Decarbonising the off-grid energy sector with DME

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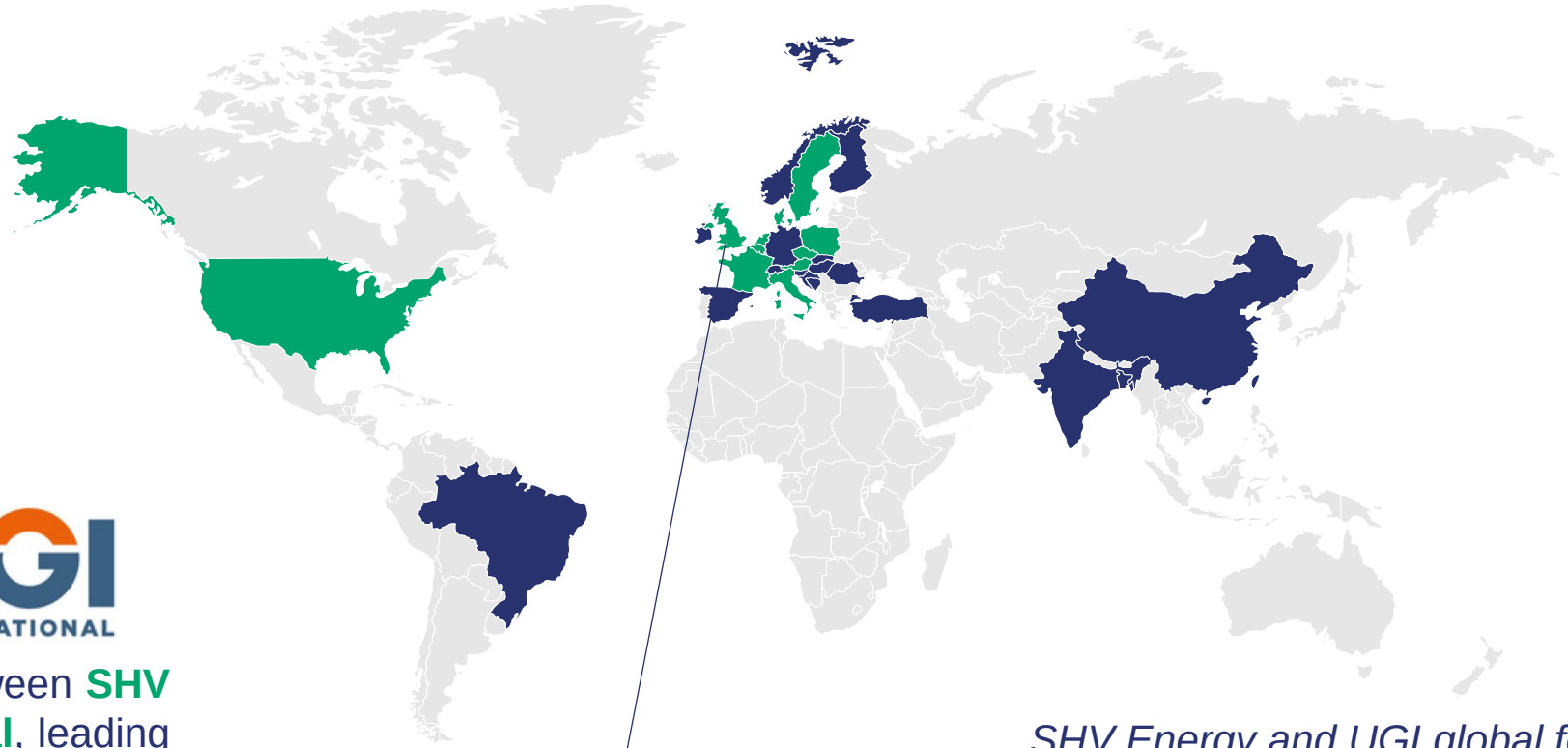
Dimeta: accelerating the energy transition in off-grid areas

We are advancing the production and use of renewable and recycled carbon Dimethyl Ether (**DME**), a low-carbon **sustainable liquid gas**, to support the de-fossilization of the LPG Industry at global scale.



SHV Energy and UGI global footprint

SHV ENERGY

UGI INTERNATIONAL

Dimeta is a joint-venture between **SHV Energy** and **UGI International**, leading global distributors of off-grid energy.

CALOR AVANTIGAS

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Dimeta works across the whole value chain

R&D
Supporting novel routes to commercial production of renewable and recycled carbon DME with targeted **R&D** activities.

PROJECT DEVELOPMENT
Developing opportunities, setting up collaborations and facilitating investment in DME production and infrastructure.

COMMERCIAL SUPPLY
Sourcing DME for **onwards sale** to LPG distributors, for both demonstration and commercial use.

SAFETY & OPERATIONs
Provide expertise on DME **operational acceptance** and **reliability**. Demonstrating cost effective distribution of DME & use in a range of applications.

ADVOCACY & COMMUNICATIONS
Promoting the use of renewable and recycled carbon DME as a solution in the energy transition, in both **blended** and **pure** form. Supporting the development of **regulations and standards** for safe and efficient use.

The UK off-grid energy sector

There are around **2 million** rural off-grid homes in the UK and over **100,000** non-domestic buildings[1]

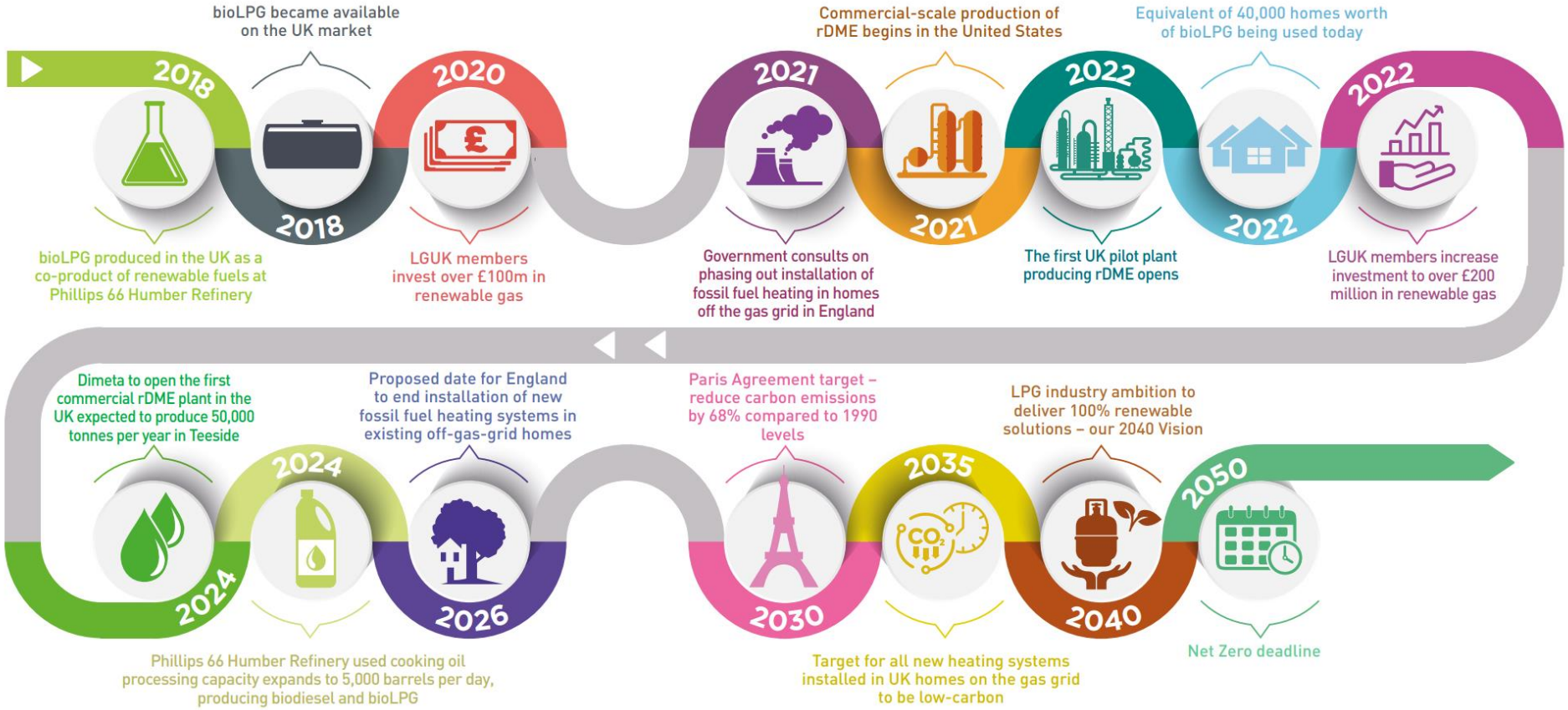
Of these off-grid homes, around 9% heat with **coal** and around 78% heat with **oil**[1]

Renewable LPG is already commercially sold in the UK; **Renewable and recycled carbon DME** can speed-up the transition to renewable fuels alongside other low-carbon heating solutions.

A **mixed technology approach** to decarbonising heating systems in the 1.5 million off-grid rural homes in the UK would save over £7 billion.[2]

1. BEIS (2022) Phase out the installation of fossil fuel heating in homes off the gas grid
2. Liquid Gas UK (2019) Analysis of off-grid heat decarbonisation pathways

A roadmap to being 100% renewable in 2040



Liquid Gas UK Pathway to Net Zero

DME: accelerating the energy transition in the LPG Industry

Simple production

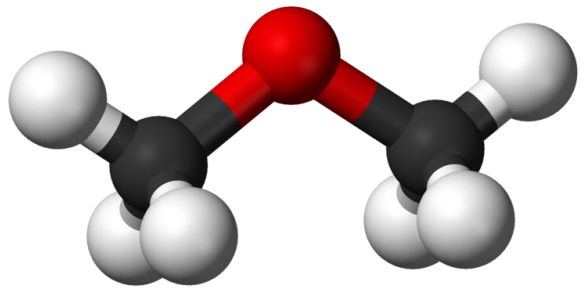
Dimethyl-ether **is a molecule** (CH_3OCH_3) that can be produced from a **wide range of local renewable feedstocks**.

Compatible with the existing infrastrucure

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

Safe, Clean, Green

Renewable DME **can reduce GHG emissions** by up to 85% compared to diesel and heating oil and emits no harmful particulates.



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Dimeta is targeting 300,000 tons/year of DME by 2027

Dimeta are supporting scale-up in renewable and recycled carbon DME supply by:

- Identifying partners and establishing the right collaboration framework for developing production plants
- Supporting partners from pre-feasibility through to financial close
- Partnering in investments
- Providing a long-term stable offtake contract for the total production, backed by international LPG distribution companies

We support plants through all stages of development, in order to secure offtake:

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Circular Fuels Ltd

- **Commercial-scale single-module plant** of KEW's gasification process in operation
- First plant to receive **End of Waste permit** from converting RDF to Syngas
- **Feedstock pre-treatment and pelletization** under installation to enable testing of multiple materials
- **Initial configuration to produce electricity** with an internal combustion engine in cogeneration mode
- **Syngas-to-DME facility** under construction (Completed mid-2023)

Circular Fuels Ltd

ARBORETUM PROJECTS

- Fuel production: 50k tons/year DME
- Location: Teesside, UK
- Feedstock: 250.000 tons/year non-recyclable waste
- Status: Land secured ; planning permission submitted ; FEED underway
- GHG emissions: meet UK government requirements, potential to reduce further with connection to Teesside East Coast CCS cluster

UK

2025

EU

USA

Dimeta partnerships for scaling up supply

- First commercial plant with **Circular Fuels Limited** in the UK in development, planning / permitting submitted on Jan ’23
- Collaboration with **Enerkem** is providing a solid base for our development targets
- New additional collaboration announced in February ‘23 with **NextChem / MyRechemical**
- R&D activity in progress, with member-state R&D funding and an EU Horizon Europe grant application successful

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