

## 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 CO<sub>2</sub> 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.<sup>1</sup>
- 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.<sup>2</sup>
- 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.<sup>3,4</sup>
- [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.<sup>5</sup>
- [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%.
- [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%.<sup>7</sup>

### ▶ 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.<sup>8,9</sup>
- [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.<sup>10</sup>
- [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.<sup>11</sup>
- [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.<sup>12</sup>
- [Escalating](#) electricity prices are regressive – poorer people pay a higher proportion of their incomes heating and cooling their houses than do richer people.<sup>13</sup>
- [Electrifying](#) everything will cost an estimated \$20-\$25 trillion over the next 20 years.<sup>14</sup>
- [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.<sup>15,16</sup>



## 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. <sup>17, 18, 19</sup>

**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 CO<sub>2</sub>, 20% less NOx, 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). <sup>21</sup>

**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 CO<sub>2</sub>. <sup>20</sup>

**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. <sup>22</sup>

**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. <sup>23</sup>

### ► Interested to learn more?

Check out the Fast Facts at [propane.com/environment](https://propane.com/environment)

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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.

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