed matrix values and will likely weigh in on those at a later time. A suggested sensitivity is to have a non-escalating gas price at, say, \$3.50 for 20 years.

The capital cost of solar PV varies significantly with modality and scale of installation. For example, capital costs of residential solar rooftop can be twice as much as C/I rooftop and community solar PV, and three times as much as utility scale solar PV. It would be advisable to model these using distinct capital costs. The distinction concerning the implementation cost profile of demand side programs should be examined closely and reviewed with stakeholders.

The TPWG believes MISO’s proposal to incorporate the Independent Load Forecast (ILF) growth rate into the Gross Demand Projections for MTEP17 violates the spirit in which the ILF project vis-à-vis MISO’s stakeholders was entered into. MISO committed that the ILF would not be to replace Module E. The MISO proposal also appears to violate Section 4.4.3.1 (Demand and Energy) of the Transmission Planning BPM, which states that “Each individual company’s Module E reported growth rate over the first 10 year period is averaged and extended over the remaining 10 years of the study period.” The ILF is not referred to in the BPM.

Furthermore, MISO proposes to let EGEAS economically select one or more of the six programs in the study, namely: a) existing programs plus; b) low growth; c) high growth; c) CPP 111d; d) Base level Distributed Generation, e) high penetration Distributed Generation. Without knowing the actual per MWh cost of each of those programs, and the assumptions underlying them, it’s impossible to judge whether the costs used in EGEAS are reasonable. More explanation is needed about the assumptions for current saturation and projected penetration, to better understand the study’s cost trends over time and/or variations between states and in order to account for the DR/EE/DG low hanging fruit having been picked in some MISO States but not in others. States want more explanation of how to find “the low hanging fruit” in the MISO footprint.

3. The TPWG has listened intently to various MISO statements about the immediate need to begin planning for the Clean Power Plan. Upper MISO management has stated that the “time is tight to get the right infrastructure in place”, and that there is a great amount of wind resources in the interconnection queue. MISO Staff have referred to the 2008-11 Regional Generation Outlet Studies which led to the first Multi-Value Project portfolio approval as a blueprint to develop a transmission overlay to assist states with Clean Power Plan compliance. However, there are significant differences between 2008 and 2016. The MISO footprint was significantly different in 2008 than it is today. In 2008, almost all of the states had enacted Renewable Portfolio Standards or goals, and so there was momentum from the states to collaborate with MISO to plan a transmission overlay to optimally interconnect renewable (wind) generation resources.

The situation is different in 2016. The MISO footprint has changed significantly, and three new OMS states do not have an RPS. Many states are legally opposing the EPA Clean Power Plan. With the recent stay of the CPP rule, many of these states have issued public statements about pausing or stopping modeling efforts for the CPP. Yet, we realize that long-term resource planning by our jurisdictional utilities must continue. It always has, and always will, be performed in the face of some amount of uncertainty about the future. The TPWG encourages MISO to collaborate with the member states and all of the other PAC sectors on long-term transmission planning modeling. However, we suggest that this effort be performed in a separate process outside of the MTEP Futures. Until the situation regarding the CPP becomes much clearer, we believe that it will be cleaner and more efficient if the MTEP Futures are developed for the sole purpose of analyzing MEPS.

The TPWG suggests that MISO start a separate process such as the UMTDI (Upper Midwest Transmission Development Initiative) or CARP (Cost Allocation and Regional Planning), and in addition meet with each state to discuss their expectations and policy views of planning for a transmission overlay. In the February 23 System Planning Committee of the MISO Board of Directors meeting, one MISO Director referenced the large amount of wind generation in the interconnection



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queue, but another MISO Director noted the industry changes for bookstores and video stores, and cautioned our industry against the potential for stranded investment of transmission assets. The TPWG understands this concern and believes this further supports undertaking a separate long-term planning process to study whether a transmission overlay is necessary, the timing of such an overlay, etc. In addition, discussion in the MTEP17 Futures workshop should include the consideration of the interplay with natural gas pipeline changes with the shift in the generation fleet from base load coal to natural gas.

One other future discussed in the workshop was the narrative of the loss of nuclear power in the next few years due to low market prices and no renewal of licenses. This narrative could include the lower cost of natural gas along with a CPP like requirement in the mid-20's and beyond. This retirement style option could be one Future or a variation of another Future. One important modeling result will be to see how much more expensive this option is over other futures.

The TPWG, and OMS in general, has supported MISO modeling of the EPA rules, such as Clean Power Plan, for years, and we continue to support MISO's modeling efforts to assist states on the potential impact to our generation fleets located in our respective areas. The TPWG thanks the MISO staff for the great support and insights that we have gained regarding the EPA MATS and CPP rules, as well as other issues over the years. The TPWG continues to support the modeling work and long-term transmission planning as they are key as our jurisdictional utilities continue to make significant resource decisions on behalf of their customers.

Legal name of organization submitting feedback:	Transmission Planning Work Group of the Organization of MISO States
MISO sector membership:	State Regulatory Authorities
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