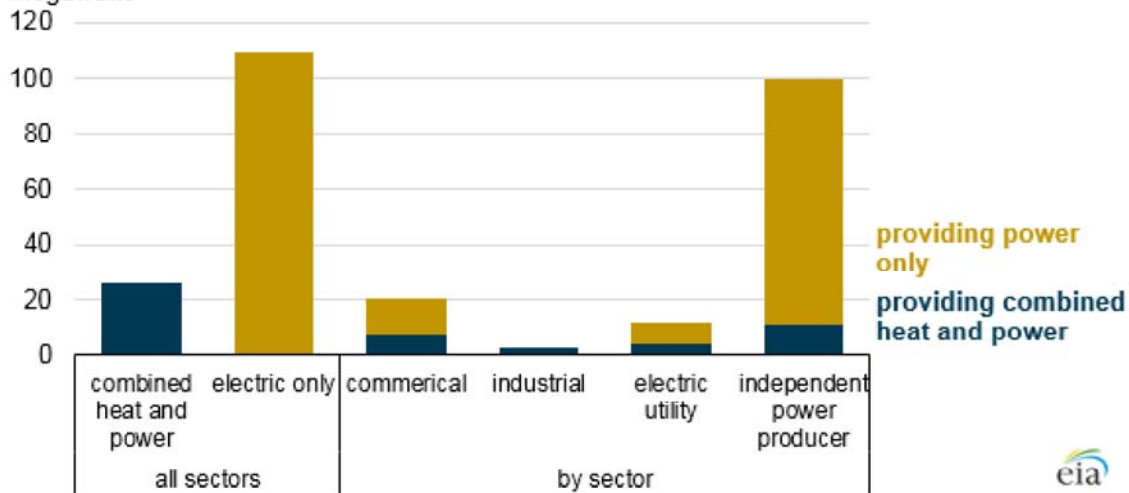


Fuel Cell Use Grows Across United States

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U.S. fuel cell power plant capacity, 2016

megawatts



By Editors of Power Engineering

An estimated 137 MW of **fuel cell** units greater than one MW came online in the United States by the end of 2016, the Energy Information Administration reported. A full 85 percent of that capacity came online since 2013.

That year, fuel cells generated 810,000 MWh of electricity in 2016, representing 0.02 percent of total U.S. electricity generation.

Fuel cell systems typically produce hydrogen gas from hydrocarbon fuels such as natural gas using thermochemical processes such as steam reforming. The hydrogen reacts with oxygen across an electrochemical cell similar to that of a battery to produce electricity and water. Although nearly 85

percent of fuel cell capacity in 2016 used natural gas, landfill gas or biogas from the decomposition of sewage at wastewater treatment plants were also used, potentially allowing the generation from fuel cells to qualify for renewable portfolio standards in certain states.

Fuel cell power plants are sometimes used for backup power at small facilities such as hospitals, as well as power for data centers.

Commercial and industrial sector **fuel cell power plants** are sometimes used in combined heat and power application, meaning they produce heat and steam in addition to electricity. Overall combined heat and power applications made up 26 MW of the 137 MW operating in 2016; the rest provided only electricity.

Fuel cell capacity factors in 2016 ranged significantly, with 8 of the 50 plants in operation for all of 2016 with a capacity factor of 30 percent or lower. Some were operated more frequently with 25 percent of fuel cell generators having capacity factors exceeding 85 percent.

Fuel cells with combined heat and power applications typically had much lower capacity factors than those that delivered electricity only, with median capacity factors of 44 percent and 81 percent, respectively.