LPG & LNG Off-grid Gas Supply
CPD
09/01/2018
Learning Aims

- Promoting an off grid energy solution using LPG and LNG
- What LPG and LNG are and their benefits
- Tank opportunities – How/where they can be sited
- Key legislations, Government incentives and Codes of practice
- To increase awareness of other off grid fuels available other than Oil
Calor Overview

• UK Market Leader in bulk and cylinder LPG
• 80+ year History
• Provides energy to over 5 million customers
• Dictionary definition for LPG
• Carbon Trust certified
• BiTC CR Index 86%
Calor Overview

Strong operational infrastructure

- Dedicated LPG terminal
- LPG Storage Caverns
- Largest LPG distributor in UK
- Operators of 7 Top Tier COMAH sites
Calor Overview
What is LPG

• LPG = Liquefied Petroleum Gas

• Stored in cylinders, and in above- or below-ground bulk tanks

• Zero contamination from spillages

• Gas heavier than air; liquid lighter than water
So why LPG?

• Compatible with low carbon and renewable technology

• Versatile: heating, cooling, hot water, electricity, drying

• Cleanest fossil fuel in non-mains areas

• Fixed stable pricing

• Automatic top-up telemetry
Environmental benefits of LPG vs Fuel Oil

• Reduced CO$_2$ emissions
• LPG is cleaner burning
• No soil or water pollution
• Oil storage legislation
• Building owner responsibilities

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kg CO$_2$/kWh
Location and Siting – Above ground

- Maintain visibility and access for tanker driver
- Separation from buildings, boundaries and fixed ignition sources
- Distance determined by tank size
- Integrity and gradient of ground below tanks
Location and siting - below ground

When discreet solution required

Installation area can be returned to grass

Fewer siting constraints

Underground pipework
Site assessment - Hazards

- Sources of ignition
- Fire Walls
- Preventing collision damage
- Security and markings
- High volume storage
Sizing Tanks

- 3 weeks storage at maximum gas demand
- Convert kW to litres LPG/hour (kW/7.08)
- Bulk tanks filled to 87% of volumetric capacity
- LPG tank ‘offtake’ capacity
Metered estates

One tank serves several premises
Similar to mains supply
Metered supply to individual premises
Tank siting flexibility
Case study – Stinsford House, Dorchester

• Distinction between:
  – Calor-owned metered estates, where end users become Calor customers, eg. a housing estate
  – Customer-owned metered estates, where end-users become customers of a business owner, eg. a holiday park
LPG – the logical partner for renewables

- Renewables demonstrate a commitment to reducing carbon footprint
- A reliable back-up fuel will be necessary in most cases
- LPG is the lowest carbon fossil fuel and therefore the logical choice
- LPG will also power CHP units
BioLPG

- Made from 100% renewable feed stocks
- Chemically identical to fossil LPG
- Delivers a minimum 15% reduction in CO₂ emissions compared to conventional LPG
The key acts, codes and legislation

- Climate Change Act - moving towards a lower carbon future.
- Building Regulations Part L (Conservation of Fuel and Power) – homes and buildings need to become more energy efficient
- Climate Change Levy – a tax levied on all energy users of a certain size
- Energy Related Products Directive – requiring all energy using products to be of a certain standard
“Calor welcomes the government’s commitment in the Clean Air Strategy, published today, to phase out the use of oil boilers in new and existing business buildings situated off the gas grid during the 2020s. Calor supports a low carbon transition and has, with parent company SHV Energy, invested in developing and bringing to market bioLPG in early 2018 - a fully renewable fuel which can be converted to deliver energy for both heat and transport in any existing LPG equipment. Furthermore, the deployment of LPG, bioLPG and LNG (liquefied natural gas and biomethane) in rural areas, will help to achieve the government’s decarbonisation targets as these fuels produce far less carbon and are cost competitive with oil”.
LNG - Liquefied Natural Gas
**LNG – Benefits over Fuel Oil**

- Circa 30% reduction in CO2 emissions
- Environmental benefits
- Cost effective in pence per kW (10-15% reduction)
- Less maintenance and servicing
- Pricing aligned with wholesale gas market rather than crude oil
LNG supply via import terminals

- Calor
- Isle of Grain
- European Terminals
- Avonmouth Terminal
- Calor Transport
- Customer
Clean, efficient energy similar to LPG

- Natural gas stored as a liquid
- Cost effective for large industrial customers
- Price stability
- Circa 30% reduction in CO₂ emissions vs. Fuel Oils
Characteristics of LNG

- Colourless, Odourless
- Cryogenic Fuel (-162°C)
- Non – Toxic
- Non – Corrosive
- Lighter than air at ambient temperatures
Summary

• Low cost, Low CO₂ off – grid energy solutions

• Compatible with low carbon and renewable technology

• Fixed stable pricing

• Nationwide availability
Thank you very much!

Any questions?