



A low-carbon future means water security in Texas

In June 2014, the Environmental Protection Agency (EPA) proposed the Clean Power Plan (CPP), which would set the first-ever national limits on carbon pollution from existing power plants. These limits present different emission reduction opportunities in each state; for Texas it means a 38 percent cut in carbon pollution to 791 lb. carbon dioxide/ megawatt-hour (MWh). By amplifying current trends, Texas can reduce emissions by adopting more renewable energy resources, bolstering energy efficiency programs, and switching from coal to lower-carbon natural gas.

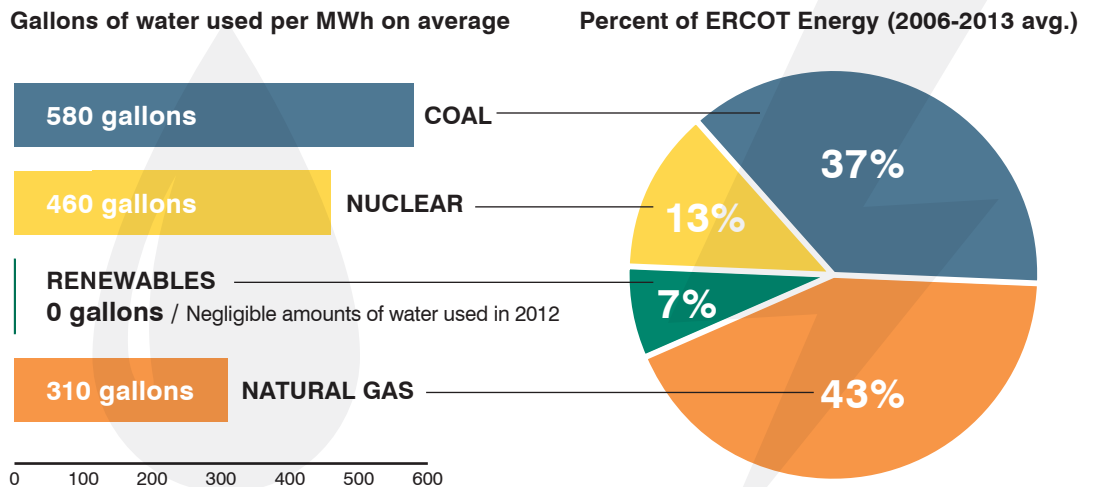
Notably, but not often considered, the CPP will also achieve significant water savings. In fact, based on predictions made by The Brattle Group, and confirmed by the CNA Corporation, the CPP could save upwards of 18 percent, more than 22 million gallons, of water use annually

by 2032, compared to a business-as-usual scenario. In Texas, with no clear end in sight from the multiple-year drought, harnessing more clean energy and meeting the CPP is a clear solution for safeguarding future water supplies.

How much water does it take to power Texas?

Every fuel source requires a certain amount of water, but some are far more thirsty than others.

Wind and solar photovoltaics use a negligible amount of water to produce electricity, yet only represent a small fraction of ERCOT's energy generation.



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By 2032 the CPP would save ERCOT the equivalent of Lady Bird Lake every month, Lake Worth every six months, and Lake Houston every year and a half.

Balance between energy and water

Generating energy in the Electric Reliability Council of Texas (ERCOT) region, which includes roughly 90 percent of Texas' electricity, has a direct impact on the state's water supply—as the amount of water used to create one megawatt-hour of energy greatly depends on the fuel source.

Coal is the most water-intensive resource and comprises over one-third of ERCOT's total energy produced. Nuclear and natural gas are also water-intensive resources. Natural gas, in particular, represents close to one-half of ERCOT's generation and consumes almost half the amount of water as coal per megawatt-hour generated. Renewable energy, namely wind and solar photovoltaics, requires little to no water, but only represents 13 percent of ERCOT's energy produced.

Business-as-usual versus clean power plan

As the Texas population increases and drought persists, meeting the energy and water needs of cities and power plants becomes harder and harder. To cope with the rising demand for electricity, ERCOT will add or rely more heavily on power plants, potentially increasing water consumption. Alternatively, by harnessing low-carbon, water-saving resources, like wind and solar energy, Texas can save huge amounts of water.

The two options in front of Texas—a lower-carbon energy portfolio or business-as-usual—could mean the difference between nearly 22 million gallons of water for the state. Texas cannot ignore the significant water savings that can be achieved through the proposed Clean Power Plan.

Business-as-usual

To meet rising electricity demand under the business-as-usual scenario, ERCOT will increase natural gas resources by 36 percent, coal by three percent, and renewables by less than one percent. These changes result in a 17 percent increase in water use above 2012 levels, or roughly 18.5 billion gallons of water per year.

Clean Power Plan

The CPP scenario assumes ERCOT will increase natural gas by 47 percent, more than double the amount of installed renewable energy, and decrease coal by 40 percent. Also, the potential to accelerate energy efficiency programs in Texas has never been riper. These changes would not only result in compliance with the CPP, but also achieve a two percent decrease in water use below 2012 levels, or five million gallons per year.

Texas, already an international leader in the use of wind power, has the greatest solar potential in the country, much of which is still untapped. By accelerating the use of renewable energy, energy efficiency, and natural gas, Texas ensures the energy and water reliability needed to continue growing and drawing more businesses to the Lone Star State.

For more information, please contact [Kate Zerrenner](mailto:kzerrenner@edf.org), Project Manager / EDF US Climate and Energy Program, kzerrenner@edf.org

Environmental Defense Fund
301 Congress Avenue
Austin, TX 78701

T 512 478 5161
F 512 478 8140
edf.org

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