BIOLPG

CLEAN, DECENTRALISED AND EFFICIENT ENERGY JUST LIKE LPG BUT RENEWABLE

www.wlpga.org

THE FACT THAT THESE PROPERTIES ARE GENERALLY OLDER AND NOT ENERGY EFFICIENT AND THEIR INHABITANTS MORE LIKELY TO BE AT THE RISK OF POVERTY MAKES DECARBONISATION VERY CHALLENGING.

VALUE

BIOLPG IS AN OPTIMAL SOLUTION IN HARD CASE TO DECARBONISE AREAS AND SECTORS OF THE ECONOMY

RURAL & OFF GRID AREAS

EXISTING BUILDING STOCK

INDUSTRY

BIOLPG IS THE BEST SOLUTION FOR OF RURAL HOMES.

COST EFFECTIVE

DECARBONISATION

BIOLPG CAN FUEL REQUIRING A GASEOUS FUEL.

HIGH TEMPERATURE INDUSTRIAL PROCESSES

THEIR HEATING PREDOMINANTLY COMES FROM HEATING OIL & COAL

IN THE EU ALONE, ARE LOCATED IN RURAL AREAS THAT ARE NOT CONNECTED TO THE GAS GRID.

40.7 MILLION HOUSEHOLDS

IT IS ABLE TO REPLACE IN EU INDUSTRIAL COMBUSTION

4 TIMES CURRENTLY ACCOUNT FOR ABOUT HIGH CARBON FOSSIL FUELS

LPG BOILERS

BIOLPG CAN BE COMBUSTED IN EXISTING

SAVING BOTH THE

HOUSEHOLD BUDGET,

AND HASSLE FROM SWITCHING TO A NEW HEATING SYSTEM.

2,000,000 LPG BOILERS

THERE ARE AN ESTIMATED IN THE EU THAT CAN LOCK INTO LOWER CO2 EMISSIONS COST EFFECTIVELY.

WITH ITS INHERENT BENEFITS IT CAN ALSO SET THOSE AREAS ON A LOW CARBON PATHWAY

CLEAN

FLEXIBLE

LOW CARBON

BIOLPG CAN BE EASILY AND COST EFFECTIVELY

BIOLPG IS A CLEAN BURNING FUEL THAT PRODUCES

COMBUSTING BIOLPG IN A BOILER PRODUCES

OF HARMFUL AIR POLLUTANTS.

OF PARTICULATE MATTER PM THAN HEATING OIL, COAL, AND BIOMASS

BIOLPG CAN BE UTILISED IN EXISTING GAS BOILERS, THAT ARE MAKING IT A FLEXIBLE FUEL SUITABLE FOR A WIDE RANGE OF APPLICATIONS.

STORED AND TRANSPORTED, IT CAN BE USED IN EXISTING GAS TECHNOLOGIES AND STORED COMPACTLY IN STORAGE VESSELS,

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WHICH SAVES SPACE AND EXPENSE.

3/4 TIMES CHEAPER THAN AN AIR SOURCE HEAT PUMP

TIMES CHEAPER THAN A GROUND SOURCE HEAT PUMP TO INSTALL IN A HOUSE

8/9 TIMES CHEAPER THAN A HYBRID HEAT PUMP, OR COMBINED HEAT & POWER SYSTEM,

90%/99% WHEN USED IN A TYPICAL GAS BOILER, BIOLPG CAN REDUCE AGAINST HEATING OIL.

70%/80% GREENHOUSE GAS EMISSIONS BY

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RURAL ENERGY MATTERS REPORT (2016) – FREE INITIATIVE

MAPPING AND ANALYSES OF THE CURRENT AND FUTURE HEATING/COOLING FUEL DEPLOYMENT (2016) – EUROPEAN COMMISSION

DECARBONISATION AND INDUSTRIAL DEMAND FOR GAS IN EUROPE (2019) – THE OXFORD INSTITUTE FOR ENERGY STUDIES

SPACE AND COMBINATION HEATERS MARKET ANALYSIS (2019) – EUROPEAN COMMISSION DG ENERGY

EMEP/EEA AIR POLLUTANT EMISSION INVENTORY GUIDEBOOK (2017) – EUROPEAN ENVIRONMENT AGENCY

SPACE AND COMBINATION HEATERS MARKET ANALYSIS (2019) – EUROPEAN COMMISSION DG ENERGY
Climate change is happening, and action is necessary. The LPG supply chain has a role to play in delivering cost-effective decarbonisation. Initially, as an immediate like-for-like alternative to high-carbon fuels such as coal and heating oil, and in the long-term, as an agent for deep decarbonisation through Biolpg.

**A Drop-in Alternative**
Biolpg is chemically identical to conventional LPG. It can replace conventional LPG but the two can also be blended and used by existing appliances suitable for use with LPG, without having to change or upgrade equipment or appliances.

**Lower Than Low Carbon Footprint**
The mission behind the development of Biolpg is to further reduce carbon emissions and the environmental impact of LPG, which already emits 35% less CO₂ than coal and 12% less than oil. Biolpg fulfils that mission – it emits 73% less CO₂ than conventional LPG.

**Readily Available**
Biolpg is not an innovation for the distant future. It is already available on the European market in quantities that can service the energy needs of thousands of families and businesses. Currently production is being increased and the market upscaled.

**What is it used for?**
Just like LPG, Biolpg can be used in many different sectors, such as domestic, commercial, industrial, agricultural and for transportation. Wherever heat, light or power is required.

**What is it made from?**
Biolpg is created from renewable and waste materials. The feedstocks undergo a series of sophisticated treatments to purify their energy content.

**Uses & Appliances**

**Sources & Feedstocks**
DEEP DECARBONISATION THROUGH BIOLPG

INITIALLY, AS AN IMMEDIATE LIKE/hyphen.case FOR/hyphen.caseLIKE ALTERNATIVE TO HIGH/hyphen.case CARBON FUELS SUCH AS COAL AND HEATING OIL, AND IN THE LONG/hyphen.case TERM, AS AN AGENT FOR CLIMATE CHANGE IS HAPPENING, AND ACTION IS NECESSARY. THE LPG SUPPLY CHAIN HAS A ROLE TO PLAY IN DELIVERING COST/hyphen.case EFFECTIVE DECARBONISATION.

IS REQUIRED.

LIGHT OR POWER WHEREVER HEAT, TRANSPORTATION, AND FOR AGRICULTURAL, INDUSTRIAL, COMMERCIAL, DOMESTIC, SECTORS, SUCH AS DIFFERENT USED IN MANY BIOLPG CAN BE JUST LIKE LPG, USED FOR?

BIOLPG

DRYING, WELDING, CUTTING LIFT TRUCKS

FRYING PRODUCTION D U S T R I A L  A P P L I A N C E S

ALTERNATIVE A DROP/hyphen.case IN UPGRADE EQUIPMENT OR APPLIANCES.

ALSO BE BLENDED THE TWO CAN CONVENTIONAL LPG BUT CONVENTIONAL LPG.

BIOLPG IS CHEMICALLY IDENTICAL TO CONVENTIONAL LPG, WHICH ALREADY EMITS 35% LESS CO2 THAN EMISSIONS THE MISSION BEHIND THE DEVELOPMENT OF CONVENTIONAL LPG. THAT MISSION /endash.case IT EMITS 73% LESS CO/two.denom THAN COAL AND 12% LESS THAN OIL.

THE MISSION 2050

BIO/hyphen.caseREFINING POWER TO GAS /parenleft.caseP2G/parenright.case UP TO 20MT IN 2025.

FROM 4.7 MILLION TONNES /parenleft.caseMT/parenright.case TODAY TO HVO/hyphen.caseBIODIESEL IS EXPECTED TO INCREASE SUCH, THE GLOBAL INSTALLED CAPACITY OF TECHNOLOGY SUITABLE FOR HVO

A LARGE NUMBER OF TRADITIONAL OIL REFINERIES IN THE EU HAVE REFINERY TECHNOLOGY SUITABLE FOR HVO (RENEWABLE DIESEL) CONVERSION. AS SUCH, THE GLOBAL INSTALLED CAPACITY OF HVO-BIO-DIESEL IS EXPECTED TO INCREASE FROM 4.7 MILLION TONNES (MT) TODAY TO UP TO 20MT IN 2025.

THE BREAKDOWN OF ORGANIC MATERIAL BY MICRO-ORGANISMS, IN THE ABSENCE OF OXYGEN. THIS PROCESS PRODUCES BIOGAS (SUCH AS BIOLPG). AD IS A KEY PROCESS FOR DEVELOPING A CIRCULAR ECONOMY AS IT ELIMINATES WASTE AND REGENERATES NATURAL SYSTEMS.

A PROCESS THAT USES HEAT, PRESSURE AND STEAM TO CONVERT BIOMASS MATERIALS SUCH AS FOREST AND AGRICULTURE WASTE INTO GASEOUS COMPONENTS THAT CAN BE USED IN VARIOUS APPLICATIONS. GASIFICATION IS ANOTHER SOLUTION USED IN VARIOUS APPLICATIONS. GASIFICATION AND PYROLYSIS

RENEWABLE RAW MATERIALS SUSTAINABLE AND WELL MANAGED. FEEDSTOCK MUST BE FULLY TRACEABLE, TO SUPPORT SUSTAINABLE BIOMASS DEPLOYMENT WHERE IT CAN PROVIDE THE GREATEST BENEFIT.

ONE OF THE CHALLENGES WITH BIOFUEL PRODUCTION IS THE EXPECTATION THAT FEEDSTOCKS WILL BE SCARCE. POLICY-MAKERS SHOULD LOOK TO SUPPORT SUSTAINABLE BIOMASS DEPLOYMENT WHERE IT CAN PROVIDE THE GREATEST BENEFIT.

COAL: 50% OIL: 100%

WHilst FEEDSTOCKS VARY, BIOLPG HAS A TYPICAL EMISSION FACTOR WHICH IS SUBSTANTIALLY LOWER THAN HEATING OIL AND COAL.

-82% (COMPARSED TO COAL)

SOLAR THERMAL BIOLPG PROVIDES FLEXIBLE TOP UP TO HOT WATER AND SPACE HEATING.

SMALL SCALE WIND BIOLPG CAN BE STORED COST-EFFECTIVELY AND BACKUP INTERMITTENT RENEWABLE GENERATION WHEN REQUIRED.

TO INCREASE THE AVAILABILITY OF SUCH ADVANCED MATERIALS, THE LPG INDUSTRY AND ITS PARTNERS NEED THE NECESSARY TIME, TOOLS & TECHNOLOGY.

TO INNOVATE AND TO MAKE THIS CRUCIAL ENERGY TRANSITION HAPPEN TOWARDS 2050.
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BIOLPG CAN FUEL HIGH-TEMPERATURE INDUSTRIAL PROCESSES REQUIRING A GASEOUS FUEL.

IT IS ABLE TO REPLACE HIGH-CARBON FOSSIL FUELS THAT CURRENTLY ACCOUNT FOR ABOUT 22% OF ENERGY USED IN EU INDUSTRIAL COMBUSTION.

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CLEAN

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COMBUSTING BIOLPG IN A BOILER PRODUCES 90%–99% LOWER CONCENTRATIONS OF PARTICULATE MATTER (PM) THAN HEATING OIL, COAL, AND BIOMASS.

FLEXIBLE

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LOW-CARBON

WHEN USED IN A TYPICAL GAS BOILER, BIOLPG CAN REDUCE GREENHOUSE GAS EMISSIONS BY 70%–80% AGAINST HEATING OIL.

THIS CAN BE LOWERED FURTHER WHEN BIOLPG IS CONSUMED IN A HYBRID HEAT PUMP, OR COMBINED HEAT & POWER SYSTEM, AND WHEN ENERGY EFFICIENCY MEASURES ARE INSTALLED.

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* Space and combination heaters market analysis (2019) – European Commission DG Energy


* Mapping and analyses of the current and future heating/cooling fuel deployment (2016) – European Commission

* EMEP/EEA air pollutant emission inventory guidebook (2017) – European Environment Agency