

# The Clean Power Plan & Iowa

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## About The Clean Power Plan

In August 2015, the U.S. Environmental Protection Agency (EPA) released the final Clean Power Plan, a national clean air standard that will cut carbon pollution from existing, fossil fuel-fired power plants. Under the Clean Power Plan, carbon pollution from the nation's power plants would be reduced by 32% by 2030 (from 2005 levels).

## The Clean Power Plan | How it Works for Iowa

To achieve national reductions in carbon pollution, the EPA works with states:

1. The EPA determined each state's level of carbon pollution in 2012 from existing power plants;
2. The EPA set individualized carbon reduction goals for each state to achieve by 2030;
3. The states develop plans to achieve their state's carbon reduction goal and submit those plans to EPA.

## The Clean Power Plan | Flexibility for States

States create their own plans to achieve the 2030 goal and have significant flexibility in determining how to meet these goals. States can use some or all of the three suggested strategies listed below as well as additional options that reduce carbon pollution. Options for Iowa and other states include:

- Increasing use of renewable energy like wind and solar;
- Increasing use of energy efficiency, like LED light bulbs and efficient appliances and equipment;
- Making coal and gas plants more efficient;
- Switching from coal to natural gas;
- Increasing use of very efficient combined heat and power systems;
- Nuclear generation;
- Improvements in electric transmission and distribution;
- Additional options to reduce emissions.

## The Clean Power Plan | Iowa is Well-Positioned

Iowa's transition to clean energy is underway with increased reliance on wind and solar and less and less use of coal. Iowa is already reducing carbon pollution and will continue to do so in coming years. The Clean Power Plan is an opportunity to continue this transition to 2030.

### *Iowa Is On Track to Meet the 2030 Goal*

Because of actions underway now to retire or convert coal plants and build renewable energy, the EPA estimates that Iowa's emissions rate in 2020 will be significantly below the 2012 baseline emissions rate of 2,195 lbs/MWh or emissions of 38,135,386 tons:

- Iowa is projected to reduce emissions in 2020 to 1,456 lbs/MWh and tons of emissions will be 29,684,986.
- As a result, Iowa will only need to reduce emissions by 12% between 2020 and 2030 to meet the emissions rate goal in 2030 (or about 15% to meet the mass goal).



### ***Wind and Solar Generation Is Increasing***

Since 2012, Iowa has been in the process of adding significant wind generation:

- MidAmerican's 1,050 megawatt (MW) Wind VIII project, approved in 2013 and built in 2014/2015.
- MidAmerican's 162 MW Wind IX project, approved in 2015 and planned for 2015/2016.
- MidAmerican's 552 MW Wind X project, approved in 2015 and planned for 2016.
- Alliant's RFP for 200+ MW of wind, under review in 2015.

Solar energy is beginning to grow rapidly:

- Iowa added 5 MW in 2013 and approximately 12 MW in 2014.
- The state ended 2014 with between 20 MW and 25 MW installed and should reach 40 MW by the end of 2015.

### ***Older Inefficient Coal Units Are Being Retired***

Since 2012, a number of Iowa's older, less efficient coal and gas units have been retired or have been planned for retirement in the next few years. Retiring these units and meeting electricity needs with cleaner energy sources will reduce emissions. These units include:

- CIPCO Fair Station. Retired in 2013.
- Ames Power Plant. Converting to gas in 2016.
- Corn Belt Earl Wisdom. Converted to gas in 2014.
- Alliant Energy – Burlington. Will retire or convert to gas in 2021.
- Alliant Energy – Dubuque. Converted to gas before 2012 and planned to retire in 2016.
- Alliant Energy – ML Kapp. Converted to gas in 2015.
- Alliant Energy – Prairie Creek. One unit will convert to gas in 2017, another will convert or retire by 2025.
- Alliant Energy – Sutherland. Converted to gas before 2012 and planned to retire in 2016.
- MidAmerican Energy – George Neal North. Several units are planned to retire in 2016.
- MidAmerican Energy – Riverside. Converted to gas in 2015.
- MidAmerican Energy – Walter Scott. Several units retired in 2015.

These units accounted for over 7,300,000 tons of CO<sub>2</sub> in 2012, or about 18% of Iowa's carbon emission in that year. Retiring most of the units and converting some to gas will result in significant emissions reductions well before 2030.

### ***Energy Efficiency Savings Reduce Emissions***

All utilities in Iowa offer programs to help each type of customer – such as residential, farm, and business – to save energy with energy efficiency. These programs save between 1% and 1.5% of energy sales annually, with new measures like LED lights and efficient appliances and equipment installed each year. Efficiency reduces overall energy demand – which reduces carbon emissions – while saving money.

### ***Iowa Has Opportunities for Trading***

The final Clean Power Plan establishes opportunities for states and utilities to exceed targets and trade excess credits with other states or utilities. Those credits will have value, so states may expect economic opportunities from trading. Iowa is well-positioned to trade for several reasons:

- Iowa is on track to meet or exceed its emissions goal;
- Iowa has enormous potential for additional wind and solar development, which could be used to help other states comply.



## The Clean Power Plan | Background Information

### ***Determining Iowa's Existing Carbon Pollution Baseline***

The EPA identified Iowa's existing (or baseline) carbon emissions by looking at how much carbon dioxide was actually released in 2012 from existing fossil fueled power plans, such as coal-fired power plants and natural gas power plants.

In 2012, Iowa had:

- 16 coal plants (25 boilers) that generated 33,009,046 MWh and emitted 37,128,850 tons of CO<sub>2</sub>;
- 3 natural gas combined cycle plants (8 turbines or boilers) that generated 1,430,248 MWh and emitted 637,095 tons of CO<sub>2</sub>
- 2 other gas-fired plants (4 boilers) that generated 306,111 MWh and emitted 369,442 tons of CO<sub>2</sub>
- Total emissions of 38,135,386 tons and generation of 34,744,405 MWh results in an emissions rate of 2,195 lbs/MWh.

Iowa's 2012 baseline is a fossil emissions rate of 2,195 lbs/MWh and total tons of 38,135,386.

### ***Setting Iowa's Carbon Reduction Goals***

To establish state-specific emission reduction goals, the EPA next determined the "best system of emission reduction" using three approaches:

1. Improving the heat-rate or efficiency of existing coal plants;
2. Increasing the use of existing natural gas combined cycle plants, which would reduce the use of coal plants;
3. Increasing the use of clean energy, which will reduce the use of coal plants. This primarily includes wind and solar but also nuclear and combined heat and power.

For any coal plant (or other fossil steam plant), these three approaches result in an emissions rate goal of 1,305 lbs/MWh. For any natural gas combined cycle plant, these approaches result in an emissions rate goal of 771 lbs/MWh.

These three approaches are applied in the context of each state's unique mix of coal and gas generation. Of all fossil fueled generation in 2012 in Iowa, 96% was coal (or gas steam) and 4% natural gas combined cycle. Iowa's 2030 target accounts for this unique generation mix.

Using the three approaches for emissions reduction and the unique generation mix results in:

- A goal for Iowa's carbon emissions rate of 1,283 lbs/MWh by 2030;
- A goal for Iowa's carbon emissions mass of 25,018,136 tons of CO<sub>2</sub>.

Iowa has the flexibility to comply using either the rate goal or the mass goal.

### ***For more information, contact***

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