



**Sustainable gaseous fuels
for off-grid consumers in
Ireland.**

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Sustainable Fuels Lead
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Who we are

Part of SHV Energy.

17,000 employees supply domestic, commercial, industrial and transport customers in **28 countries**, to **>30 million customers**.

Committed to **5 million tonnes of CO₂ reduction by 2025** and **100% of our energy products to come from renewable sources by 2040**

Our Brands



28
countries

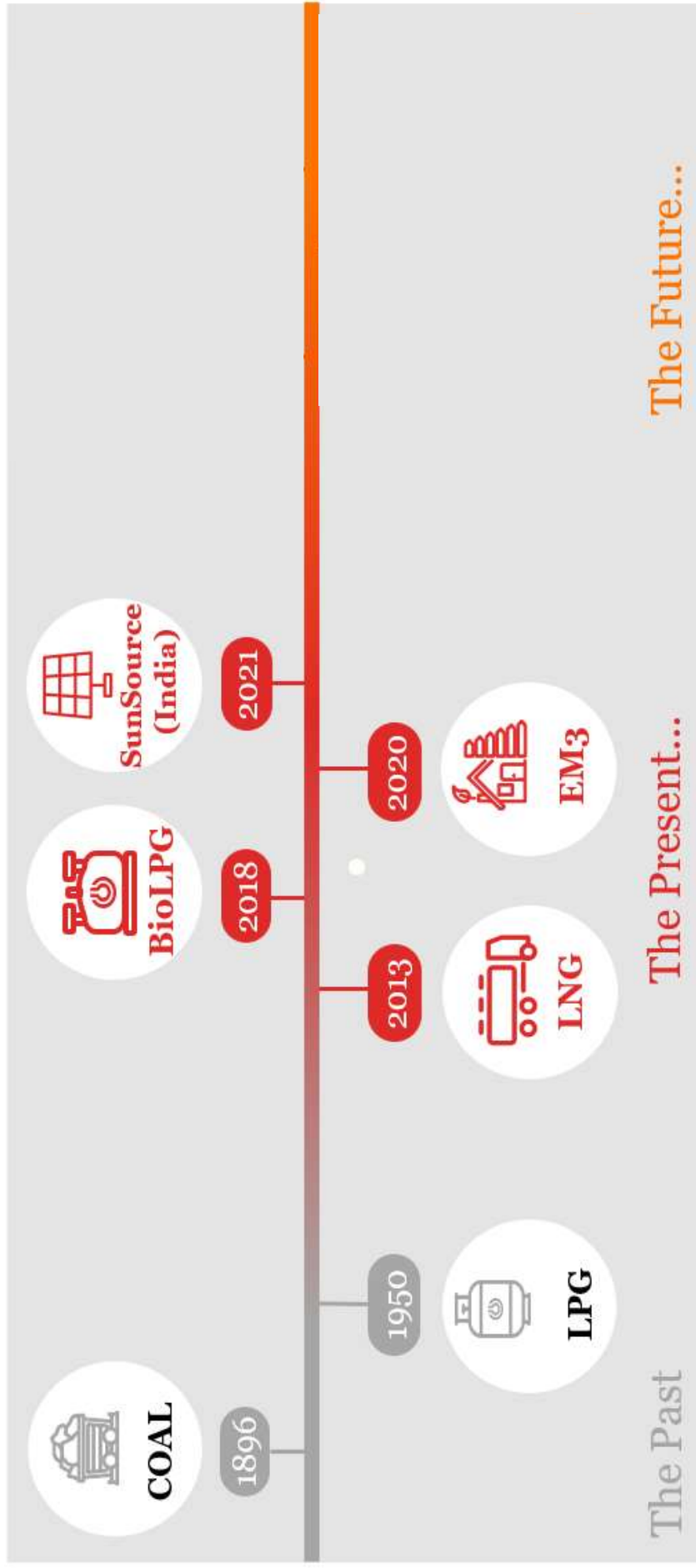
>30
million
customers

2040
100%
renewable
fuels

Source: SHV Energy



SHV Energy Evolution and Product Innovation Roadmap





However our goal is to be 100% sustainable by 2037, our centenary year operating in Ireland.

2018

Our first
renewable
product
launched

Increasing supply
to meet customer
demand

Developing
Alternative
Sustainable Fuels

2037

100% sustainably
sourced fuels



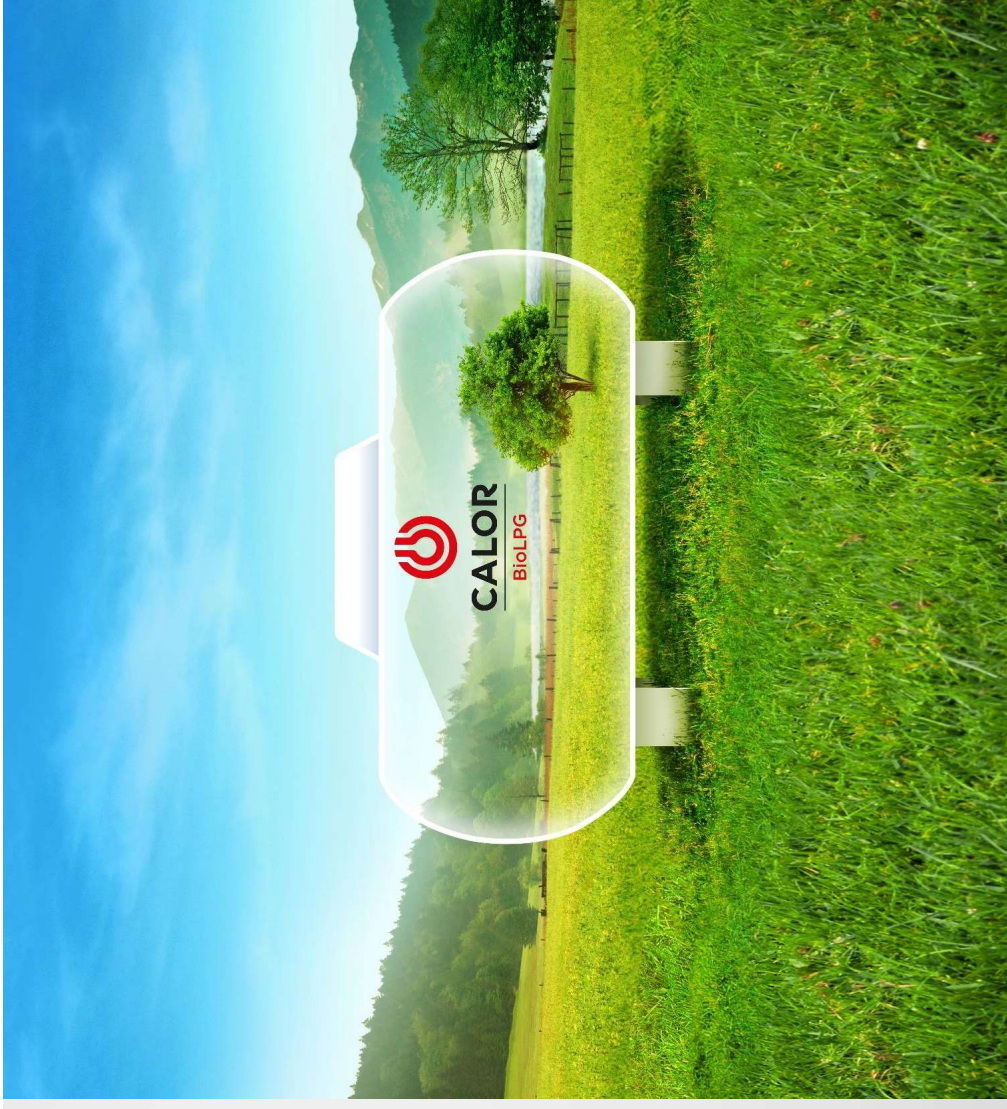
Solution #1: BioLPG

Available in Ireland since 2018 and is a lower carbon, drop-in replacement for conventional LPG

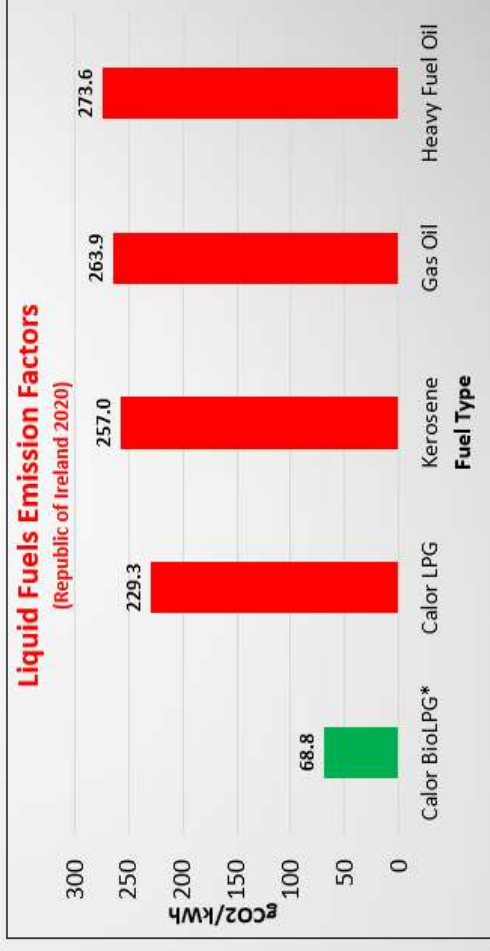
Can be used in the commercial & industrial sectors for multiple applications including;

- Steam generation
- Hot Water Production
- Space Heating
- Forklift Trucks
- Grain Drying

(BioLPG is exempt from carbon tax)



Compared to conventional LPG, when BioLPG is allocated, CO₂ emissions are substantially reduced



All other fuels' values - Reference SEAI.ie, accessed March 2022.

*BioLPG reduces GHG & carbon emissions by a minimum of 50% and up to 90% against set values of fossil fuels, in accordance with the Renewable Energy Directive (RED). BioLPG carbon value of 68.8gCO₂-eq/ kWh is based on a 70% saving against conventional LPG. (229.3gCO₂-eq/kWh SEAI).



Solution #2 – Renewable Dimethyl Ether (rDME)



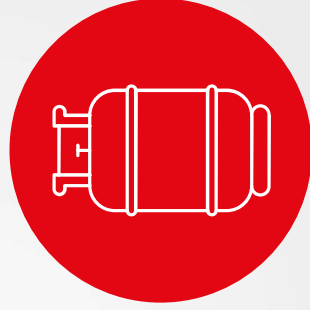
Solution #2: rDME

What is renewable DME?



A simple product

Dimethyl ether is a **single molecule** that can be produced from a wide range of **renewable and recycled carbon feedstocks**.



Easy to handle

rDME is **chemically similar to propane and butane**, and is a gas at room temperature and pressure. Like LPG it is easily transported as a liquid in pressurised cylinders and tanks.



Safe, clean and green

rDME can **reduce CO2 emissions** by up to 85% compared to diesel and heating oil. It's use also significantly improves air quality.



Numerous applications

rDME has been used **for over 50 years in the chemicals sector** as an aerosol propellant. It can also be used in the transport sector, for cooking, as well as domestic and industrial heating.

Futuria DME - Investing into the future

Accelerating the energy transition:

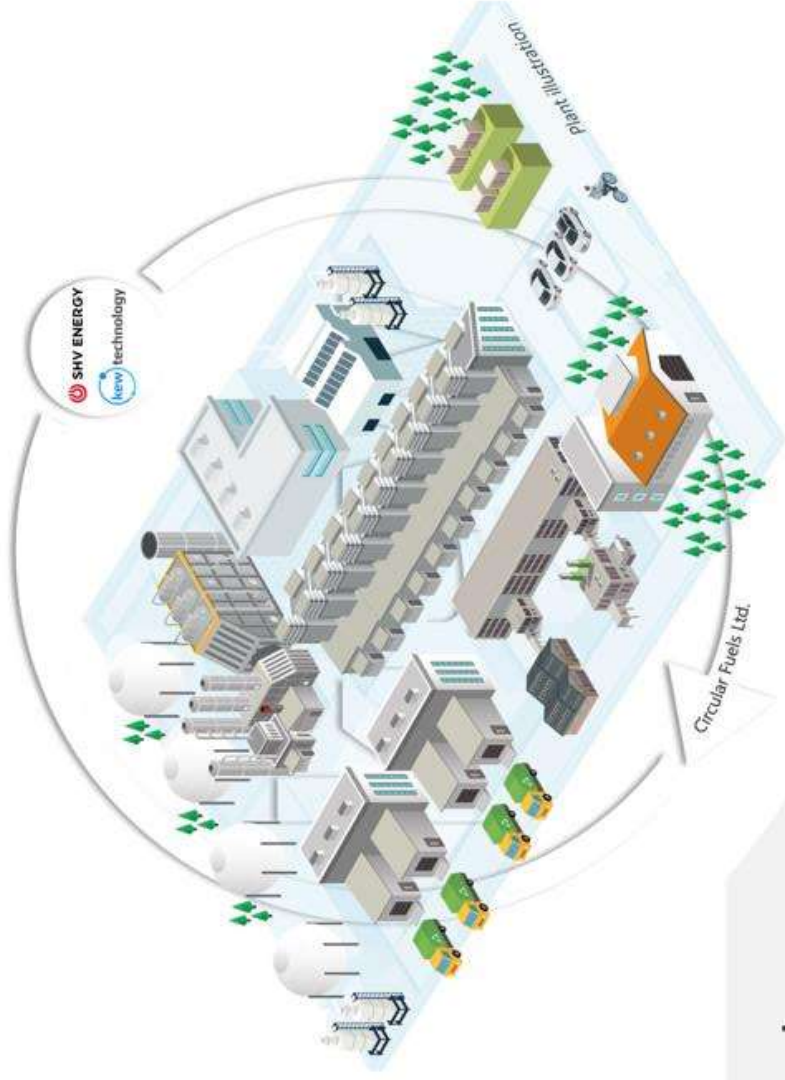
Joint-venture between SHV Energy and UGI

Aggregate investment up to **\$1 billion***.

Advancing innovative gasification technology:

Develop **6** rDME production plants

300,000 tonnes per year by **2027**.



* expected to involve third party investment

Solution #3: BioLNG

Cryogenic Liquefied Natural Gas (LNG) has been available in Ireland since 2019 and is currently used by large industry across the island

High Efficiency Gas Fired Steam generation

- Flue Gas Economisers
- Fully modulating burner
- Eliminate SOx

In 2023 we aim to provide **BioLNG** for our existing customers



Solution #4: Hydrogen

Hydrogen is increasingly seen as a major part of the energy transition and the future energy scenario for our markets around the world.

Right now, most of the world's 'grey' hydrogen is produced industrially from natural gas and coal, which generates significant carbon emissions.

If you capture the carbon emissions either for storage (called CCS) or reuse (called CCU) this can generate 'blue' hydrogen.

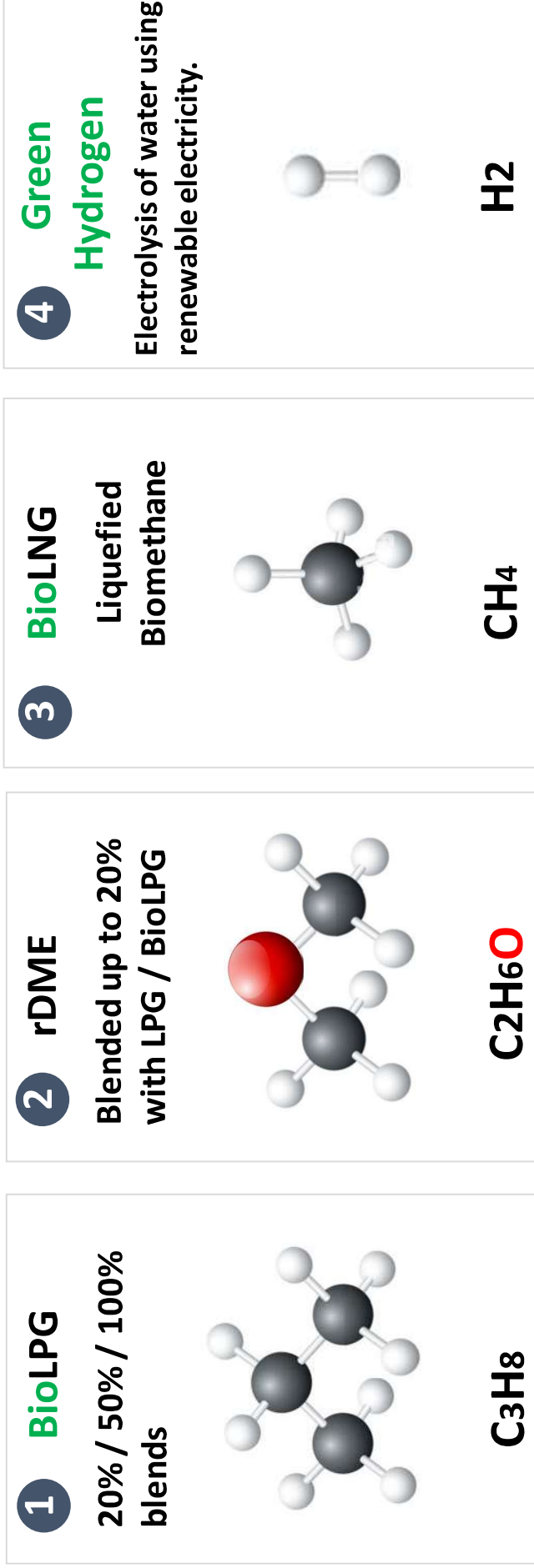
"Green" hydrogen is generated using renewable energy sources, like green electricity from wind and solar.

We are very keen to explore how green H2 can play a role for our off grid customers around the world.



Sustainable Fuels Roadmap

Our strategy is to ensure that the source and supply of our products becomes increasingly renewable and sustainable.



Transition to Net Zero Carbon





Liquid Gas Ireland is committed to working with consumers, industry stakeholders, and policymakers to support Ireland's goal to improve air quality, drive decarbonisation, and achieve net zero emissions by 2050

Feedstocks - Sustainably Sourced



Production Pathways



Calor Sustainability Achievements

100% renewable electricity across all our sites in Ireland including the installation of solar panels

Rainwater Harvesting (including truck wash facilities)

Biodegradable cleaning materials

Increased Recycling of all waste materials

Evaluating Alternative Fuels for our truck fleet including BioLNG and HVO

Route Optimisation Software to maximise logistics efficiency



An aerial photograph of a lush green landscape, likely a rural area, during sunset. The sun is low on the horizon, casting a warm, golden glow over the scene. The landscape features rolling hills, fields, and a winding road. A prominent red rectangular box is overlaid on the lower right portion of the image, containing white text.

Thank You

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