

## **Summary of EPA's Review of Comments on the National Electric Energy Data System (NEEDS) v.5.15 and the Integrated Planning Model (IPM) v.5.15.**

This document summarizes EPA's review of comments on inputs to the Integrated Planning Model (IPM), including the National Electric Energy Data System (NEEDS) database. This document highlights common comment types and how EPA generally reviewed and acted on those comments. For a detailed accounting of all unit-level comments, see the Excel document "Updates to NEEDS v.5.15 for the CSAPR Update Incremental to NEEDS v.5.15."

EPA received a wide variety of comments on the NEEDS database and other IPM inputs through the August 4, 2015 Notice of Data Availability (NODA), based on the IPM v5.14 platform, and the CSAPR Update Proposal, based on the IPM v5.15 platform. These comments were reviewed and updates were made to the model's inputs as discussed below. These comments can largely be categorized as follows:

### **Changes to the EGU fleet composition (e.g., new units and retiring units) and unit configurations (e.g., coal-to-gas fuel switching and control installations)**

EPA reviewed suggestions for adding new units, updating retirement years for certain units, and updating retrofit control configurations for certain units in NEEDS v.5.15. When sufficient supporting documentation was available to meet the criteria for including new units or retiring units, as described in sections 4.2 of the documentation for EPA Base Case v.5.13,<sup>1</sup> EPA made changes to NEEDS v.5.15 accordingly. In instances where plans for a new unit or retirement have been announced but did not meet the criteria in section 4.2, EPA did not adjust NEEDS v.5.15 for this release; EPA will continue to monitor updates regarding the status of such units to inform future analyses. Similarly, EPA reviewed comments stating that coal steam units have changed or will change from burning coal to natural gas and EPA updated the units' modeled fuels in NEEDS v.5.15 as appropriate.

### **Heat Rates and Capacity**

EPA received comments on the heat rate and net summer generating capacity listed in NEEDS v.5.15. EPA determines these unit characteristics through a rigorous methodology based on information reported to EIA through forms 860 and 923, and data accompanying EIA's Annual Energy Outlook from 2012. EPA recognizes that there are alternative ways these metrics can be quantified for any particular unit; however, the data for these parameters shown in NEEDS v.5.15 are derived using a consistent fleet-wide methodology throughout the contiguous U.S. Additionally, some metrics can have multiple definitions (for example, the unit capacity in NEEDS is the unit's net summer dependable capacity, not the nameplate capacity), which has led to some requests to change data in NEEDS to values that would

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<sup>1</sup> IPM v5.15 CSAPR Update Rule Base Cases is incremental to v.5.13 (and v.5.14 and v5.15) and only incremental changes to the v5.13 documentation are described for each version. This section on criteria is unchanged from v5.13.

not be in keeping with the particular metric intended for that NEEDS field. Except where large differences warranted additional investigation, EPA maintained the consistently determined values for these unit characteristics. For further information on how EPA determined the unit-level heat rates and capacity for NEEDS v.5.13. EPA, see the Base Case v.5.13 Documentation sections 3.8 and 4.2.2, respectively.

### **NO<sub>x</sub> Emission Rates**

EPA received many comments on NO<sub>x</sub> emission rates for units in NEEDS v.5.15 (note: this is separate from comments on the “widely achievable” NO<sub>x</sub> emission rate by units equipped with SCRs). The emission rates in NEEDS are determined from reported CEMS data. In general, they are based on 2011 emissions data, as described in the Base Case v.5.13 Documentation section 3.9.2. EPA is aware NO<sub>x</sub> emission rates vary year-to-year. However, EPA believes the 2011 NO<sub>x</sub> emission rates are largely representative of the emission rates of units and therefore chose to continue to use 2011 NO<sub>x</sub> emission rates unless a clear long-term change in unit behavior, typically SCR or SNCR operation or retrofits, was demonstrated.

Since one of the key NO<sub>x</sub> mitigation strategies considered in the CSAPR Update Rule is the operation and optimized use of SCRs and SNCRs, EPA determined it was reasonable to focus on updating the NO<sub>x</sub> emissions rates for units with SCRs and SNCRs. In cases where emission rates changed by more than 25%, EPA updated the NO<sub>x</sub> emission rates in NEEDS to reflect that change in behavior.

In response to many comments EPA received, EPA revised the “widely achievable” NO<sub>x</sub> emission rate by units equipped with SCRs to be 0.10 lbs/mmBtu for the modeling used to set state budgets. See EGU NO<sub>x</sub> Mitigation Strategies TSD for further discussion.

### **IPM Retirement Projections**

Many comments pertained to IPM’s projections regarding retirement or limited utilization of capacity. Given the necessity of near-term forecasting for this rule, EPA constrained the model to prevent retirement projections prior to the 2020 run year, except for units that have announced plans to retire (see NEEDS v.5.15 Final CSAPR Update). Additionally, projections of future year generation at some plants may be less than historical levels. EPA revised the state budget quantification methodology in the final rule to reflect a combination of historic utilization and emission rate data with the projected change in state level emission rates in IPM (see Section VI of the Preamble). As a result, any utilization projection in a future year at any given fossil plant would only affect state budget quantification noticeably where that plant was projected to generate considerably more or less in the policy case than in the base case. Given the limited impacts on market fundamentals projected to occur as a result of this rule, such a situation is extremely limited.

### **IPM Generation Decisions and Resulting Emissions**

Many comments pertained to model outputs including model plant and unit level dispatch decisions and the resulting emissions. EPA addressed the model's retirement decisions as described above, which addressed many comments pertaining to generation. However, many comments EPA received did not provide actionable information regarding IPM's inputs or constraints. In instances where commenters did provide such information, EPA evaluated it and update the model as appropriate.

### **Additional Resources**

1. The "Updates to NEEDS v.5.15 for the CSAPR Update Incremental to NEEDS v.5.15" has a list of all comments EPA received on the NODA and Proposed CSAPR Update regarding the NEEDS database and other IPM inputs. It includes a detailed accounting of the actions taken in response to each comment, if any, and includes a reason if the comment did not result in any changes to the IPM inputs and assumptions.
2. The "EPA v.5.15 CSAPR Update Rule Base Cases Using IPM Incremental Documentation" details all changes to the IPM platform since the v.5.13 platform was released, and specifically highlights changes made between the CSAPR Update Proposal and the modeling for the CSAPR Update Final Rule.