



International Developments in LP Gas Markets

*UNECE Working Party on Gas
Geneva
19 January 2005*

*Johanna Wickstrom
Project Manager
World LP Gas Association*

Contents

1. LP Gas – facts and figures
2. LP Gas & Natural Gas – complementary fuels
3. LP Gas & Sustainable Development

1. LP Gas – facts and figures

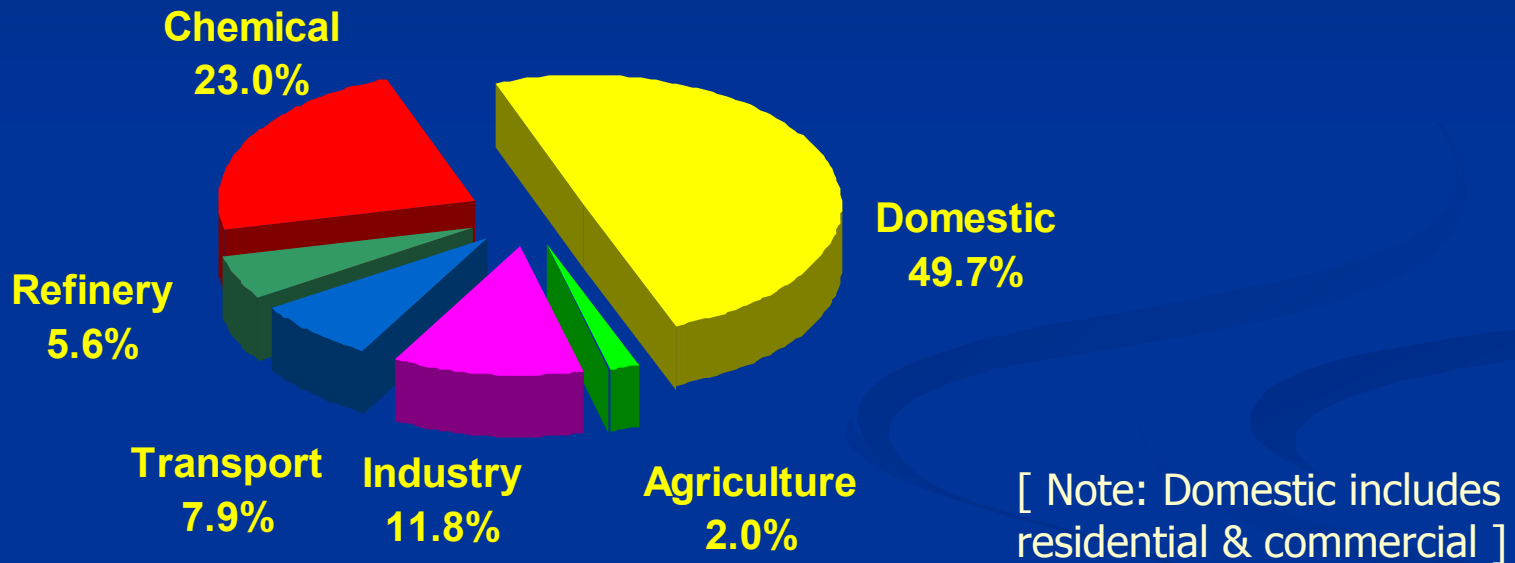
The World LP Gas Market

- facts and figures

- LP Gas is a product of oil & gas production. It consists of propane and/or butane.
- More than 207 million tonnes of LP Gas were consumed in 2003 (245 million toe, equivalent to 10% of global natural gas consumption)
- LP Gas supply is increasing at approximately 3% per year
 - With greater contribution coming from natural gas production
- Global use of LP Gas as a domestic fuel will double between 1990 and 2010

The World LP Gas Market

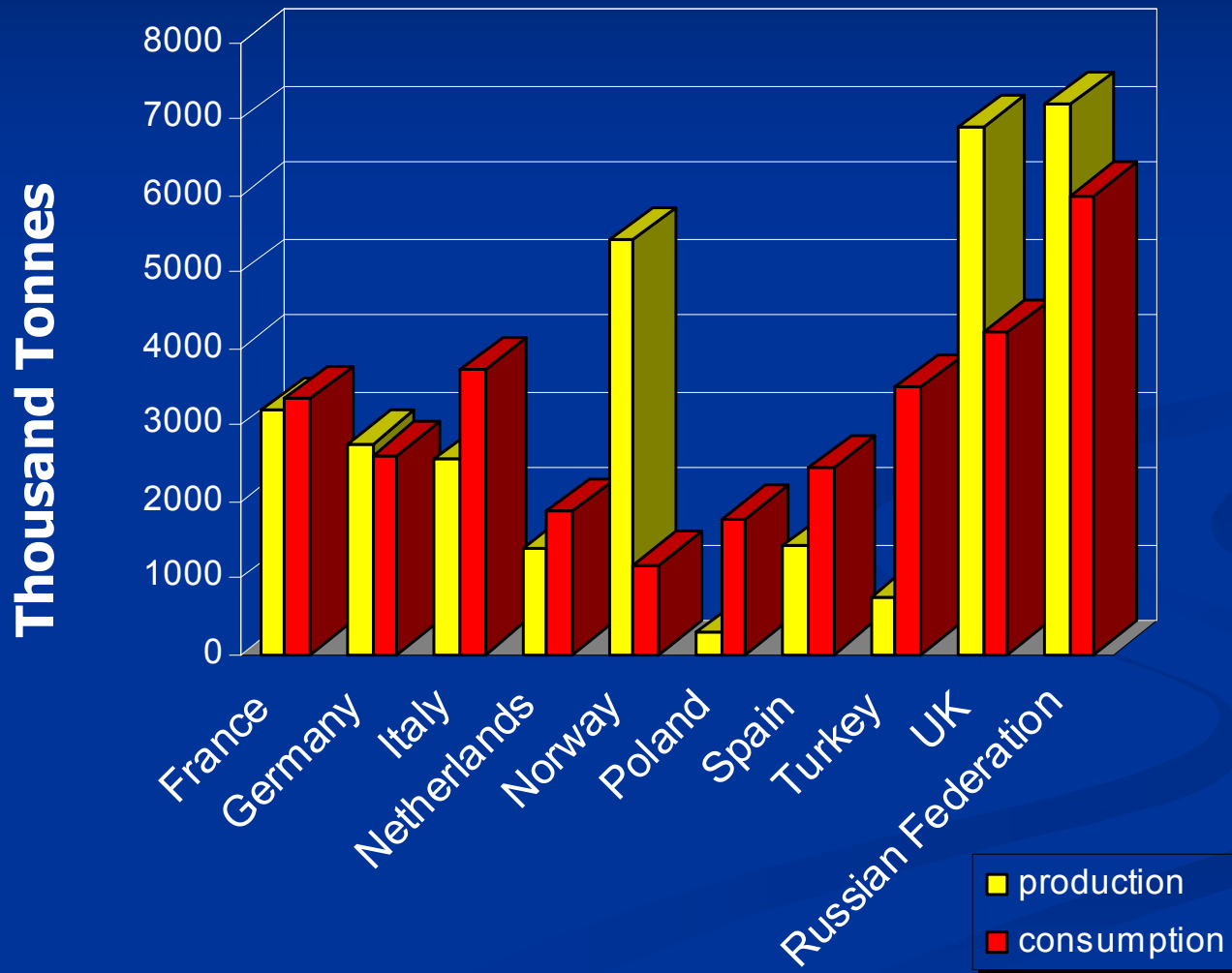
Facts and Figures



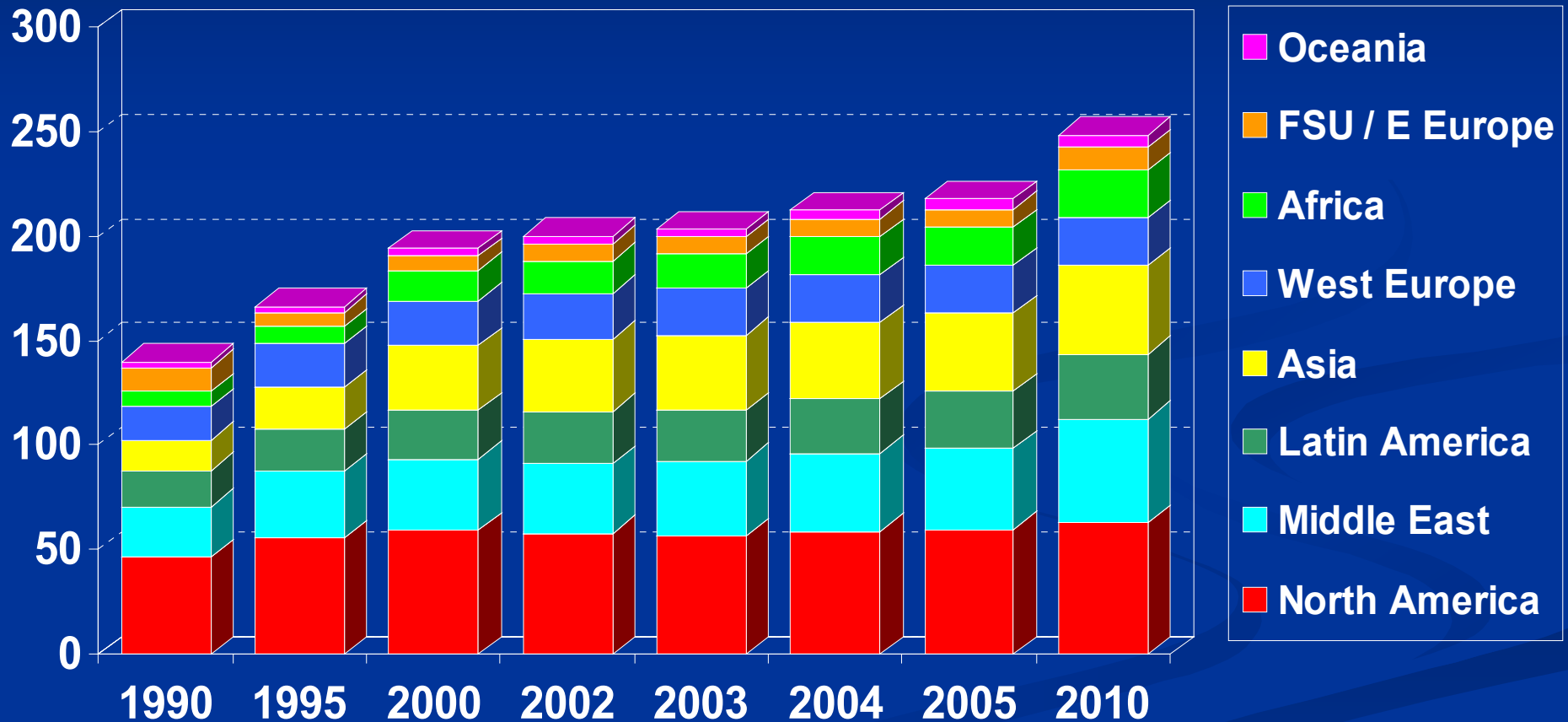
Source: WLPGA Statistical Review of Global LP Gas, 2004

European LP Gas Supply / Demand

Annual LP Gas production / consumption

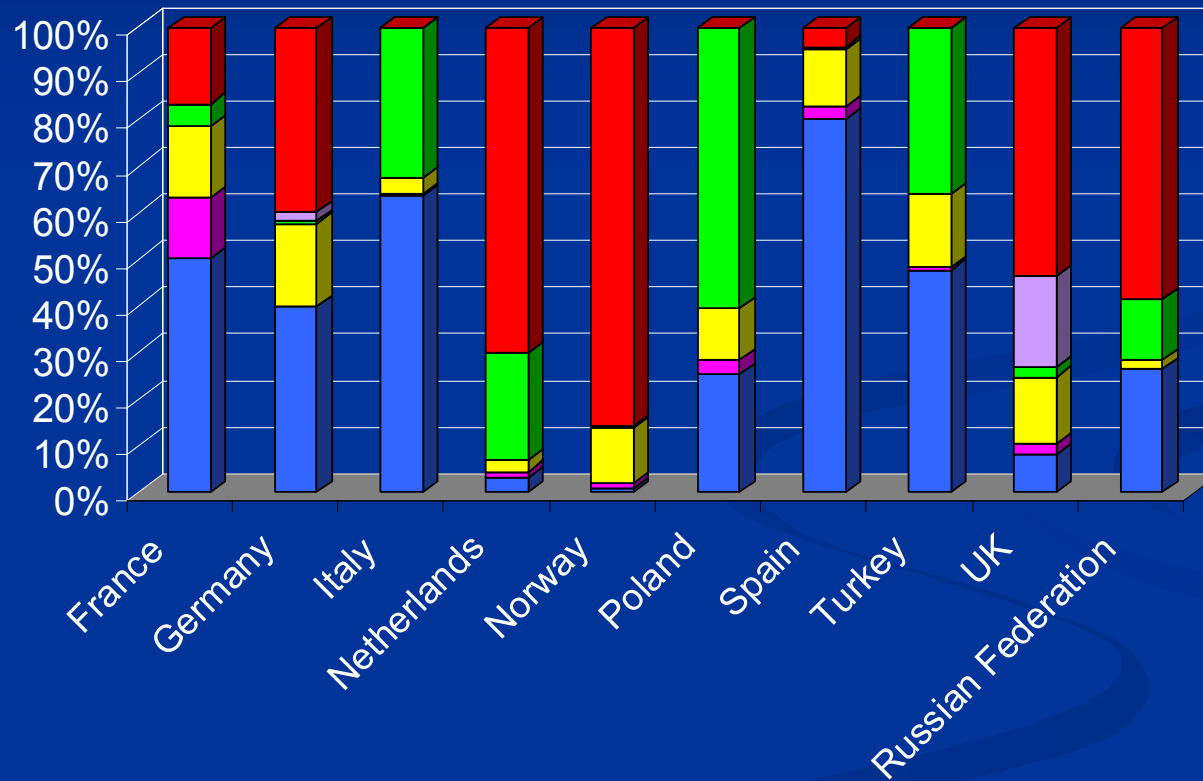


Increasing Global LP Gas Supply



Source: Purvin & Gertz, Inc.

LP Gas consumption by sector



■ Domestic ■ Agriculture ■ Industry ■ Transport ■ Refinery ■ Chemical

Mature markets still important for LP Gas

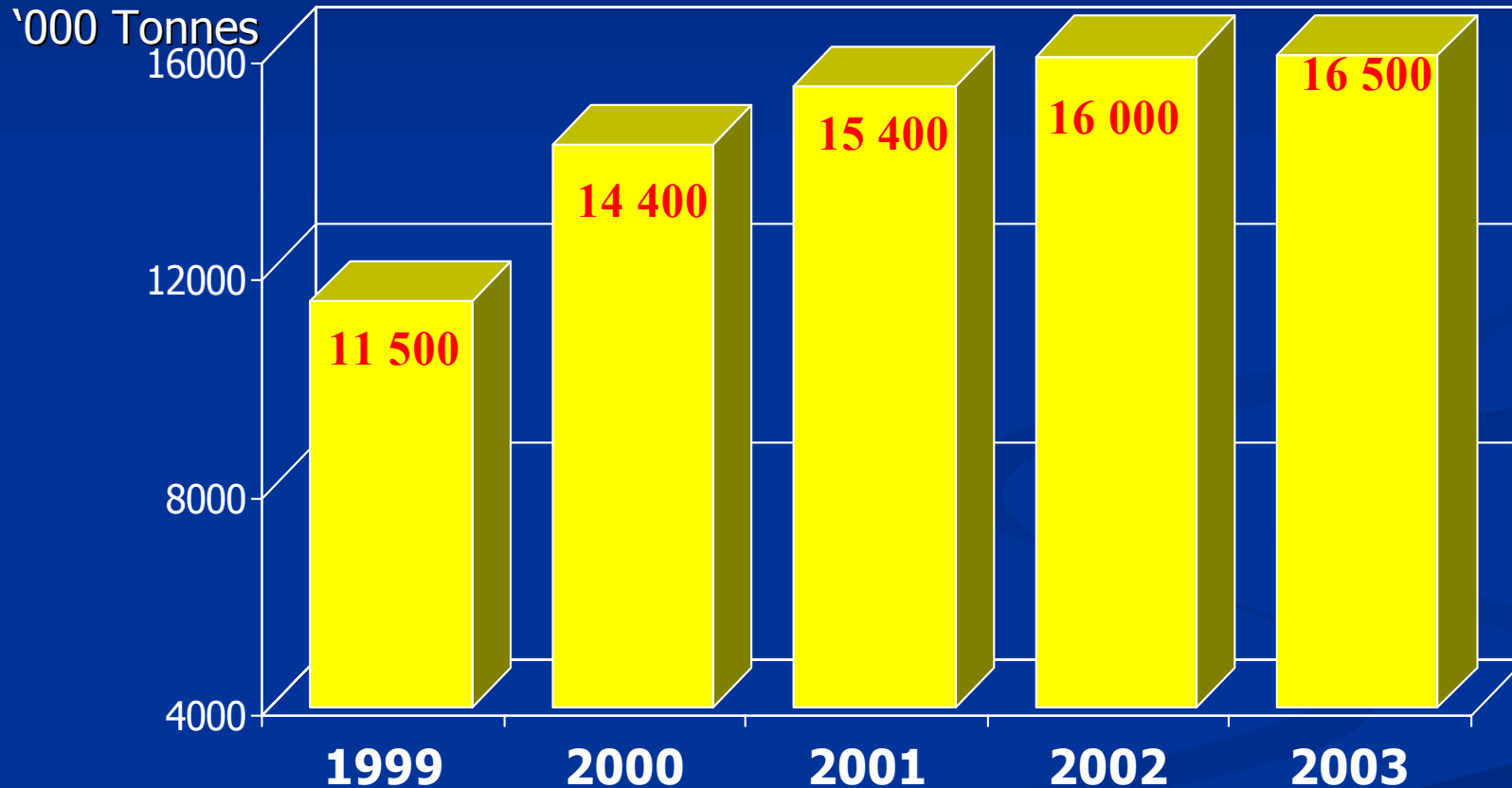
- Heating still important market in Europe where Natural gas does not exist
ex. Italy and France
- Heating still important market in US and with increasing share of agricultural use
- LPG Road drying in Texas and New Mexico showing strong growth

Drivers of LP Gas demand

- Economic growth, in particular personal income growth
- Access to LP Gas / investment in infrastructure
- Environmental and health initiatives / policies
- Government policy to encourage investment in distribution e.g. mini-grids etc.

Global Autogas growth

Global Consumption

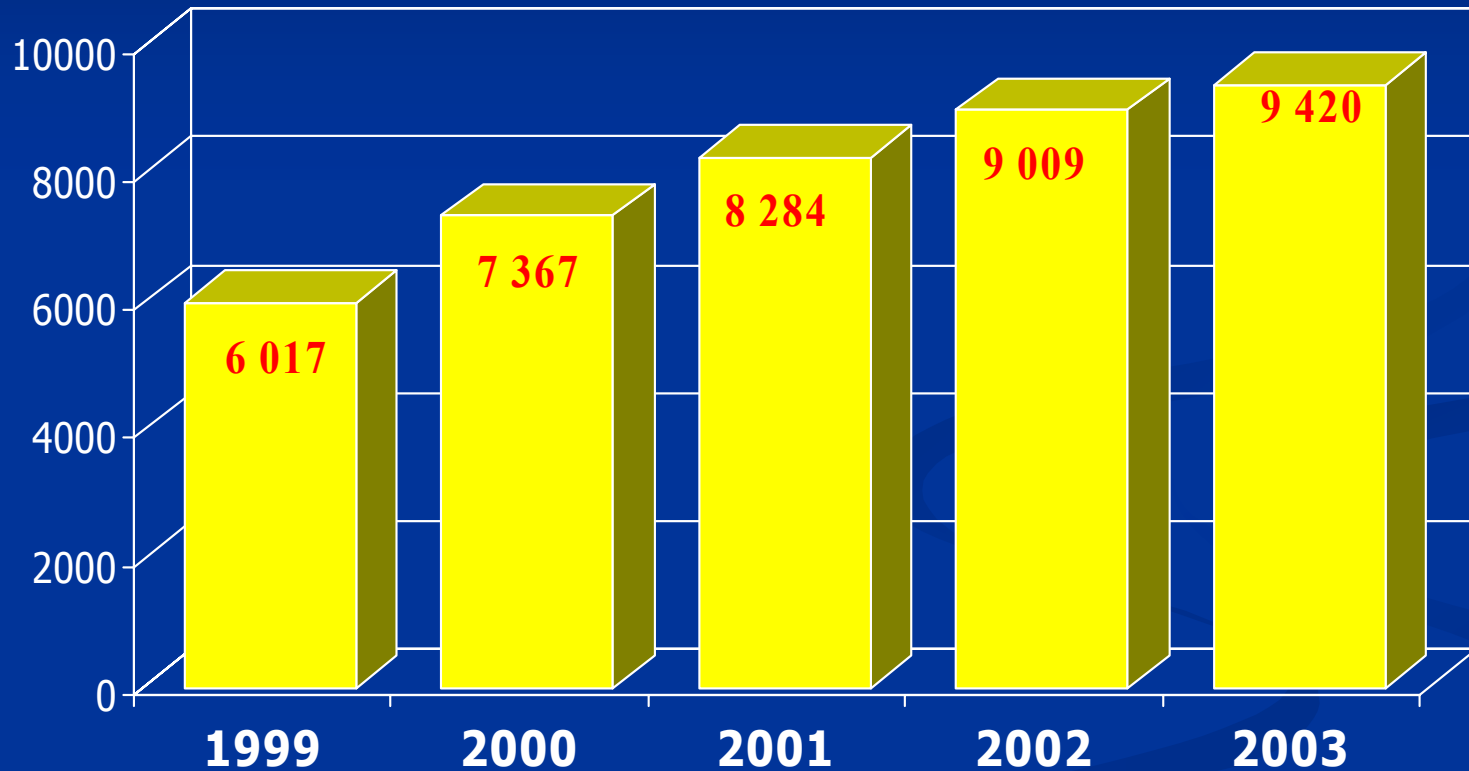


- ▶ Since 1990, Autogas has grown from 6.6 to 7.6% of total world LP Gas consumption

Global Autogas Growth

Vehicles Worldwide

(^000 vehicles)



2. LP Gas & Natural Gas

- complementary fuels

LP Gas and Natural Gas

- Complementary fuels

LP Gas and natural gas share many similar attributes:

- Both are clean and efficient sources of energy
- They can share end-use appliances interchangeably
- To the end user, they can be indistinguishable
- They can contribute to regional socio-economic development

LP Gas and Natural Gas

- Complementary fuels

- LP Gas can be used as a precursor fuel in new areas
 - Allowing market development at lower cost / risk
 - Increases demand prior to introducing grid
- Provides an alternative in off-grid areas
 - e.g. mountainous / remote regions
- Is an option in regions of declining natural gas supply or in areas no longer served by grid
 - e.g. areas of natural / man-made disasters, post conflict
 - WLPGA is coordinating relief efforts to tsunami victims
- Provides flexibility to industrial customers
 - Interruptible contracts / peak shaving / back up supply.

LP Gas and Natural Gas

- Complementary fuels

- Synthetic Natural Gas (SNG) is a propane : air mixture, effectively interchangeable with natural gas
- Many case studies of complementary SNG / NG projects exist :
 - In Korea during the 90's, a series of SNG fuelled city gas systems were built to support economic growth (and to replace cylinder LPG). Later connected to LNG as it became available.
 - In China > 30 cities developing natural gas with SNG as a precursor fuel
- Similar projects could be considered for Europe, particularly Eastern Europe and the FSU.

3. LP Gas & Sustainable Development

LP Gas contribution to sustainable development

LP Gas can contribute to the three pillars of sustainable development where natural gas can not:

- **Economic** – move from traditional & biomass fuels to modern energy and stimulate economic growth in rural areas
- **Social** – Improve health and quality of life through reduced indoor air pollution where no natural gas alternative exists
- **Environmental** – Through its high efficiency and low emissions per kJ it can support governmental targets such as Kyoto.

Conclusions

- LP Gas is a small, but increasingly important constituent of the global gas market
- Combined with Natural Gas, LP Gas can provide interesting project / market development opportunities
- Promotion of LP Gas can be considered to support sustainable development and climate change prevention
- LP Gas is a proven, clean, alternative automotive fuel with opportunities in many parts of Europe



Thank you

www.worldlpgas.com