



THE GLOBAL LPG PARTNERSHIP

THE FASTEST PRACTICAL SOLUTION TO ONE OF THE WORLD'S TOP PROBLEMS

OUR MISSION: The Global LPG Partnership (“GLPGP”) assists developing countries to plan, finance and implement national-scale availability and use of liquefied petroleum gas (“LPG”)¹, to help prevent the 3.8 million² annual deaths, severe forest loss, and vast impact on women’s and children’s time caused by societal dependence on solid fuels for cooking.

1. THE GOAL

Plan, finance and implement, in partnership with national governments, the infrastructure and activities required to transition 1 billion people in developing countries to use of clean LPG for household cooking by 2030. This transition is a top priority of the United Nations (“UN”) system and many developing country governments.

2. THE PROBLEM

As of 2018, over 2.8 billion people continue to cook with solid fuels, with enormous negative consequences:

- 2.1. Household Air Pollution (“HAP”) from cooking with solid fuels like charcoal and firewood kills 3.8 million people annually—more than malaria and AIDS combined.
- 2.2. Harvesting wood for cooking fuel is a leading cause of forest degradation and deforestation in Africa and Asia. Governments in countries such as Uganda, Ghana and Nigeria have emphasized the scale and acceleration of their deforestation challenge.
- 2.3. The search for fuel wastes human capital. Rural women and children spend 1 to 6 hours a day gathering firewood³.

3. THE FASTEST SCALABLE SOLUTION TO THE PROBLEM: LPG

- 3.1. The evidence shows that LPG is the fastest, most scalable solution to this problem. Alternative clean cooking solutions like natural gas, biofuels and electrification are too costly and too slow to implement to have a significant impact quickly and at large enough scale. Efficient biomass cookstoves, while an improvement over traditional stoves and fires, can neither deliver the health and environmental impacts that can be achieved with LPG nor realize the desired vision of modern energy.
- 3.2. In recognition of these realities, developing countries are actively developing policies and strategies for increasing access to, and use of, LPG, a goal that is aligned with Sustainable Development Goal (SDG) 7 to achieve universal energy access by 2030⁴. For example, Prime Minister Modi of India in 2016 launched his government’s ambitious program to expand LPG use to 100% of the population—more than 1.3 billion people—by 2020⁵.

4. THE SOLUTION CATALYST: THE GLOBAL LPG PARTNERSHIP

- 4.1. GLPGP is a non-profit, Public-Private Partnership NGO formed in 2012 under UN Sustainable Energy For All (SEforAll) and announced by the UN Secretary-General at the Rio+20 Conference.
- 4.2. GLPGP was formed to aggregate and deploy the global resources required to help developing countries transition large populations rapidly to LPG on a commercially sustainable basis.
- 4.3. GLPGP’s growing list of collaborating partners includes public sector institutions such as the European Union (EU), the World Bank and the German development bank, KfW, and UN agencies such as UNDP; NGOs and foundations such as the UN Foundation; and leading international private sector LPG organizations such as Total (France) and Kosan Crisplant (Denmark) (see Annex 1 for full list).

¹ LPG, a by-product of oil and gas production and refining, comprises propane and/or butane gas, which liquefy under moderate pressure. Bio-LPG is becoming increasingly available.

² World Health Organisation 2018.

³ World Bank ESMAP and GACC, 2015. The State of the Global Clean and Improved Cooking Sector.

⁴ International Energy Agency, World Energy Outlook 2017.

⁵ The Times of India, 27 February 2018.

5. WHAT WE DO

- 5.1. GLPGP partners with host country governments and relevant stakeholders to create national LPG plans for rapid, sustainable scale-up of, LPG infrastructure, distribution and demand. Where requested by governments, GLPGP also will participate in financing key elements of those scale-ups.
- 5.2. The first step of GLPGP and its partner countries is to define the policy and regulatory reforms necessary to create the enabling environment for development of a viable, scalable, sustainable LPG ecosystem.
- 5.3. After enabling environments are created, GLPGP then aggregates and invests blended capital from the public and private sectors in a coordinated manner to:
 - 5.3.1. Build necessary large-scale LPG infrastructure that neither the public sector nor private sector in developing countries have been able to build alone.
 - 5.3.2. Facilitate local distribution business expansions in support of LPG market growth.
 - 5.3.3. Unlock consumer demand for LPG through financial support for consumer acquisition of LPG equipment via microfinance institutions (MFIs) and other local consumer credit intermediaries.
 - 5.3.4. Aggregate and coordinate national and regional LPG investment projects, to improve their economies of scale, financing efficiency and implementation risk.
- 5.4. To support objective evidence-based planning and decision-making, GLPGP collaborates with leading universities and research institutions to define and quantify the useful role and impact of LPG in the evolving global energy system. Particular research focus areas include health, climate, the environment, women's empowerment, and broadened affordability.

6. WHY WE ARE UNIQUE

- 6.1. The GLPGP leadership is the only group of experts with deep and broad experience in partnering with governments to create national LPG plans. KfW and the EU determined that GLPGP senior staff were the key persons uniquely qualified to lead their Clean Cooking for Africa LPG initiative (see Annex 2 for management profiles).
- 6.2. GLPGP aggregates the scarce expertise and global capital needed to help countries plan, implement and finance major scale-up of LPG availability and usage.
- 6.3. GLPGP's founding principles foster trust between host country governments and GLPGP. These principles include: (i) focus on domestic social benefit and engaging local stakeholders; (ii) GLPGP governance balancing public and private sector interests as well as donor and host-country interests; (iii) competition neutrality; (iv) evidence-based and market-driven solutions; and (v) transparency. To date, more than 20 countries have requested GLPGP to partner in creating large-scale transition to LPG for their populations.

7. WHY COUNTRIES REQUEST GLPGP ASSISTANCE

A significant number of developing countries have set national targets for expansion of LPG use to a majority of their populations. Such countries formally request GLPGP assistance to achieve the three main prerequisites for making LPG widely available and affordable:

- 7.1. Technical assistance and collaboration on planning and implementation of adequate governmental policies, regulations and regulatory enforcement.
- 7.2. Arrangement of expansion capital to finance a critical mass of LPG supply, infrastructure and distribution systems quickly and sustainably.
- 7.3. Arrangement of capital to empower developing country consumers, who cannot otherwise afford the upfront cost of appliances to use LPG.

8. CURRENT SCOPE OF GLPGP ACTIVITIES

- 8.1. GLPGP has engaged with the governments of eight developing countries (Kenya, Uganda, Tanzania, Ghana, Cameroon, Rwanda, South Africa, Nigeria) for planning of policy and regulatory reforms and LPG sector investment.
- 8.2. In Ghana, Cameroon and Kenya, new national LPG policies, laws and regulations have been completed and submitted for cabinet or parliamentary approval. These governments' goals are to increase LPG use to 50-70% of their populations from 15-20% today.

- 8.3. In Cameroon, GLPGP and the Government completed the country's LPG Master Plan for clean cooking, and are facilitating the implementation and financing of the plan. The Master Plan target is 58% of the population using LPG by 2030.
- 8.4. In Kenya, GLPGP is partnering with the state-owned National Oil Corporation to plan, implement and finance large-scale LPG expansion to meet the government's national LPG usage goal. The target is to enhance LPG penetration from approximately 10% currently to 70% by 2020.⁶
- 8.5. In Ghana, GLPGP is partnering with the National Petroleum Authority to assist with the national transition to the LPG cylinder recirculation model⁷, which was mandated by the President in late 2017 to improve safety and distribution of LPG.
- 8.6. In Rwanda, GLPGP signed an agreement with the Ministry of Infrastructure in May 2018 to collaborate to achieve Rwanda's national LPG target. The target is to expand access to, and use of, LPG to 40% of its population, by 2024.
- 8.7. GLPGP has initiated community-level microfinance programs in Cameroon and Kenya to help low-income families afford the upfront cost of equipment needed to switch to cooking with LPG. Microfinance project planning work is ongoing in Ghana.
- 8.8. GLPGP is collaborating with the Economic Community of West African States (ECOWAS) to develop a regional LPG policy framework to guide policy development and project coordination amongst ECOWAS member states.
- 8.9. GLPGP is evaluating the needed scale of assistance to additional countries (Bangladesh, Benin, China, Cote D'Ivoire, Equatorial Guinea, Azad Kashmir, Niger, Zambia, and Senegal) which have requested GLPGP assistance, but for assisting whom GLPGP has not yet sourced funding.
- 8.10. To date, GLPGP has identified and defined approximately US \$1 billion of needed LPG scale-up investments concentrated in three African countries where it is working, and has scoped out conceptually approximately US \$1 billion of LPG scale-up investments in additional countries.

9. GLPGP IMPACT TARGET

- 9.1. *Near term (2018-2021)*: Plan and mobilize investments to scale up the LPG sectors in a minimum initial 4-5 countries and transition 75-100 million people to LPG (approximately US\$ 1-2 billion in aggregate investment).
- 9.2. *Medium term (2022-2024)*: Based on replicable learnings from successes in initial partner countries, expand activities to 5-10 additional countries, with a potential US\$ 4-5 billion of needed LPG sector investments.
- 9.3. *Long term (2025-2030)*: Be instrumental in transitioning 1 billion persons from traditional fuels and kerosene to LPG by 2030,⁸ to avert approximately 1.3 million HAP-related annual deaths and 6 million hectares of annual forest loss (about 40% of today's global total).

⁶ National Oil Corporation 2017, <http://nationaloil.co.ke/gas-yetu-the-mwananchi-gas/>

⁷ National Petroleum Authority 2017, <http://www.npa.gov.gh/news/cylinder-re-circulation-module>

⁸ LPG is a long-term transition solution through at least 2030, until greener/more efficient energies for household cooking become sufficiently viable, cost-effective and scalable to serve large, energy-poor populations.

Annex 1.

Key GLPGP Collaborating Partners

Public Sector Organizations

- Governments of Ghana, Cameroon, Kenya, Uganda, Tanzania, Rwanda
- African Development Bank
- Danish Industrialization Fund for Developing Countries
- ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE)
- European Union – Infrastructure Trust Fund
- KfW (German government development bank)
- Netherlands SNV (Ghana)
- World Bank Group
- UNDP
- UNIDO

NGOs / Social Impact Organizations

- African Alliance for Clean Cooking
- Climate and Clean Air Coalition
- Entrepreneurs Du Monde
- Global Alliance for Clean Cookstoves
- OPEC Fund for International Development
- New Venture Fund
- Self-Employed Women's Association, India (SEWA)
- Sustainable Energy for All (SEforAll)
- Total Impact Advisors
- UN Foundation

Private Sector Organizations (including State-Owned Enterprises)

- Afriland Bank (Cameroon)
- Bernard Schulte Ship Management
- Cavagna Group
- Clif Bar Family Foundation
- Dalberg Global Development Advisors
- Energy Transportation Group
- Eneron
- Equity Bank (Kenya)
- E+Co / Persistent Energy Partners
- Friedrich Scharr KG
- Kosan Crisplant
- National Oil Company of Kenya
- Petroleum Institute of East Africa
- Total
- World LPG Association
- Vital Strategies

Academic / Research Institutions

- Centre for International Climate and Environmental Research (CICERO)
- Clean Air Asia
- Douala General Hospital (Cameroon)
- Emory University
- Johns Hopkins University
- London School of Hygiene and Tropical Medicine
- Sri Ramachandra University, Chennai
- University del Valle de Guatemala
- University of British Columbia
- University of Liverpool
- University of Pennsylvania, Wharton Business School
- University of Sydney
- US Centers for Disease Control and Prevention
- US National Institutes of Health

Annex 2.

GLPGP Leadership

GLPGP's leadership team has deep and broad experience globally in the LPG industry, development finance, LPG policy and regulatory development, public health, and the successful deployment of investment capital for energy infrastructure.

- **Chairman Kimball C. Chen** is an industry statesman in the LNG and LPG sectors, with more than 40 years' experience as a CEO, investor, senior advisor to governments and international organizations, and former President of the World LPG Association. In his capacity as a member of the International Chamber of Commerce G20 CEO Advisory Group, he provides energy and infrastructure policy insights to the global debate, Mr. Chen received his B.A. (Magna Cum Laude) from Harvard University in 1973 and his MBA from Harvard Business School in 1978.
- **President & Chairman of the Operating Committee Alex W. Evans** has a 30-year career of CEO, COO/CFO and other senior management positions in global public and private companies in energy and technology. This includes serving as President and Chief Operating Officer of Energy Transportation Group, a multinational project development company focused on energy infrastructure and logistics systems, such as LNG shipping and LPG distribution. Mr. Evans serves on the Industry Council and multiple working committees of the World LPG Association. He holds a BSc degree (Cum Laude) in Engineering from Yale University and an MBA degree (highest honors) from Harvard Business School.
- **Chief Financial Officer John R. Hauge** previously served as CFO of the Inter-American Development Bank. He has held senior finance positions in the public and private sectors, including as Deputy Assistant Secretary of the U.S. Department of the Treasury and with Lehman Brothers Kuhn Loeb. He holds a B.A. (Magna Cum Laude) from Dartmouth (1973), a postgraduate degree in Politics and Economics from Oxford University (1975), and an MBA from Harvard University (1977).
- **Chair, Policy, Regulatory and Development Advisory Renzo E. Bee** has a 40-year career of senior positions in the oil and gas industry. He was formerly Director of Global Accounts and Partnerships at Total, and served 13 years as global director of LPG, with responsibility for Total's LPG activities in 90 countries. Mr. Bee holds an engineering degree from Arts et Metiers ParisTech, an MBA from the Institut d'Administration des Entreprises, and a postgraduate degree from the Centre for Diplomatic and Strategic Studies in Paris.
- **Chair, International Institutions Richenda Van Leeuwen** is a globally recognized expert on energy access, gender development and poverty alleviation, Ms. Van Leeuwen has held a range of CEO and executive leadership positions in both public and private sectors over the course of her nearly 30-year career. She founded and led the United Nations Foundation's work on energy access and its engagement with the UN's Sustainable Energy for All Initiative. She also serves as a member of the high level Technical Advisory Group (TAG) to the Energy Sector Management and Assistance Program (ESMAP) at the World Bank, and as a founding US Women's Clean Energy Ambassador under the US Department of Energy C3E Initiative. Ms. Van Leeuwen holds a Bachelors of Science (Hons) degree and MBA, both from the University of Durham, UK.
- **Director of Research, Monitoring & Evaluation Dr. Elisa Puzzolo** leads research and M&E for GLPGP's projects in Sub-Saharan Africa and South Asia. A globally-renowned expert on the health impacts of household air pollution, she is a Senior Honorary Research Fellow at the Department of Public Health and Policy of the University of Liverpool (UK), and member of the Energy, Air Pollution and Health Research team within the University. She was formerly a consultant for the World Health Organisation (WHO), supporting the coordination programme on household energy, air pollution, health and climate change. Dr. Puzzolo received an M.P.H. from the University of Liverpool, a PhD from the International School of Advanced Studies in Trieste, and an M.Sc in Biology with distinction from the University of Catania, Italy.
- **Country Director, Cameroon, Bessem Enonchong** has a decade of business development experience in the LPG industry in Cameroon. As an executive with Kosan Crisplant, she successfully directed the launch of GLOCALGAZ, a subsidiary focused on safe residential LPG cylinder distribution, in the Cameroon market in 2006. She subsequently took on an LPG equipment sales role, covering all of Sub-Saharan Africa. Ms. Enonchong was honored by the World LPG Association as a Women in LPG Global Network (WINLPG) Role Model in 2015. She holds a B.A. in History and a postgraduate degree in Pedagogy from the University of Buea, Cameroon.

- **Country Manager, Kenya, Elizabeth Muchiri** has over 25 years' experience in the gas sector. She started her career in BOC Kenya Ltd. In 2008, she joined National Oil Corporation of Kenya as the first ever LPG Manager, where she was instrumental in the launch of Supa Gas brand. Since 2013, she has worked as an LPG consultant in Kenya, and has been engaged by several LPG start-up companies to advise on cylinder requirements, management, and distribution strategies. She holds a Bachelor of Commerce from University of South Africa (UNISA) and an MBA from Strathmore University in Kenya.
- **Country Manager, Ghana, Charles Kinyanjui** is an oil and gas supply chain practitioner. Originally from Nairobi, Kenya, he holds a BSc Degree in Mechanical Engineering from the University of Nairobi. He has 26 years' work experience in oil and gas supply chain management, starting as an employee of Exxon and Shell affiliates in Kenya and the National Oil Corporation of Kenya, before venturing into private consulting practice in 2006. He is an ardent supporter of the UN Sustainable Energy for All initiative.
- **Senior Advisor, Development Finance, Derek Saleeby** has a background in banking, capital markets and investing in both emerging and developed markets across numerous sectors and capital structures. He has experience in a range of roles including originating, structuring, placing and investing in various opportunities. He has designed blended and hybrid structures to mobilize new sources of capital to opportunities. He has structured transactions using combinations of commercial, DFI and impact oriented capital structures and investment vehicles, working with banks, investment funds, DFIs, IFIs, and others. Mr. Saleeby co-founded TOTAL Impact Capital, a global advisory and impact investments firm, where he serves as a Managing Partner. His previous service includes Chief Investment Officer of a hedge fund of funds and senior positions with global firms such as Citibank, Salomon Smith Barney, Spain's Banco Bilbao Vizcaya (Latin America), RAM Capital, and Deutsche Bank Asset Management/RLJ. From 1999 to 2001, he was a founding partner of African Private Equity Partners, where his team provided advisory services to Mexico's Cemex. Mr. Saleeby has a BA in Economics and Politics with African Studies from Princeton University and an MBA from Harvard Business School.