



## The HBH Gas Systems Green Piece

When you choose Propane, you are making the environmentally responsible decision to steer your off-grid development away from inefficient, carbon-heavy electricity toward more sustainable development fueled by gas:

- Using gas in lieu of electric appliances reduces the average home's carbon emissions by 8.5 tons per year<sup>1</sup>
- Gas water heaters produce 60% less carbon emissions than electric powered water heaters
- Propane is an EPA approved alternative energy per the Clean Air and Energy Policy Acts
- Propane is non-toxic and insoluble so it offers minimal risk to aquifer and ground water supplies
- 30 wood-burning houses create as much particulate pollution as 30,000 houses with gas logs

Utilization of propane as a clean alternative fuel for high-efficiency gas appliances in lieu of electric appliances reduces the need for energy from power plants. Using propane for just space and water heating reduces the average home's annual carbon emissions by 8.5 tons, which offsets the carbon emissions from one average vehicle!

Propane's versatility allows homeowners to power a wide variety of appliances more economically and efficiently: central heat and air units, water heaters, cooking ranges, dryers, outdoor grills, swimming pool heaters, gas fireplaces, gas lanterns and street lamps, in-line back-up generators, as well as eco-friendly propane-powered lawn equipment.

An enormous amount of coal is used to create electricity every day. Electrical plants emit toxic chemicals like sulfur and nitrogen oxides into our air that create acid rain and the dreaded greenhouse effect. The more electricity we conserve by using gas, the less electricity we'll need to produce, which cuts down on the amount of pollutants that are released into our atmosphere.

In the US, coal-fired power plants spew over:

- 40% of carbon dioxide emissions
- 59% of sulfur dioxide
- 18% of nitrous oxides
- 50% of the particulate pollution, and are the biggest polluters of toxic mercury and hazardous air toxins in the US.

Electricity is one of the least efficient and least environmentally friendly heating options a homeowner can choose. Because of losses at the power plant and in power lines, electricity for space heating is only 30% efficient once delivered to a customer's power meter. In comparison gas systems are typically two or more times as efficient.

At the point of use, propane has a lower carbon content than gasoline, diesel, heavy fuel oil, or ethanol. Natural gas (methane) generates fewer carbon dioxide (CO<sub>2</sub>) emissions per BTU than propane, but natural gas does not break down in the atmosphere and produces a global warming effect 25 times that of carbon dioxide. With its efficiency, versatility and environmental sustainability, propane effectively and economically diminishes the effects of global warming when substituted for other conventional energy sources.

<sup>1</sup>Propane Reduces Greenhouse Gas Emissions: A Comparative Analysis, PERC, June 2007



## HBH & Sustainable Development

The unique quality and capabilities of an HBH Gas System make it the ideal energy delivery model for sustainable development in the new millennium. HBH Gas Systems and Ferrellgas are committed to supporting the economic and environmental principles of sustainable development.

As an Environmental Protection Agency (EPA)-approved alternative green energy recognized by Clean Cities, The Energy Policy Act and The Clean Air Act, propane offers lower greenhouse gas emissions than other fuel options without compromising performance in a wide range of applications.

LP gas contributes to strengthening the three pillars of sustainable development:

- The Economy, by boosting productivity and providing increased savings:

According to Department of Energy research, heating a home with electricity is nearly twice as expensive per BTU as propane gas. In other words, the estimated savings to homeowners using LP gas in lieu of electricity for heating averages about 50% per month. Additionally, the decrease in electric demand reduces the need to build additional coal-fired electric generating plants.

- Social Welfare, by improving living standards through increased comfort and convenience:

Gas offers a number of advantages that simply make life more pleasant. A gas water heater recovers twice as fast as an electric one and makes running out of hot water a thing of the past. Homeowners prefer gas furnaces because they are more comfortable. They produce warmer air than an electric heat pump, which eliminates that "drafty" feeling. A gas dryer dries clothes faster and more efficiently than an electric dryer, and a gas range heats more evenly. Optional in-line propane back-up generators supply uninterrupted power so the home is never affected by an electrical power outage.

- The Environment, by replacing electric power in off-grid homes:

Gas substantially increases efficiency, reduces greenhouse gasses and minimizes particulate emissions when compared to coal-based electric supplies. Switching from traditional coal-based electric generation to LP gas is bringing considerable health and environmental benefits at the local, regional and global levels. From the point of generation to the home, coal-fired electricity is only 28.5% efficient. In a similar comparison, propane gas is about 98% efficient. Without an HBH Gas System, the price of this inefficiency is reflected in homeowners' electric bills as well as the increased demand for more pollution laden coal-fired electric generation.