

## Updates To NEEDS v.5.13 Based on External Engagement

In May 2013, EPA provided a public opportunity for input on the unit-level data in a draft version of the NEEDS v.5.13 database. EPA received input from the 59 organizations listed in Table 1, including state environmental agencies, utilities, and trade groups. Several states and organizations aggregated input from several individual members or utilities, adding another roughly 50 entities that indirectly provided input into this process.

**Table 1.** Organizations that provided input on NEEDS v.5.13

<b>State Environmental Agencies</b>	<b>Utilities ,Trade Groups, and other Entities</b>
Alabama DEM	AEP
Colorado DPHE	AEP (Big Sandy)
Connecticut DEEP	Big Rivers Electric Corporation
Florida DEP	Bluegrass Generation
Georgia EPD	Consolidated Asset Management Services
Illinois EPA	Cytec
Indiana DEM	Dominion
Iowa DNR	Duke
Kansas DHE	Environmental Energy Alliance of New York
Kentucky DAQ	EquiPower Resources Corp
Maine DEP	Exelon
Mississippi DEQ	First Energy
Missouri DNR	Georgia Power
Nebraska DEQ	Great River Energy
New Hampshire DES	GZA GeoEnvironmental
New Jersey DEP	Kleen Energy
New Mexico ED	LG&E and KU Energy
North Carolina DAQ	Lincoln-Lancaster County Health Department
North Dakota DH	Minnesota Power
Ohio EPA	NRECA
Oklahoma DEQ	Old Dominion Electric Cooperative
South Carolina DHEC	PNM Resources
Texas CEQ	PowerSouth Energy Cooperative
Virginia DEQ	Prairie State Generating Company
Wisconsin DNR	PSEG
Wyoming DEQ	Riverside Generation
	Southern Company
	Southern IL Power Cooperative
	Tucson Electric Power
	TVA
	Waste Management of Connecticut, Inc. – New Milford Landfill
	We Energies
	Xcel

EPA received a wide variety of input, which has all been catalogued for staff review. Due to the need to thoroughly review suggested changes and the long lead time for model development, not all suggestions were able to be reviewed and incorporated into the EPA Base Case v.5.13 and NEEDS v.5.13 being released in November 2013. Therefore, EPA prioritized input received to date that would affect the most important variables informing power sector modeling projections, and EPA staff will continue assessing all input to inform any projections in future EPA analyses. EPA appreciates the effort that organizations put into documenting and sending information relevant to this modeling effort.

Below is a summary of the actions EPA has taken to date on the input to NEEDS v.5.13.

**Changes to the EGU fleet composition (e.g., new units and retiring units) and unit configurations (e.g., coal-to-gas fuel switching and post-combustion 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.5.13. 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, EPA made changes to NEEDS v.5.13 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.5.13 for this release; EPA staff will continue to monitor updates regarding the status of such units to inform future analyses. Similarly, EPA reviewed input suggesting units have changed or will change from burning coal to natural gas and, when warranted, EPA updated the units' modeled fuels in NEEDS v.5.13.

EPA received suggestions for updates and changes to NO<sub>x</sub> Combustion Controls and Mercury Controls (e.g., Low NO<sub>x</sub> Burners, Over Fire Air, ACI) for some units. EPA is reviewing the details of these suggestions and will update NEEDS, as warranted, in the future.

**Consent Decrees and State Regulations**

EPA received several updates regarding consent decrees and state regulations. Firm unit-specific commitments and changes to unit controls or retirement plans related to consent decrees and state regulations that will take effect prior to 2016 are reflected in NEEDS v.5.13 at the unit level, based on the information made available to EPA to date. Any such requirements taking effect in 2016 or later or that provide affected units with multiple means of compliance are captured in model constraints that govern projections from the Base Case v.5.13 (see the EPA Base Case v.5.13 Documentation sections 3.9.5, 3.9.6, and 3.9.8 for a detailed description of how state-specific environmental regulations, new source review (NSR) settlements, and energy efficiency and renewable portfolio standards were represented in EPA Base Case v.5.13); these modeling constraints do not appear as unit-specific conditions in NEEDS v.5.13 even though they are accounted for in projections due to those modeling constraints.

**SO<sub>2</sub> Permit Rates**

EPA received input on SO<sub>2</sub> permit rates for some units. EPA has updated some units' permit rates as warranted by data on permits and consent decrees where such updated information was available in

time for reflection in the November 2013 release of NEEDS v.5.13. EPA will continue to review such information and make additional updates to NEEDS as warranted in the future.

It should be noted that the SO<sub>2</sub> Permit Rate in NEEDS is *not* the emission rate the unit has in the model, but is a permissible upper-bound emission rate that informs the model set-up of which coal types are available to that unit for projected operations. Unlike the NO<sub>x</sub> rate in NEEDS, which is based on historic emissions data, the SO<sub>2</sub> Permit Rate is listed to provide units in IPM modeling with the flexibility to choose among coal types with varying sulfur content; each unit's projected SO<sub>2</sub> rate will be a function of the coal selected and the removal efficiency of the related pollution control technology operated in the modeling scenario. As a result, changing a unit's SO<sub>2</sub> permit rate in NEEDS would not affect its projected emission rate in IPM modeling unless the updated permit rate would bar the unit from burning a coal type that it was previously assumed to be able to burn in the model. For more information, see Section 3.9.1 of EPA Base Case v.5.13 Documentation.

#### **NO<sub>x</sub> Emission Rates, Heat Rates, and Capacity**

EPA received input on the NO<sub>x</sub> emission rates, heat rates, and unit capacities listed in NEEDS v.5.13. EPA determines these unit characteristics through a rigorous and consistent methodology based on recent emissions data, 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.5.13 are derived using consistent methodologies that are designed to inform modeling conditions in the IPM framework. 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 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 NO<sub>x</sub> emission rates, heat rates, and capacity for NEEDS v.5.13. EPA, see the Base Case v.5.13 Documentation sections 3.9.2, 3.8, and 4.2.2, respectively.