

**Modeling Work Group Meeting**  
**Thurs., Sept. 20, 2012, 9:00 – 11:30 ET**  
**Draft Agenda**

9:00	Remaining fixes needed for Scen. 3 & 1 (Including PA feedback on latest Scen 1 results) – Ralph Luciani & Bruce Tsuchida, CRA
9:05	Scenario 1 – outstanding MWG questions on production cost results, including answers to 9/18 questions that are pending: <ul style="list-style-type: none"><li>○ flowgates in NE are not showing up in S1</li><li>○ low flows over Neptune &amp; HTP</li><li>○ negative LMPs in MISO W &amp; SPP-N</li><li>○ MISO-IL &amp; MO are outliers on LMP</li><li>○ cause of wind curtailment in Nebraska - 40%, MISO-W is 25%</li></ul>
9:15	Review Stan's maps of results; CRA summary information for presentation to SSC; Doug Gotham's wind curtailment data
9:30	Identify other information we should share with SSC on production cost results: <ul style="list-style-type: none"><li>○ general observations of the MWG</li><li>○ DR costs in Scenario 1</li><li>○ Comparison of hours where flowgates are binding in Midwest in Scen 1 &amp; 3 (Randell)</li></ul>
9:45	<b>Sensitivities – review list and rationale from July 11 meeting (see notes below)</b>
11:00	Narrow the list of sensitivities for further discussion by SSC
11:25	Set dates for future MWG Calls

**SEE MWG Sensitivity 7-11 Mtg Notes on next page**

## EXCERPT FROM July 11, MWG Call Summary

### Proposed Sensitivities

- MWG members wish to wait until the base run results are available before formally proposing or recommending particular sensitivities, however they discussed numerous possibilities for sensitivities that may yield useful information about the Phase 2 scenarios.
- Hurdle rates
  - The potential outcomes are unclear, however reductions in hurdle rates would likely allow greater dispatch from further away.
  - CRA recalled that adjusting the hurdle rates in Phase I did not result in a significant difference in terms of resource build from NEEM.
  - A hurdle rate sensitivity would likely make more of a difference in scenarios with a significant amount of wind in the middle of the country.
- Eliminate commitment pools to reflect broader market initiatives (S3)
  - Such a sensitivity would allow generation in the entire EI to satisfy day-ahead load.
  - CRA said that eliminating some or all of the commitment pools could make it difficult/impossible for the model to solve.
  - CRA will examine whether the combining or elimination of some commitment pools is doable.
- Wind build in Canada (S1, S2, S3)
  - A MWG member requested that the wind capacity value in Ontario be adjusted to a level closer to what is planned to be in operation by 2018 and beyond -- approximately 7000 MW
  - There are dummy units that were not activated in NEEM in the load flow cases, and the SSI includes transmission within Canada to accommodate this wind. Such a sensitivity would only show intra-region impacts; it is expected to have a relatively minor impact,
  - MWG members discussed the possibility that such adjustments may be able to be combined with an enhanced wind performance sensitivity
- Generation and transmission mismatch (testing transmission system robustness if expected generation is not available)
  - Some examples include if the wind generation in S1 is not dispersed as originally expected, or more coal plants stay online than anticipated, or additional nuclear plants shut down
  - This may also be a possibility for combining with the Canadian wind build (more wind than expected)
- Demand Response
  - Some of the possible DR curve modifications that may be worth exploring include decreasing the average price (\$750 in the base case); adjusting the size or price of blocks or adding new blocks; or lower price levels or smaller blocks at the lower end of the price curve. The group discussed the possibility of applying different DR curves to different scenarios
  - ORNL will send a tool for people to experiment with
- Improved wind performance
  - Some MWG members suggested a sensitivity with wind generation power curves (incoming wind speed/unit power output) updated to reflect current technology -- the assumptions being used in the base case are a few years out of date
  - The difference is especially significant in low wind density areas

- One possible suggestion is a 10% capacity factor increase in higher wind speed areas and a 25 - 30% increase in lower wind speed areas which could be applied to the different wind classes
  - Such a sensitivity could possibly be combined with the Canadian wind build sensitivity or an enhanced thermal generation system flexibility sensitivity
  - May want to combine with Canadian wind
- CO2 price (\$1)
  - A carbon price sensitivity may yield useful information about how variations in carbon prices might affect electric prices, dispatch and load flows
- Fuel costs
  - Higher natural gas prices could be of particular interest so stakeholders may see how this would it affect electric prices, dispatch and flows
- Capacity/limitations of DC ties
  - DC lines are expensive and a big decision, and if base runs shows that full capacity isn't needed, it could yield useful information to reduce the capacity of the DC ties
  - There was concern that this could result in either completely constrained or unreliable system
  - Alternatively, it may make sense to do a transmission sensitivity focused on relieving congestion in a particular area
- Enhanced thermal generation system flexibility
  - This suggested sensitivity could include higher ramp rates, wider lowest block for DR supply curve, lower partial load heat rates and other adjustments to reflect technologies that may be more prevalent in 2030, which could yield better flexibility of thermal generators
  - It was suggested that it would helpful to also include an assumption that simulates the system flexibility provided by storage but there were no suggestions on how to incorporate that in sensitivity.
  - May involve multiple assumptions and adjustments, so the group would need confirmation that those could all be incorporated into one sensitivity
- Expanded HVDC Capacity to determine if transmission constraints are causing wind curtailment (ADDED ON 9/18/12 MWG CALL)