

CSD-16 Partnerships Fair – May 2008

## The LP Gas Rural Energy Challenge

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[WWW.WORLDPGAS.COM](http://WWW.WORLDPGAS.COM)

### Introduction

- Access to affordable, reliable energy services is a prerequisite for sustainable development and for achieving the MDGs
- Two billion people worldwide lack access to electricity and a further two billion people depend on traditional fuels (wood, dung) for cooking and heating
  - 1.6 billion live on less than \$1/day
  - 2.6 billion live on less than \$2/day
  - 2.0 billion people worldwide lack access to electricity
  - 2.0 billion depend on traditional fuels (wood, dung) for cooking and heating
- Energy distribution to rural areas is often difficult or not in place

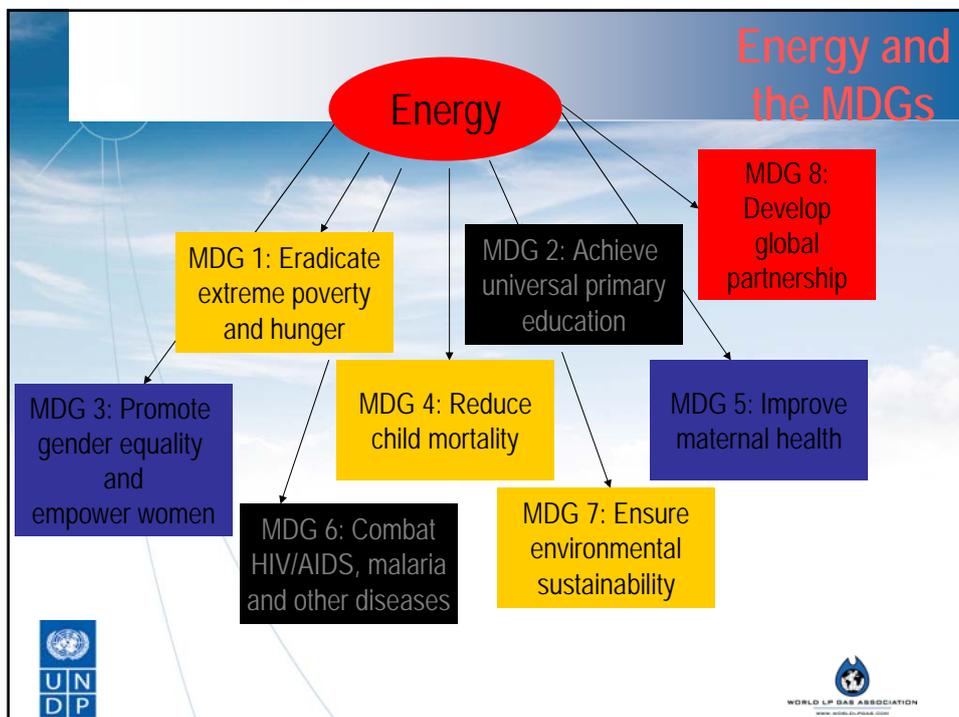


## Energy for Subsistence

- Energy is key for meeting basic needs
  - Domestic uses (heating and cooking)
  - Household tasks (water pumping, grinding and milling)
  - Productive purposes (brick and ceramics firing, metal working, fish smoking)
  - Social services (health care, education)



## Energy and the MDGs



## Women and Energy

Lack of access to energy affects women and girls disproportionately

- Health: carrying tens of kilos of fuel wood over long distances; indoor air pollution
- Literacy: girls are kept from school
- Fertility: illiteracy increases family size
- Safety: household fires, personal attack
- Economic opportunities: heat using activities



## What is LP Gas

LP Gas is propane or butane or a mixture of the two. It is always present as a product of oil refining and also is always present naturally in natural gas (methane) fields and crude oil fields.

It can be distributed in relatively cheap, small containers and used for cooking, heating, lighting and commercial/industrial activities.

LP Gas has significant health, safety and environmental benefits compared to traditional solid fuels, such as wood/biomass and coal, or other refined fuels such as kerosene or paraffin.

**BARRIERS:** Availability of fuel, canister size, financing of first costs and refilling costs and transportation are constraints to LP Gas use by the poor, whether urban or rural.



## LP Gas delivers *Rapid Accessibility*

Because it's portable:

- Bottles can be stored indefinitely
- Easily transported
- Used virtually anywhere -- from urban centres to remote regions



When and where costly, grid-based energy services are unavailable



## LP Gas is an *Acceptable* alternative

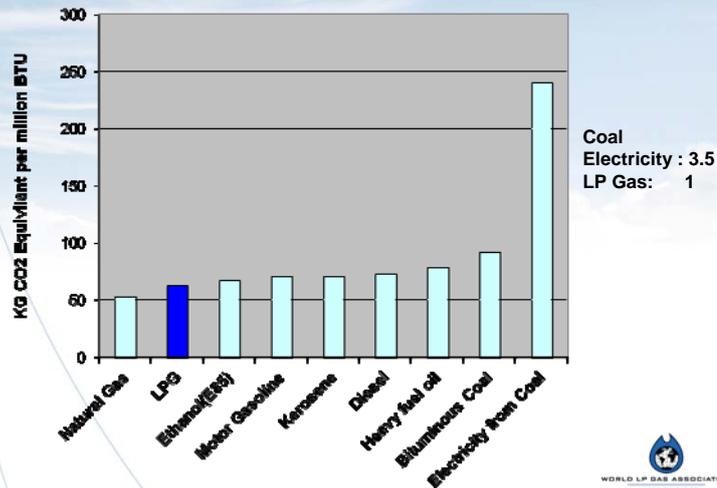
...Because it's a clean fuel:

- It burns cleanly
- No smoke or residual particulate matter
- Relatively low pollutant emissions
- Low Green House Gas (GHG's) emissions
- Helps fight deforestation by substituting "traditional fuels"
- Frees women and girls from drudgery of searching for firewood



## LP Gas has a low GHG footprint

LP Gas is NOT a zero – GHG fuel: However in most cases it can make major and immediate contributions to real emission reductions



## LP Gas and reduced indoor air pollution

According to the landmark 2006 WHO study  
"Fuel For Life, Household Energy and Health"



- ... smoke from indoor cooking fires kills 1.6 million every year, more more people than malaria, and almost as many as unsafe water and sanitation
- ... smoke in the home is the fourth greatest cause of death and disease in the world's poorest countries
- WHO have highlighted LP Gas as the cost effective solution for reducing pollution from cooking fuel
- "... investing US\$ 13 billion per year to halve, by 2015, the number of people worldwide cooking with solid fuels by supplying them with LP Gas shows a payback of US\$ 91 billion per year"



## When the LP Gas cylinder comes into kitchens



LP Gas cylinder arrived in kitchens.  
Before and after.



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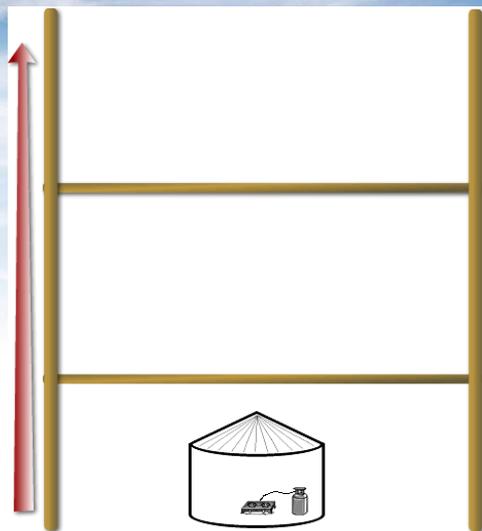


## LP Gas allows for incremental development

Stage 3: LP Gas bulk tank,  
fuelling stove, refrigerator,  
water boiler and generator

Stage 2: LP Gas cylinder  
outside, piped in to fuel stove,  
refrigerator and light

Stage 1: LP Gas cylinder inside  
feeding stove



## Meeting Energy Needs

TYPICAL APPLIANCE ENERGY USAGE	
APPLIANCE	ENERGY CONSUMPTION / Watts
Minimal Lighting	150
Additional Lighting	400
Radio	6
Television	100
Refrigerator	90
V.C.R.	50
Sewing Machine	95
<b>Electric Stove</b>	<b>1 500</b>
<b>Electric Kettle</b>	<b>1 500</b>
<b>Home Heating</b>	<b>2 000 - 5 000</b>

Many domestic, thermal energy needs can not be met by off-grid electrical power



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## What is the LP Gas Rural Energy Challenge?

- A Public – Private Partnership (UNDP/WLPGA)
- Address lack of access to clean energy through the use of LP Gas
- Improve living standards
- Contribute to achieving the Millennium Development Goals
- Create viable and commercially sustainable LP Gas markets in rural / suburban areas of developing countries
  - for domestic consumption
  - for industrial productive uses

Through identifying and addressing barriers to rural market development



## The WLPGA

- 170 member organizations headquartered in 90 countries worldwide
  - WLPGA unites international and local, private and state companies involved in one, several or all activities of the LP Gas industry.
  - Producers, marketers, shippers, equipment manufacturers, distributors, national and regional LP Gas associations and consulting firms are all represented.
- WLPGA has many partners at a global level including:
  - The World Bank
  - The United Nations Environment Programme
  - The International Energy Agency
  - The World Health Organization



## The UNDP

UNDP is the UN's global development network, advocating for change and connecting countries to knowledge, experience and resources to help people build a better life.

- Democratic Governance
- Poverty Reduction
- Crisis Prevention and Recovery
- Energy and Environment
- HIV/AIDS



## A Public-Private Partnership

- UNDP Strengths
  - expertise on financing mechanisms
  - capacity building to support governments in policy development
  - collaboration with local organisations to stimulate investment and employment generation
- LP Gas Industry Strengths
  - expanding storage capability for imported LP Gas to capture shipping economies of scale
  - addressing recurring user costs through investment in the production of smaller, more affordable bottles



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## Why did we form a partnership?

- Complementary competencies and resources
  - Global reach
  - Experience with partnerships
  - Access to the worlds major private sector companies
- Comparative advantages as partners
  - e.g. LP Gas is a privately traded good that depends on public sector determined policies
  - Different entry points (profit vs. non-profit) → same goal (improved standard of living)



## Programme plan

- First key step for the partners was the selection of 7 countries for multi-stakeholder workshops:
  - Ghana; Honduras; Morocco; South Africa; Vietnam, Turkey and China
- Objectives of these workshops are:
  - Initiate dialogue between all stakeholders (public sector, private sector and consumers)
  - Agree priority actions to remove barriers to development
  - Identify projects to demonstrate feasibility of rural market development.



Multi-stakeholder workshops held in :

- Ghana (August 2003)
- Honduras (September 2003)
- South Africa (April 2004)
- Morocco (May 2004)
- Vietnam (October 2004)
- China (July 2005)
- Turkey (January 2007)

### Similar Partnership Outcomes

Interestingly, despite cultural diversity, the 7 workshops highlighted similarities in terms of barriers



## Barriers

- Low density of LPG target population
- Low purchasing power and even sometimes barter communities
- Need for local credit facilities
- Inadequate cylinder size
- Lack of safety culture and poor enforcement of regulations
- Strong competition of cheaper alternative energy sources (sometimes subsidized)
- Inadequate energy State policy to stimulate LP Gas development (sometimes driving major players away)
- Weakness of LP Gas distribution networks in remote rural area



## Outcomes

### Workshop recommendations

- To set up a transversal national LPG industry association
- To initiate a transparent dialogue with the State, on structure, incentives, safety and law enforcement levels, to create convergence of interests
- To develop affordable and appropriate appliances
- To activate current local micro-credit facilities
- To seek and tap bilateral/multi-lateral funding
- To test recommendations in field project samples



## Learning Process

More accurate evaluation of the limits of players:

- Willingness of private sector to risk capital
- The budget/treasury limitation of the States
- The capacity of States to implement large scale new projects
- The existence of competitive energy lobbies
- The lack of local consumer associations



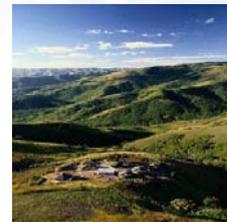
## Expectations and Indicators

- UNDP creates awareness and mobilizes financing to address clean fuels issues
- Establishment of new, viable markets for LP Gas delivery and consumption
- Rural people increase access to LP Gas and appliances
- Development of markets that adhere to both good safety and good business practices
- Lessons learned from public-private partnership are publicized and replicated



## Next Steps

- Identify further pilot countries
- Define clear and feasible projects based on workshop findings
- Secure project financing from private and public sources
- Hire a local coordinator in each selected country
- Execute projects and scale up
- Monitor and report on progress
- Transfer knowledge



## Conclusions

- LP Gas is a readily available, clean-burning, modern energy carrier and is an ideal fuel for a changing world as it is clean, acceptable and accessible
- Strong endorsement of LP Gas has been received from key global authorities
- Safety and affordability for consumer is key
- Progress is measured differently by the stakeholders
  - Private Sector vs Public Sector priorities can be different
- Success will come from recognising a win-win-win solution is both possible and necessary



## LP Gas Rural Energy Challenge

[www.undp.org/energy](http://www.undp.org/energy)

[www.worldlpgas.com](http://www.worldlpgas.com)



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*"LP Gas – Clean Energy for a Low  
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