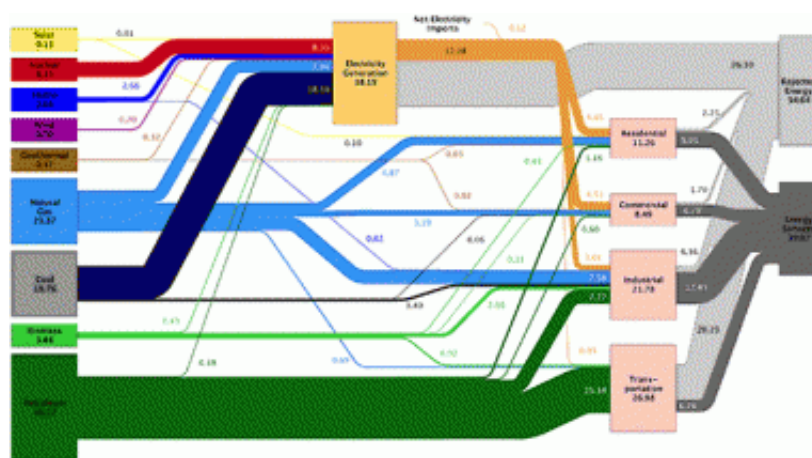


Americans using less energy, more renewables: report

August 24 2010



The left side of the chart shows the different sources of energy and the amounts produced. Following the flow of energy from left to right, the pink boxes show where the energy is consumed (electrical generation, residential, commercial, industrial and transportation) while the shades of gray show the amount of energy lost or rejected - often through heat loss. The information is based on DOE/EIA-0384(2009), August 2010. Distributed electricity represents only retail electricity sales and does not include self-generation. EIA reports flows for non-thermal resources (i.e., hydro, wind and solar) in BTU-equivalent values by assuming a typical fossil fuel plant "heat rate." End use efficiency is estimated as 80% for the residential, commercial and industrial sectors, and as 25% for the transportation sector.

Americans are using less energy overall and making more use of renewable energy resources.

The United States used significantly less coal and petroleum in 2009 than in 2008, and significantly more wind power. There also was a decline in [natural gas](#) use and increases in solar, hydro and geothermal power according to the most recent [energy flow charts released](#) by the Lawrence Livermore National Laboratory.

"Energy use tends to follow the level of economic activity, and that level declined last year. At the same time, higher efficiency appliances and vehicles reduced energy use even further," said A.J. Simon, an LLNL energy systems analyst who develops the energy flow charts using data provided by the Department of Energy's Energy Information Administration. "As a result, people and businesses are using less energy in general."

The estimated U.S. energy use in 2009 equaled 94.6 quadrillion BTUs ("quads"), down from 99.2 quadrillion BTUs in 2008. (A BTU or British Thermal Unit is a unit of measurement for energy, and is equivalent to about 1.055 kilojoules).

Energy use in the residential, commercial, industrial and transportation arenas all declined by .22, .09, 2.16 and .88 quads, respectively.

Wind power increased dramatically in 2009 to .70 quads of primary energy compared to .51 in 2008. Most of that energy is tied directly to [electricity generation](#) and thus helps decrease the use of coal for electricity production.

"The increase in renewables is a really good story, especially in the wind arena," Simon said. "It's a result of very good incentives and technological advancements. In 2009, the technology got better and the incentives remained relatively stable. The investments put in place for wind in previous years came online in 2009. Even better, there are more projects in the pipeline for 2010 and beyond."

The significant decrease in coal used to produce electricity can be attributed to three factors: overall lower [electricity demand](#), a fuel shift to natural gas, and an offset created by more [wind power](#) production, according to Simon.

Nuclear [energy use](#) remained relatively flat in 2009. No new plants were added or taken offline in this interval, and the existing fleet operated slightly less than in 2008.

Of the 94.6 quads consumed, only 39.97 ended up as energy services. Energy services, such as lighting and machinery output, are harder to estimate than fuel consumption, Simon said.

The ratio of energy services to the total amount of energy used is a measure of the country's energy efficiency

Carbon emissions data are expected to be released later this year, but Simon suspects they will tell a similar story.

"The reduction in the use of natural gas, coal and petroleum is commensurate with a reduction in carbon emissions," he said. "Simply said, people are doing less stuff. Therefore, they're burning less fuel."

Lawrence Livermore National Laboratory has helped to visualize the Energy Information Administration's U.S. energy data since the early 1970s.

Provided by Lawrence Livermore National Laboratory

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