

Efficient, Environment-Friendly Propane Fuels Modern Farms

Washington, D.C. - According to a recent Gallup poll, Americans think the environment will be the nation's most important problem in 25 years. As environmental and energy efficiency concerns grow, propane offers farmers a unique fuel source that meets both of these concerns and also is cost-competitive. Propane is produced domestically, predominantly from natural gas, and the supply forecast remains positive and secure.

Propane, or liquid petroleum gas (LPG), is efficient. Ninety percent of propane drawn from tanks is converted to usable energy, which reduces waste and costs. The fuel also offers environmental benefits. Using clean-burning propane as an alternative fuel can reduce greenhouse gas emissions from automobiles and other farm equipment, according to the Propane Education & Research Council (PERC) study *Propane Reduces Greenhouse Gas Emissions: A Comparative Analysis*. Propane emits less carbon dioxide per Btu at the point of use than gasoline, diesel, and even ethanol.

“The world is going green,” said PERC Director of Agriculture Programs Mark Leitman. “As the original environmentalists, farmers have an opportunity to make a large conservation impact and propane’s small carbon footprint and efficiency could be a great asset in that effort with propane’s many uses on the farm.”

Carbon dioxide released per Btu	
Fuel Type	kg CO ₂ /million Btu
Natural Gas	52.8
LPG	62.7
Ethanol (E85)	66.6
Motor Gasoline	70.5
Kerosene	70.7
Distillate Fuel (Diesel)	72.5
Residual Fuel (Heavy fuel oil)	78.6
Bituminous Coal	92.7

On-site emissions estimates based on chemical composition of the fuel with 99 percent combustion.
Source: U.S. Department of Energy (DOE), 1994, DOE/PO-00280 Vol. 2 (October).

Efficient Trucks Drive Farming Operations

It's an undeniable fact that farmers and ranchers need trucks for agriculture operations. Such an important component of the farm needs to be efficient. Due to propane's unique combustion characteristics, it provides efficient energy as an alternative vehicle fuel.

Both light- and medium-duty propane-fueled trucks match gasoline-powered trucks on performance but leave a smaller carbon footprint. The PERC study tested light-duty truck emissions and found that vehicles such as the propane-powered Ford F-150 from Roush Industries reduce greenhouse gas emissions by 19 percent when compared with gasoline-powered trucks.

Most farm operations already use propane so the fuel is readily available and cost-competitive.

Propane Irrigation Engines Pump Up Performance

U.S. farmers rely on approximately 500,000 irrigation pumps for crop production nationwide. Modern propane-fueled irrigation engines also operate more efficiently, which helps farmers reduce fuel use. Preliminary results from a recent University of Nebraska study shows modern propane engines consume approximately 1.5 gallons of propane per gallon of diesel during engine operation. Previous industry thought assumed the ratio was 2 to 1.

In addition, propane-fueled irrigation systems produce 10 percent less greenhouse gas emissions than diesel-powered systems, according to the PERC study. Propane also is nontoxic and insoluble in water, which eliminates any risk of groundwater or soil contamination in the case of a spill or leak.

Green for the Rural Lifestyle

For others who enjoy living in rural America, propane can help them be green in many ways, including water heating and caring for a larger lawn.

Tankless water heaters benefit homeowners and offer an alternative for farmers with sanitation needs in other buildings on their farm. Propane-powered tankless water heaters improve efficiency by heating on demand instead of constantly heating water stored in a tank. This can reduce a household's energy usage by up to 20 percent. Propane water heaters also benefit the environment. When measuring both upstream and end-use emissions, the propane units produce 60 percent less greenhouse gas emissions than electric water heaters.

Reducing lawn-mowing emissions might be as easy as switching the fuel source because propane produces less greenhouse gas emissions than gasoline. Beyond that, propane doesn't leave significant deposits on the engine that can cause premature wear. To document the efficiency of propane-fueled mowing equipment, PERC and the University of Tennessee launched a two-year study to compare the economics, emissions, and performance of both gasoline- and propane-fueled mowers.

"One of PERC's goals is to empower the agriculture industry by providing farmers with an efficient yet environmentally friendly source of energy," says Mark Leitman, PERC director of agriculture programs. "PERC is committed to protecting our environment through the development of innovative, propane-fueled technologies for the agriculture industry."

PERC's vision is that by 2010 the agricultural industry will embrace propane as a preferred energy source that offers cost-effectiveness, efficiency and productivity, reliability, portability, and environmental friendliness.

For more information on PERC and its programs to promote the safe and efficient use of propane in agriculture, call (202) 452-8975 or visit www.agpropane.com.