

United States Power Plant Water Withdrawals Decline: U.S. Energy Information Administration Report



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The United States Energy Information Administration (“EIA”) issued a November 9th report (“Report”) addressing water withdrawals by United States power plants.

The Report concludes that water withdrawals by United States power plants have been declining.

The focus of EIA’s analysis is on water withdrawals by thermoelectric power plants. These facilities are noted to withdraw water from sources such as rivers or lakes for equipment cooling during the generating process. The Report notes in part:

After withdrawal, the water is either consumed, meaning it is lost to evaporation or blowdown during generation, or the water is diverted or discharged back into a body of water. According to the U.S. Geological Survey, electric power generators are the largest source of U.S. water withdrawals and account for about 40% of total water withdrawals in the United States.

The plants are further described as requiring cooling water to cool and condense steam that is used to drive steam turbines.

EIA states that water withdrawal by U.S. thermoelectric power plants was 52.8 trillion gallons in 2017. This amount is stated to constitute a decline in water withdrawal volumes that began in 2014. Further, the Report notes:

The water intensity of total U.S. power generation – the average amount of water withdrawn per unit of total net electricity generated – fell from 15.1 gallons per kilowatthour in 2014 to 13.0 gallons per kilowatthour in 2017.

As to the decline in water withdrawals, the Report notes that this has been driven mainly by:

... changes in the electricity generation mix. Between 2014 and 2017, the coal share of U.S. electricity generation fell from 39% to 30%, while the natural gas share increased from 27% to 32%, and nonhydro renewables increased from 7% to 10%. Electricity generation from renewable resources such as wind and solar requires almost no water, and combined-cycle natural gas power plants, which account for much of the natural gas-fired generating capacity added in the past two decades, require less water on average than a coal-fired power plant.

Finally, the Report points out that power plants in the eastern United States tend to withdraw more water per unit of electricity generated than those in the west. This is due to the greater availability of water and the use of once-through cooling systems which do not reuse water like recirculating cooling systems.

A copy of the Report can be found [here](#).