



# Shaping the Energy systems of the future : Offgrid biogas opportunities

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**SHV ENERGY**





**SHV ENERGY**

**28**  
countries

**>30**  
million  
customers

## OUR BRANDS

 **SUPERGASBRAS**

 **CALOR**

 **PRIMAGAZ**

 **PINNACLE**

 **LIQUIGAS**



**喜威中国**  
SHV ENERGY CHINA

 **PRIMA LNG**

 **GASPOL**

 **SUPERGAS**

 **PRIMAGAS**

Source: SHV Energy 2017 report



**~5.4 million mT**  
retail sales  
**~10.4**  
billion gallons



**~5.1 million mT**  
3rd party  
**~10 billion**  
gallons



**17 000**  
employees

# ~114 million EU citizens live in rural areas not connected to a gas grid



**114 MILLION**

EU citizens live in rural areas



**OFF-GRID**

Off-gas grid homes are typically older and less energy-efficient



**45%**

of rural heat comes from heating oil and coal (off-the-gas-grid & non-electrical)



**DIVERSE**

The off-grid building stock is diverse in characteristics



**24%**

of people in rural areas are at risk of poverty or social exclusion



**72%**

of heating & cooling demand of single-family homes is consumed in rural areas



The Future of Rural Energy in Europe (FREE) initiative was created by SHV Energy in 2010 to promote the use of sustainable energy within rural communities. FREE is supported by a variety of stakeholder groups, together giving a voice to all those who believe that rural energy needs are important, and aiming to add new perspectives to the EU's energy and climate debate. Identifying untapped potential in Europe's rural areas to decarbonise and improve air quality in a cost-effective manner. Filling in rural energy data gaps. Engaging and supporting rural communities is essential if government energy, climate and environment policies are to be realised.

We  LPG : safe, efficient, flexible, cost effective!



Cooking



Heating



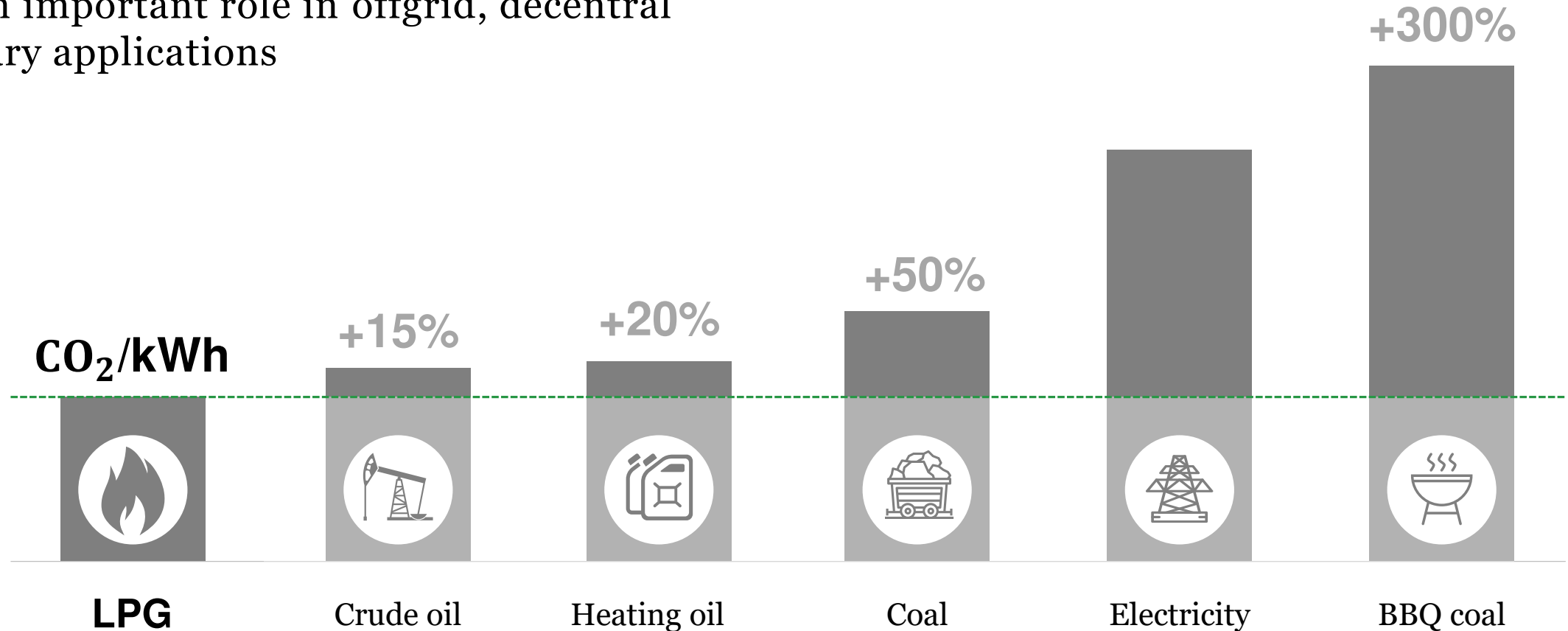
Industrial Processes



Transport

# LPG is lower carbon than other fossil fuels and has very low air pollutant emissions

LPG plays an important role in offgrid, decentral and temporary applications



Source : Ecuity analysis for FREE report 'Scenarios for decarbonising EU homes in rural areas'

# Our environment is changing

## Trends in Renewable Energy (Installed Capacity, MW)



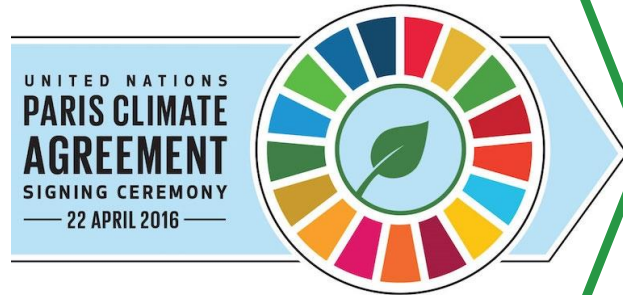
2017: 2 179 099

2007: 992 616

| Year | Year | Year | Year | Year | Year | Year | Year | Year | Year | Year |
|------|------|------|------|------|------|------|------|------|------|------|
| 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |

### MARKET DYNAMICS

Increasing growth of  
renewable energy options



### LEGISLATION

Global agreements, country  
targets & regional political  
pressure



### PUBLIC OPINION

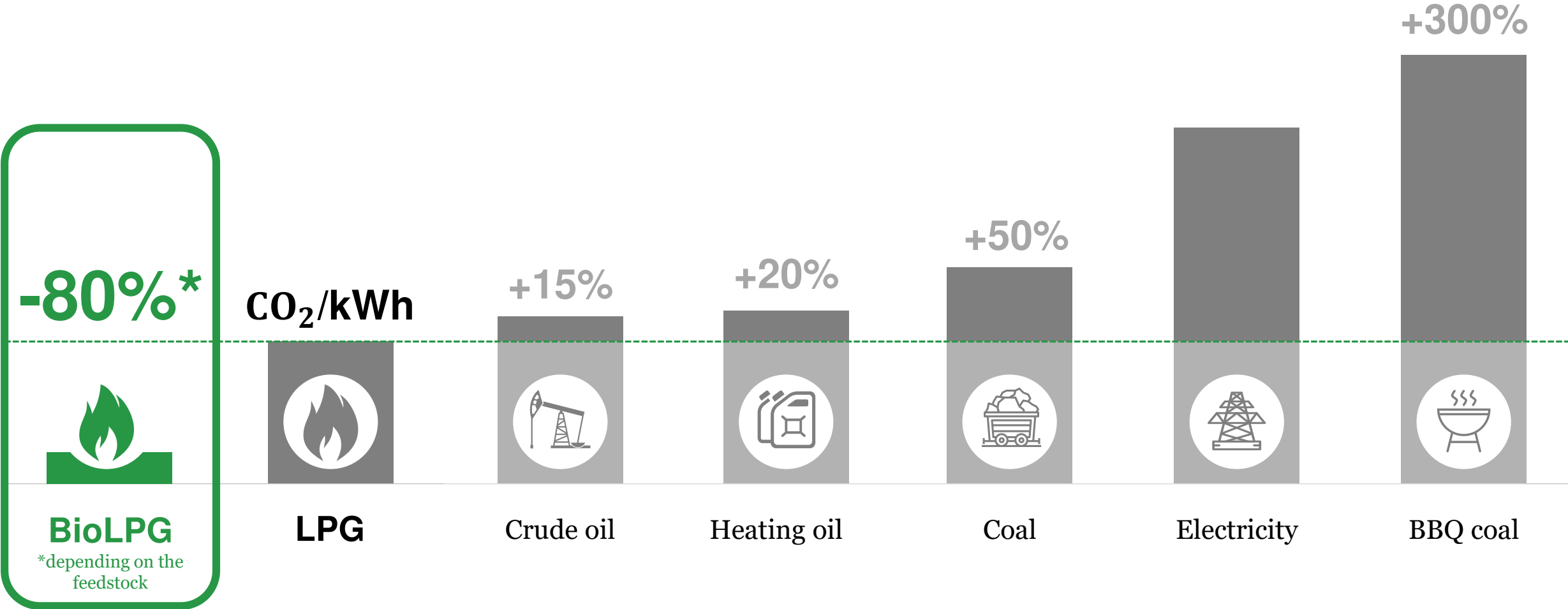
Circular economy  
Reduce, reuse, recycle

Source : IRENA <http://www.irena.org/bioenergy>

27/08/2020

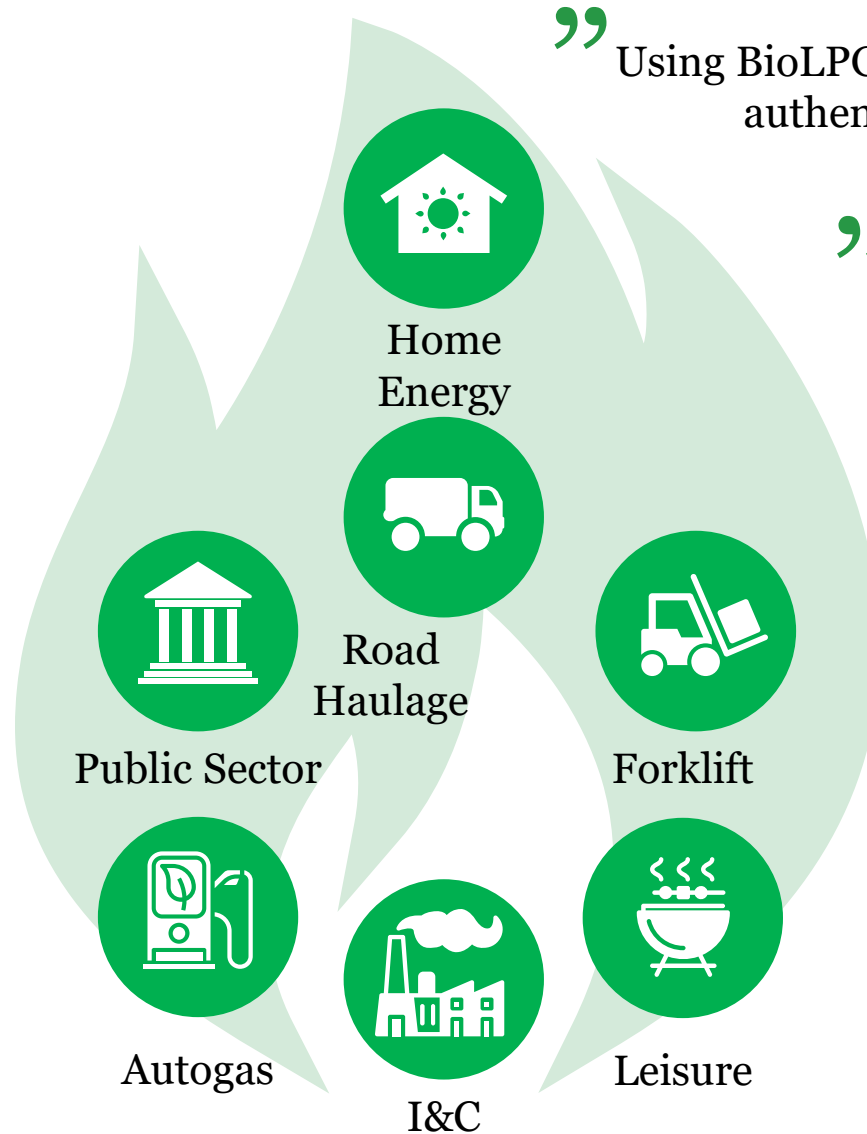


# ... and with bioLPG we can do even better!



Source : Ecuity analysis for FREE report 'Scenarios for decarbonising EU homes in rural areas'

# We have launched bioLPG in 9 countries



” Using BioLPG adds another element of authenticity to my brand.

” Signing up to BioLPG helps my business fast track its way to an Origin Green certificate

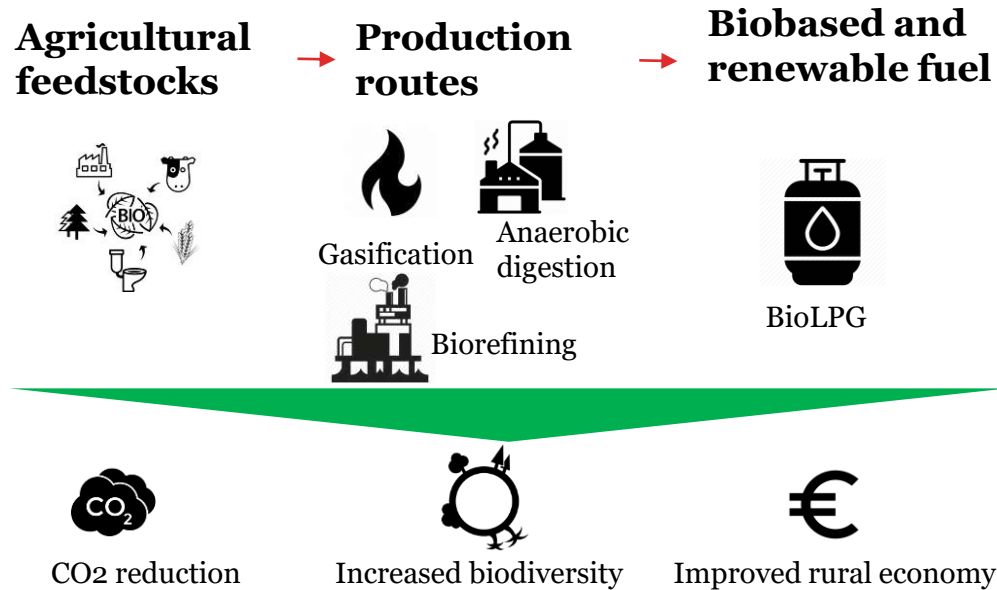
” Investing in BioLPG shows customers and stakeholders that we are a partner in their sustainability goals.

” Switching to BioLPG is an easy change I can make to help reduce my carbon footprint without limiting my lifestyle.



# BioLPG can facilitate the agriculture sector to de-fossilize and contribute to the rural economy

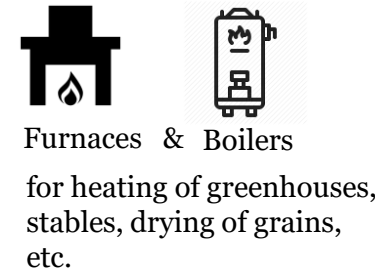
## Production of bioLPG & agriculture



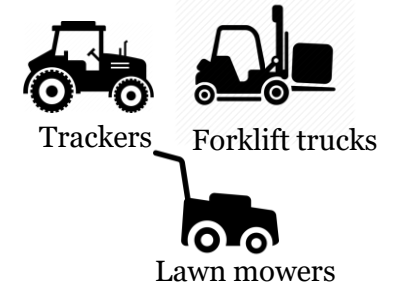
- Production of bioLPG is possible through multiple production pathways using a variety of **agricultural feedstocks** such as cereal straw, manure, biowaste, etc.
- Just like biomethane, bioLPG has a positive impact on emission reductions, it helps **protect biodiversity and preserve healthy soils**.
- The production of bioLPG offers new revenue streams for farmers for their waste and residues generated on farm, thus, contributing to **rural economy**.

## Uses of (bio)LPG & agriculture

### Heating



### Transportation



- **LPG offers a clean and low carbon alternative** to more polluting liquid and solid heating fuels such as **coal and oil**.
- On farm machinery and transportation including tractors and forklift trucks can use LPG as an alternative low carbon fuel to diesel thus contributing to **reduction in process energy emissions** in the agriculture sector.
- **Switching to bioLPG** does not require consumers to change heating appliances or vehicle engines and offers further CO2 reductions.

# Advancing energy through active collaboration

We prioritize offgrid, local and circular solutions

**Seeking strong partnerships around the world and engaging with the scientific community**



Investing in HVO/HEFA production



Investing in new biobased and renewable fuels



Collaborating with universities



### MOVE FROM PILOT TO DEMONSTRATION PHASE.

Using Oberon's DME production facility, move from testing operating procedures (pilot phase) to replicating commercial operation and procedures (demo phase)..



### TEST DME-POWERED VEHICLES IN CA.

Make Imperial Valley a testing ground for DME 100% DME vehicles. IV's extreme conditions and regular routes to the Ports of LA & Long Beach make it an excellent test bed for new vehicle technology. Build fueling infrastructure to support the demonstration vehicles.



# Contact us!



For more information please contact  
[biofuels@shvenergy.com](mailto:biofuels@shvenergy.com)

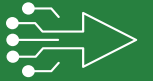
# We are interested to find



**Innovative projects**  
to explore  
conversion routes



**And other interesting collaboration opportunities!**



**New technology solutions & providers**

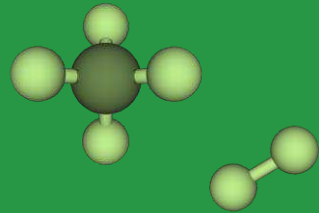


**Feedstock availability**  
and sustainability  
processes



**Circular economy solutions**  
for energy  
transition

## Molecules we are looking for



- ✓ Renewable Propane
- ✓ Renewable Butane
- ✓ BioLNG
- ✓ rDME
- ✓ Green Hydrogen

bioLPG

