

# Humanising Energy

## Putting people at the heart of the energy transition

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4º Congreso Internacional del GLP  
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Bogotá



A photograph showing three women from behind, walking away from the camera. They are carrying large, heavy bundles of dry sticks and branches balanced on their heads. The woman in the center is wearing a red top and a patterned shawl. The woman on the right is wearing a yellow shawl with blue and red floral patterns. The background is a dry, hilly landscape with some green vegetation in the foreground. The text "Energy poverty is a reality for billions every day" is overlaid on the image, with "Energy poverty" in orange and the rest in white.

**Energy poverty** is a reality  
for billions every day

climate change looms...



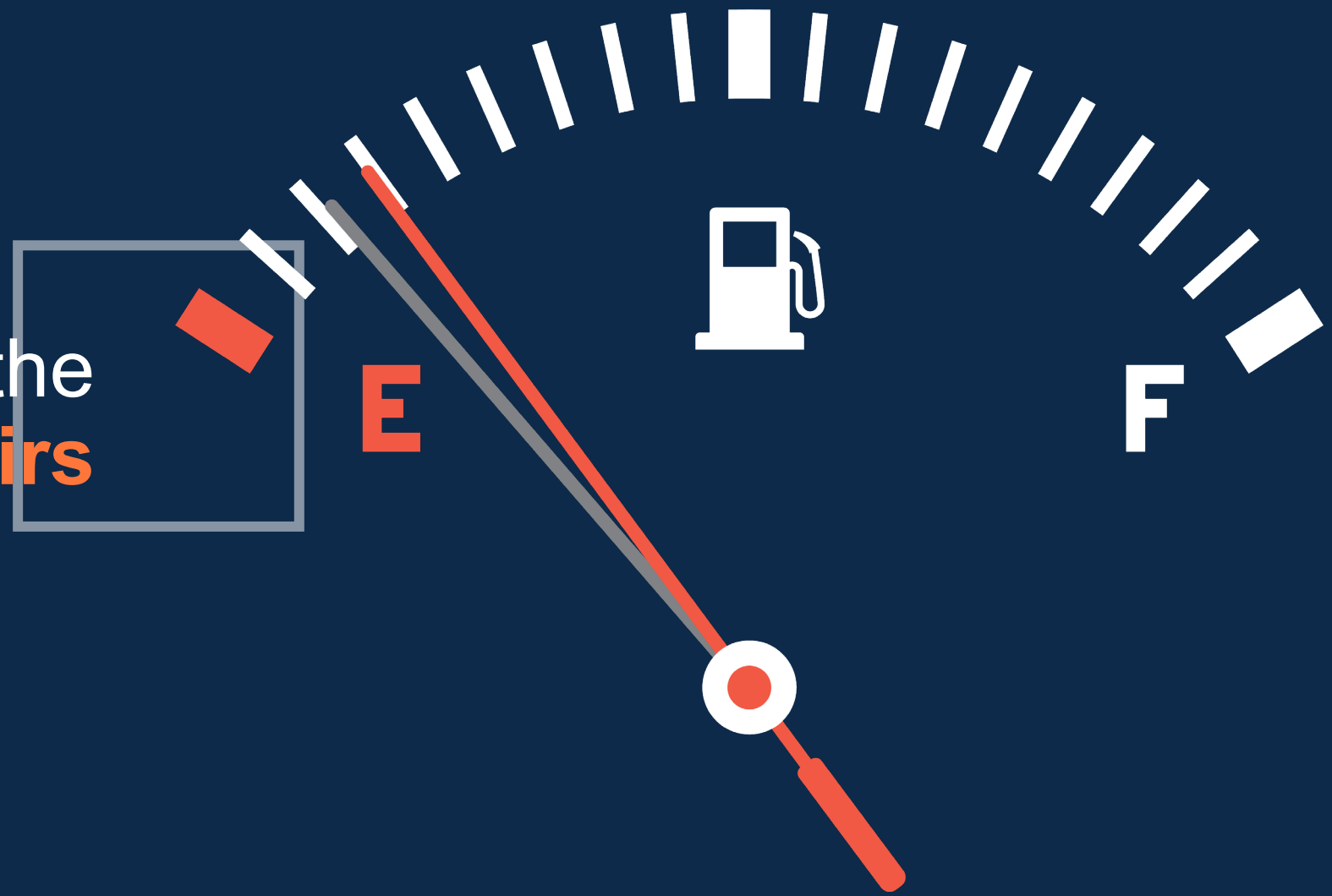


...and is having a regulatory impact  
on the energy sector **worldwide**

the global energy  
landscape **is changing**



fossil fuels are in the  
**policy crosshairs**



RULES

LAW


STANDARDS

a change driven  
by policy

POLICIES

REQUIREMENT

COMPLIANCE



**‘electricity first’**  
policies are emerging  
across the globe



## war in Europe



- what will be the short- and long-term repercussions?
- security of supply is an issue which should favor the LPG industry

A glass jar is tipped over, spilling a large number of coins onto a dark, textured surface. The coins are of various denominations, including copper and silver. The background is dark and out of focus.

## cost of living crisis is global


- unprecedented increases in energy pricing
- knock-on effects on public sector debt



**in all of this,  
where does  
LPG fit in?**



everywhere



LPG is the **only** fuel  
that can make energy  
more efficient and  
reduce emissions  
across the globe

regardless of the level  
of **energy maturity**



# Solutions for sustainable energy transitions

we need our future energy systems to be:

- Acceptable
- Accessible
- Available
- Affordable

# What does unacceptable look like?

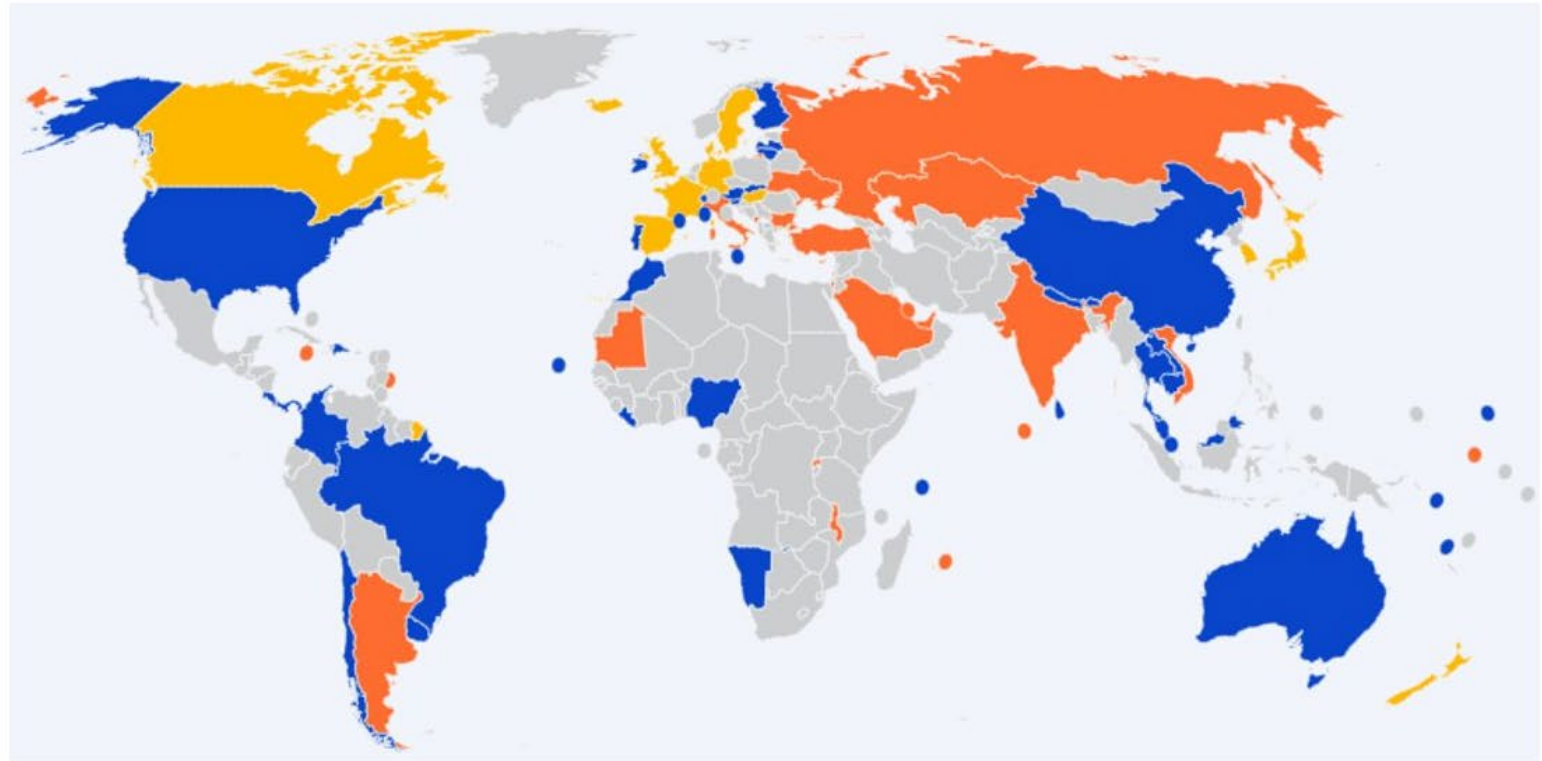
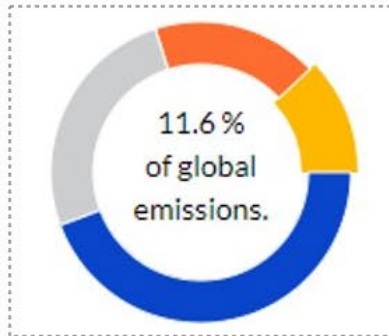


Outdoor air pollution  
- 4.2 million deaths per year

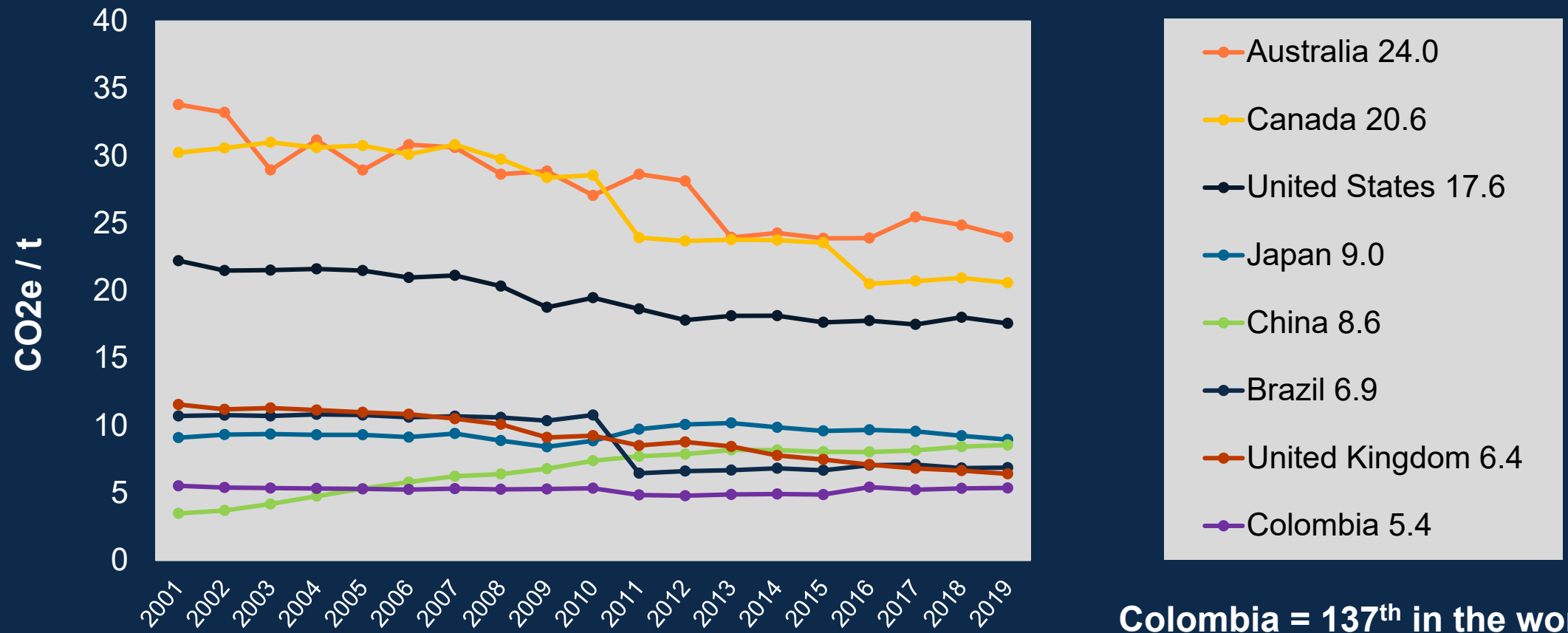
Household air pollution  
- 3.8 million deaths per year



# 83 countries have net-zero targets



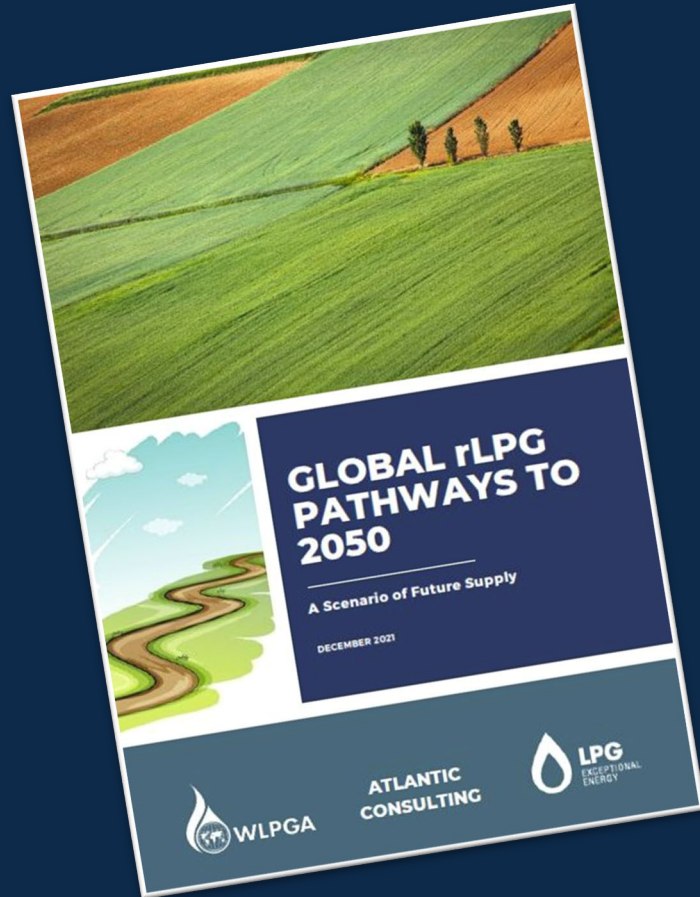
# CO<sub>2</sub>e per capita is generally falling





# **sustainable energy transitions** **with fuel innovation**

# Renewable LPG



- Global working group (50 people)
- Demonstrate credibility that:  
*50% of non-chemical demand for LPG will be met with rLPG by 2050*
- What pathways?
- What value?

# Renewable LPG - national targets



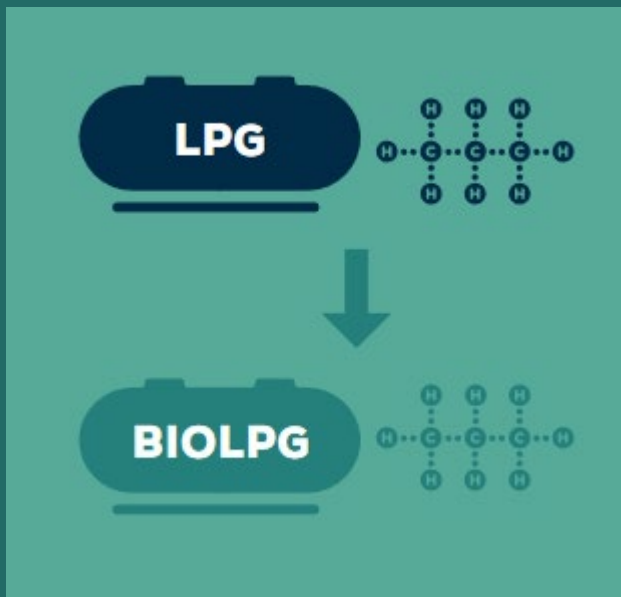
We are not alone:

- EU: 100% by 2050
- UK and Ireland: 100% by 2040
- California: 100% by 2040 (or even 2030)



**BIOLPG**

**CLEAN, DECENTRALISED AND EFFICIENT ENERGY JUST LIKE LPG BUT RENEWABLE**



**A DROP-IN  
ALTERNATIVE**

**Chemically  
identical**



**LOWER THAN LOW  
CARBON FOOTPRINT**

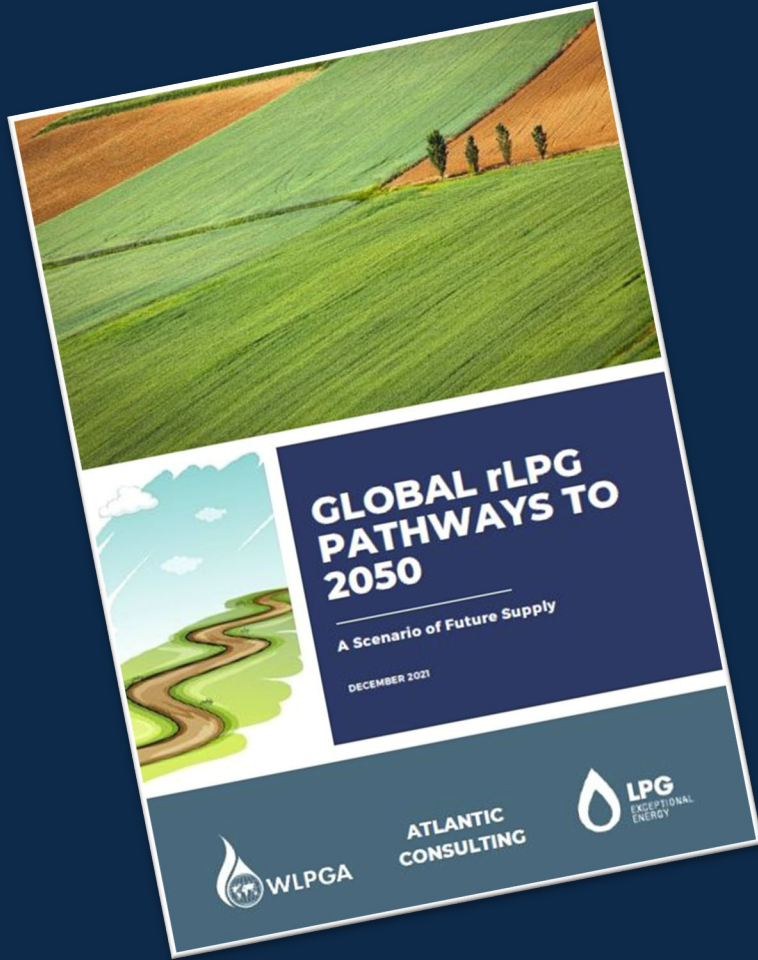
**80% lower CO2 than LPG**



**READILY  
AVAILABLE**

**Being consumed by  
thousands of families  
and businesses today**

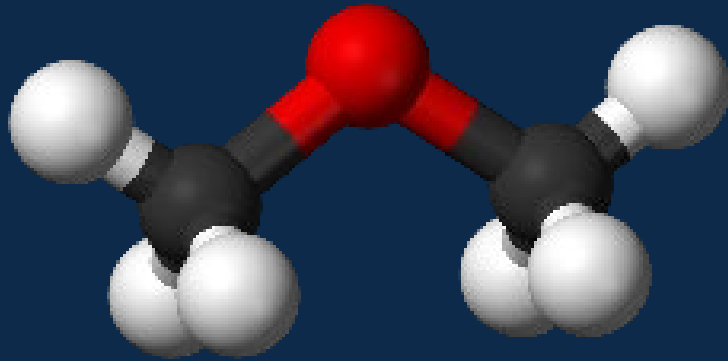
# Renewable LPG projections



- WLPGA report shows that >50% of 2050 non-chemical LPG demand can be met by rLPG...

... and this doesn't include DME

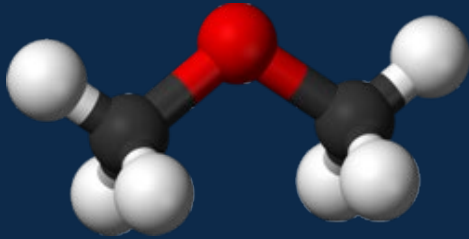
# rLPG – contribution of rDME



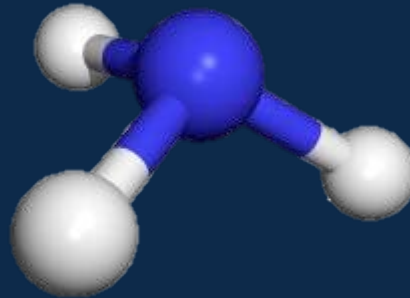
- Safe, clean and green – 50+ years of use as an aerosol propellant
- Physical properties similar to LPG
- Relatively easy synthesis via methanol or syn gas ( $H_2 + CO$ )
- Can be blended into traditional LPG with dramatic overall decarbonisation
- Offers negative Carbon Intensity

# Future molecules through existing infrastructure

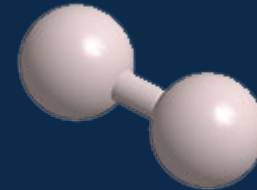
What other future molecules can we use e.g. green ammonia, green hydrogen?



**rDME**



**rNH3**



**rH2**



# **Sustainable energy transitions** **with appliance innovation**

# Interesting opportunities in powergen

- Over 300 offshore salmon farms in Chile
- 300kVA power requirement
- 130 tonnes / yr LPG / farm
- 7% reduction in costs
- 24% reduction in CO2
- Zero spill risk



# 45MW back up power plant in Chile

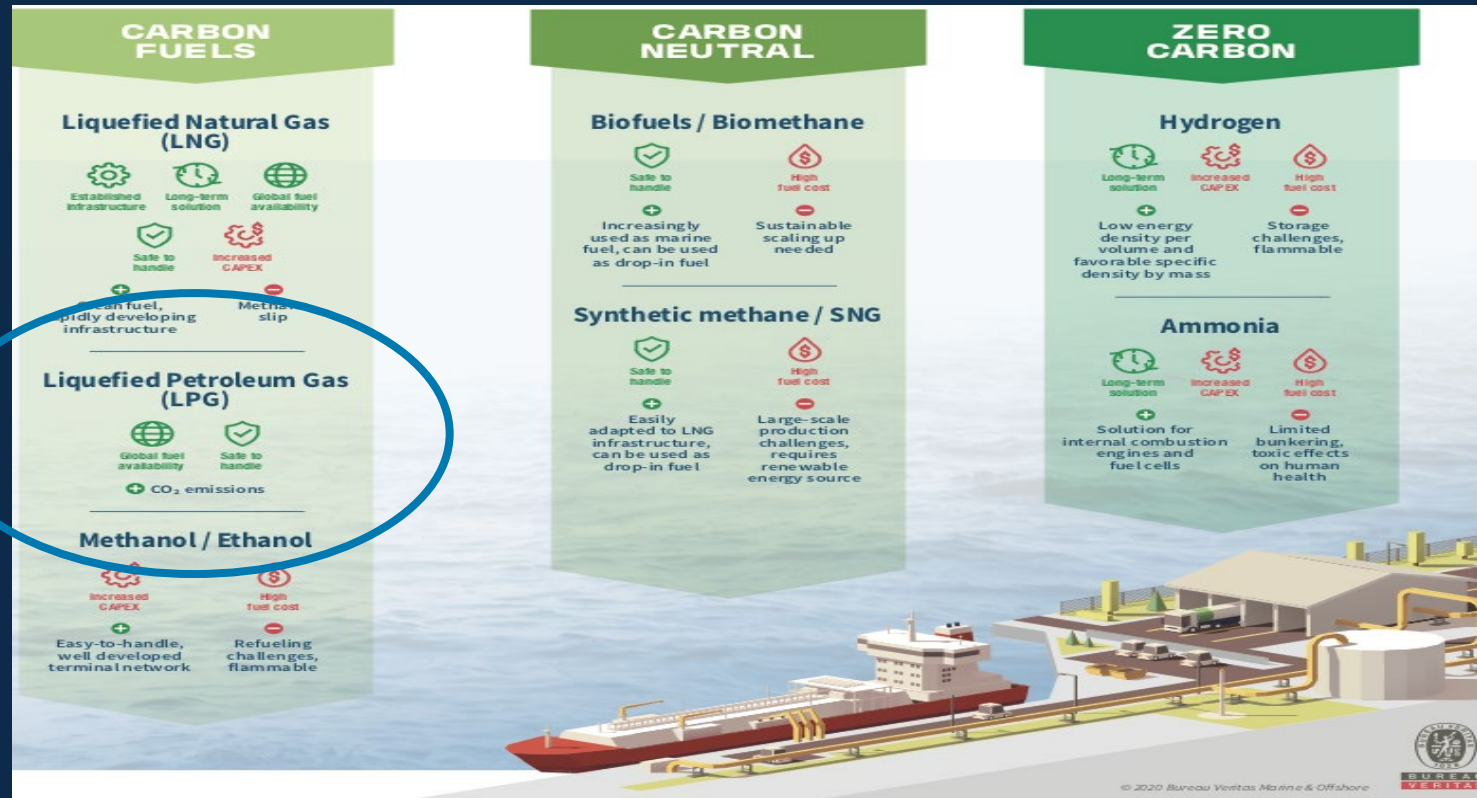
- Back-up to renewables
- 26 x 1.7MW gas-engines
- LPG preferred to natural gas
- Emissions far lower than liquid fuel options
- 200 tonne mounded storage
- 9 tonne per hour vaporizer





# energy transitions - marine

# Future marine fuels: LPG - many advantages – limited challenges



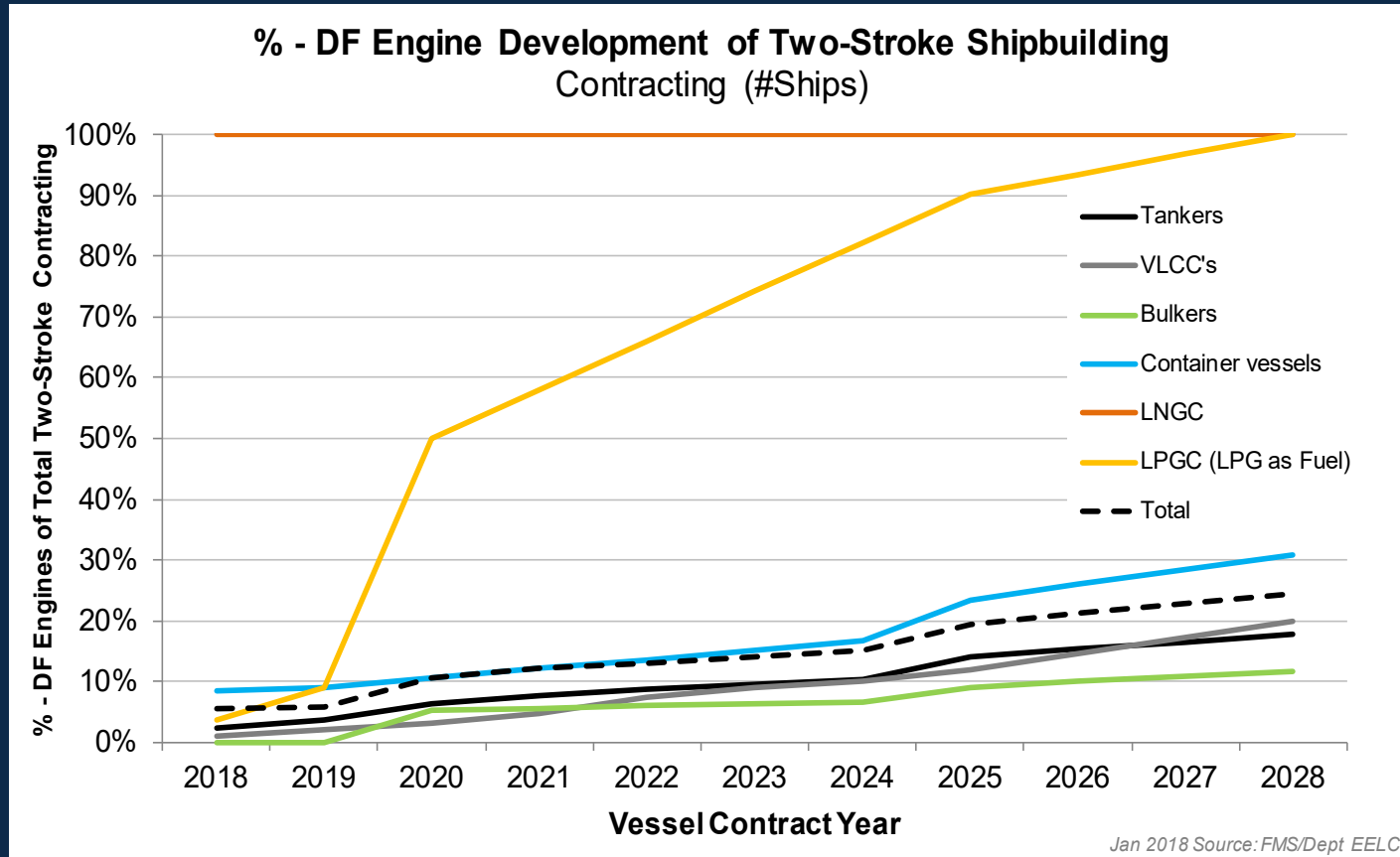
Source: Bureau Veritas

# Forty LPG powered LPG carriers already in operation



Some 100 current orders for retrofits or newbuilds

# Marine LPG potential



MAN:

By 2028, all new  
LPG carriers could  
use LPG as a fuel

By 2028, 30% of  
container vessels  
could be LPG fuelled

A close-up photograph of a gas pump nozzle, showing its metallic body, a black trigger handle, and a blue safety lock. The nozzle is attached to a metal structure. The background is a blurred gas station with cars and other pumps.

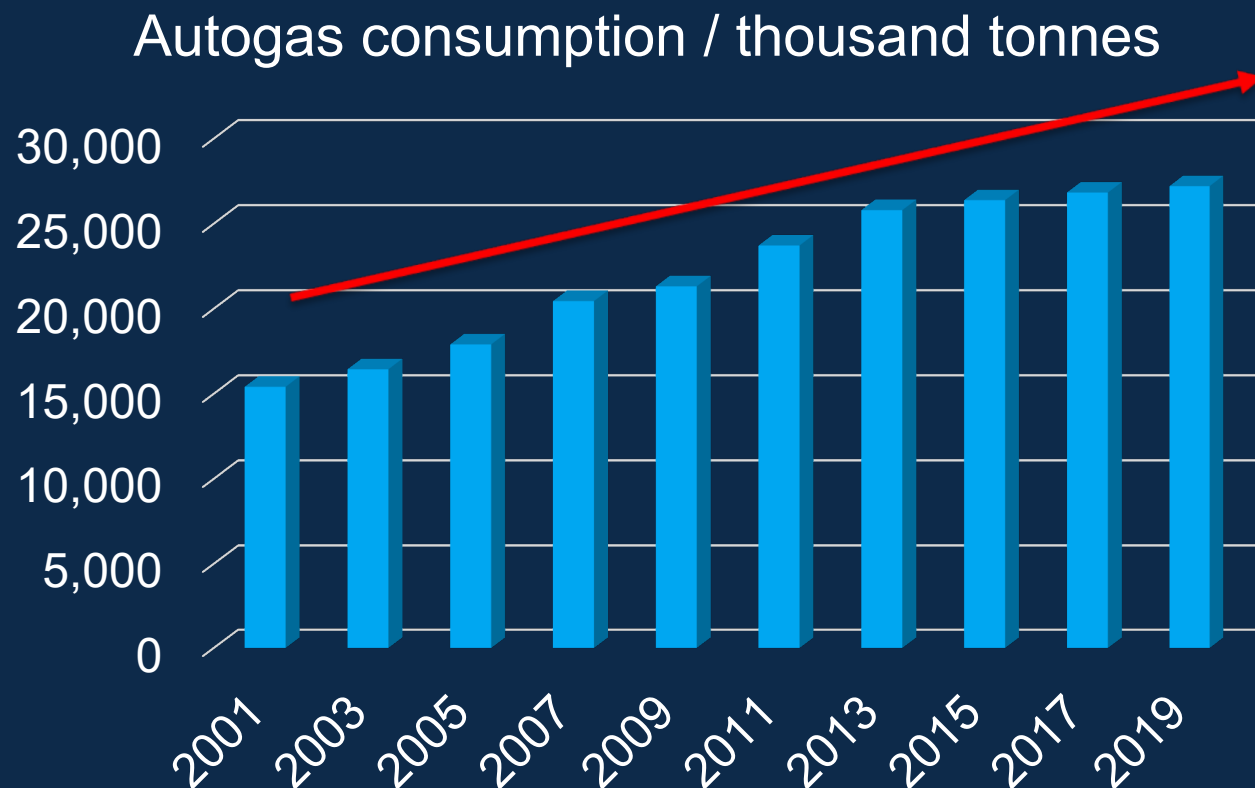
**energy transitions -  
autogas**

# Why Autogas?

- Autogas offers an immediate solution to improve air quality especially in urban areas
- Autogas emits among the lowest levels of greenhouse gases of all commercially available fuels



# Autogas global growth path



25 million tonnes in 2021

c.90% growth between 2001  
and 2021

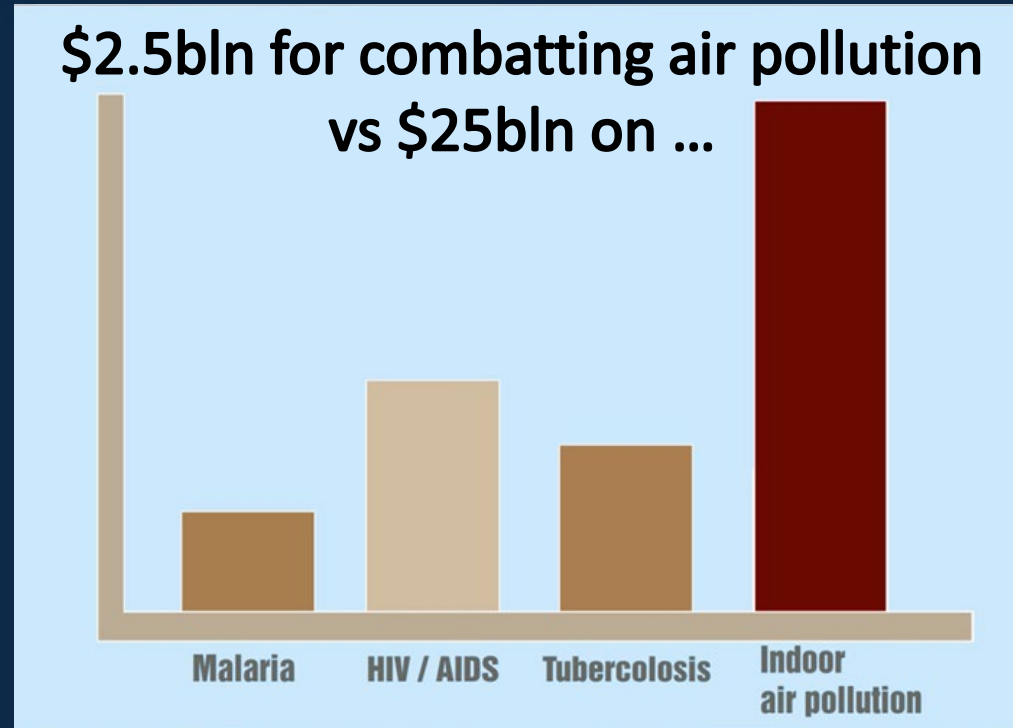
Growth trajectory to 60 million  
tonnes by 2040

# Energy transitions - domestic



# The domestic opportunity

3.8 million people die prematurely every year from exposure to household air pollution



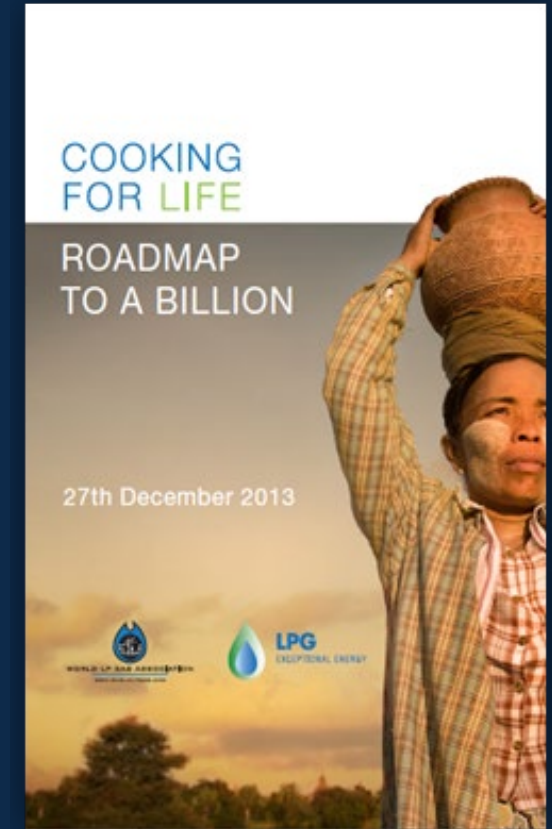
Household Air Pollution from cooking kills more than Malaria, HIV and TB combined

# The Cooking For Life vision

COOKING FOR LIFE aims to facilitate the transition of ONE BILLION people from cooking with traditional fuels as well as other dirty and dangerous fuels to cleaner-burning LPG between 2015 and 2030.

Additional LPG volumes: > 30million tonnes/yr

Premature deaths avoided: c. 1 million/yr



An aerial photograph of a dirt road winding through a dense, green forest. A small red car is driving on the road, and it is enclosed within a white rectangular box. The text "The LPG value proposition" is overlaid on the image, with "LPG" in orange and "The" and "value proposition" in white.

# The **LPG** value proposition

available today





it can go **everywhere**  
(literally everywhere)



**proven and reliable  
logistics chains  
across the world**

that can deliver LPG  
today and renewable  
products tomorrow

A close-up photograph of a person's hand gently touching a dark solar panel. The panel is covered in a grid of thin white lines. In the background, a bright sun is setting or rising, creating a warm, golden glow and lens flare effects. The overall scene conveys a sense of clean, sustainable energy.

can be the  
**ideal reliable  
partner** for  
renewable  
electricity

we have a  
**future proof solution with**  
renewable LPG & DME




**no or low public  
investment in infrastructure**



A photograph of a man and a woman sitting in a kitchen. The woman is wearing a red headscarf and a patterned sari. The man is wearing a light-colored shirt. They are sitting in front of a corrugated metal wall. To their left is a red gas cylinder with a gas stove on top. On the stove, a pot is cooking. In the background, there are shelves with various jars and containers. The text "the energy revolution is not new" is overlaid on the image in orange. The text "our industry has been in the driving seat for decades enabling the biggest shift in fuel in history" is overlaid on the image in white.

**the energy revolution is not new**

our industry has been in the driving seat for decades enabling the biggest shift in fuel in history

An aerial photograph of a massive crowd of people, likely at a music festival or public gathering. The people are densely packed, filling the entire frame. Many are wearing blue clothing, possibly as part of a theme or event. The image has a dark, blue-tinted overlay, making the colors appear muted and giving it a somber or contemplative feel. The text is overlaid on the center of the image.

the future will be challenging  
but we will continue to deliver  
exceptional energy

**today and tomorrow**

# Humanising Energy

2022 / NEW DELHI



New Delhi, India



thank you

