



RENEWABLE PROPANE: A CLEANER ENERGY SOURCE

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Energy producers are pioneering the production of renewable propane. It's essentially identical to traditional propane in terms of its chemical structure and physical properties with one big exception — it's **not made from fossil fuels** [PDF](#). As a result, renewable propane solves a variety of environmental problems and offers additional benefits.

HOW IS RENEWABLE PROPANE MADE?

Renewable propane is made from a mix of waste residues and sustainably sourced materials — including agricultural waste products, cooking oil, and meat fats — rather than fossil fuels like natural gas. In many cases, it's produced as a co-product of biodiesel production. During this process, **feedstocks** [↗](#) go through a series of complex treatments and are then merged with hydrogen in a **process called hydrogenolysis** [↗](#), which purifies the energy content.

WHAT ARE RENEWABLE PROPANE'S ENVIRONMENTAL BENEFITS?

Renewable propane's two primary advantages are:

- **Landfill diversion:** Recycling cooking oil and meat fats into biodiesel and renewable propane helps cut the amount of waste deposited in landfills. In 2018, the U.S. biodiesel industry used more than 7.5 billion pounds of soybean oil and more than 2 billion pounds of corn oil to produce biodiesel. It also used 1.7 billion pounds of yellow grease and 618 million pounds of white grease as **feedstock** [↗](#).
- **Carbon reduction:** Converting animal fats and cooking oils into renewable propane provides an excellent way to reduce demand for landfills, but the conversion is also an ultra-low carbon intensity process that can be scaled up. In vehicle engines, for example, it's low NOx and has a carbon intensity [the amount of carbon by weight emitted per unit of energy consumed] of 19%, which is five times better than diesel and gasoline — and, surprisingly,

more than one-and-a-half times better than U.S. grid electricity.

WHERE IS RENEWABLE PROPANE MADE?

Currently, renewable propane commercial production plants are under development around the world. In Europe, biofuels pioneer Neste Corporation is creating renewable propane as a co-product while producing renewable diesel at its facility in Rotterdam, Netherlands. Neste plans to produce about 160,000 metric tons of renewable propane over a four-year period, which will be [used for transportation applications ↗](#) in Europe.

In North America, there are several renewable propane refiners in operation including Louisiana's [REG Geismar ↗](#) and AltAir Fuels in Los Angeles, California. AltAir Fuels is producing renewable propane while [manufacturing commercial-grade renewable and sustainable jet fuel ↗](#). In addition, energy manufacturer Phillips 66 recently announced that it plans to [convert a California refinery ↗](#) to produce renewable fuels – including biodiesel and renewable propane – from used oils, fats, and greases rather than crude oil.

HOW BIG IS THE RENEWABLE PROPANE SEGMENT?

Global production of renewable propane is currently around 200,000 tons per year, or just under 0.1% of worldwide LPG production. U.S. production capacity across six of the largest refiners is approximately 10.5 million gallons per year.

In Europe alone, about 40 million rural homes are located beyond the gas pipeline grid, many of which are reliant on dated, “dirty” heating oil-based central heating systems. SHV Energy calculates that if 1 million of these off-grid homes switched to renewable propane, the change could remove [as much as 5 million tons of CO2 emissions PDF](#) – an amount equal to eliminating 2.5 million cars from Europe's roads.

The adoption of environmentally friendly renewable propane is an easy and available way to achieve net-zero carbon, and given the ongoing improvements in the technology for making renewable propane, greater amounts of this green energy source are becoming more widely available.

ABOUT THE AUTHOR

Nic Newman is an energy and technology journalist. He has extensive experience and expertise about global energy business issues. He has written for Energy Focus, Energy World, and Renewable Energy World.