

The background of the slide features a series of offshore wind turbines silhouetted against a clear blue sky. The turbines are positioned at various distances across the horizon, with the largest one in the center-left foreground. The sea is visible at the bottom of the frame.

Established Gas Demand Uses

BIEE Seminar, October 10, 2013

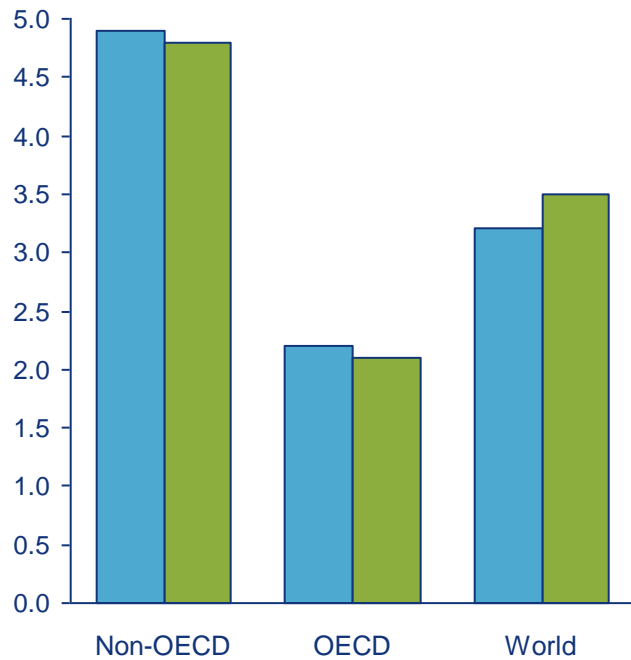
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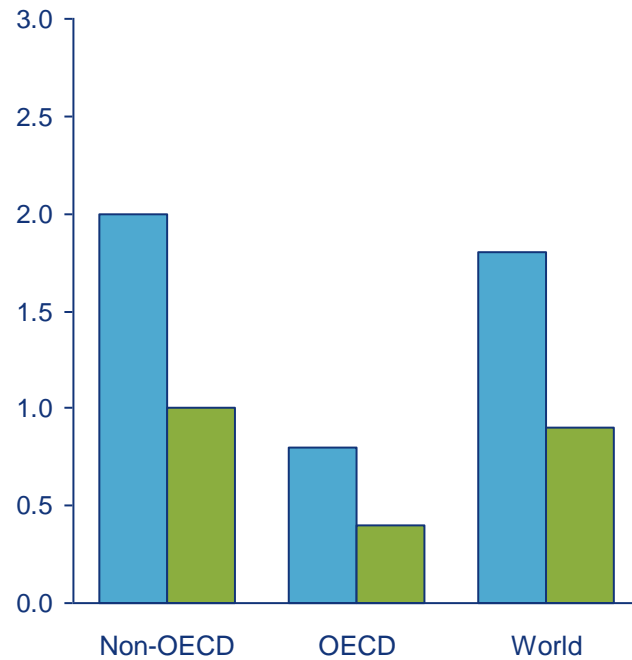
centrica

Global macro context will drive gas consumption

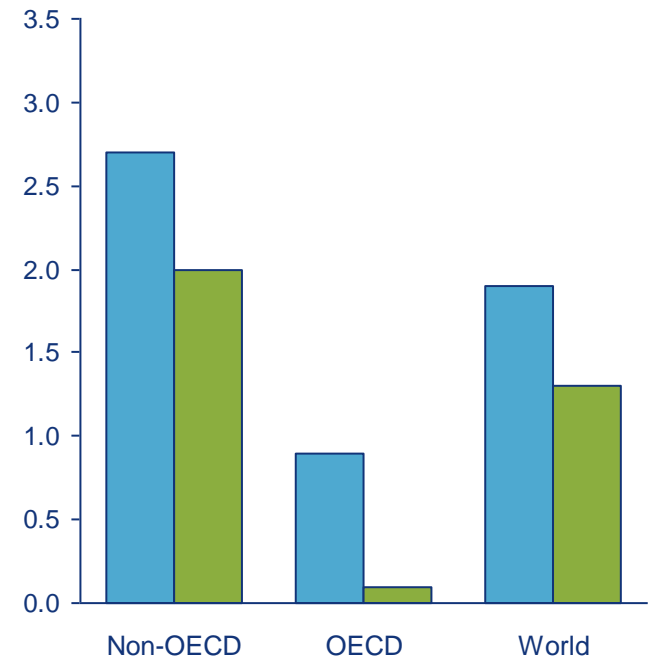
GDP Growth (%)



Population Growth (%)



Primary Energy (%)



■ 1990-2010 ■ 2010-2030

■ 1990-2010 ■ 2010-2030

■ 1990-2010 ■ 2010-2030

Global macro context will drive gas consumption

Macro context of OECD economies

▪ Structural drivers

- GDP growth close to trend similar to recent trend levels
- Population growth slowdown driven by ageing population
- Emphasis on energy efficiency
- Primary energy consumption flat

▪ Implications for gas demand

- Gas growth at the expense of competing fuels

Macro context for Non-OECD economies

▪ Structural drivers

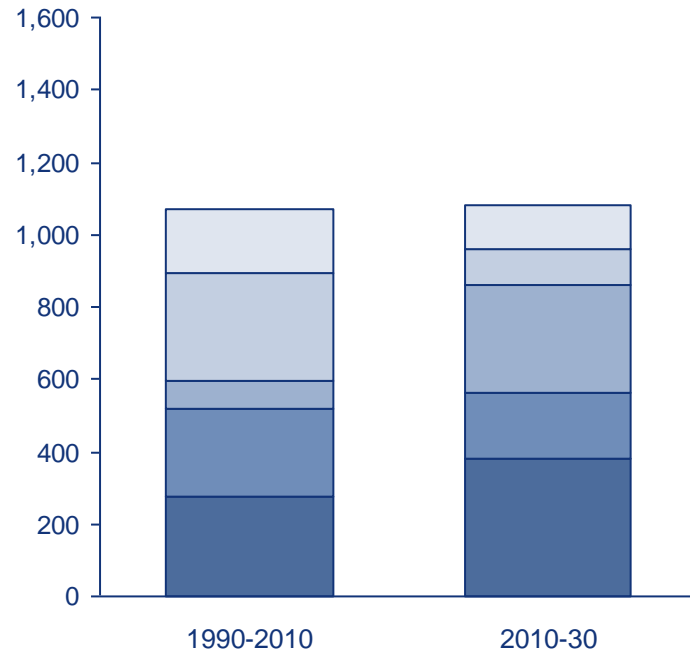
- GDP growth to continue at trend levels
- Per-Capita GDP level induced slow down in population growth
- Energy efficiency growth at historical trend levels

▪ Implication for gas demand

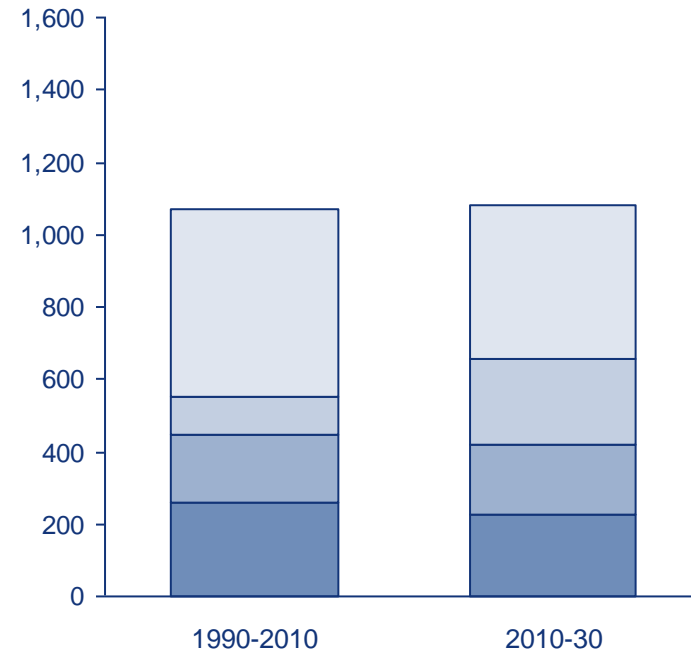
- Gas demand driven by economic growth and competition with alternative fuels

Gas demand growth out to 2030

Regional Gas Demand Growth (mtoe)



Sector Gas Demand Growth (mtoe)



Gas demand growth out to 2030

■ Regional gas demand growth

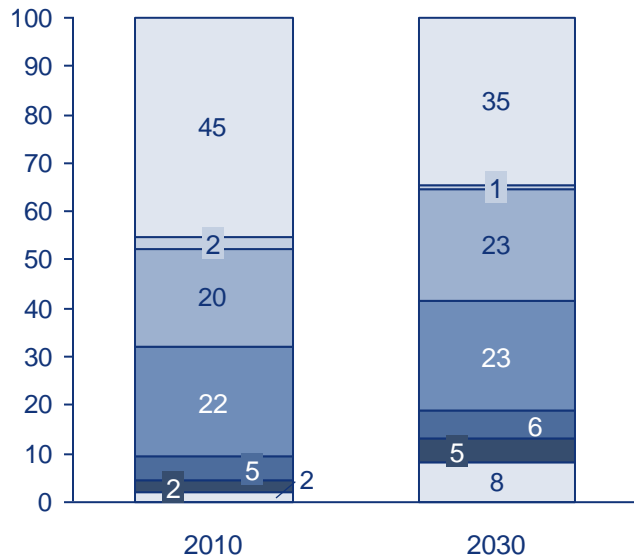
- OECD
 - Historically Europe and Asia were the main drivers of gas demand growth
 - Going forward North America will be the main driver of gas demand
- Non-OECD
 - Historically, Middle East has dominated gas demand growth
 - Going forward China and other Asia Pacific countries will drive gas demand growth while Middle East will continue to grow at historical trend levels

■ Sector Gas Demand Growth

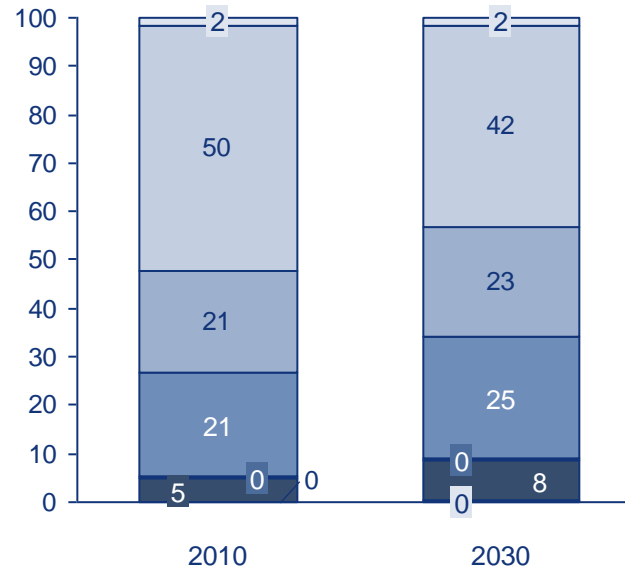
- Power and industrial sector to dominate demand growth
- Reticulation demand to grow mainly in non-OECD countries
- High growth in transportation but from a low base

Gas demand growth in the OECD

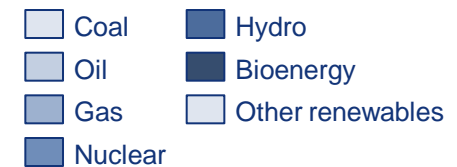
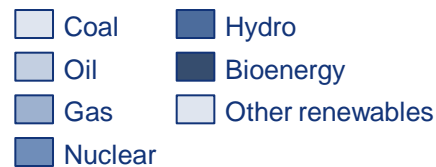
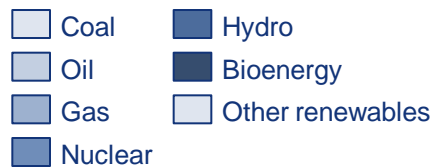
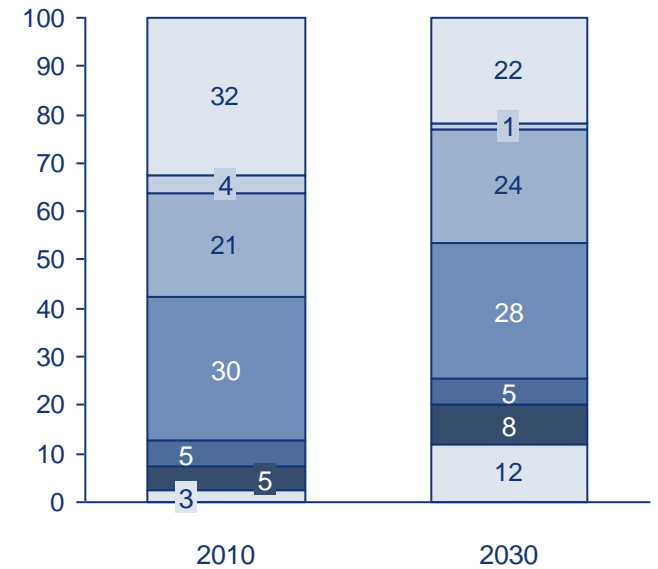
North America Power Sector(%)



North America Final Consumption (%)



Other OECD Power Sector (%)



Gas demand growth in OECD

■ North America power sector

- Shale gas production growth and environmental regulation to push gas demand growth at the expense of coal
- This growth despite expectation of continued strong growth in renewables

■ North American industrial sector

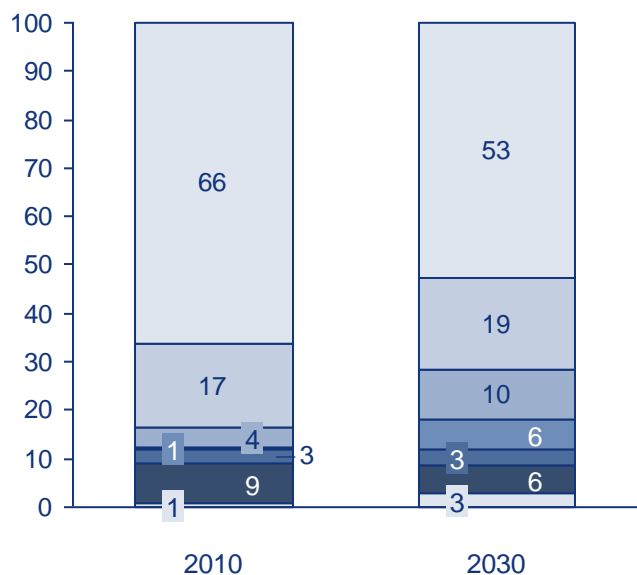
- Industrial growth in US
- Tar Sands production growth in Canada
- Gas demand growth driven by industrial growth rather than displacement of alternative fuel

■ Other OECD power sector

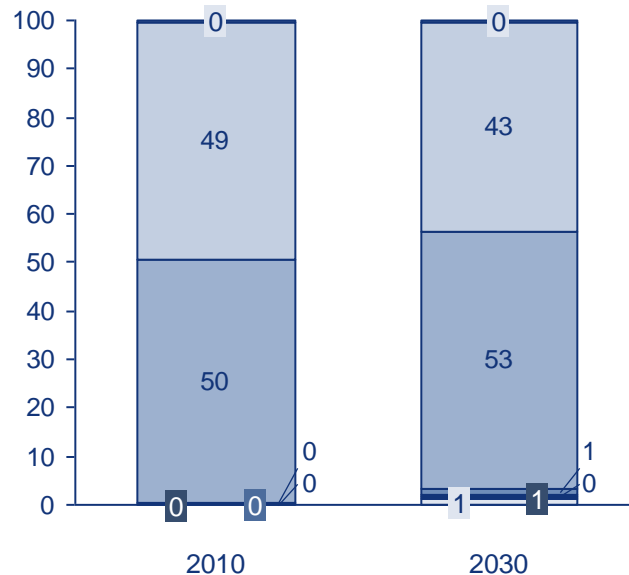
- Gas demand mainly at the expense of coal driven by environmental regulations

Gas demand growth in the Non-OECD

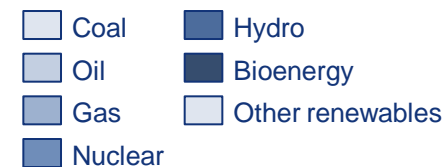
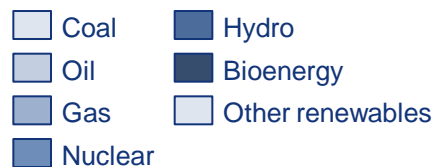
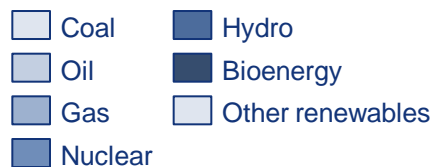
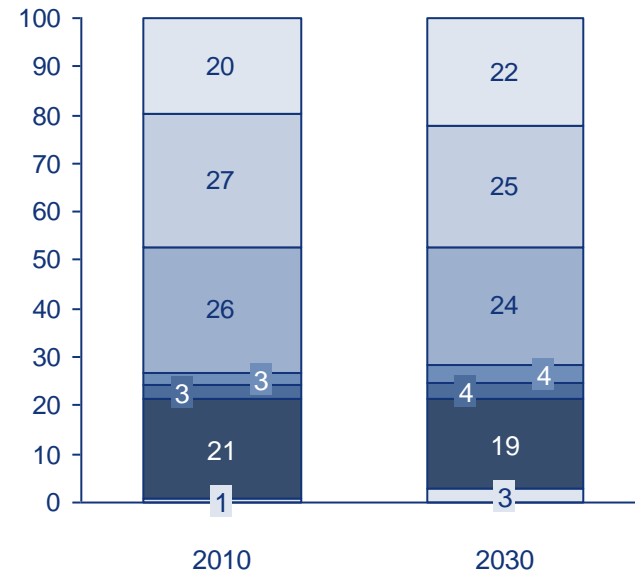
China Primary Energy (%)



Middle East Primary Energy (%)



Other non- OECD Primary Energy (%)



Gas demand growth in Non-OECD

■ Gas demand growth in China

- Substantial increase in gas share of primary energy
- Power demand driven by policy to reduce coal mainly in the coastal provinces
- Industrial demand driven by economic growth and displacement of coal and fuel oil
- Reticulation demand driven by urbanization and displacement of LPG networks

■ Middle East

- Gas share of primary energy increasing more modestly
- Growth mainly in the power sector – displacing oil

■ Other non-OECD countries

- Gas share of primary energy declines
- Gas demand increase driven by economic growth and urbanization impacting in the industrial, reticulation and power demand

Conclusion

■ OECD

- Economic, demographics and emphasis on efficiency implies a flat primary energy outlook
- Gas demand growth will therefore come at expense of competing fuels
- Economics and policy will be key drivers
- Power and industrial growth in North America are the key areas of gas demand growth

■ Non OECD

- Economic growth and urbanization will be key drivers of overall energy and gas demand growth
- In addition environmental regulation to reduce emissions (GHG and non-GHG) will also promote gas demand
- Key areas of growth are power and industrial sector and reticulation demand in non-OECD Asia