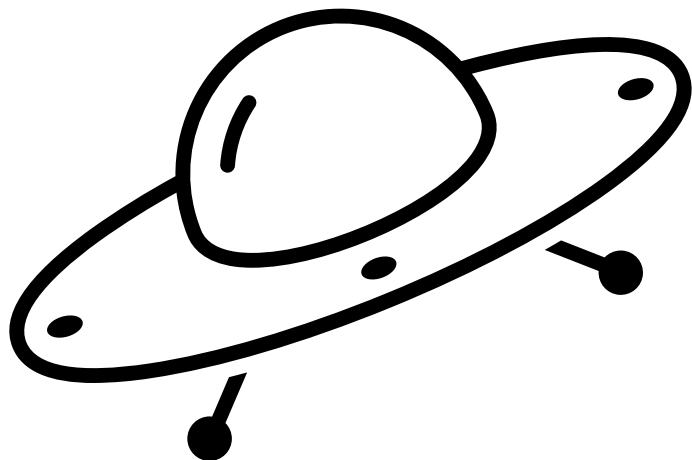


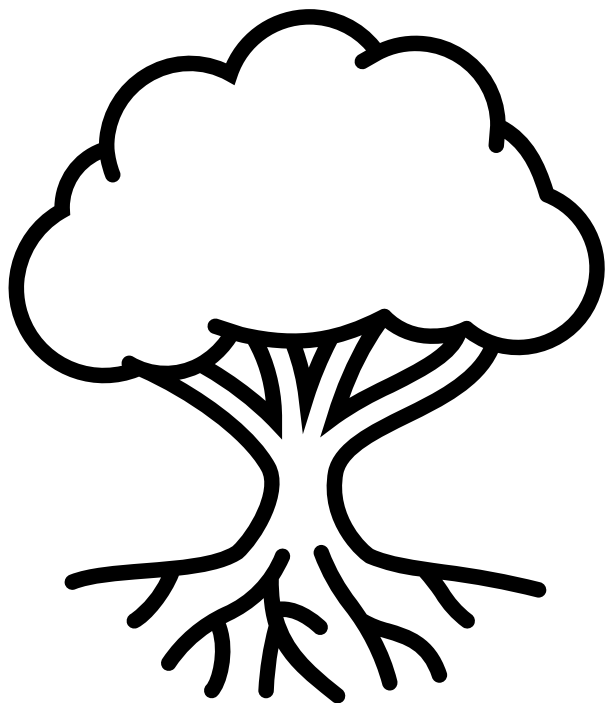


# The EU Green Deal – #FitForLPG

**Esther Busscher, President  
Gasdagarna**  
26<sup>th</sup> May 2021

European LPG Association  
[www.liquidgaseurope.eu](http://www.liquidgaseurope.eu)

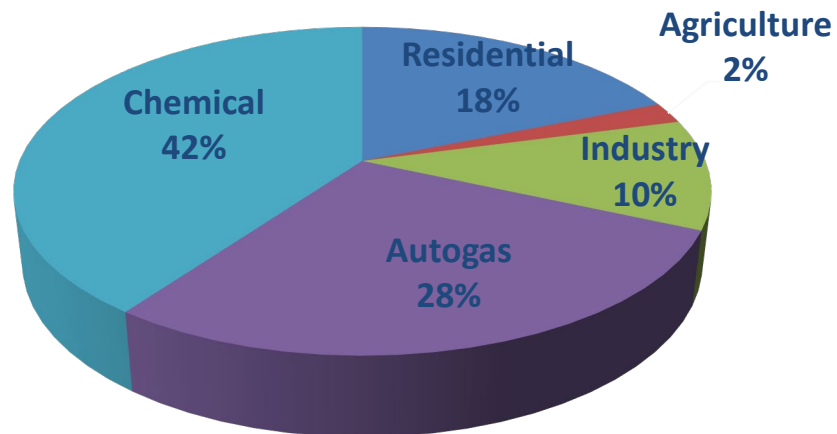




# Market overview



**Total LPG demand in 2019  
= 38.7 million tonnes**



## Top-10 LPG retail markets in Europe

### Residential:

1. Italy
2. Spain
3. France
4. Turkey
5. Germany
6. Portugal
7. UK
8. Poland
9. Romania
10. Netherlands

### Autogas:

1. Turkey
2. Poland
3. Italy
4. Ukraine
5. Bulgaria
6. Germany
7. Romania
8. Greece
9. Netherlands
10. Serbia

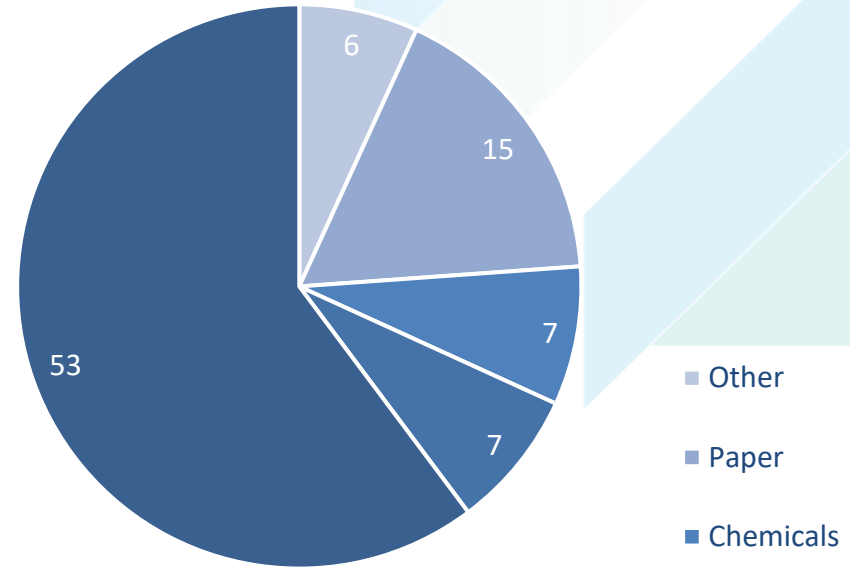
### Industrial:

1. Germany
2. UK
3. Sweden
4. France
5. Finland
6. Poland
7. Italy
8. Norway
9. Turkey
10. Greece

# Industrial market in Sweden



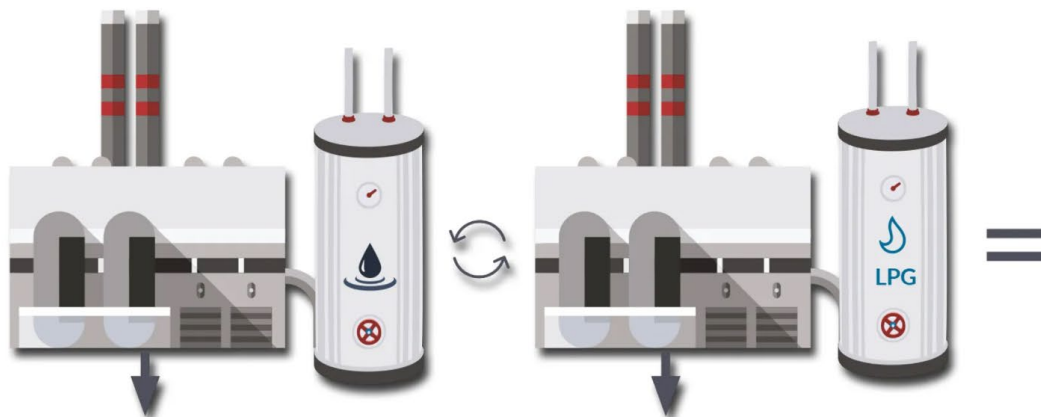
- The Swedish consumption of LPG (gasol) was 4.45 TWh in 2019
- 94% of LPG use in Sweden was in the industrial sector
- The industrial landscape in Sweden is predominantly dispersed, rural and off-grid



# LPG's value to manufacturing industries... and their local communities



Sweden



Gas oil fire-tube steam boiler

LPG fire-tube boiler

LPG → annual CO<sub>2</sub> savings: 15%  
BioLPG → annual CO<sub>2</sub> savings: 78%

76% NO<sub>x</sub> emissions savings

96% Lifetime PM emissions savings

€383,730 Annual energy bill savings

Capital cost payback = < 2 years





Supporting businesses in the energy transition

# The role of LPG and bioLPG in Europe



## Benefits of switching to LPG and bioLPG: Cheese production unit

In France, dairy products are the second largest agri-food industry after meat. France has 700 processing establishments that produce 24 billion litres of milk annually. France ranks second in Europe for producing milk, cheese and butter. The milk industry produces around 1.9 million tonnes of cheese, more than 760,000 tonnes of butter & cream and 2.4 million tonnes of yogurt and desserts (France Agrialimentaire).

Energy consumption in cheese production is needed for:

- Cheese reception (thermization)
- Processing, treatment/storage
- Cooling
- Pressurised air to cleaning

Many of these processes use fuels such as oil in order to perform mid-temperature requirements (75-85°C) for milk pasteurisation and low-temperature requirements for cheese treatment.

Performing these functions can be done at a lower cost if oil is replaced by LPG or bioLPG. We estimate that the levelised cost (LC) of using LPG to fuel these processes is €17.5/MWh, an 11% reduction compared to using oil. Using bioLPG to fuel these processes would marginally raise the LC (higher price premium for bioLPG over LPG) however, the economics are still favourable – LC of using bioLPG is estimated to be 8% lower than oil.



## Benefits of switching to LPG: Bottle manufacturing in Italy

Bottled water is a global business and Italy is one of the most important producer and consumer countries (BWA). Italian bottled water consumption was over 12 billion litres in 2013, the seventh highest in the world. In terms of annual per capita consumption, Italy ranks first in Europe and third in the world after Mexico and Thailand. According to Bevi's annual report (2015), the Italian bottled water industry included 143 companies of different sizes with gross sales of €2.4 billion annually.

According to Italy's energy balance (2019 edition), consumption of oil in the food, beverage and tobacco sector was 1.8 TWh, 16% of overall oil consumption in the industrial sector. Oil is likely to be used to sterilise plastic and glass bottles during the manufacturing process of packaging. The process could be done by using LPG, a lower-carbon alternative than oil.

We estimate that a typical bottle manufacturer in Italy could reduce its annual energy consumption by 17% if it were to use LPG to sterilise plastic and glass bottles instead of oil. With more and more manufacturing companies looking to reduce their environmental footprint throughout the product lifecycle, switching to LPG could enable this. We estimate that by switching to LPG annual carbon emissions would fall by 30%. If the bottle manufacturer were to switch to bioLPG, annual carbon emissions would fall by more than 50%.



## Benefits of switching to LPG: Distillery in Scotland

There are over 120 active distilleries spread across Scotland, which are split into five whisky-producing regions: Campbeltown, Highland, Lowland and Speyside. Scotland's brewing and distilling sector plays a vital role in the Scottish economy; it contributes approximately 3% to total Scottish GDP. The economic contribution from the 'spirits and wines' industry was £3.9bn in 2015.

Many distilleries and brewers are based in rural communities and most remote distilleries use fuel oil to provide energy for steam, which drives the distillation process. Islay, an island located on the west coast of Scotland, has nine distilleries which burn through 15 million litres of fuel oil every year, costing £8 million per year (Pale Blue Dot Energy).

Switching to LPG can result in running cost and carbon emission savings. LPG is a lower-carbon alternative to fuel oil with a carbon footprint that is around 20% lower than fuel oil.

If a distillery in Scotland were to replace their existing oil boilers with a modern condensing LPG boiler, annual running costs would fall by 2.5% per annum, rising to 3% after accounting for servicing and maintenance costs. This annual saving would enable the distillery to payback the capital cost of the new LPG boiler in under five years which is highly appealing.

Furthermore, if the distillery were to utilise bioLPG from 2030 onwards, then annual carbon emissions fall by 81% lower compared to fuel oil. Air quality would also significantly improve as emissions of NOx would fall by 80%.

Switching to bioLPG could bring additional financial and commercial value to the distillery. The distillery could market and advertise that it is using bioLPG in its production process. Consumers, who are increasingly climate-conscious, are likely to react positively to this and this could increase demand for the product, raising revenues. In addition, moving to a lower-carbon production process by switching to bioLPG could encourage suppliers to partner with the distillery, boosting financial performance and profit.



Liquid Gas  
Europe

A close-up photograph of Ursula von der Leyen, the President of the European Commission, speaking at a podium. She has short, wavy blonde hair and is looking upwards and to the right with a serious expression. She is wearing a white collared shirt under an orange patterned jacket. The background is a blue wall with faint, large-scale geometric patterns.

***At the heart is our commitment to  
becoming the world's first  
climate-neutral continent***

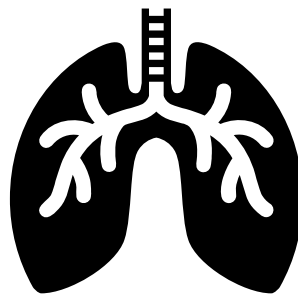
*Ursula von der Leyen, the new Commission President, September 2019*



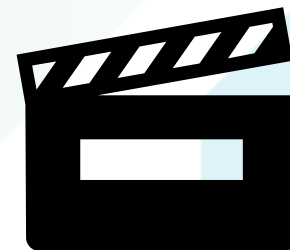
# The LPG industry's long-term vision



**Cost-efficient** solution  
to cut **CO2 emissions**  
from heating  
& transport now



Immediate solution to  
**improve air quality** in  
both cities & rural areas



Technology **ready** for  
tomorrow & will  
**accelerate** emission  
benefits in the long run

# EU framework



Green Deal → 2030 Climate Targets revised → Fit for 55 package

CO<sub>2</sub> Emissions  
Standards

Energy Taxation  
Directive

Renewable  
Energy Directive

Alternative Fuels  
Infrastructure  
Directive

Energy Efficiency  
Directive

Emissions  
Trading System

# #FitforLPG



**BioLPG** must be recognised within European policy frameworks & regulations



European & national policies should cherish **gas efficient technologies** & offer incentives for consumers to **switch to (bio)LPG**



Innovation in, plus **production** of low-carbon & renewable alternative gases should be promoted at EU & member state level

The image is a YouTube video player thumbnail. The background is a scenic aerial view of a mountain valley with a winding road and a river. The title 'BIOLPG: A RENEWABLE PATHWAY TOWARDS 2050' is overlaid in large white and green text. A play button icon is centered over the title. In the top left corner, there is a small 'Liquid Gas Europe' logo and the text 'BioLPG: A Renewable Pathway Towards 2050'. In the top right corner, there are icons for 'Watch later' and 'Share', and a larger 'Liquid Gas Europe' logo. In the bottom right corner, the hashtag '#BioLPG2050' and the text 'The conversation starts now!' are displayed. In the bottom left corner, there is a 'Watch on YouTube' button.

BioLPG: A Renewable Pathway Towards 2050

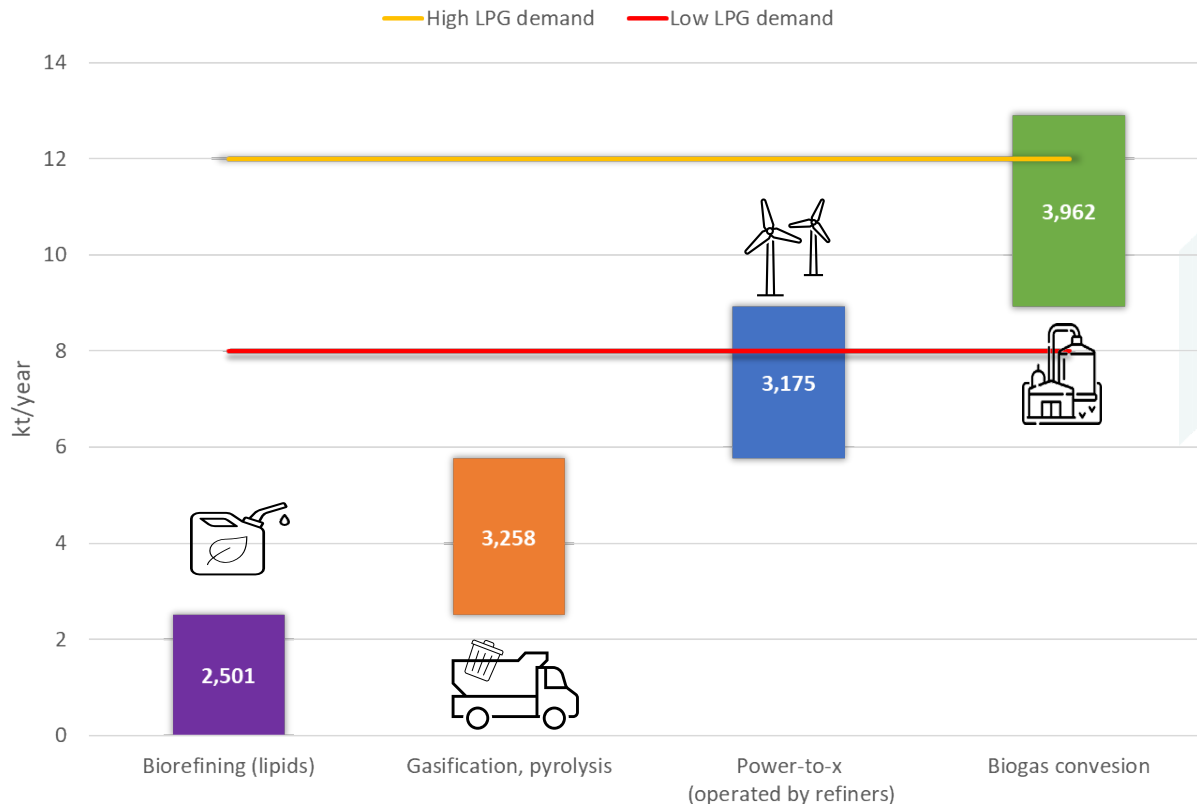
Watch later Share

**BIOLPG:**  
**A RENEWABLE PATHWAY**  
**TOWARDS 2050**

#BioLPG2050  
The conversation starts now!

Watch on YouTube

# 2050 bioLPG pathways

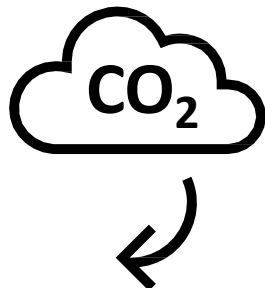


The European LPG market can be 100% renewable by 2050

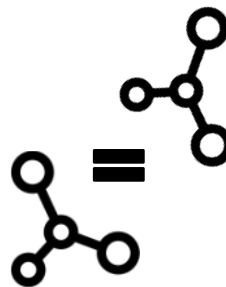
# What is bioLPG



Produced from  
organic  
feedstock  
or  
renewable  
electricity &  
 $\text{CO}_2$



Reduced  
carbon  
footprint  
(up to 80% to  
conventional  
LPG)



Chemically &  
physically  
identical to  
conventional  
LPG



Drop-in fuel  
conforms with  
all LPG supply  
standards



Mass balance  
approach

## RENEWABLE GASES

### A key asset for decarbonisation

#### Renewable gas solutions

**Biogas:** gas that is produced from the decomposition of organic materials, including waste and residues

**Biomethane:** methane produced from biomass through the upgrade of biogas. It has properties close to natural gas. When used in transport we refer to BioCNG and BioLNG, if liquified

**Synthetic natural gas (SNG):** gas with similar properties to conventional natural gas obtained through a power-to-gas process

**Renewable hydrogen:** gas obtained through the electrolysis of water using renewable electricity

**BioLPG:** also known as renewable LPG, is a liquified gaseous fuel obtained from various processes using biological sources or renewable electricity and CO<sub>2</sub>

#### Technologies & processes



**Anaerobic digestion**



**Upgrading of biogas**



**Gasification**



**Biomass pyrolysis**



**Power-to-gas**



**Biorefining**

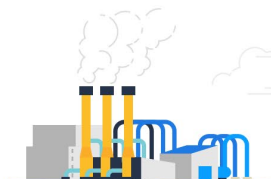
#### End uses & benefits

Renewable and low carbon gases are a cost-effective solution to the decarbonisation of **heating** off and on the grid\*



Renewable gases can keep and create **jobs** in Europe

Biogas production and conversion drives decarbonisation and economic development of the **agricultural sector**, reducing methane emissions and boosting the transition towards a more **circular economy**



Switching to renewable gases accelerates **energy system integration** and contributes to the decarbonisation of **industry** and **electricity production**



Renewable gases are a strong accelerator of carbon neutral **mobility**

**gas**  
**naturally**  
making a clean future real



# LPG industry commitment

- **Advising** consumers and businesses on the possibility and advantages of switching to LPG in the short-term and bioLPG in the future
- **Educating** stakeholders and policymakers about bioLPG and its potential
- **Approaching** investors on possible projects producing bioLPG
- Considering **investing** in the production of bioLPG
- **Joining** consortia applying for EU funding of research projects
- **Sponsoring** industry-funded PhD, collaborating with research labs or offering research grants to research new technology pathways for bioLPG





European LPG e-Congress

# The Green Deal: Fit for LPG

28-30 September 2021

#FitForLPG #EUGreenDeal

The European LPG e-Congress is the largest annual event for the European LPG industry. It aims to bring together both European and global industry leaders, energy professionals, end-users, policy-makers and other external stakeholders.

[Register here](#)



# Tack!



@LiquidGasEurope



European LPG Association  
[www.liquidgaseurope.eu](http://www.liquidgaseurope.eu)