**The climate and health impacts of achieving National target levels of LPG adoption in Cameroon: findings from policy modelling according to the Cameroon National LPG masterplan**

Chris Kypridemos1, Elisa Puzzolo2, Borgar Aamaas3, Kristin Aunan3, Daniel Pope1

1. Department of Public Health & Policy. University of Liverpool. Liverpool, UK
2. The Global LPG Partnership
3. CICERO Center for International Climate Research

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# Introduction

As part of its commitments to becoming an emerging economy by 2035, the Cameroon Government has set a target that by 2030, 58% of the population will be using Liquefied Petroleum Gas (LPG) as a cooking fuel, compared to less than 20% in 2014. The aims of this study were to estimate the potential impacts of this planned LPG expansion (Masterplan) on population health and climate change mitigation.

# Methods

We developed mathematical models to measure the health and climate impacts of expanding LPG adoption for household cooking in Cameroon over two periods:

1. Short-term (2017-2030); Comparing Master Plan with a counterfactual LPG adoption of 32% in 2030, in line with current trends.
2. Long-term (2031-2100, climate modelling only); Assuming Cameroon will become a mature and saturated LPG market by 2100 (73% adoption, based on Latin American countries). We compared this with a counterfactual adoption of 41% by 2100, in line with current trends.

# Results

By 2030, successful implementation of the masterplan was estimated to save about 23,000 lives and avert 760,000 disability-adjusted-life-years compared to naturally increasing trends in LPG adoption. For the same period reductions in component emissions of more than a third were found, leading to an annual cooling effect of -4.4 Mt CO2-equivalent (calculated with 50% renewable biomass), by applying the Global Warming Potential with a 100-year time horizon, and a global cooling of -0.1 milli °C in 2030. For 2100, a cooling impact for the Masterplan leading to LPG saturation (73%) was estimated to be -0.70 milli °C assuming 90% renewable biomass, increasing to -0.93 milli °C with 50% renewable biomass.

# Conclusion

Meeting the government target of 58% of the population using LPG through successful implementation of the Masterplan will have significant positive impacts on population health and on climate, through reductions of emissions influencing climate and associated global cooling.