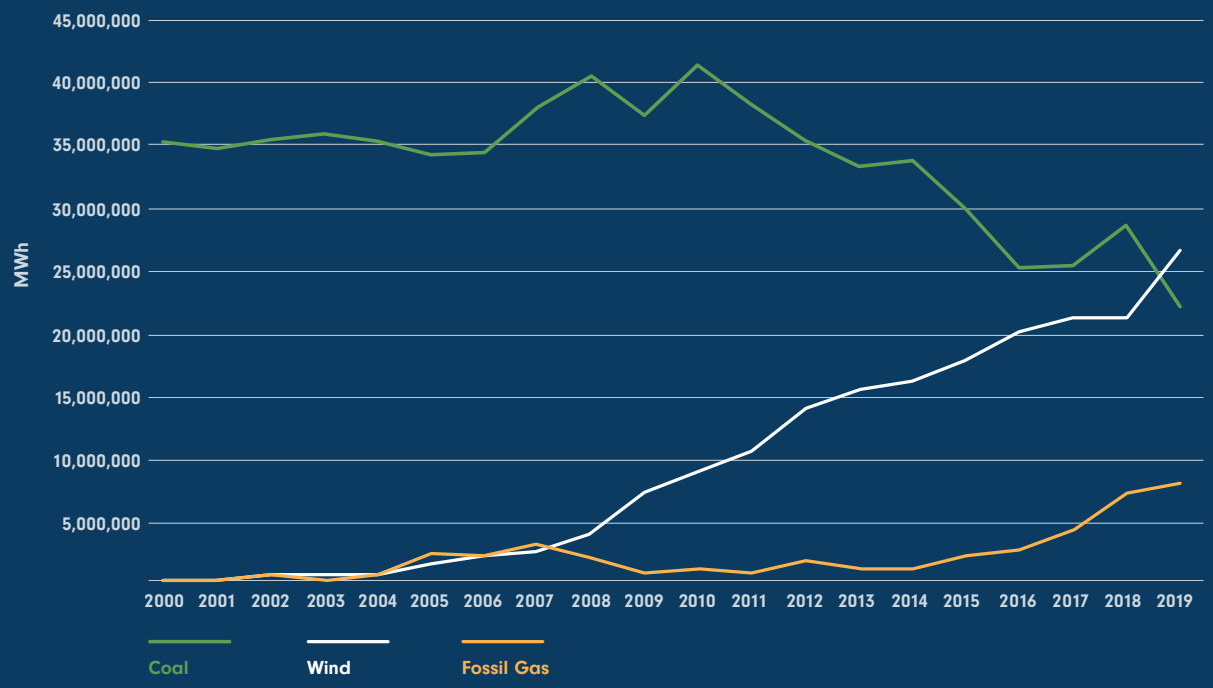
Iowa's Generation History and the Path to 100% Renewable Energy

Iowa Environmental Council

This is the first in a series of policy briefs breaking down the findings of the recent IEC publication *Iowa Electric Generation: Condition of the State,* October 2020. We start off with an overview of Iowa's electricity generation profile and what we need to do to reach 100% renewable energy.

Iowa's progress in developing renewable energy over the past twenty years has driven significant reductions in carbon emissions in the electric generation, or power sector. In fact, wind energy surpassed coal as Iowa's primary source of electricity for the first time ever in 2019, and greenhouse gas emissions from Iowa's power sector declined by nearly 40% between 2008 and 2016 as Iowa began generating more than a third of its electricity from wind.[1] However, the electric generation from coal and natural gas (hereafter referred to as fossil gas) when combined remains the larger share of electricity generation in Iowa, with fossil gas use on the rise.[2]

Chart 2: Iowa Generation Sources



[1] Iowa Department of Natural Resources, 2018 Iowa Statewide Greenhouse Gas Emissions Inventory Report (2019) available at https://www.iowadnr.gov/Environmental-Protection/Air-Quality/Greenhouse-Gas-Emissions

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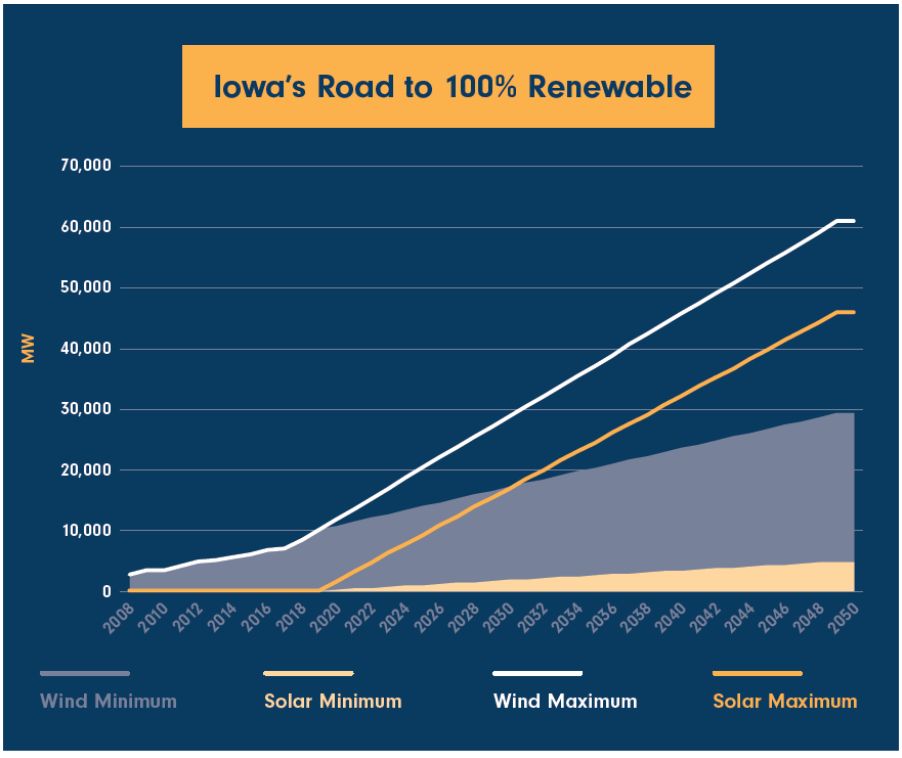
In order to combat climate change, the state must be powered by 100% renewable electricity 24 hours a day, seven days a week. Such a goal is both achievable and necessary, but significant work remains to further reduce emissions and reach very high levels of carbon-free electricity.

The climate emergency requires countries to transform their economies into zero-emissions as soon as possible. The Paris Agreement sets this goal for 2050, but scientists now believe that is too late. Scientists are now calling for the electric sector to be zero-emissions by 2030 and for the other sectors to do the same no later than 2035.

Relying on 100% renewable electricity and eventually 100% renewable energy across sectors must also mean getting to zero reliance on fossil energy sources. To date, 11 countries have reached or exceeded 100% renewable electricity, 12 have passed laws to reach 100% renewable electricity by 2030, and 49 have passed laws to reach 100% renewable electricity by 2050. Meanwhile, more than 300 cities have also set goals to have 100% renewables by no later than 2050, and more than 280 international businesses committed to having their operations based on clean energy.[3]

To understand how Iowa can achieve 100% renewable energy, IEC reviewed a variety of studies that projected Iowa's contribution to a decarbonized electric grid. Some include high levels of electrification that allow for de-carbonization of other sectors, such as buildings and transportation, while others focus on status quo electricity demand. In *Iowa's Road to 100% Renewable,* published in May 2020, IEC found that Iowa will need 5,000 to 46,000 MW of solar, and 30,000 to 61,000 MW of wind in order to reach 100% renewable energy. With 10,000 MW of wind and less than 200 MW of solar currently, there is clearly significant work left to do.



The pursuit of 100% renewable energy starts with an honest accounting, full disclosure, and the complete elimination of unnecessary, dirty coal generation.

Next up in the series: *Utilities 101 – Retail load, Market Sales, and the MidAmerican 100% Pledge.*

[2] In 2020, 60% of Iowa electric generation was from wind with 33% from coal and gas combined.

[3] Energy experts call for a 100% renewable world by 2035, https://www.zmescience.com/science/energy-experts-call-for-a-100-renewable-world-by-2035/