

A recent study on the consumption of water in the production of ethanol and gasoline shows that there is variability by region, feedstock, soil and climate condition, and production technology for ethanol. There is also much variability in water use in the production of gasoline due to the age of oil well, recovery technology, and extent of produced-water re-injection and steam recycling. This table shows ranges for the amount of water consumed (net) for five different fuels/feedstocks.

**Section: BIOFUELS**  
**Water Consumption for Ethanol and Petroleum Gasoline Production**  
 (Quadrillion Btu)

Fuel (feedstock)	Net Water Consumed <sup>a</sup>	Major Factors Affecting Water Use
Corn ethanol	17-239 gal/gal ethanol <sup>b</sup>	Regional variation caused by irrigation requirements due to climate and soil types
Switchgrass ethanol	1.9-9.8 gal/gal ethanol <sup>b</sup>	Production technology
Gasoline (U.S. conventional crude)	3.4-6.6 gal/gal gasoline	Age of oil well, production technology, and degree of produced water recycle
Gasoline (Saudi conventional crude)	2.8-5.8 gal/gal gasoline	Age of oil well, production technology, and degree of produced water recycle
Gasoline (Canadian oli sands) <sup>c</sup>	2.6-6.2 gal/gal gasoline	Geologic formation, production technology

**Source:**

Argonne National Laboratory, *Consumptive Water Use in the Production of Ethanol and Petroleum Gasoline - 2011 Update*, ANL/ESD/09-1-Update, July 2011.

<sup>a</sup>In gallons of water per gallon of fuel specified.

<sup>b</sup>All water used in ethanol conversion is allocated to the ethanol product. Wather consumption for corn and switchgrass farming includes irrigation.

<sup>c</sup>Including thremal recovery, upgrading and refining.