

Presentation to the press
London, 6 June 2011

ARE WE ENTERING A GOLDEN AGE OF GAS?

Special Report

**WORLD
ENERGY
OUTLOOK**

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- **Mounting worries over energy security & climate change**
 - *Policy uncertainty favours gas*
- **Renewed debate surrounding nuclear power**
- **A transformation of natural gas markets is underway**
 - *The North American shale gas boom is spreading*
 - *Dramatic & continuing expansion of LNG trade*
- **Increasing concerns about local pollution in emerging economies**

Are we entering a Golden Age of Gas ?

■ Objectives of the report:

- *Examine factors that could result in a more prominent role for gas*
- *Assess implications for all fuels, energy security & climate change*

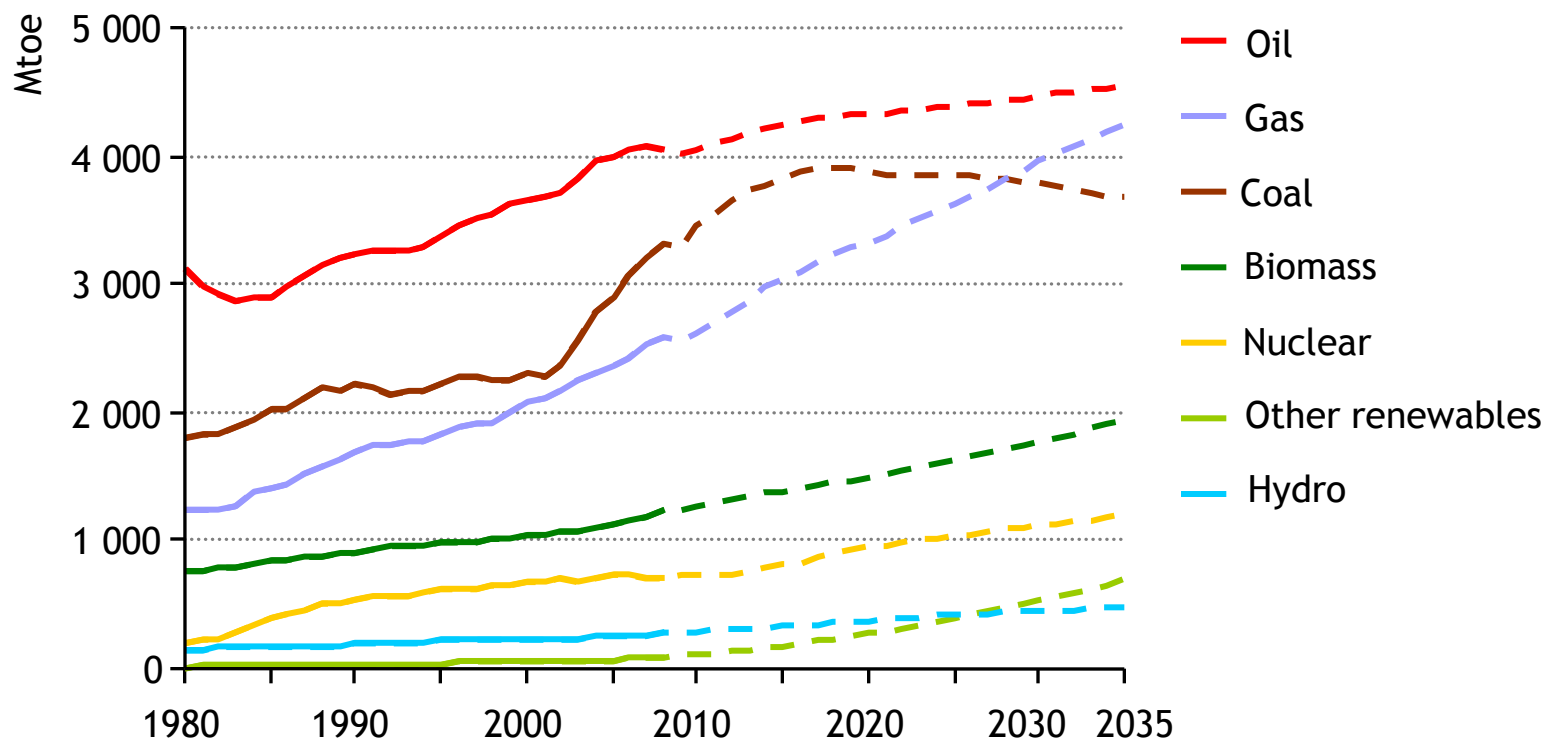
■ Key drivers of the *GAS Scenario*

- *Widespread development of unconventional gas*
- *Lower gas prices*
- *Gas targets in China's 12th Five-Year Plan*
- *Reduced growth of nuclear energy*
- *Increased deployment of natural gas vehicles*

■ *WEO-2010 New Policies Scenario* serves as benchmark for comparison

Gas grows nearly twice as fast as total energy.....

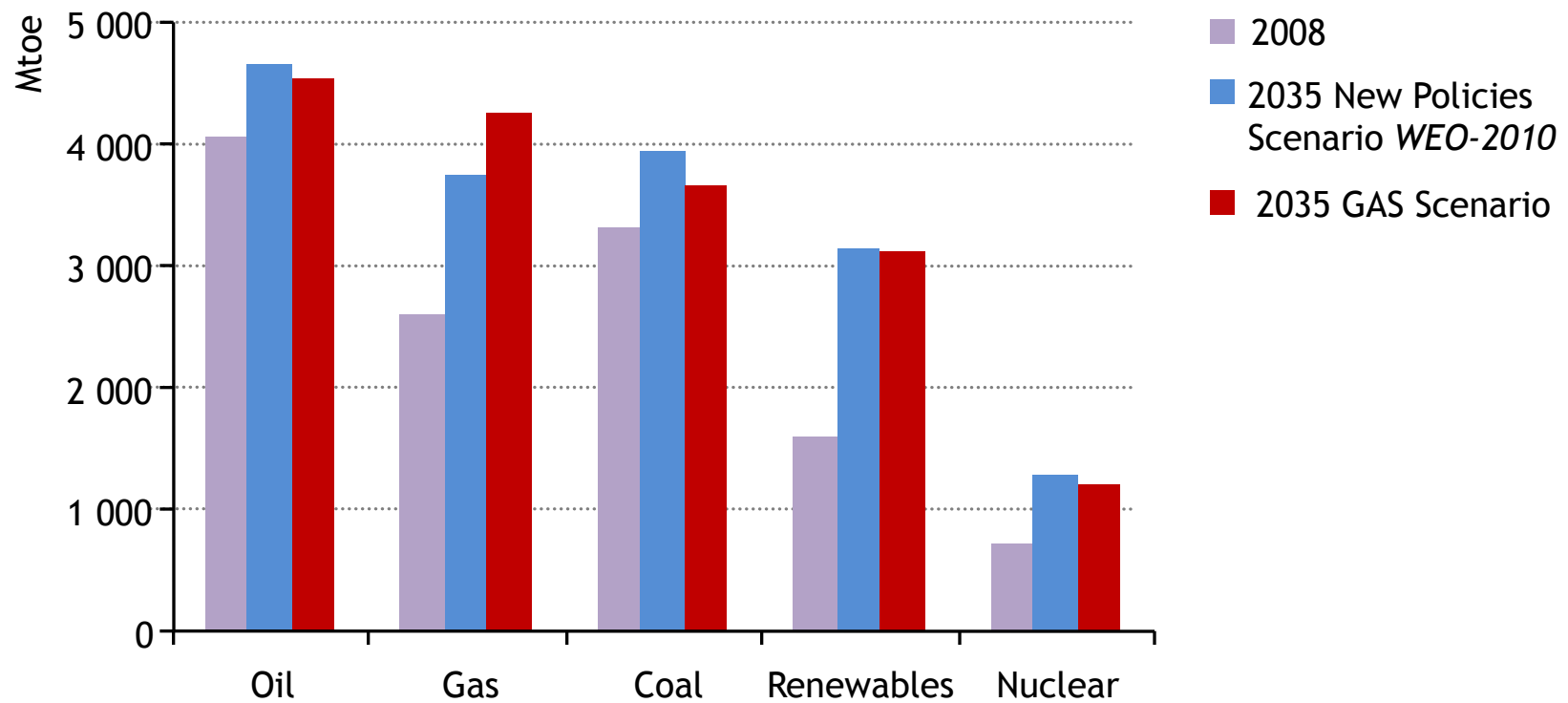
World primary energy demand by fuel in the GAS Scenario



Gas overtakes coal before 2030 and meets one quarter of global energy demand by 2035 – demand grows by 2% annually, compared with just 1.2% for total energy

.....mainly displacing coal

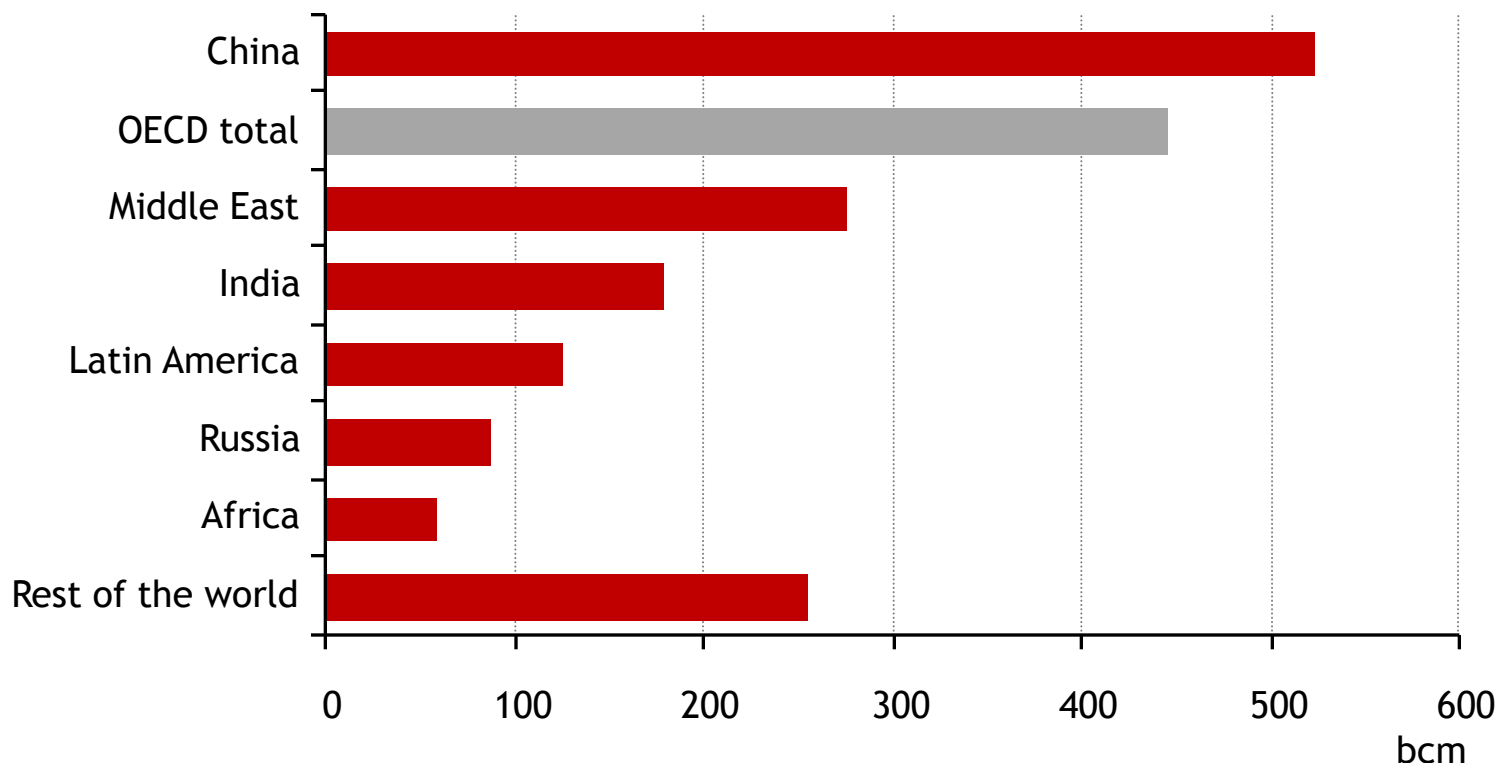
World primary energy demand by fuel and scenario



Gas demand in 2035 is 13% higher than in the New Policies Scenario, while demand for coal, nuclear & oil declines

Consumption grows most in developing economies

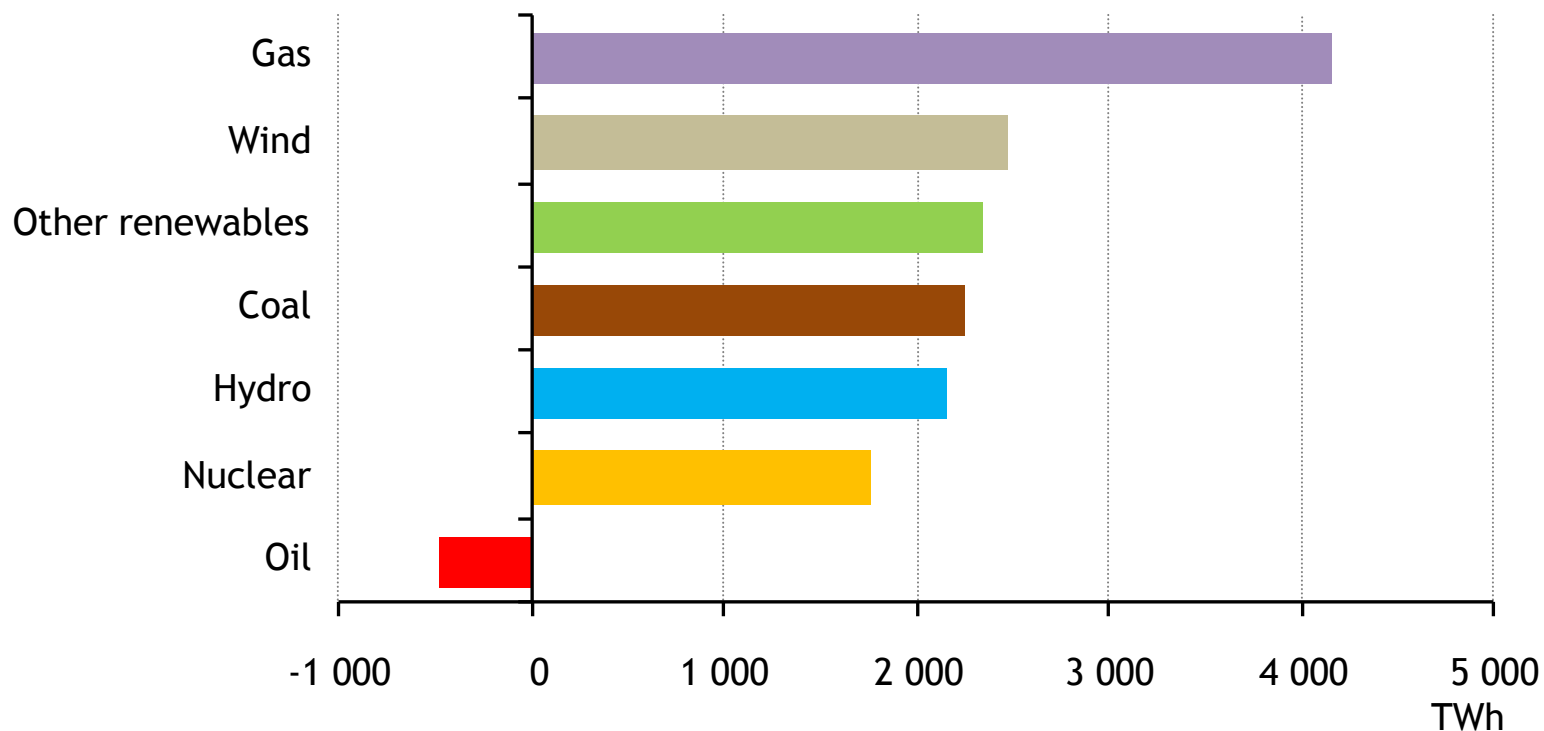
Increase in natural gas consumption in the GAS scenario, 2010-2035



Non-OECD countries account for 80% of demand growth – China alone makes up nearly 30% of global growth & uses as much gas as the EU by 2035

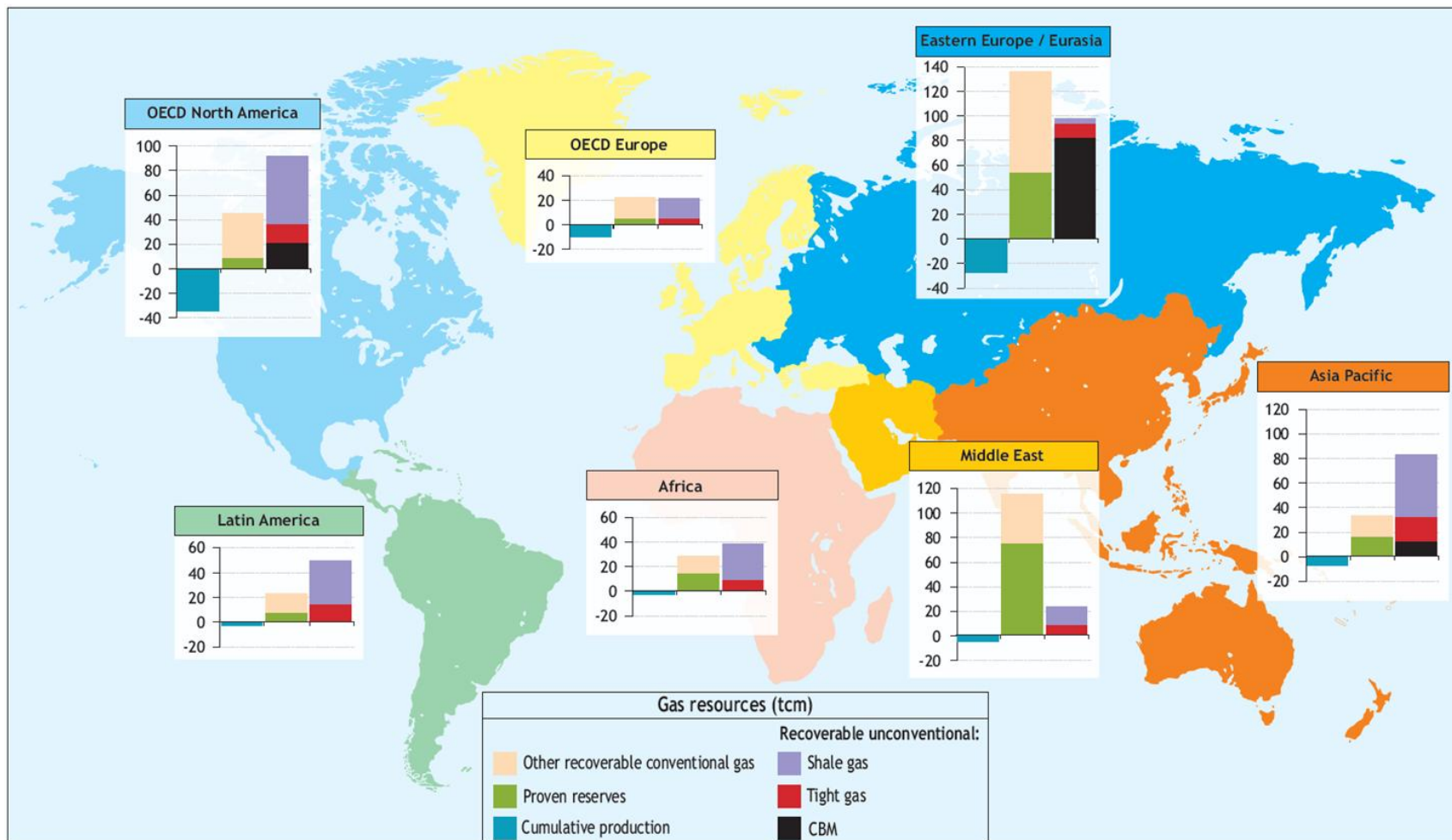
Power sector drives gas demand

Change in power generation by fuel in the GAS scenario, 2010-2035



Total electricity demand increases 70% by 2035, underpinned by a near doubling of gas-fired generation

Natural gas: recoverable unconventional resources match conventional

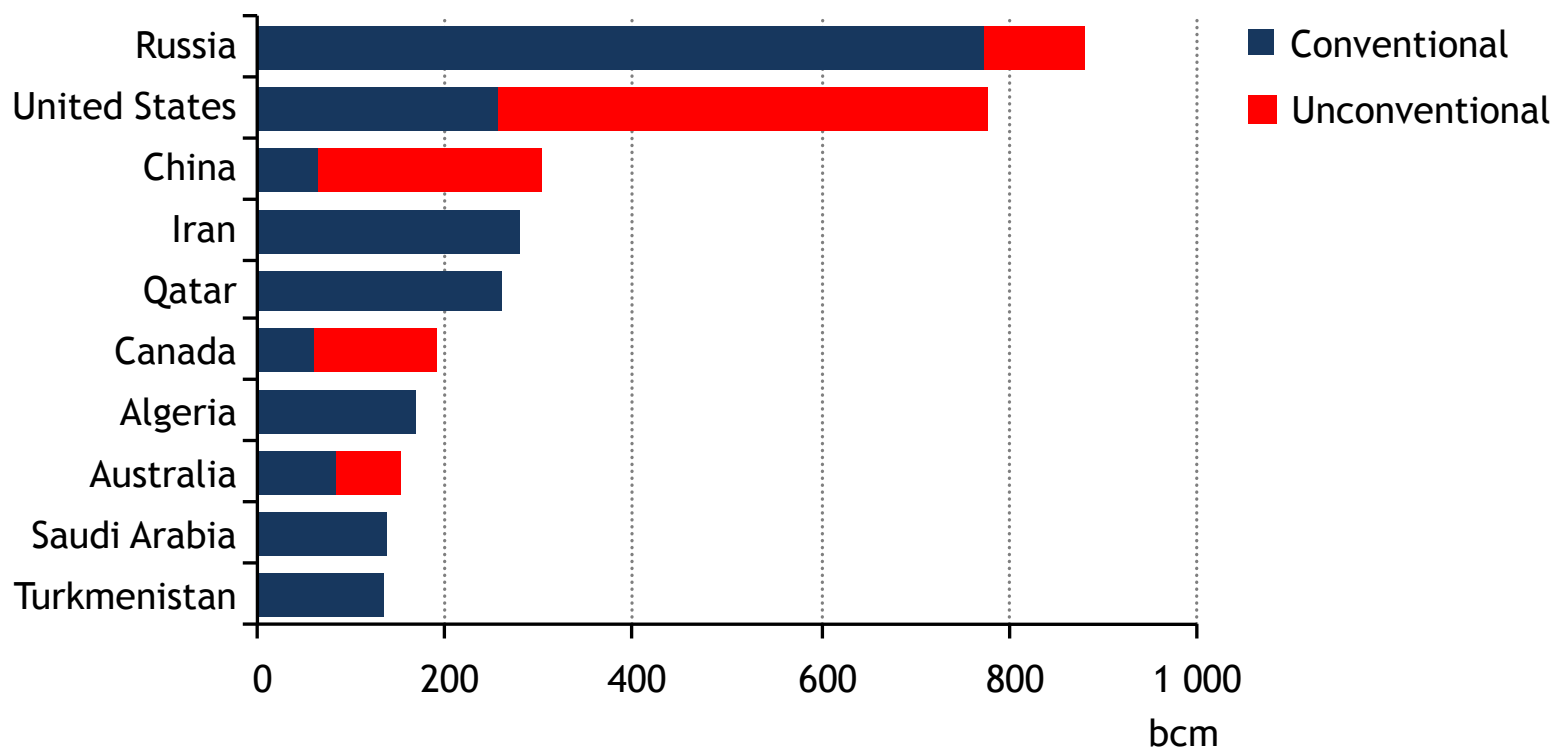


This map is for illustrative purposes and is without prejudice to the status of or sovereignty over any territory covered by this map.

Natural gas can enhance security of supply: global resources exceed 250 years of current production; while in each region, resources exceed 75 years of current consumption

Production of unconventional gas becomes widespread

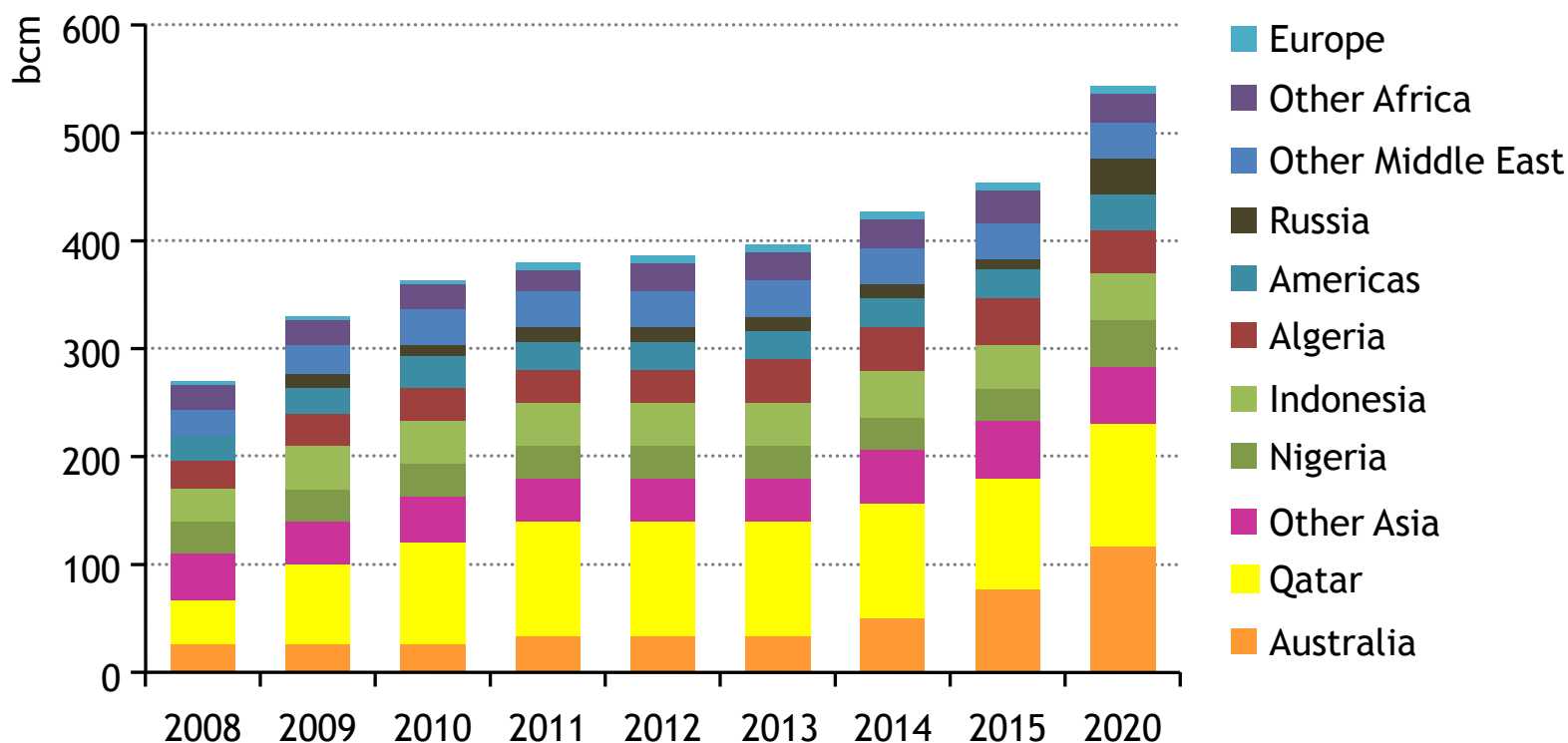
Largest gas producers in the GAS Scenario, 2035



Unconventional gas supplies 40% of the 1.8 tcm increase in gas demand to 2035, making up nearly one quarter of total production

Growing LNG enhances supply security & market flexibility

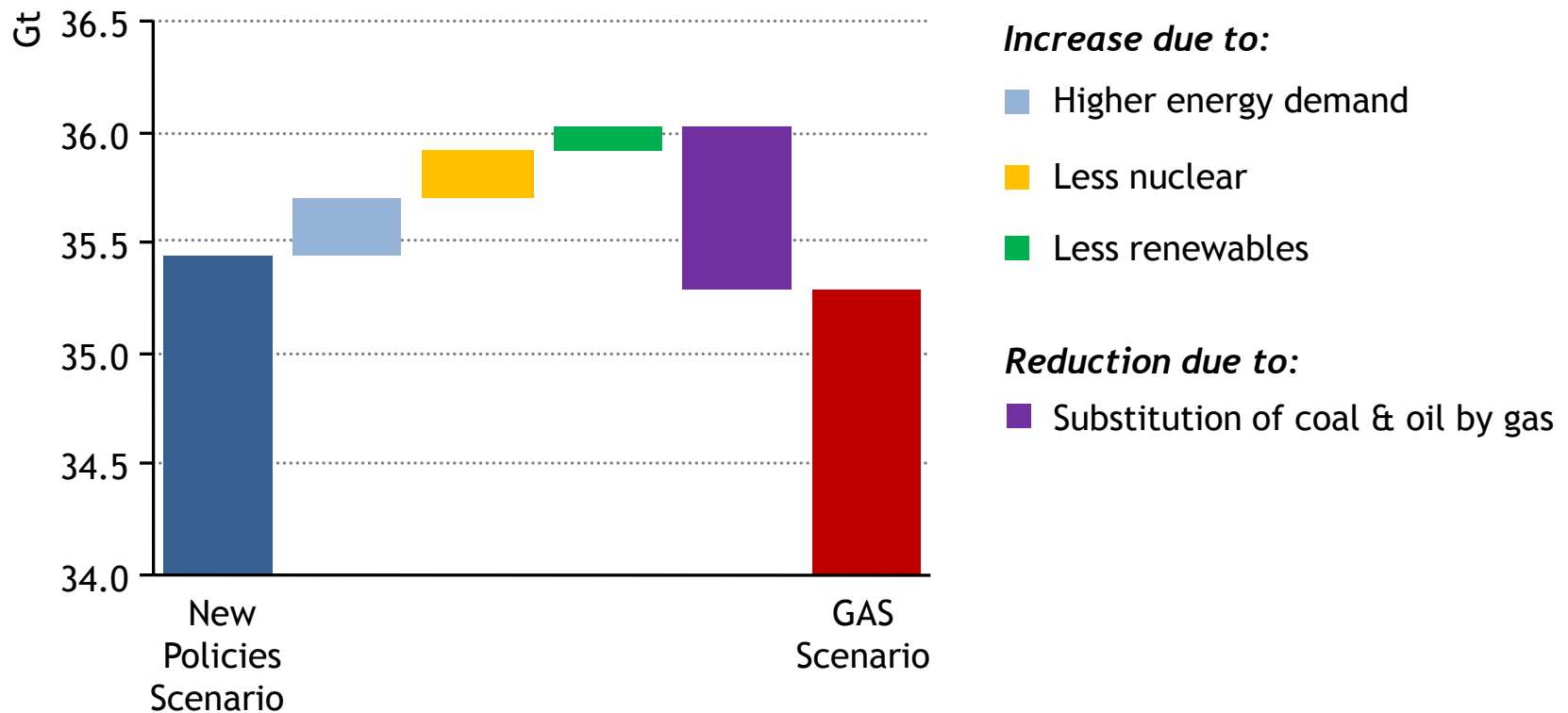
Projected LNG liquefaction capacity by country



Trade in natural gas between major regions doubles to over 1 tcm by 2035, with Australia becoming a leading LNG supplier

CO₂ emissions drop, but only slightly

CO₂ emissions in the GAS Scenario compared with the New Policies Scenario, 2035



CO₂ emissions are just 160 Mt lower than in the New Policies Scenario in 2035. Substitution of coal & oil by gas cuts emissions by 740 Mt, but this is largely offset by other effects

■ Existing regulatory regimes are being tested

- *Hydraulic fracturing: water use, contamination & disposal*
- *Greenhouse-gas emissions*

■ But regulatory & operational best practices can mitigate the risks

- *Ensuring gas, water & chemicals cannot enter other formations*
- *Minimising water use*
- *Treating & disposing of water appropriately*
- *Limiting gas venting*

■ Using best practice, “well-to-burner” emissions from shale gas production are 3.5% higher than from conventional gas

- **Market uncertainties create opportunities for natural gas**
- **Greater gas use could enhance regional energy security**
 - *New supplies & trade routes emerge*
- **Gas has a role to play in a low-carbon energy economy, but increased use in itself is far from sufficient to reach the 2°C goal**
- **Unconventional resources could boost supplies substantially**
 - *But best practice regulation is essential to mitigate environmental risks*
- **In the GAS Scenario, demand for gas grows more than 50% by 2035, providing over 25% of world energy.....**
 - *surely a prospect to designate the Golden Age of Gas*

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