

OPSI DATA REQUEST FOR SECTION 111(D) MODELING

The Organization of PJM States appreciates the effort of PJM staff to inform the states on the capabilities that PJM possesses to model potential impacts of the EPA's proposed 111(d) rulemaking. These requests are offered in an effort to get modeling results that provide the broadest value to the PJM states in the limited time provided for commenting on this complex and important rule.

1. Base Case/ Business as Usual: This case would examine outcomes assuming no 111(d) regulation. This case would use the same variable values and input assumptions as used in PJM's market efficiency analysis. OPSI would like to focus on years 2020, 2025 and 2029. (Additional years such as 2019 and 2022 would also be of some interest).

- 2a. PJM 111d Regional Compliance Case: Roll up the PJM state emissions targets, as proposed by EPA (and make adjustments for states at the seam based on resources only within PJM). This case would result in a single price across PJM for CO2 emissions. OPSI would like this case to focus on the years 2020, 2025, and 2029 (additional years such as 2019 and 2022 would also be of some interest). PJM would take as given the energy efficiency targets being met (as EPA did in its modeling), and adding renewables to meet the known state RPS targets for each year run. Provide overall results with the following information:
 - a. PJM-wide CO2 price
 - b. LMPs at the state, and zonal level
 - c. Percentage of generation by fuel type by state, zone, and PJM-wide
 - d. CO2 emissions (tons) and emissions rates (lbs/Mwh) for each state
 - e. Load expenditures for each state
 - f. Generator net revenues and needed capacity revenues to go forward for each state
 - g. 111(d) compliance costs for each state
 - h. Comparisons relative to Case 1 (the base case/business as usual) without 111(d) regulation.

- 2b. PJM Regional Compliance Case Scenarios: For the years 2020, 2025 and 2029 model the system the same as in 2a however incorporate the following assumptions:
 - Case i: only include renewables currently in the queue
 - Case ii: only model 50% of the EPA assumed energy efficiency achievement
 - Case iii: assume natural gas price 50% greater than used in Case 2a
 - Case iiiii: assume a 50% reduction in nuclear as compared to that used in Case 2a.

3. State by State Compliance Case: For 2020 perform regional dispatch, but each state with a compliance obligation under the EPA 111(d) proposal (12 in PJM) would be modeled with a separate CO2 price that reflects the separate state targets assigned by USEPA. All other assumptions are the same as in Case 2a. Add the years 2025 and 2029 if time permits. Overall results should include the same information as the regional runs, but with differing state-by-state prices on CO2 in place of a PJM regional price on CO2.