



The United States is a leader in the global effort to reduce harmful emissions and slow the impact of climate change, which is increasingly impacting communities at home and abroad. Energy companies and consumers alike have made meaningful investments in new technology to protect the planet, communities, and homes. Like many domestic energy providers, the propane industry is dedicated to innovation and delivering clean, affordable, and reliable energy solutions to benefit all Americans regardless of geography.

Today the propane industry plays a critical role in fighting climate change and helping the U.S. reach its emission reduction goals. The National Propane Gas Association (NPGA) supports an all-of-the-above approach to emissions reductions, which ensures consumers maintain access to a diverse range of clean energy solutions, including propane. The U.S. has an abundant supply of propane, and NPGA's members deliver this clean fuel across all sectors of the economy nationwide. Below, learn more about propane's role in reducing the carbon intensity of U.S. energy sources.

1. The 1990 Clean Air Act included propane on the approved list of clean fuels.<sup>1</sup>
2. The environmental impact of burning propane is much lower than other traditional fuels. Propane emits the lowest levels of carbon when consumed compared to other fuels and about 30 percent less than coal<sup>2</sup>.
3. Propane is a clean<sup>3</sup> and methane-free<sup>4</sup> fuel that provides value in many applications, including home heating<sup>5</sup>, power generation<sup>6</sup>, and transportation<sup>7</sup>.
4. Propane is non-toxic<sup>8</sup>, does not pollute groundwater<sup>9</sup>, and has an ozone depletion potential (ODP) of 0<sup>10</sup>.



5. Propane irrigation engines reduce source energy use by 21%, along with 18% fewer GHG emissions, 20% fewer NOx emissions, and 17% fewer SOx emissions<sup>11</sup>.



6. Propane used in vehicles lowers life cycle greenhouse gas (GHG) emissions over gasoline and diesel<sup>12</sup> and, in many states, electric<sup>13</sup>.
7. Conventional propane has a Carbon Intensity (CI) score in the 80s<sup>14</sup>, renewable propane has a CI score in the 20s<sup>15</sup>, and there are innovative blends of propane being deployed in California with an estimated CI score of -278<sup>16</sup>.

8. Nationwide, over 22,000 propane-powered school buses<sup>17</sup> transport 1.3 million children to and from school every day. Propane-powered school buses reduce NOx emissions up to 96%<sup>18</sup> and can cost 70%<sup>19</sup> less than comparably clean technologies.



9. Propane Combined Heat and Power systems reduce GHG emissions by 15% and NOx by 16% while increasing the efficiency to 90%<sup>20</sup>.
10. When used in a microgrid, propane can reduce CO2 by 92 metric tons over the microgrid's lifetime<sup>21</sup>, and when paired with other renewables, further emission benefits are possible.

11. Propane is a resilient fuel that does not lose efficiency in cold weather<sup>22</sup>.
12. The Department of Energy's Energy Star Program gives propane a source-site ratio of 1.01, which is equivalent to electricity produced by solar and wind<sup>23</sup>.



## References

1. <https://sciencing.com/effects-propane-environment-16139.html>
2. <https://www.eia.gov/tools/faqs/faq.php?id=73&t=11>
3. [https://www.epa.gov/sites/default/files/2020-09/documents/1.5\\_liquefied\\_petroleum\\_gas\\_combustion.pdf](https://www.epa.gov/sites/default/files/2020-09/documents/1.5_liquefied_petroleum_gas_combustion.pdf)
4. <https://www.wtamu.edu/~cbaird/sq/2013/05/02/why-is-propane-stored-in-household-tanks-but-natural-gas-is-not/#:~:text=Propane%20molecules%20consist%20of%20three,have%20a%20permanent%20electric%20dipole.>
5. <https://propane.com/wp-content/uploads/2018/12/Propane-Space-Heaters-versus-Electric-Heat-Pumps.pdf>
6. [https://cdn.microgridknowledge.com/files/base/ebm/microgridknowledge/document/2022/09/1663609083323-finalwhitepapermicrogrids\\_04232021.pdf](https://cdn.microgridknowledge.com/files/base/ebm/microgridknowledge/document/2022/09/1663609083323-finalwhitepapermicrogrids_04232021.pdf)
7. [https://afdc.energy.gov/fuels/propane\\_basics.html](https://afdc.energy.gov/fuels/propane_basics.html)
8. [https://www.nj.gov/dca/divisions/dfs/pdf/ffh1060x\\_ch03.pdf](https://www.nj.gov/dca/divisions/dfs/pdf/ffh1060x_ch03.pdf)
9. <https://texashelp.tamu.edu/wp-content/uploads/2016/02/EB-6027-petroleum-product-storage.pdf>
10. <https://www.cibsejournal.com/cpd/modules/2016-09-fgas/>
11. GHG and Criteria Pollutant Emissions Analysis, Gas Technology Institute (2017)
12. [https://afdc.energy.gov/vehicles/propane\\_emissions.html](https://afdc.energy.gov/vehicles/propane_emissions.html)
13. [https://afdc.energy.gov/vehicles/electric\\_emissions.html](https://afdc.energy.gov/vehicles/electric_emissions.html)
14. <https://ww2.arb.ca.gov/resources/documents/lcfs-pathway-certified-carbon-intensities>
15. [https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/fuelpathways/comments/tier2/b0189\\_summary.pdf](https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/fuelpathways/comments/tier2/b0189_summary.pdf)
16. <https://www.oberonfuels.com/low-ci-lpg>
17. <https://propane.com/newsroom/energy-for-everyone-blog/give-your-child-a-better-ride-to-school/>
18. [https://cloudinary.propane.com/images/v1601044101/website-media/WVU-School-Bus-Emissions-Final-Report-June-2019/WVU-School-Bus-Emissions-Final-Report-June-2019.pdf?\\_i=AA](https://cloudinary.propane.com/images/v1601044101/website-media/WVU-School-Bus-Emissions-Final-Report-June-2019/WVU-School-Bus-Emissions-Final-Report-June-2019.pdf?_i=AA)
19. [https://assets.ctfassets.net/ucu418cgcnu/362sQcGinJzFxFvQFh0DBCr/cb2ee507e5c8f646ee133bfdabbccbf/02\\_Blue\\_Bird\\_Electric\\_Bus\\_Presentation\\_Truck\\_and\\_Bus\\_NOTES\\_V2.pdf](https://assets.ctfassets.net/ucu418cgcnu/362sQcGinJzFxFvQFh0DBCr/cb2ee507e5c8f646ee133bfdabbccbf/02_Blue_Bird_Electric_Bus_Presentation_Truck_and_Bus_NOTES_V2.pdf)
20. GHG and Criteria Pollutant Emissions Analysis, Gas Technology Institute (2017)
21. <https://www.microgridknowledge.com/resources/white-papers/article/11428075/the-benefits-of-propane-generators-for-hybrid-microgrids>
22. [https://assets.ctfassets.net/ucu418cgcnu/362sQcGinJzFxFvQFh0DBCr/cb2ee507e5c8f646ee133bfdabbccbf/02\\_Blue\\_Bird\\_Electric\\_Bus\\_Presentation\\_Truck\\_and\\_Bus\\_NOTES\\_V2.pdf](https://assets.ctfassets.net/ucu418cgcnu/362sQcGinJzFxFvQFh0DBCr/cb2ee507e5c8f646ee133bfdabbccbf/02_Blue_Bird_Electric_Bus_Presentation_Truck_and_Bus_NOTES_V2.pdf)
23. <https://portfoliomanager.energystar.gov/pdf/reference/Source%20Energy.pdf>