WASTE-TO-ENERGY

A look at the potential impact of using fuel cells to turn organic waste into ultra-clean energy

**ANIMAL WASTE**
In the US, large dairy and swine farms produce enough methane to generate 2,100 megawatts (MW) of renewable energy each year. Enough to power 1.75 million homes.

**WASTE WATER**
Only 10% of America's large scale wastewater treatment plants utilize on-site biogas, literally flushing almost 1,500 MW of renewable fuel cell energy down the drain, which could be used to power over 1.2 million homes.

**FOOD WASTE**
If half of the food waste generated each year in the US was converted to biogas and used to generate electricity, it would power over 2.5 million homes.

**DIGESTER**
Farmers, municipalities and food processors use anaerobic digesters like this one to reduce the mass of their solid waste, generating renewable biogas as a waste byproduct.

**ULTRA-CLEAN**
Using biogas to generate ultra-clean power with fuel cells would eliminate almost half a million tons of pollutants and 40 million tons of greenhouse gas emissions, per year; the equivalent of taking seven million cars off the road.

**RELIABLE**
Fuel cells operate continuously, providing reliable baseload power and usable heat at the point of use. The energy lost in the United States from wasted heat in the power generation sector is greater than the total energy use of Japan.

**EFFICIENT**
Direct fuel cells generate about 1/3 more electricity from a given unit of fuel than the less efficient transmission grid. DFC plants also produce high quality heat for facility heating and cooling, increasing overall efficiency.

**ULTRA-CLEAN**

Sources: EPA, EIA, NREL, ORNL