

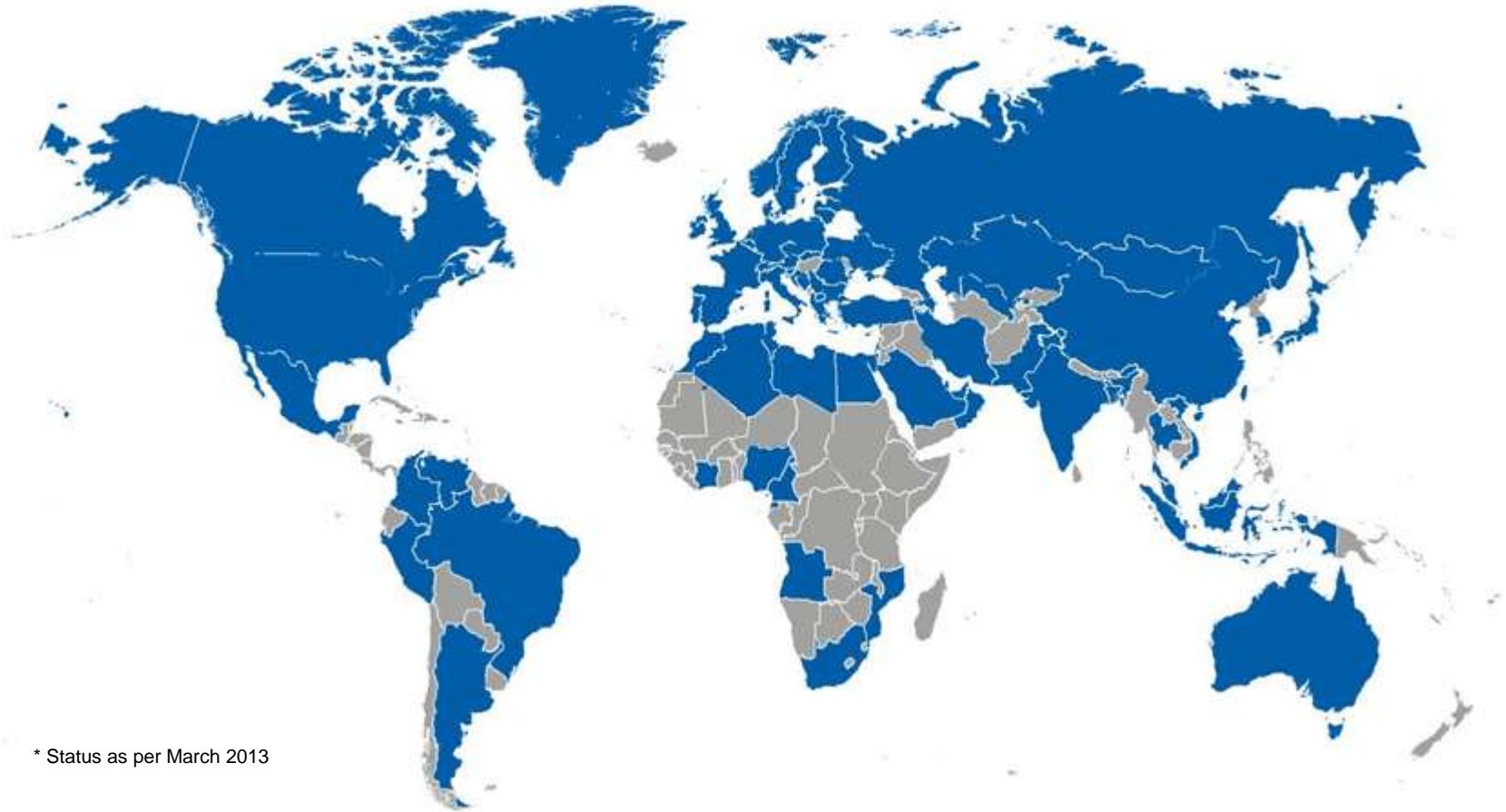


***Global Vision for Gas:
The Pathway towards a Sustainable Energy Future***

**Torstein Indrebø
Secretary General of IGU**

**European Gas Conference 2013
4-5 June, Oslo, Norway**

IGU represents more than 95 % of the global gas market



* Status as per March 2013

Founded in 1931
www.igu.org

 IGU members

81 Charter members
40 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:

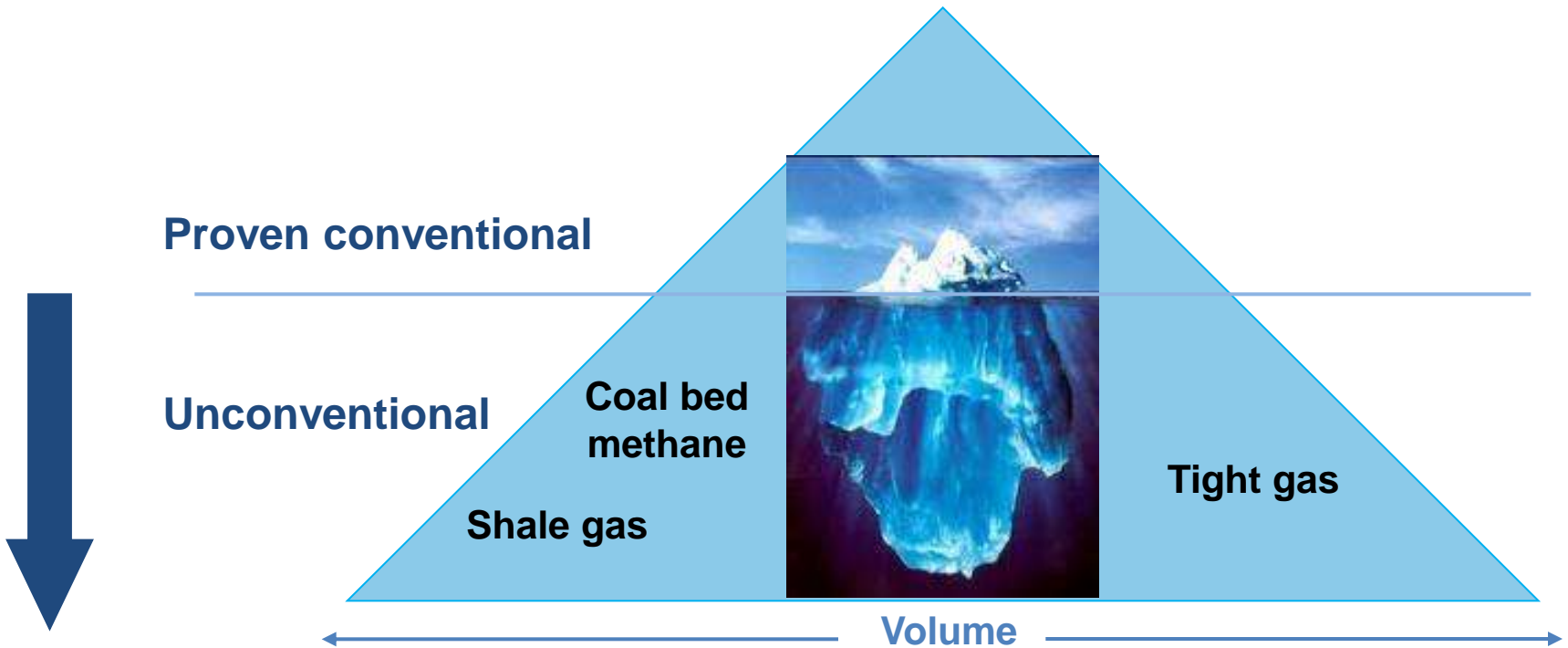
- Secure, clean and competitive energy
- Safe energy



 ***Balanced and robust solutions required***

Natural gas resources are abundant

Technology – driving supplies



Gas resources for more than 250 years (IEA)

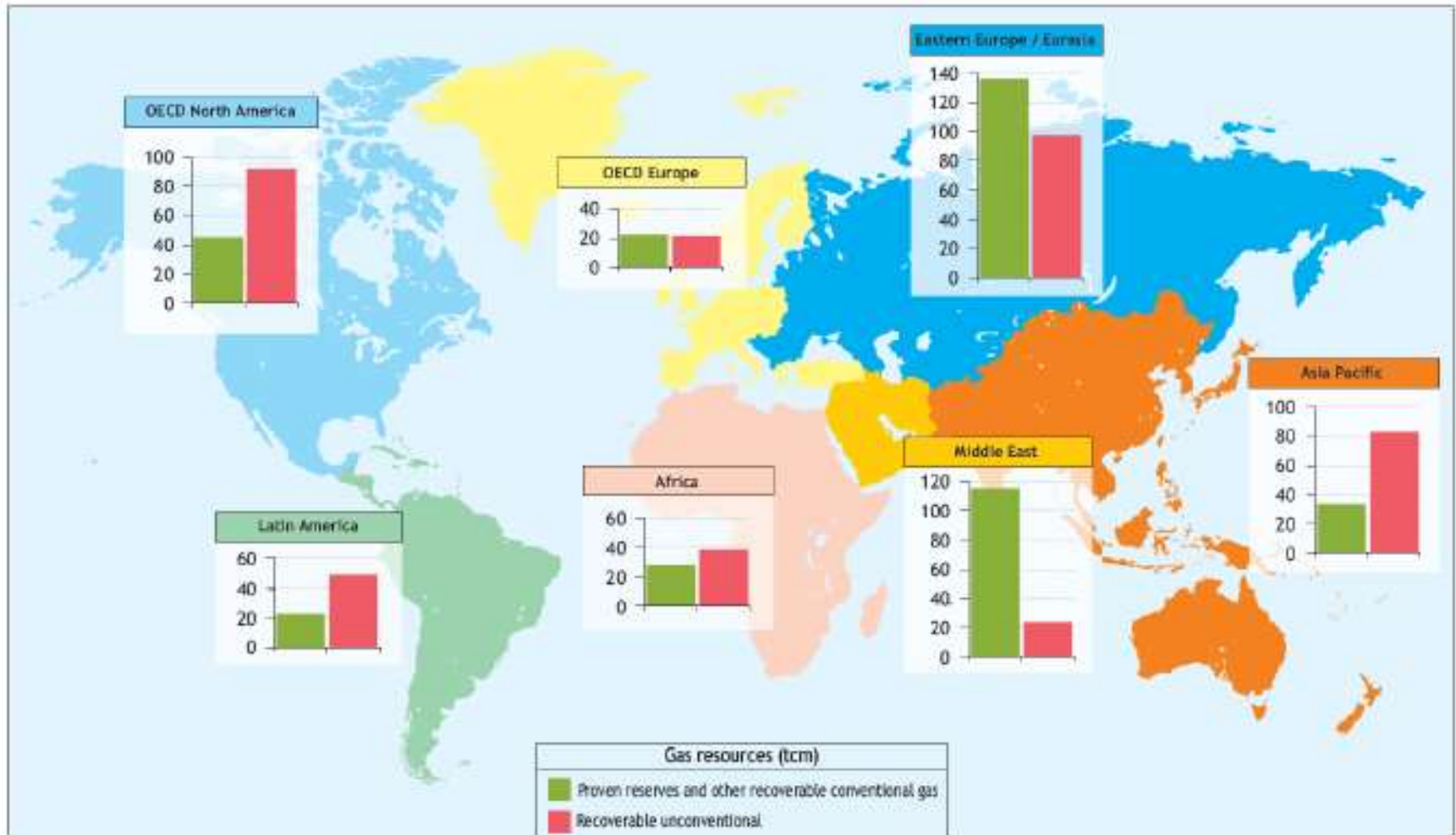


Do Not Drink
His Water

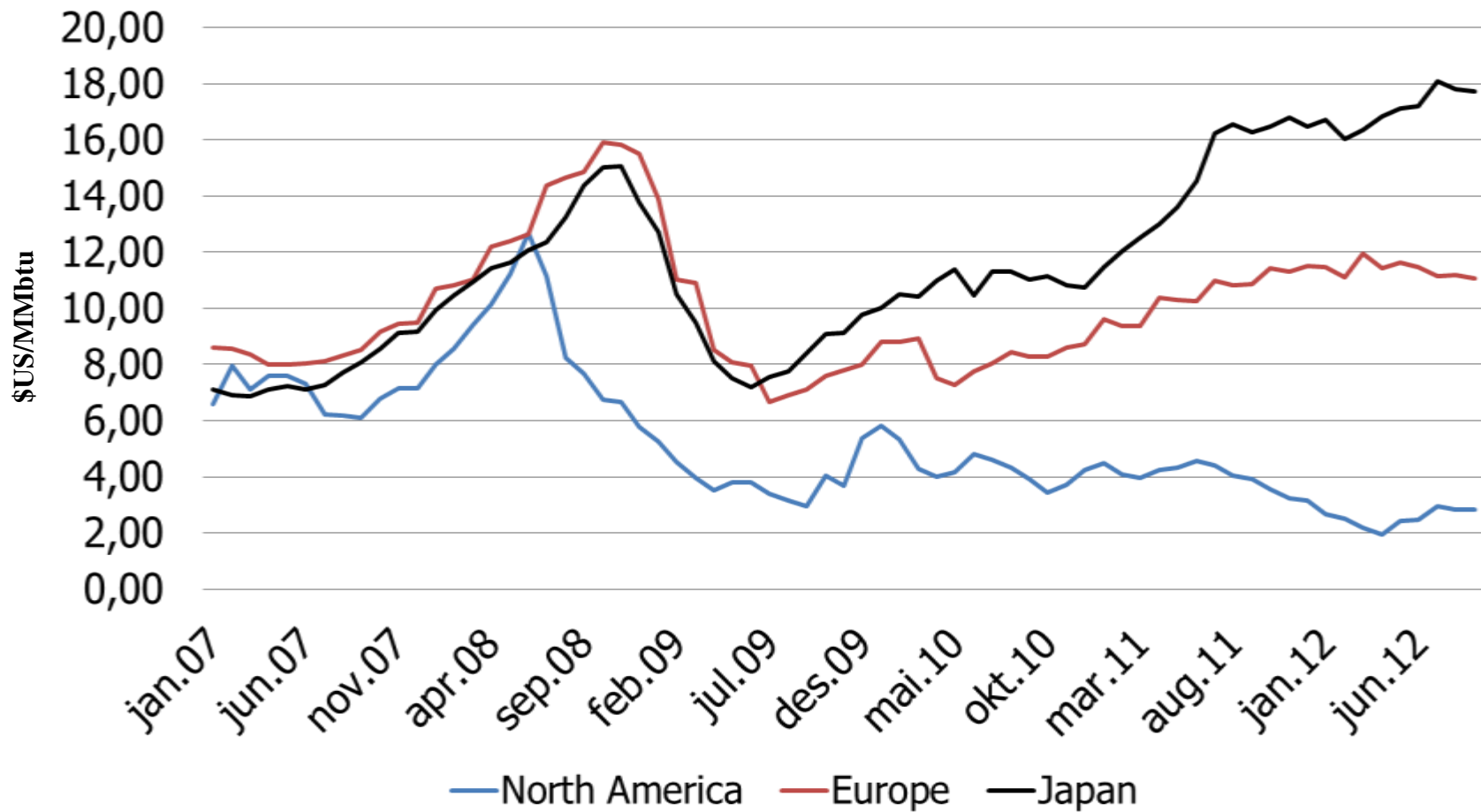


Do Not Drink
His Water

World gas resources – Conventional (green) & unconventional (red)



World Natural Gas Prices



Source: World Bank

World loves electricity!



Source: ExxonMobil

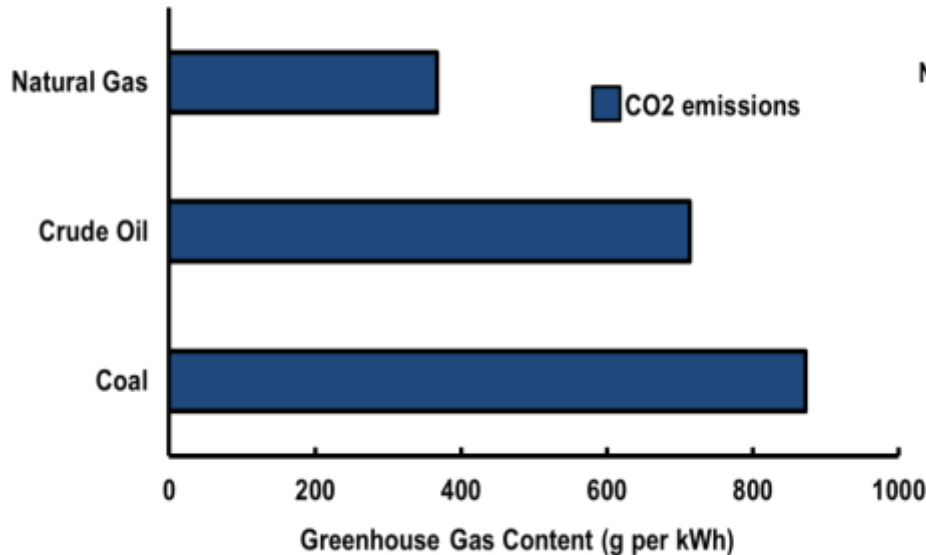
Global increase by 2035 more than 50%

Natural gas in the power sector

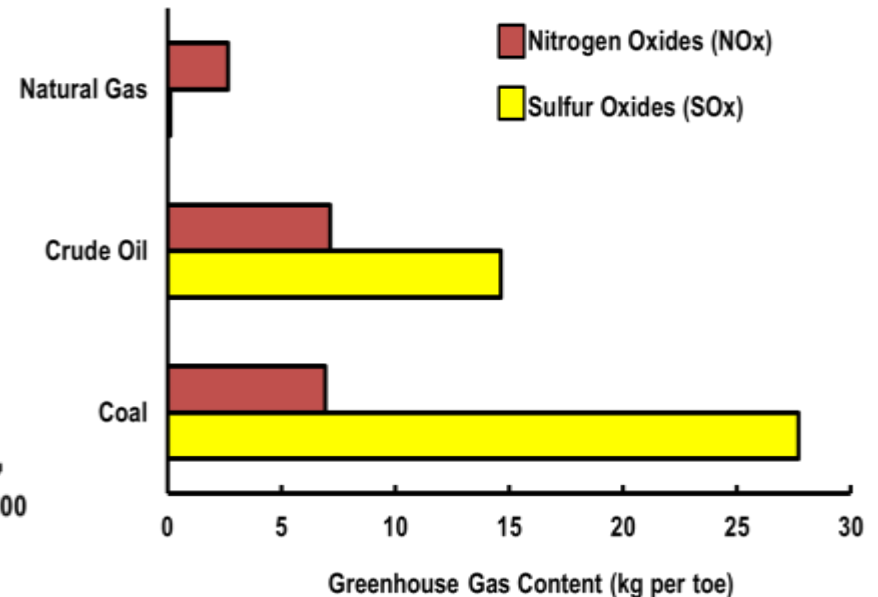


....clean-burning and affordable

Carbon dioxide emitted during electricity generation by fuel



NOx and SOx content by fuel



Natural gas enables renewable energy

Natural Gas - Wind - Solar

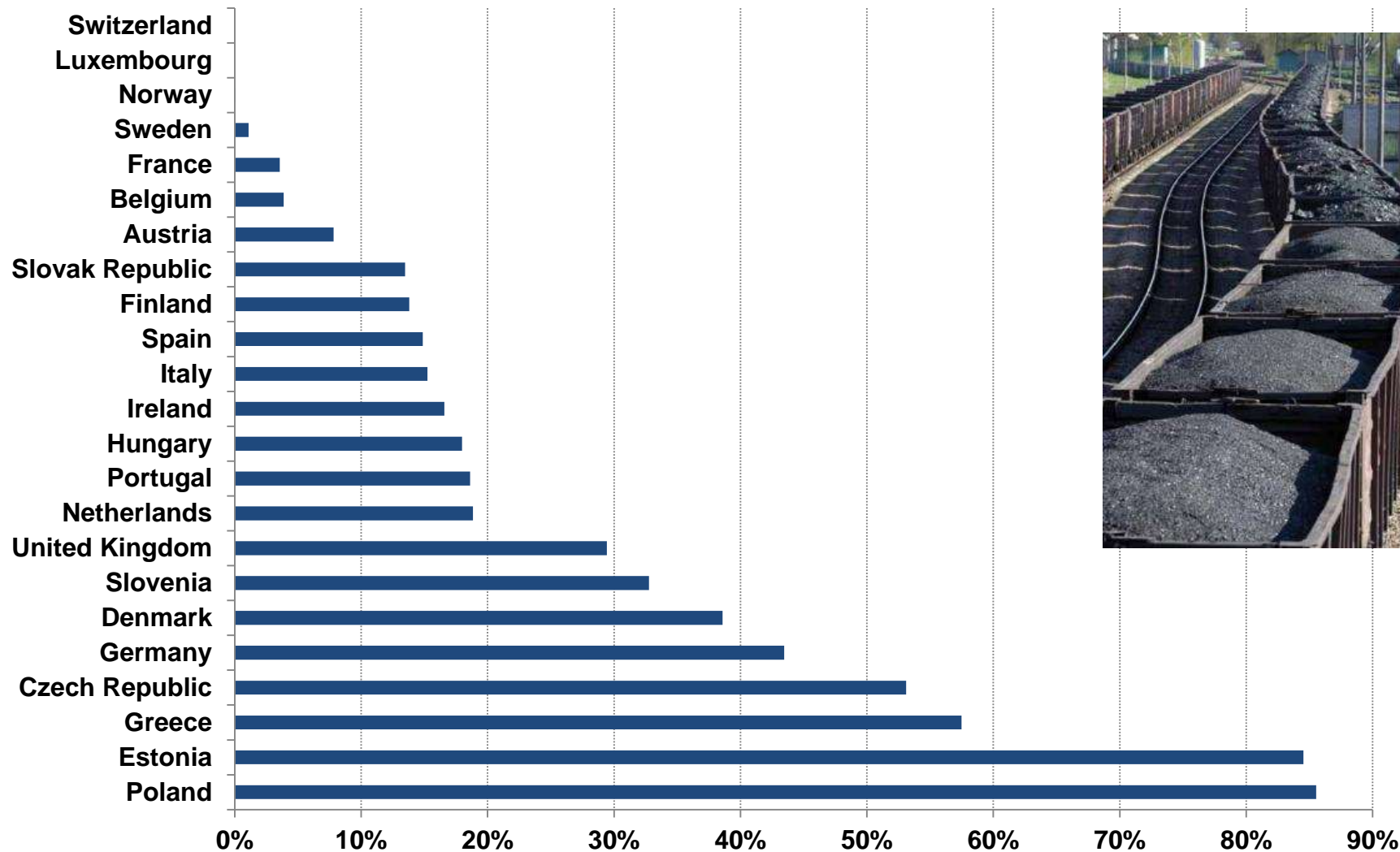
Clean support for
variable renewables



An ideal combination



Share of coal in electricity generation in Europe



Natural gas for transportation



Less

- **Particles/soot**
- **Noise**
- **CO2**
- **NOx - smog**



Fleets



Maritime

Gas price lower than oil price

Natural gas provides sustainable growth

- **Economic development and job creation**
- **Build on existing energy infrastructure**
- **Gas industry contributes to public finances**



Adaptability of natural gas

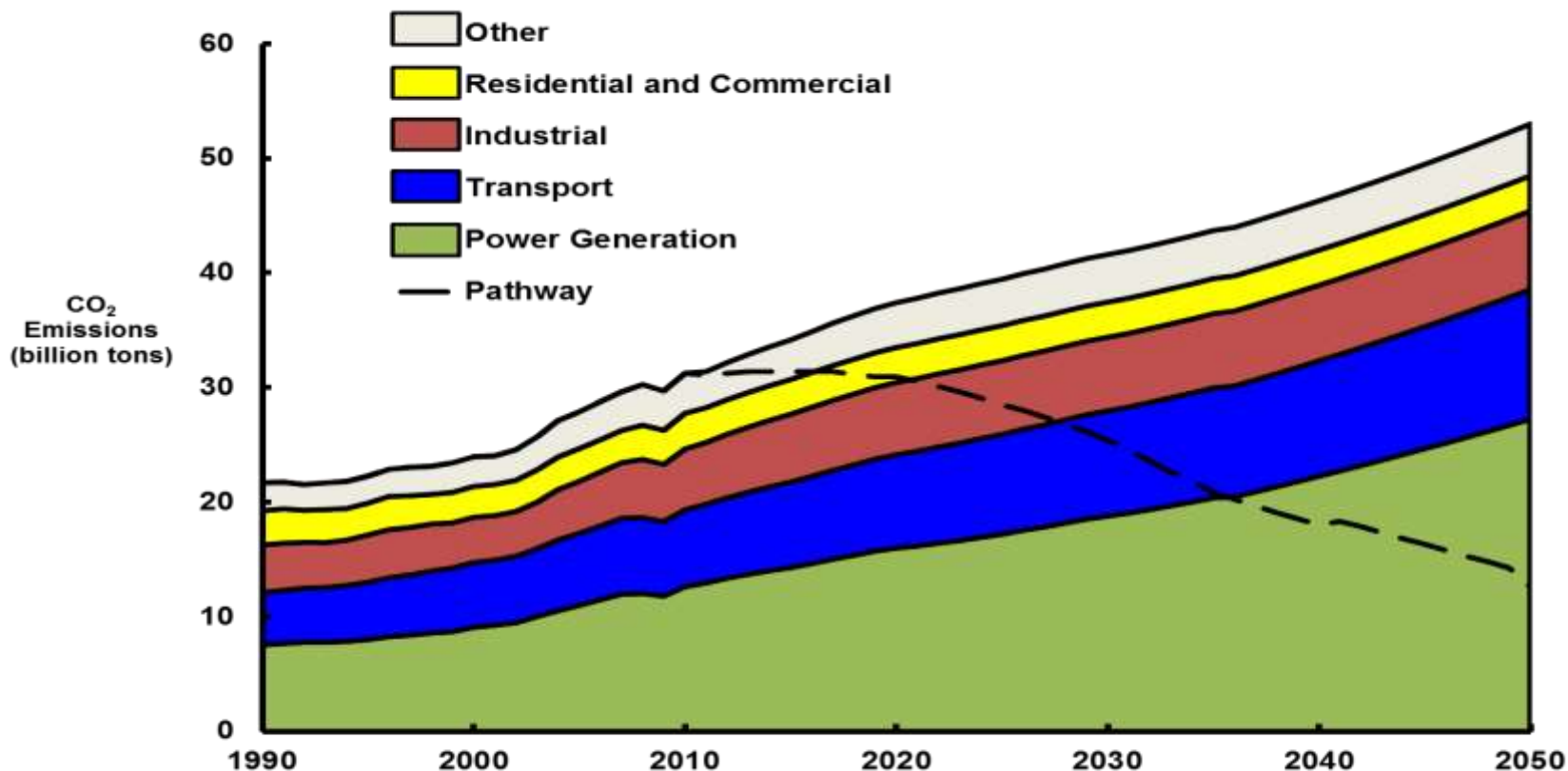
- **Gas-fired generation technology directions:**
 - Capture carbon through retrofit technology
 - Partnership with renewables
 - Greater inclusion of carbon-neutral biogas
- **Gas pipeline and storage systems provide future options for:**
 - CO₂, Biogas, Hydrogen



The Pathway towards a sustainable future

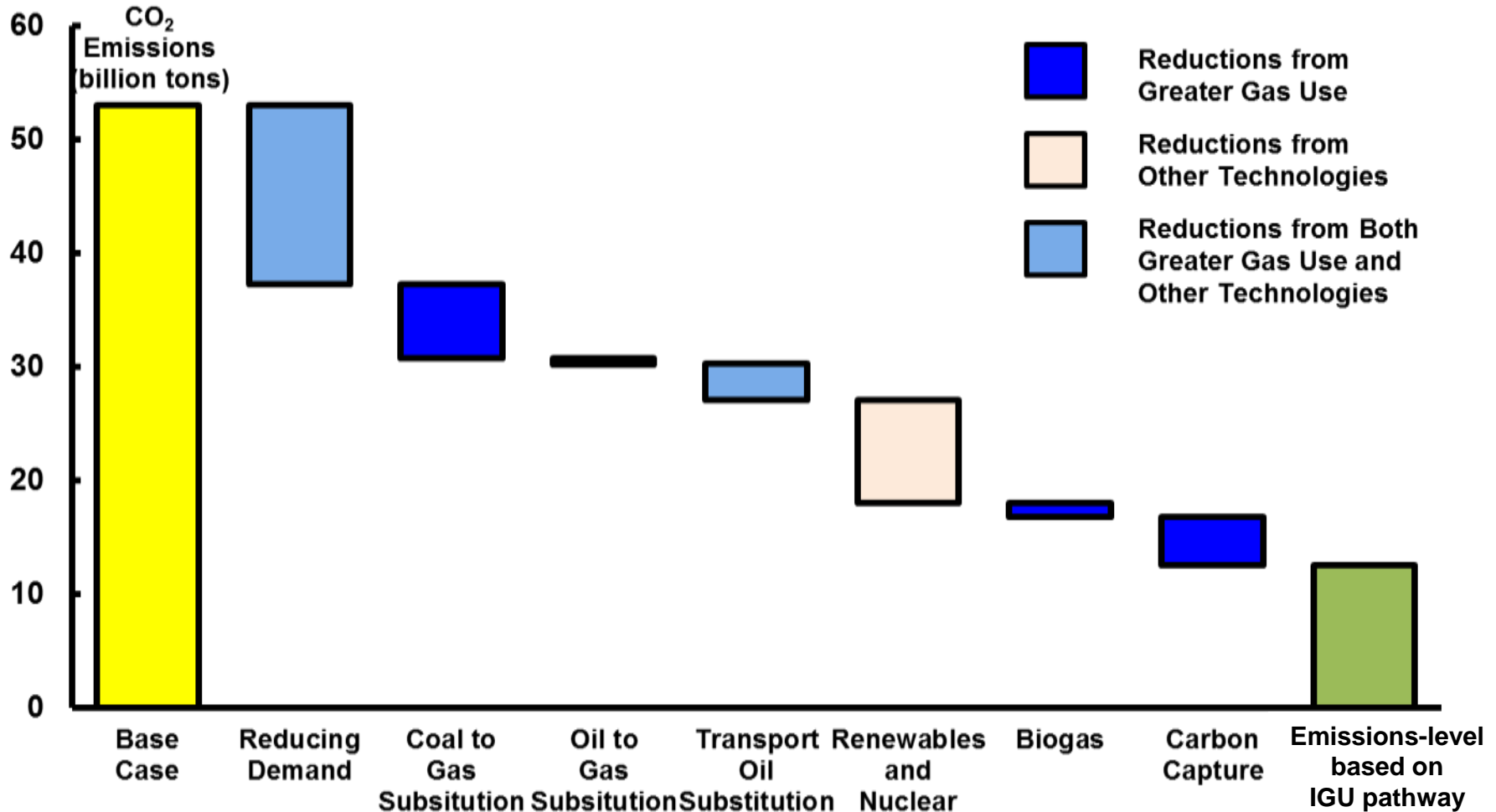
Meeting future global energy needs – whilst addressing air quality and climate change concerns

Global Emissions Trajectory Base Case

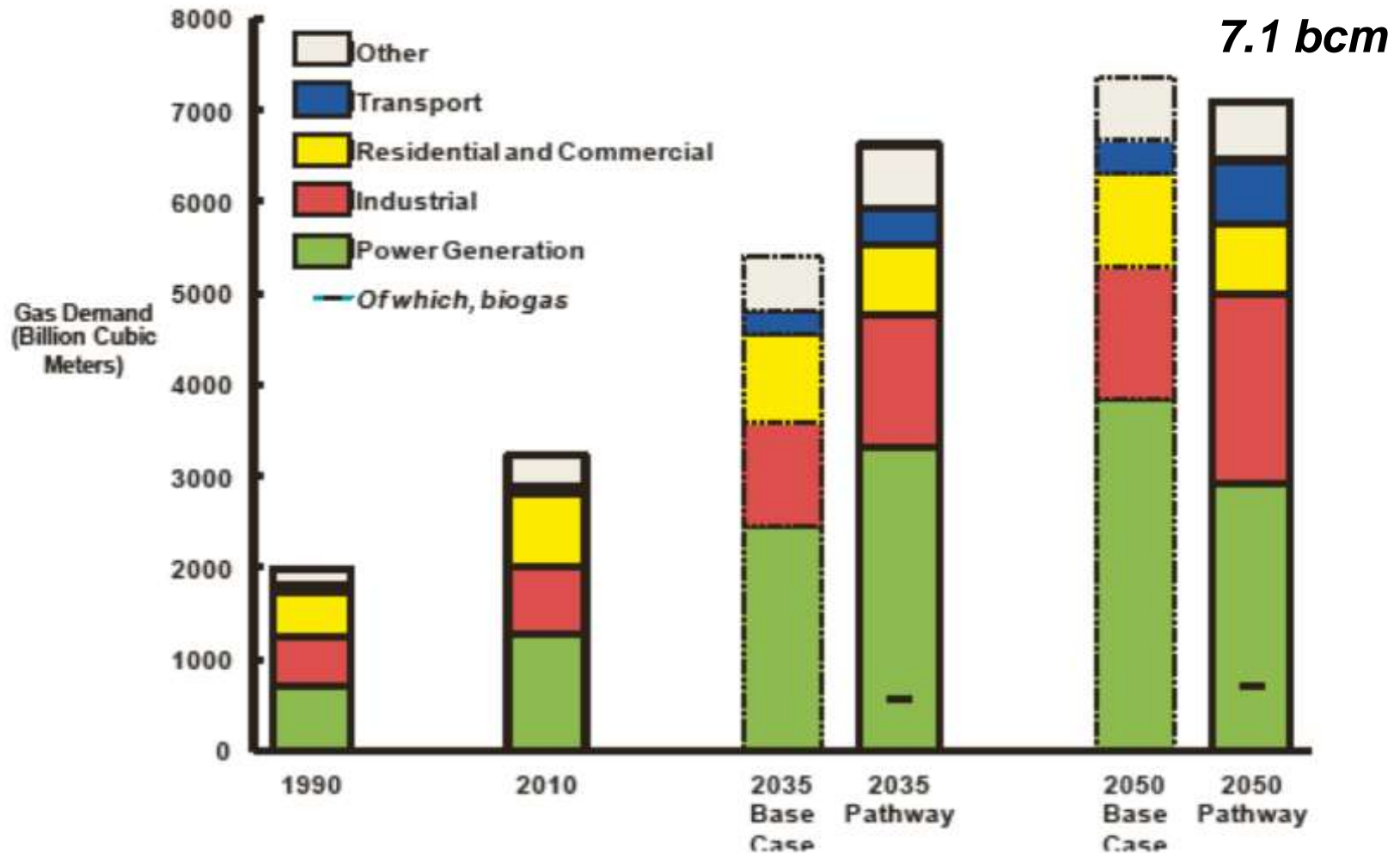


Vision Pathway highlights various CO₂ abatement options and technology choices

Calculation for 2050



Pathway: Gas demand by sector

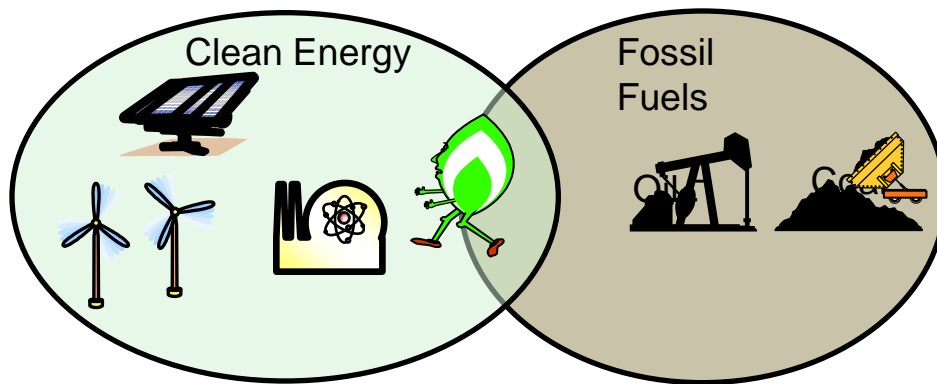


Creating Trust for Gas

- **Recognition by policymakers**
 - National, EU, G20, UN
- **Dialogue with environmental NGOs**
- **Licence to operate**



Image of Gas



GHG Emissions Spectrum



A robust and sustainable energy policy

- Energy efficiency & savings
- Enhance use of gas in power generation and transportation
- Phase in renewable energy
- Develop Carbon Capture and Storage technology



Gas: The fuel of today and tomorrow!

Thank you for your attention!



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