EPA Clean Power Plan

Wes Hall, Mark Walling

February 03, 2016

Imagination at work

CPP Overview

Clean Power Plan

Decreases National CO2 Emissions 32% from 2005 Levels by 2030

Phased in from 2020 to 2021, with Four Compliance Periods – 2022-2025, 2025-2027, 2028-2029, 2030-2031

Clean Power Plan – New York Goals

Mass Based

2030 Goal = 32 Million Tons CO_2

2012 Actual = 34 Million Tons CO_2

Rate Based

2030 Goal = 902 lb/MWh

2012 Actual = 1,140 lb/MWh

Clean Power Plan – Building Blocks

Building Block 1 – Reduced Carbon Intensity from Existing Fossil Generation

Building Block 2 - Replacing Coal Fired Generation with Natural Gas

Building Block 3 – Increased Reliance on Renewable Generation

Clean Power Plan – Compliance Options

Emissions Standard Plan

- Mass Based Targets
- Rate Based Targets

State Measures Plan

- Demand Side Resources
- Renewable Energy Standards

Flexibility in Defining “Leakage” from Existing Units

Multi State Trading Regimes

Impacts on Reliability Modeling

Increased Renewables

- EPA Projects greater than 700 GWh of Energy Production from Renewable Resources Nationwide (Nearly double what was included in the Renewable Building Block of the Proposed Rule.)
- States Can “import” renewable energy through Emissions Reduction Credits
- Clean Energy Incentive Plan (CEIP) subsidizes renewable build
- NY State Energy Plan similarly calls for increased reliance on renewable resources – particularly distributed solar

Impacts on Reliability Modeling

Thermal Unit Energy Limitations

- Coal and Oil Fired Generation will be limited
- Natural Gas Fired Generation is preferred
- Capacity Factor Limitations on New Sources

MARS Improvements

Capturing resource limitations in MARS

New concept – limiting groups

Groups would be defined as a collection of units

Be activated as EOP steps – allows for dispatch before/after other steps (DR? etc.)

Groups would have a defined limit – annual, monthly, daily, etc.

Units would be able to have a function mapping their output to consumption of the limit

Capturing resource limitations in MARS

When activated, MARS will partially dispatch units in a priority order

Iterative solution to try to resolve loss of load while not violating the group limits

Dispatch point of units would be considered in dynamic limits