

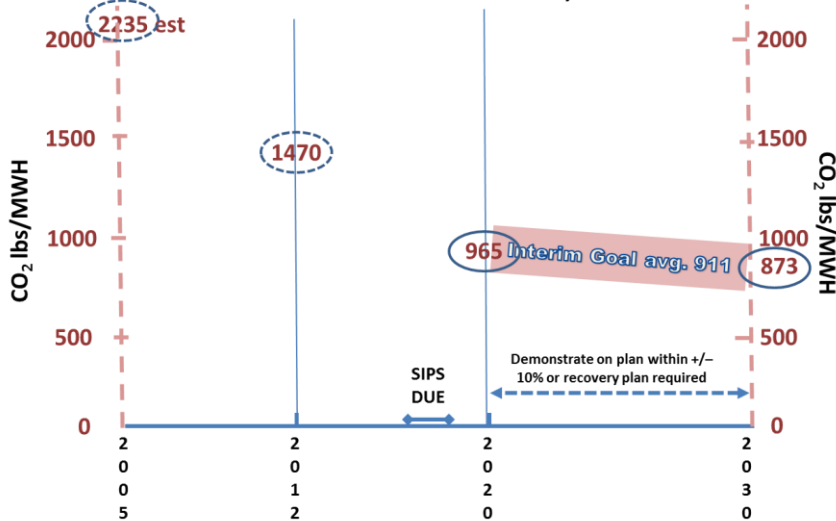
Proposed EPA Carbon Rule, Clean Power Plan, Concerns

- Rule appears to discount or ignore “early” actions taken between 2005-2012 (plant efficiency, conservation, etc.).
- Cross-Border ownership not recognized (e.g., ND wind serving MN customers). Only 2012 MN wind is considered.
- As a result of the first two bullets, Minnesota is asked to do more than its share (Administration Goal: 30% vs. 2005).
- Forced fuel switching will affect power markets & reliability.
- Forced coal to gas switch compels higher electricity price to customers and drives higher natural gas prices.
 - ✓ Base NGCC capacity and energy production assumptions questionable
 - ✓ NGCC capacity is needed to back intermittent wind and peak demand
 - ✓ Generation and transmission is located to serve customer demand needs so forcing dispatch for other needs creates system need for more capital retrofits.
- Uncertainty assigning reduction goals and crediting action.

Minnesota targets under EPA's 111(d) Proposed Rule

Clean Power Plan (released June 2, 2014)

EPA notes Minnesota's affected unit emission rate is reduced 41% between 2012 and 2030 by CPP measures



MN Plants In CPP 2012

- Allen S King
- Austin Northeast
- Black Dog
- Clay Boswell
- Faribault Energy Park
- Fox Lake
- High Bridge
- Hoot Lake
- Hutchinson Plant #2
- LSP-Cottage Grove LP
- Mankato Energy Center
- Riverside
- Sherburne County
- Silver Lake
- Syl Laskin
- Taconite Harbor Energy Center

Block 1: Unit level efficiency improvements for coal-fired units. 6% assigned to MN by EPA.

Block 2: Fuel switching. EPA says existing natural gas combined cycle (NGCC) units can run up to 70% of their installed value to displace coal generation. This compares to Minnesota's current NGCC dispatch of 24% of capacity factor (about 2500 MW of MN NGCC is present per EPA base data). Similarly, EPA assumes that Minnesota coal generation megawatt hours drop by about half.

Block 3: Renewable Energy and Preserved Nuclear. EPA says that nuclear units are assigned operation at a 90% capacity factor and specific to each State, EPA assigns a certain amount of nuclear and renewable energy growth. For Minnesota, EPA shows 0.84 million MWh nuclear for 2020 to 2030 and 7.89 million MWh existing and incremental Minnesota renewables, 2020 through 2030.

Block 4: Demand-side management and energy efficiency potential. EPA assigns a national opportunity for up to 1.5% per year. EPA shows Minnesota delivers net benefits ramping up from 4.8% in 2020 to 11.7% cumulative net demand reduction impact in 2029. This gives the downward slope to the MN interim goal progress between 2020 and 2030. EPA shows other Minnesota BSER measures are mostly delivered by 2020. EPA also assigns 7.5% additional generation delivery through transmission loss avoidance.