EDF ENVIRONMENTAL DEFENSE FUND®
Finding the ways that work

A clean energy future means water security in Texas

Transitioning to cleaner energy means more water for Texas homes, agriculture, and businesses.

THE ENERGY-WATER NEXUS

As Texas' population increases and climate change persists, meeting the state's water needs is becoming more and more difficult. Also known as the energy-water nexus, energy choices have a vital role to play in protecting water supplies: It requires[1] a lot of water to produce and move electricity from traditional energy sources like coal and natural gas. Yet wind and solar PV, as well as saving energy through efficiency measures, are virtually water-free. Fortunately, as a result of unprecedented energy innovation and a robust, competitive market, Texas is rapidly transitioning to a low-water, clean energy economy.

Energy-water nexus

The amount of water used to create one megawatt-hour of energy depends on the fuel source, meaning the energy we put on the grid has a direct impact on the state's water supply. Coal is the most water-intensive resource and comprises roughly one-fifth of the total energy portfolio of Texas' main grid operator, the Electric Reliability Council of Texas (ERCOT).[2] Natural gas consumes roughly half the amount of water as coal, and provides the majority of Texas' power. Nuclear is also highly water-intensive.

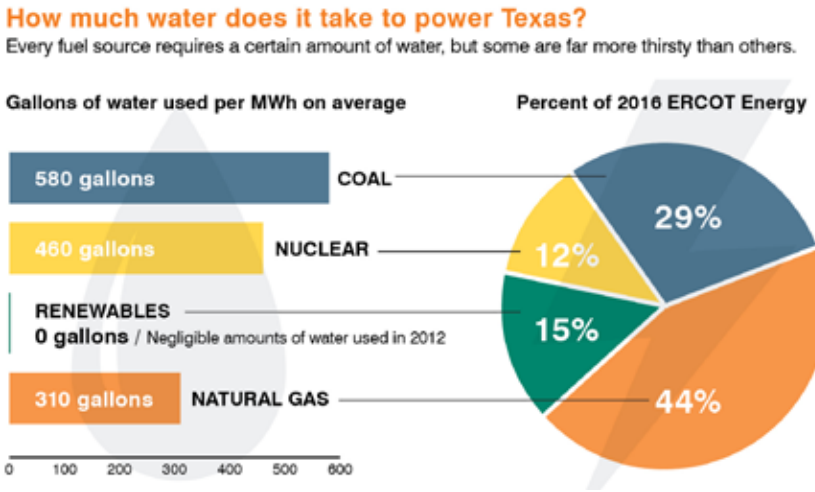
Clean energy, namely wind and solar PV, requires little to no water. Despite recent growth, renewable energy sources still only represent 15 percent of ERCOT's energy use. Increasing renewable energy's share of the state generation mix is an easy way for Texas to save water.

Thirsty power sector

In its 2017 State Water Plan, the Texas Water Development Board forecasts the state's water demand for fossil fuel power generation will significantly increase by 2030. Yet these predictions are based on an outdated energy resource mix.

With market and technological forces drastically reducing coal's share of Texas' electricity, the power sector will likely require less than half of the water designated in the 2017 plan. In addition to financial savings, this means more water could be allocated to Texas

CLEAN ENERGY



homes, businesses, industry, and agriculture, rather than to coal power plants.

Clean energy growth

Fortunately, Texas' renewable energy and energy efficiency continues to grow, leading to huge water savings. In 2017 Texas broke its all-time record[3] for wind energy production, and is now the fastest growing utility-scale[4] solar market in the country.

Texas can achieve further water savings by developing and implementing a bold, comprehensive state energy plan, while creating local, well-paid jobs. In fact, Texas is now home to nearly a quarter[5] of the nation's wind power jobs, and state solar jobs grew 34 percent[6] in 2016. By accelerating the use of renewable energy and energy efficiency, Texas' economy can continue to grow while ensuring energy and water reliability.

Opportunities to engage

Planning for a resilient Texas

The Texas climate is highly variable, with many areas suffering from cycles of drought and flooding. In 2015, Texas emerged from a devastating statewide drought, only to experience two years of record flooding. And climate models predict[7] intense weather swings for the future as well: After the next flood is another drought, which will likely be more intense and longer than usual due to climate change. Decisions we make now help ensure a resilient future for Texas.

Economic costs

A study[8] funded by cities in Central Texas determined that low levels in Lake Travis could lead to economic impacts, such as a loss of 241 jobs and $6.1 million in wages. Additionally, it is estimated that governments could lose up to $21.9 million in total fiscal revenues. Economic losses in Houston from the May 2015 flooding are estimated at $550 million, and those from the April 2016 flooding at more than double that.[9] Multiply these figures across the state and the impact of not taking care of our water resources becomes very clear.

[1] U.S. Department of Energy (June 2014)
[2] ERCOT (2017)
[3] ERCOT (Mar. 2017)
[4] Solar Energy Industries Association (July 2016)
[5] U.S. Department of Energy (Jan. 2017)
[6] The Solar Foundation (Feb. 2017)
[7] National Climate Assessment (May 2014)
[8] Lake Travis Coalition (Sept. 2011)
[9] Houston Business Journal (April 2016)

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