The role of LPG in the prevention of Household Air Pollution in Sub-Saharan Africa

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Household air pollution ‘silent killer’

- Products of incomplete combustion from burning solid fuels (PM, CO, NOx, SO2, PAH etc) – similar to cigarette smoke.

1.6 million people a year die prematurely disease related to household air pollution caused by the inefficient use of solid fuels (latest GBD data - 2017).

- 12% are due to pneumonia (children)
- 34% from stroke
- 26% from ischaemic heart disease
- 22% from COPD
- 6% from lung cancer
• 3 billion people around the world rely on solid fuels for cooking and heating their homes.

Country: Kenya

Household air pollution causes 16,566 premature deaths every year (6.1% of all deaths).
Clean Energy Access for the Prevention of Non-Communicable Disease in Africa

CLEAN-Air(Africa)
Global Health Research Group

WHO Indoor Air Quality Guidelines

Recommendation 4: “need to **rapidly scale** use of clean fuels and technologies” in countries depending on solid fuels to achieve ‘safe’ levels

1) Inform strategies to support more equitable uptake of LPG across the population by evaluating **enabling/ inhibiting factors** and **testing interventions** to address identified barriers

2) Estimate the **impacts** of scaled clean fuel adoption in line with governmental targets on health and climate providing evidence for policymakers to advocate for widespread transition to clean fuel

3) Train health workforces in the prevention of HAP

4) Facilitate **engagement between the general public and policymakers** to exchange knowledge on how best to achieve rapid transition to clean household energy
Estimating health impacts: examples of PM$_{2.5}$ data (Cameroon)

**WHO Guideline Level (IT1) = 35 μg/m$^3$**

- **Ambient** (outside home)
- **Concentration** (in kitchen)
- **Exposure** (cook AND children)

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<th>Concentration (micrograms per cubic meter)</th>
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<td><strong>35 μg/m$^3$</strong></td>
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**Concentration of PM2.5 in kitchens by stove type**

- LPG
- Traditional
Key Study Findings:

Scaling up LPG primary adoption by 58% of the population in Cameroon by 2030, through successful implementation its national LPG Master Plan would result in:

- 28,000 averted deaths (minimum=22,000, maximum=35,000)
- 770,000 (minimum=580,000, maximum=1 million) disability-adjusted life years.
- Reduction in pollutant emissions affecting climate change, leading to a global cooling of −0.1 milli °C in 2030.
- A global cooling impact estimated to reach −0.70 milli °C (−0.64 to −0.93 milli °C) in 2100 if the LPG market would reach 73% of the population relying on LPG for daily cooking.
Thank you!!
Questions?