Decarbonising Rural Heating – A pathway to Net Zero

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Liquid Gas UK

About us

- Liquid Gas UK is the trade association for the LPG industry in the UK
- Member companies cover over 99% of the total LPG distributed in the UK
- Membership is made up of gas producers & distributors, Equipment & Service Providers, Training Centres, Installers
- Rebranded from UKLPG to Liquid Gas UK

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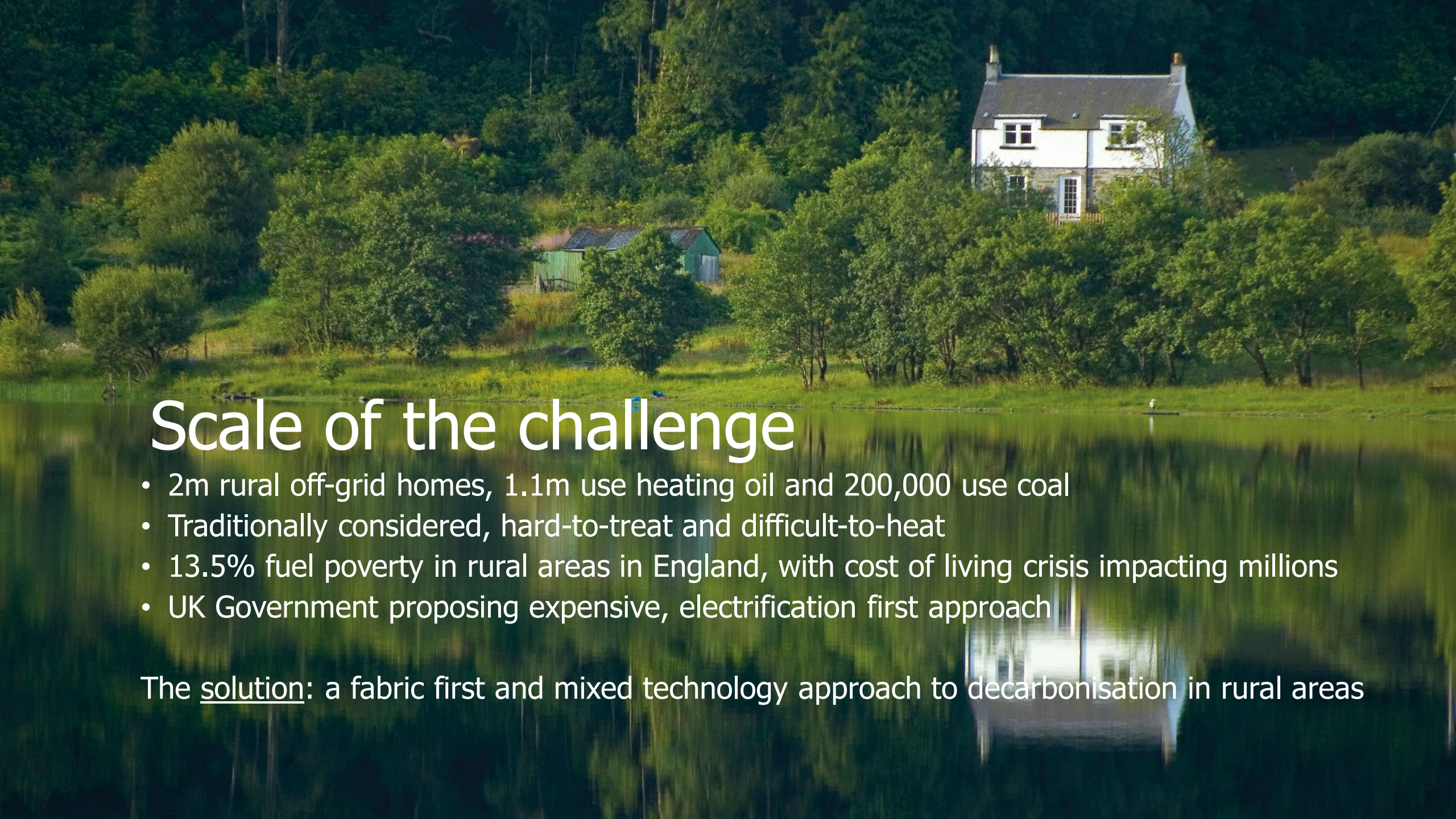


Scale of the challenge

- 2m rural off-grid homes, 1.1m use heating oil and 200,000 use coal
- Traditionally considered, hard-to-treat and difficult-to-heat
- 13.5% fuel poverty in rural areas in England, with cost of living crisis impacting millions
- UK Government proposing expensive, electrification first approach

The solution: a fabric first and mixed technology approach to decarbonisation in rural areas

No one size fits all approach

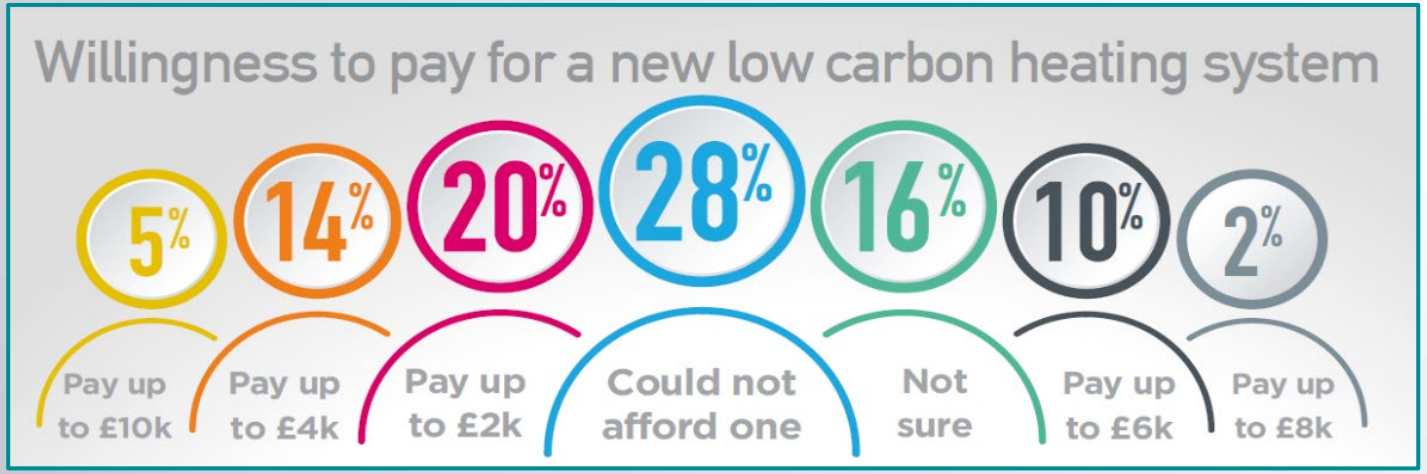
- Research shows, that for 44% of these, hybrid heat pumps or bioLPG would provide an affordable transition
- Need and demand for a mixed technology approach to Net Zero – also saves £7bn

Why can't you take a 'one size fits' all approach?

Whole house approach, Household energy needs, Geographical / Settlement Attributes, Character & Heritage. Lastly, but importantly, cost

Rural households across the UK agree

- **87%** of people support Government allowing a mix of low carbon technologies to allow residents to choose what is best for them.
- **72%** would want a back-up heating system if they relied upon electric heating.
- **88%** felt that Government should take more account of rural people's views.



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The importance of fabric first

- As highlighted in the Rural Services Network 'revitalising rural campaign' – improving energy efficiency is crucial
- **61% of rural households had not improved energy efficiency in the last five years**
- Nearly 20% had installed loft insulation, 16% double glazing and 15% had upgraded to a more efficient boiler

Of those who did not invest in energy efficiency;

- **40%** felt their home was already efficient enough
- **32%** could not or were not willing to pay
- **20%** felt it wasn't a priority

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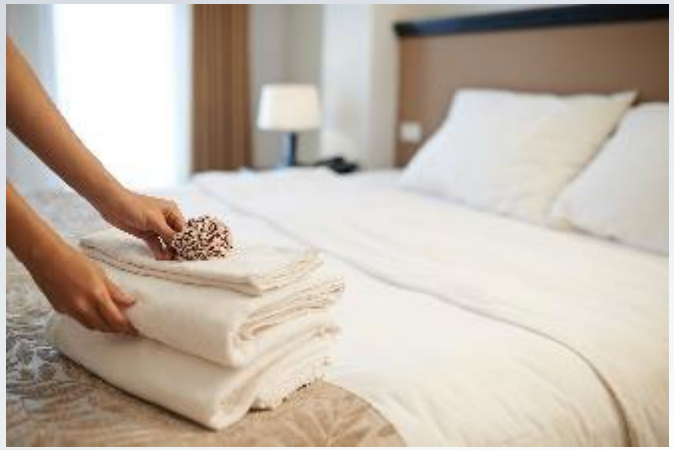
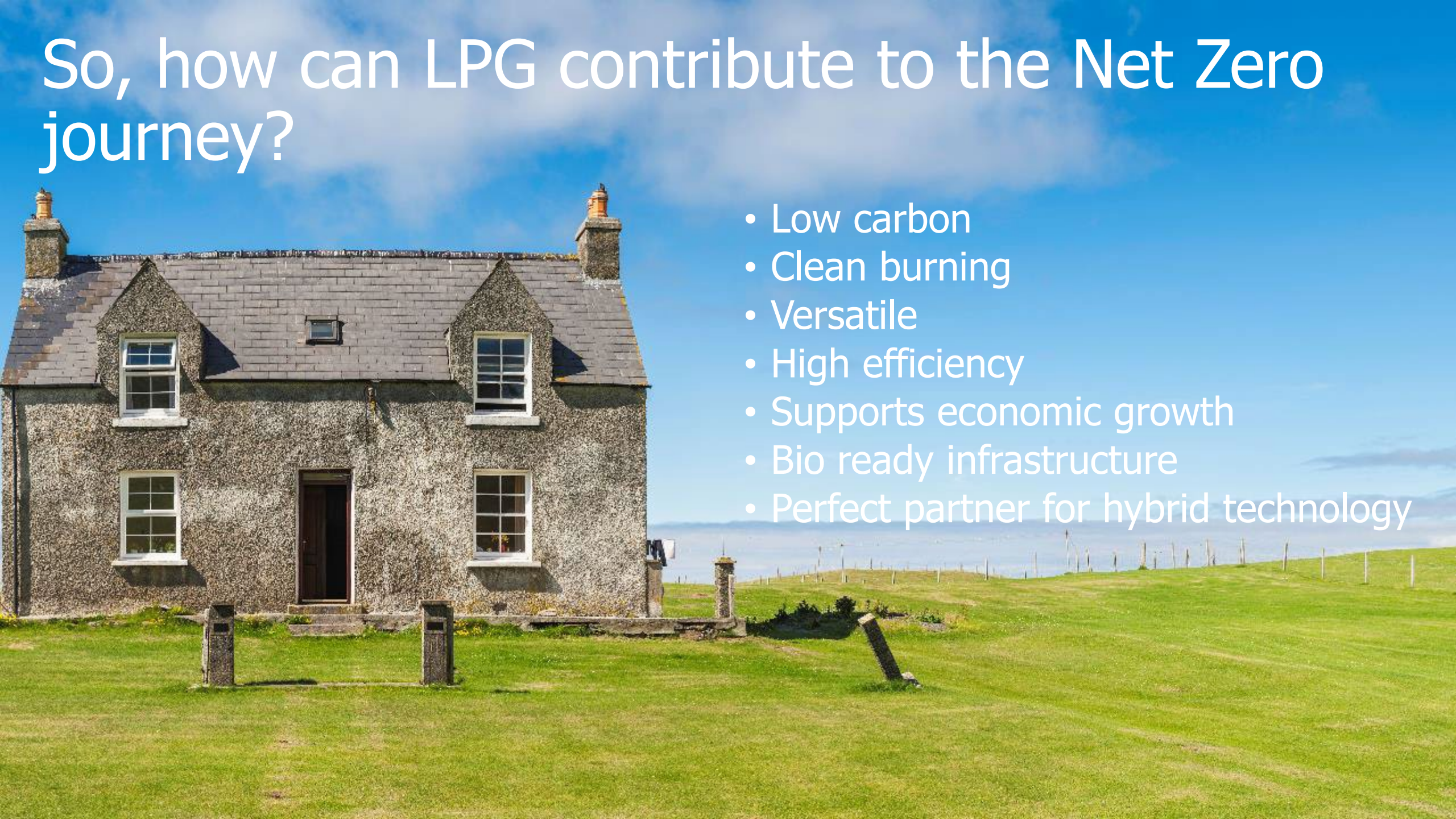
Beyond homes, to business

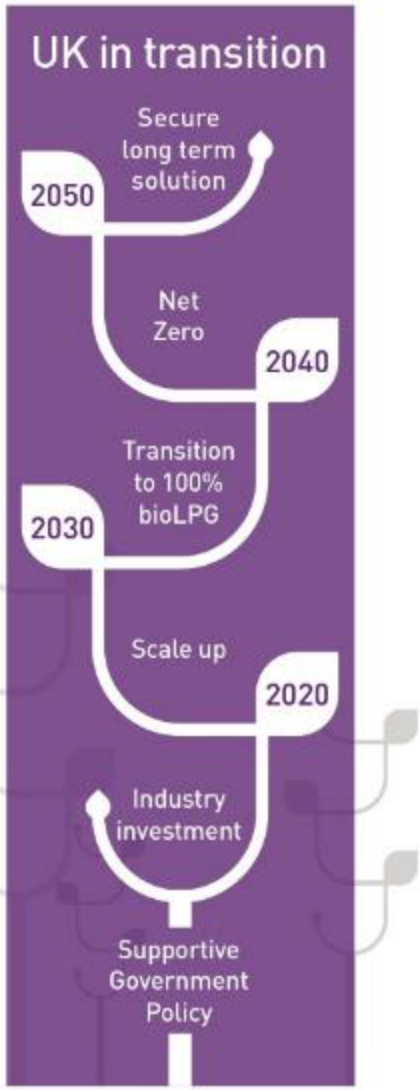


So, how can LPG contribute to the Net Zero journey?



- Low carbon
- Clean burning
- Versatile
- High efficiency
- Supports economic growth
- Bio ready infrastructure
- Perfect partner for hybrid technology

2040 Vision



The liquid gas industry aims to transition fully to bioLPG (also known as biopropane) by 2040.

Industry is keen to demonstrate its role in the UK's net zero future.

It brings a number of benefits:

Renewable: Made from a diverse mix of biological feedstocks and processes.

Low carbon: Up to **90%** carbon emissions reduction while offering the same low NOx, SOx and PM as conventional LPG.

LPG boilers are bio-ready: As bioLPG is a 'drop-in' fuel, LPG infrastructure is ready for the future. This means no retrofit costs and low consumer disruption.

Instant heat: Immediate and expedient heat or hot water.

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Our Net Zero Journey

- Growing since 2018, industry is transitioning to Net Zero
- **£106m** invested into bioLPG here in the UK
- Available on the market, bioLPG already being used by homes and businesses large and small, from Coffee Roasters to Coca Cola
- **First of a kind renewable gas plant** built in the UK
- Globally, circa 226 million tonnes of renewable LPG is expected to be produced per year by 2050

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The benefit of bioLPG in practice

Pre-1918 Detached house

Floor area: 153 m^2

No major renovations (solid brick uninsulated, loft uninsulated)

Annual heating demand: 22,338 kWh / year

There are approximately 42,000 English properties that correspond to this archetype

Cost Breakdown:

Heating System	CapEx (£)	OpEx (£/yr) [2020]	Levelized Cost (£/MWh) [2020]	Carbon Emissions (kgCO2e/yr) [2020]
Oil	4,150	1,658	80	8,299
Coal	5,077	1,478	76	11,599
LPG Boiler	1,900	2,208	94	5,883
BioLPG Boiler	**1,900**	2,605	**110**	1,336
ASHP	13,060	2,472	137	1,979
*ASHP (+R) **	29,690	**1,023**	177	818
Hybrid	13,300	2,329	138	1,850
*Hybrid (+R) **	30,470	1,109	192	825
Biomass	18,100	1,839	123	**543**

Based on annual disposable income for households in England:

68% could afford a bioLPG system

27% could afford an ASHP

10% could afford ASHP with retrofit

If you have any further questions, please contact me on sophia.Haywood@liquidgasuk.org