

The benefits and advantages of Bio LPG

1. AVAILABLE

In 2016, Bio Liquefied Petroleum Gas (LPG) will be coming to Europe. 40,000 tons will be produced per year in Neste's renewable product refinery in Rotterdam and then sold exclusively by 'off-grid', energy supplier, SHV Energy. It will enable users of existing fossil fuels in 6 European countries to reduce their carbon footprint across the full range of standard LPG applications.

2. EASY TO USE

Bio LPG is chemically identical to conventional LPG and can be blended and used by all existing appliances suitable for use with LPG. This means customers can easily enjoy all of the benefits of Bio LPG without having to change or upgrade their equipment or appliance.

3. RENEWABLE

Bio LPG is made from over 10 sustainably sourced and technically approved raw materials with over 60% coming from waste and residues. The remainder are sustainably sourced vegetable oils. Neste is fully committed to sustainability and has an established system for traceability of feed stocks according to EU legislation. Bio LPG is a sidestream of the Neste's NEXBTL renewable diesel process and uses the same raw material base. The Biofuel/liquid status of Bio LPG within each recipient country will be discussed with its national Government and we are confident of its value as a completely renewable fuel.

4. CLEANER

Bio LPG is a far cleaner than the fossil fuel alternatives often used in 'off-grid' areas. We estimate that heating the average European home with Bio LPG, as opposed to an existing 12 year old heating oil boiler, could save up to 5.74 tons of carbon. This would be equivalent to the carbon used to drive 38,249 kilometres in a car or the carbon used to heat that same home for a further 1 and a half years! (See table overleaf for further carbon impact details)

5. THE FUTURE

The Bio LPG that will become available in 2016 is intended as only the start. Both Neste and SHV Energy are looking at future sources and improved methods of making Bio LPG in the future, to help give 'off-grid' customers across Europe the choice of using this unique and environmentally sustainable fuel.

Table 1

Carbon impact of substituting 1 tonne of bio-LPG

<i>Application</i>	<i>Substituted Fuel</i>	<i>CO2 saving (mT)</i>	<i>Equivalents to CO2 savings</i>	
			<i>Car-km eq. *</i>	<i>Home-heating year**</i>
Domestic space heating ♦	Heating oil, new boiler	4.19	27,920	1.14
Domestic space heating ♦	Heating oil, 12-year-old boiler	5.74	38,249	1.56
Industrial heating	Heavy heating oil	4.02	26,813	1.09
Patio/BBQ	LPG	2.44	16,284	0.66
BBQ	Charcoal	7.22	48,105	1.96
Car ♦	Petrol	3.22	21,463	0.88
Cylinder				
Forklift	LPG	2.44	16,284	0.66
Forklift	Electricity	4.80	32,006	1.31
Cooking	LPG	2.44	16,284	0.66

Notes:

**CO2 savings expressed as an equivalent amount of CO2 emitted by driving so many km in an average European car.*

***CO2 savings expressed as an equivalent amount of CO2 emitted by heating an average European home for a year.*

♦ Conversion factors from Fuel Quality Directive