



PROPANE & NET ZERO



WHY NET ZERO IS IMPORTANT

“Net zero” refers to achieving an overall balance between emissions produced and emissions taken out of the atmosphere. Propane can help reduce CO2 emissions by replacing heavy carbons like coal, oil and even wood. Its affordability also ensures every consumer can share equitably in the benefits propane brings.

PROPANE DECARBONIZES

Cleaner and renewable energy like propane **accelerates decarbonization**.

- Decarbonization requires more cleaner energy options. The U.S. Department of Energy’s (DOE) Office of Scientific and Technical Information [says](#) that large emissions reductions are achievable through a broad range of opportunities, including the use of low- or zero-carbon alternatives. ¹
- The electric grid isn’t always the cleanest answer. [Currently](#), propane-fueled medium- and heavy-duty vehicles provide a lower carbon footprint solution in 38 U.S. states when compared to medium- and heavy-duty EVs charged from the electrical grid. ²
- Propane is innovating everyday. It is, in fact, the [new diesel](#). Six propane-related projects were part of DOE’s 2020 \$139 million effort to advance innovative vehicle technologies. ^{3,4}
- [Ocean-going](#) cargo ships need to reduce sulfur emissions by more than 80%. Propane is replacing heavy carbon fuels because it meets all current global emissions standards today. ⁵
- [Propane](#) makes ultra-efficient Combined Heat and Power (CHP) technology possible. CHP is on-site generation capable of providing reliable electricity. Unlike centralized electrical generation plants that operate at only 33% efficiency, CHP systems capture heat and achieve total system efficiencies of 60-80% for producing electricity and useful thermal energy. Some systems achieve efficiencies approaching 90%. ⁶
- [Solar](#) and wind have improved greatly but can’t improve much more. The physics boundary for silicon photovoltaic cells, the Shockley-Queisser Limit, is a maximum conversion of 34% of photons into electrons; the best commercial PV technology today exceeds 26%. For wind turbines, the Betz Limit is a maximum capture of 60% of kinetic energy in moving air. Today’s commercial turbines achieve 45%. ⁷

PROPANE ENSURES EQUITY

Access to cleaner, **affordable** and renewable energy like propane **ensures equity** on the path to zero.

- [Urban](#) and rural low-income households, especially African American and Latinx households, spend roughly three times as much of their income on energy costs as non-low-income households. [In](#) February 2021, EIA reported that electricity was 68% more expensive per million BTUs than propane. ^{8,9}
- [Energy](#) should be affordable, so that no one has to go without, but the share of income that low-income households spent on electricity rose by 1/3 in the last decade. ¹⁰
- [Everyone](#) should have access to clean energy and home energy management tools, but utility programs that promote rooftop solar power, electric vehicles, and home energy storage are largely inaccessible to low-income households. ¹¹
- [Emission-free](#) renewable energy isn’t free. Net-metering gives solar customers a credit on their bill when their rooftop panels generate excess power and the utility buys back the power. The power is paid for by other non-solar customers, including low-income households. ¹²
- [Escalating](#) electricity prices are regressive—poorer people pay a higher proportion of their incomes heating and cooling their houses than do richer people. ¹³
- [Electrifying](#) everything will cost an estimated \$20-\$25 trillion dollars over the next 20 years. ¹⁴
- [At least](#) 100 pounds of materials are mined, moved and processed for every pound of battery fabricated and [Amnesty](#) International has reported on the prevalent use of child labor in mining of materials like cobalt and lithium. ^{15,16}

IT'S BETTER WITH PROPANE

- **It's better than grid electricity** – because [more than 60%](#) of energy used for electricity generation is lost in conversion and [nearly 25%](#) of grid electricity comes from coal. Propane has a great [source-site ratio](#) of 1.01, compared to 2.80 for electricity from the grid. Almost no energy is lost as it travels from tank to application. ^{17,18,19}
 - **It's better than natural gas** – because propane is methane-free. Over a 20-year period, one ton of methane has a global warming potential that is [84 to 87 times](#) more than CO₂. ²⁰
- It's better than liquid fuels** – because it vaporizes when exposed to air. It won't harm soil, drinking water or marine ecosystems and is not reactive in the air.

Versus gasoline, propane autogas-powered vehicles significantly reduce emissions: 12% less CO₂, 20% less NO_x, 25% fewer greenhouse gases and up to 60% less carbon monoxide. The numbers versus diesel are even better, plus propane emits virtually no particulate matter [PM 2.5]. ²¹

- **It's WAY better than coal** – because it is [low carbon](#). That's why the U.S. Dept. of Energy classifies it as a clean alternative fuel. ²²
- **And it's renewable** – because it is being [made today](#) by converting plant and vegetable oils, waste greases and animal fat into fuel, all of which are MUCH better than disposal. ²³

Interested to learn more? Check out the Fast Facts at <https://propane.com/environment/>

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FOR MORE INFORMATION

For more information on propane appliances, visit [Propane.com](https://propane.com).

THE PROPANE EDUCATION & RESEARCH COUNCIL was authorized by the U.S. Congress with the passage of Public Law 104-284, the Propane Education and Research Act (PERA), signed into law on October 11, 1996. The mission of the Propane Education & Research Council is to promote the safe, efficient use of odorized propane gas as a preferred energy source.

1140 Connecticut Ave. NW, Suite 1075 / Washington, DC 20036 / P 202-452-8975 / F 202-452-9054