



GOG¹⁶
Gulf of Guinea Gas Conference



**Natural Gas - Supporting Social and
Economic Development**

***Torstein Indrebø
Secretary General
International Gas Union***

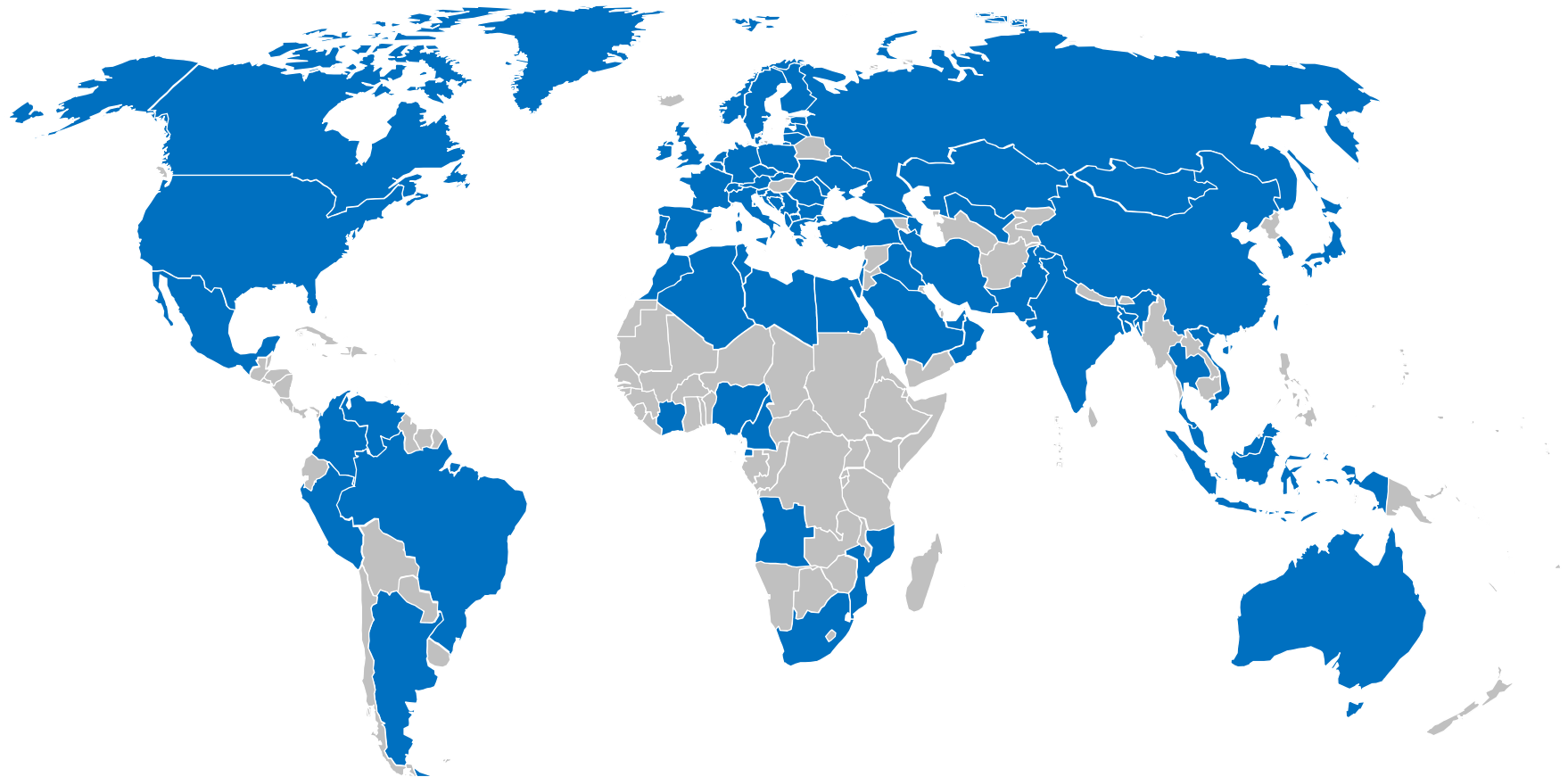


***Abidjan, Cote d'Ivoire
November 6-8, 2013***



International Gas Union

- Supporting the gas industry worldwide



Founded in 1931

www.igu.org

 IGU members

83 Charter members
43 Associate members

The global energy future

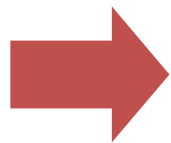
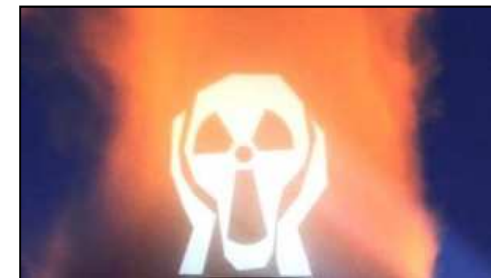
Drivers:

- Rising population & middle class
- Economic development and job creation
- Public health: urban air quality
- Environmental concerns



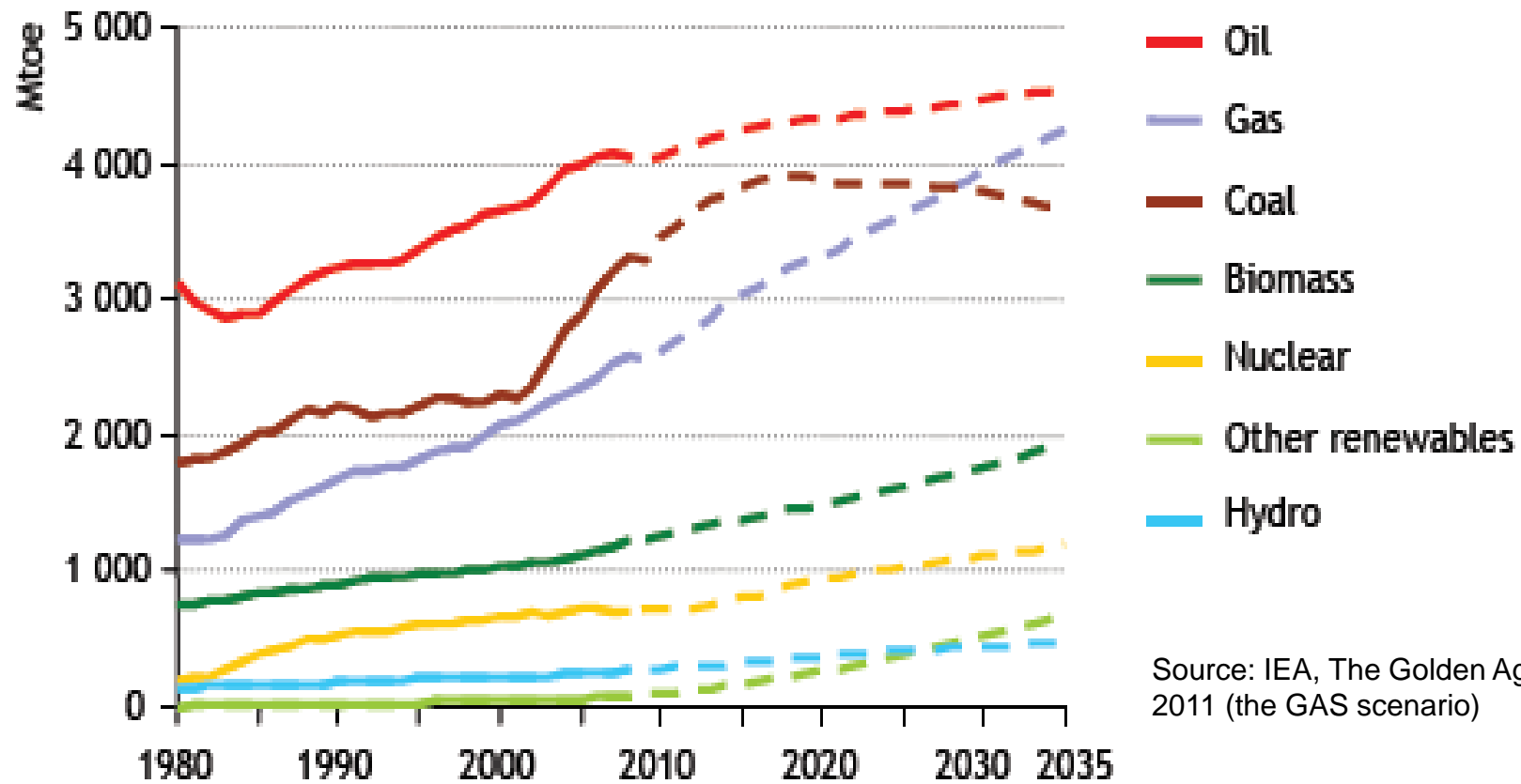
The world needs energy services:

- **Reliable, clean, affordable, safe**



Balanced and robust policies required

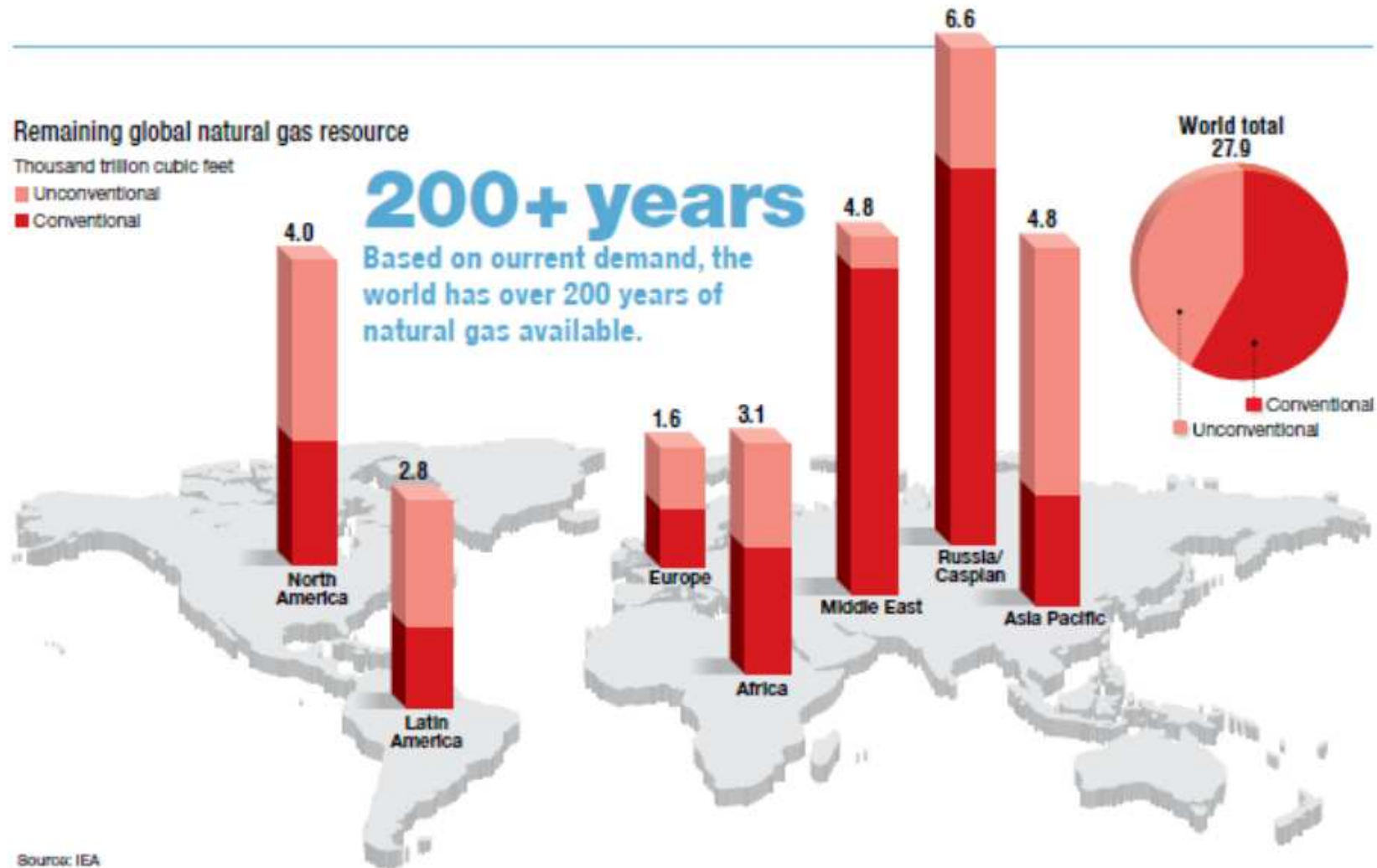
Growing energy demand – need for all energy sources available



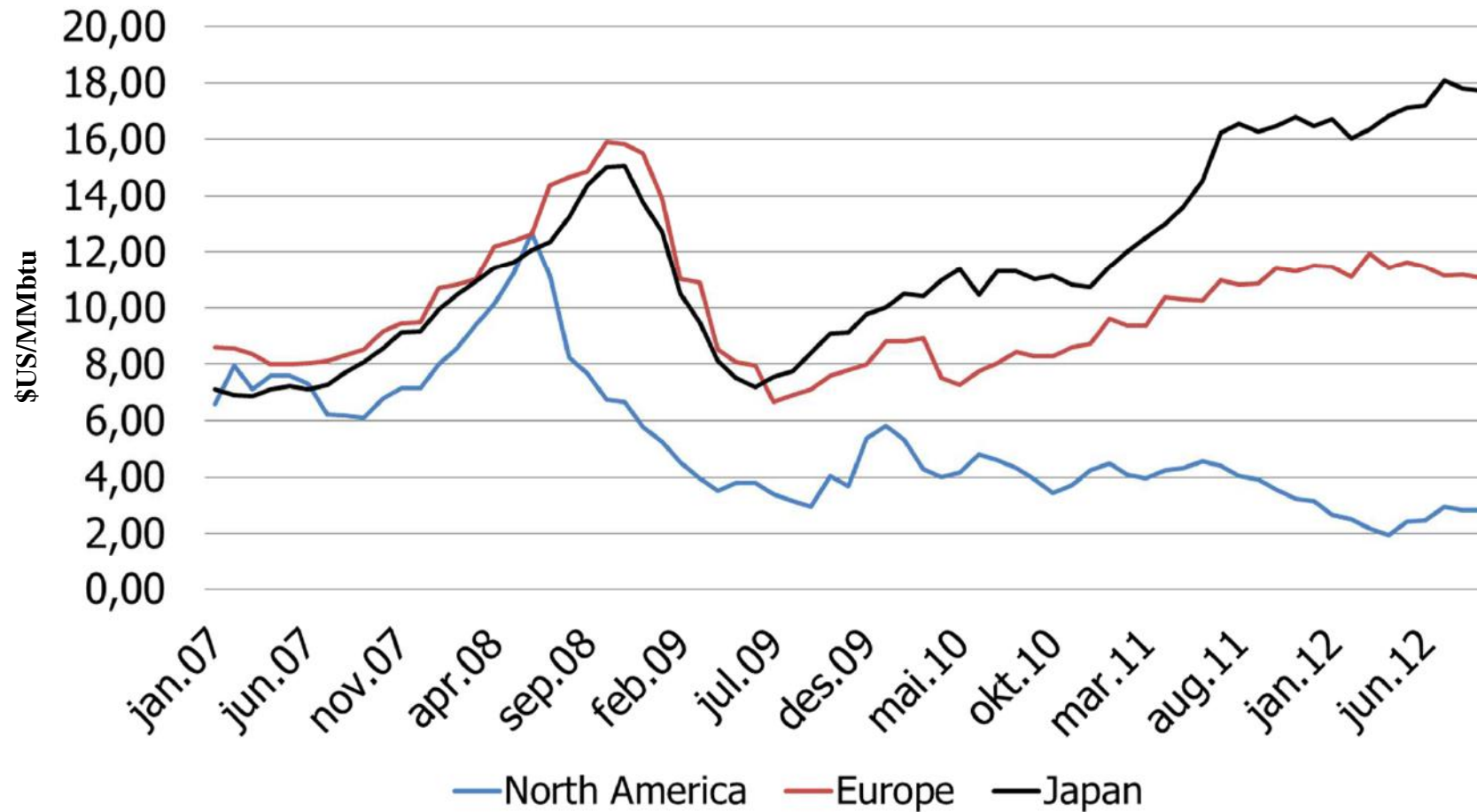
Source: IEA, The Golden Age of Gas, 2011 (the GAS scenario)

- Oil and coal declining in the long run whereas gas and renewables are increasing

Gas is available - and widely distributed



World Natural Gas Prices



Source: World Bank

Natural gas fueling the global economy – offers a wide range of applications



Fuel for
Gas District Cooling



Fuel for
Residential



Fuel for
Commercial



Fuel for
Automotive



Fuel for
Industry



Fuel for
Power Generation

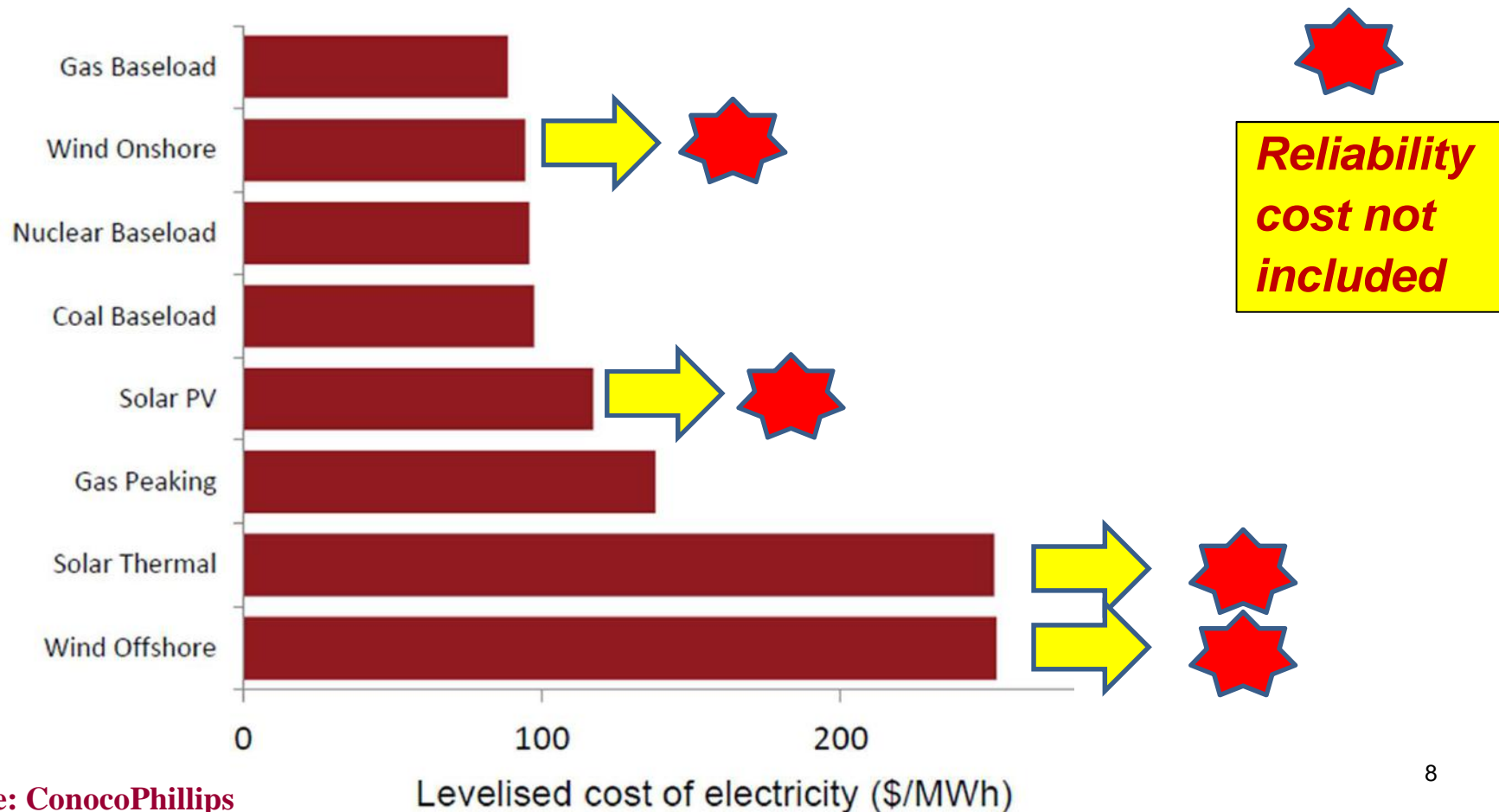


Fuel for
Petrochemical Feedstock

Natural Gas – competitive & affordable

Comparison of generation cost

(10 eur/T CO₂, 10 usd/mmbtu gas, 100 usd/mt coal, cap cost EIA 2013)



Natural gas partnering with renewables

Society needs energy 24 hours / 7days

Gas



Wind



Solar



Hydro



**Capacity
utilisation**

90-100%

30-40%

10-25%

Drought

***Natural gas easy
to turn on and off***



Gas fired power – clean burning and affordable

Electricity 24 hrs/7 days – no blackouts



- ▶ **Gas turbine 350 MW – 1 million households (2800 kwh/year)**
- ▶ **350 MW turbine requires 600 million cm/year (8000 hours)**
- ▶ **Technology scaleable, proven and affordable**
- ▶ **Environmental friendly**
 - ▶ **Lower GHG than coal and diesel, less air pollutants**

Natural gas for transportation (CNG/LNG)



Fleets



Less

- Particles/soot
- Noise
- CO₂
- NO_x - smog



Maritime

Economics & environment – the main drivers

Electric cars – increasing in urban areas



Less

- **Particles/soot**
- **Noise**
- **Local air quality**



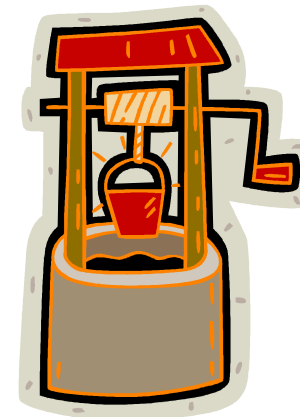
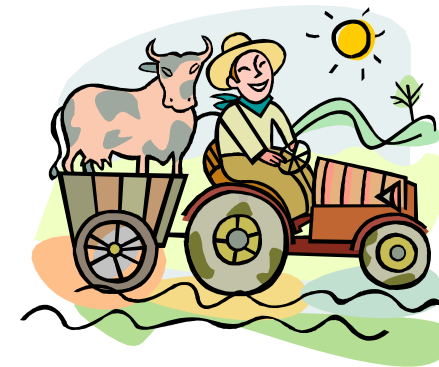
Less

- **CO₂?**

How is the electricity produced?

Access to energy – key to social and economic development

- Food supplies – farming/irrigation
- Clean water supply
- Industry & job creation
- Health services & education



Gas – supports all sectors of society

Enhanced domestic use of gas in Africa

Offer potential for:

- **Economic and social development**
 - Jobs, government income, trade
- **Reduced deforestation**
- **Reduced gas flaring**



Gas: provides energy access in a sustainable way

A robust and sustainable energy policy

- **Energy efficiency & savings**
- **Enhance use of gas in power generation and transportation**
- **Phase in renewable energy**



Gas: The fuel of today and tomorrow!

Thank you for your attention!



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