

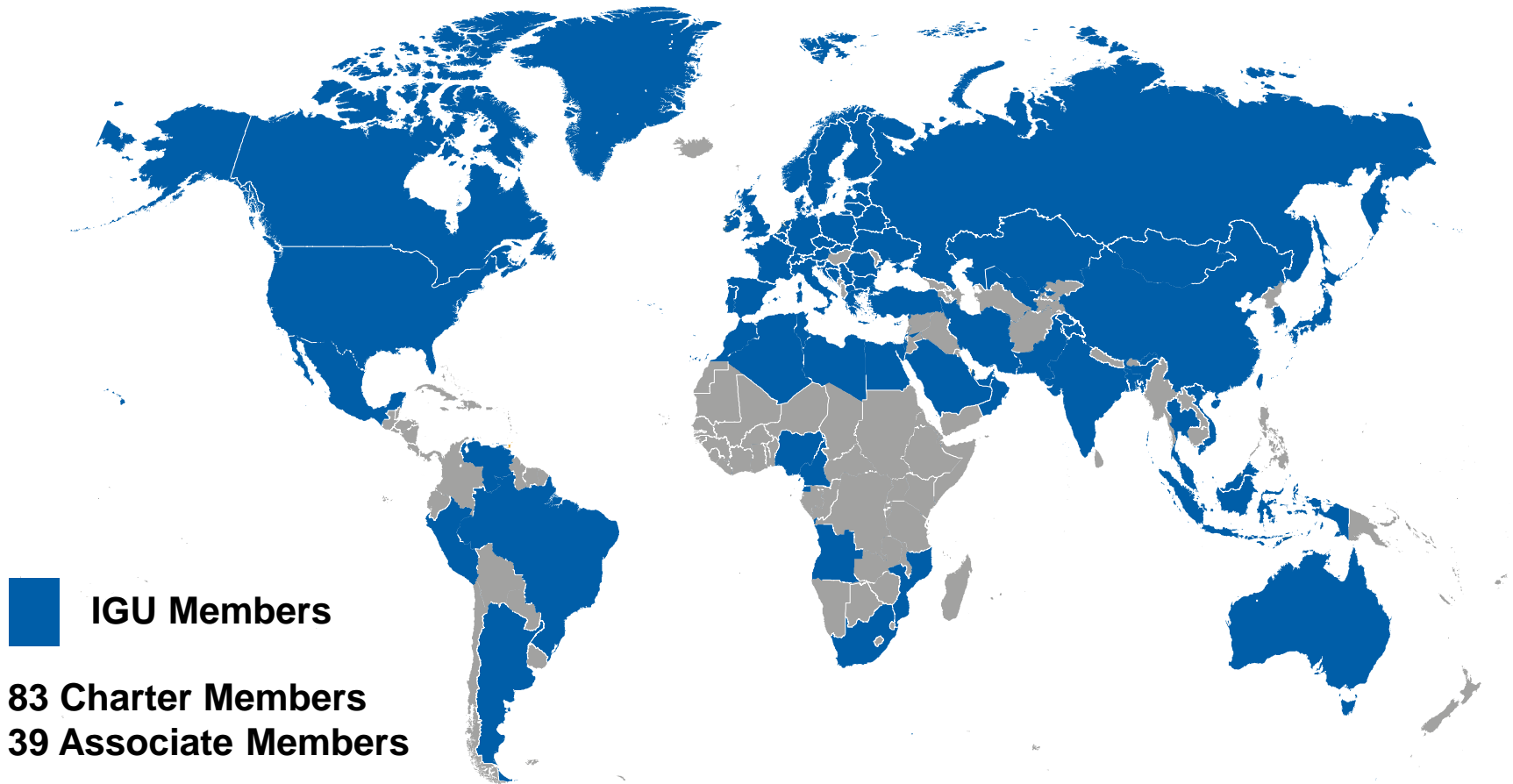


## **Global Vision for Gas** The Pathway towards a Sustainable Energy Future

**Mats Fredriksson**  
Senior Advisor to Secretary General of IGU

24 October 2012  
Kiev, Ukraine

# IGU represents more than 95 % of the global gas market



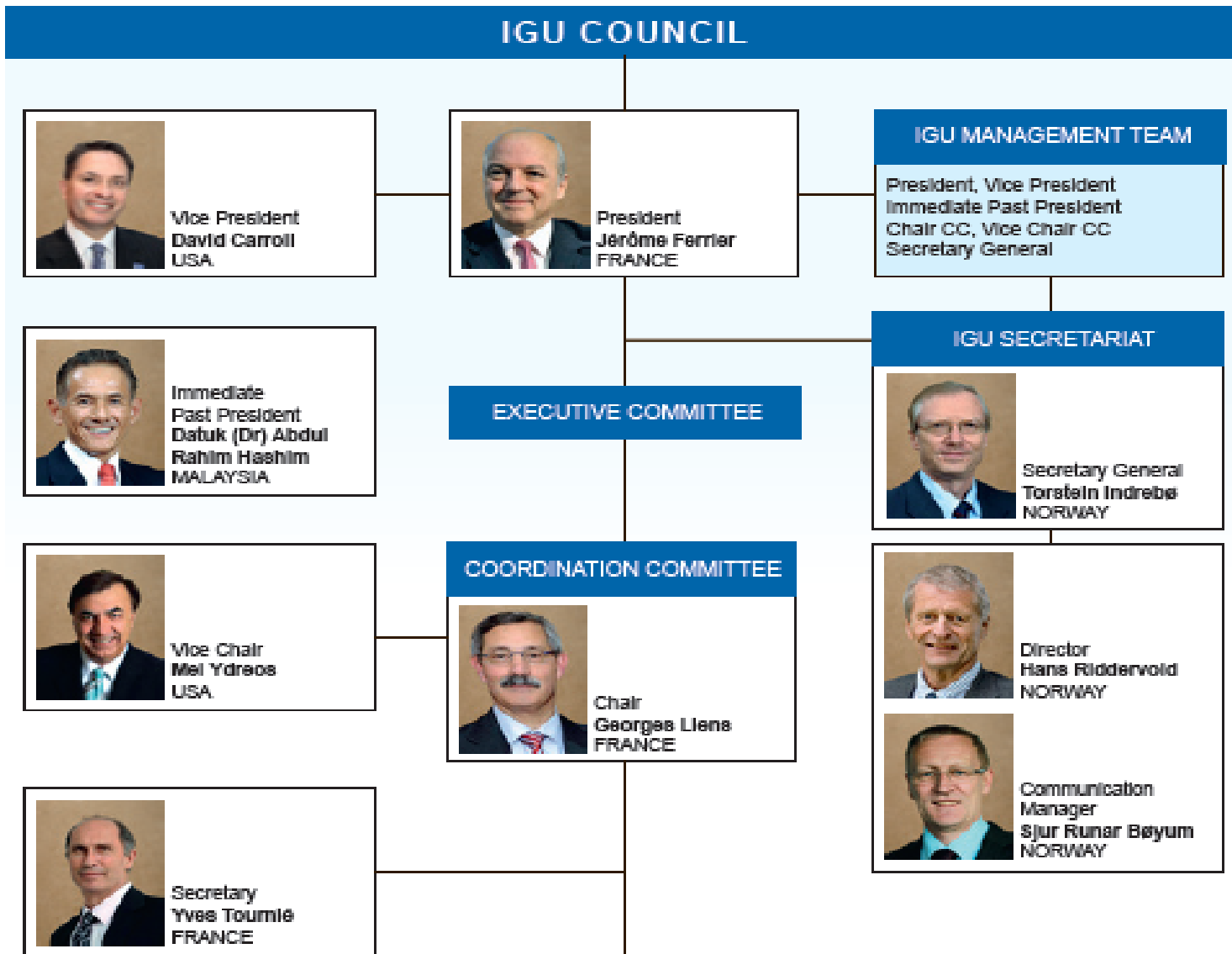
 **IGU Members**

**83 Charter Members**  
**39 Associate Members**

**IGU Charter Member for Ukraine:  
Naftogaz of Ukraine**

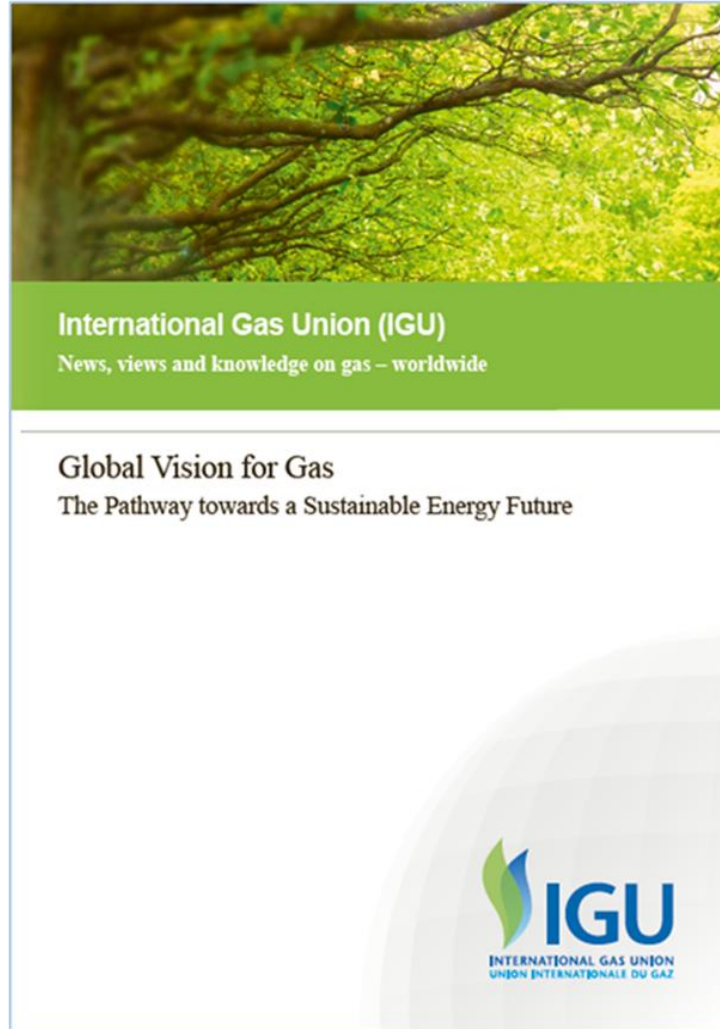
**Established in 1931**

# France heads the IGU in the 2012-2015 triennium



# Global Vision for Gas

## The Pathway towards a Sustainable Energy Future



# Natural Gas: Addressing the World's Challenges

## Key Global Challenges

Population Growth & Resource Availability

Economic Development & Employment

Energy Poverty & Public Health

Air Quality & Climate Change

Mobility

Affordability

## Role of Natural Gas

- Newly Recognised Abundant Resource Base
  - conventional, deepwater & unconventional
- Industrial Feedstock
- Employment Creation
  
- Combat indoor pollution & urban smog
  
- Negligible SO<sub>x</sub>, particulates
- Low levels of NO<sub>x</sub> and CO<sub>2</sub>
  
- LNG for trucks and shipping
- CNG and/or electric vehicles for cars
  
- CCGTs as lowest cost low carbon technology

# A Global Vision for Gas

## Natural gas is a fuel very well-suited to meet these challenges

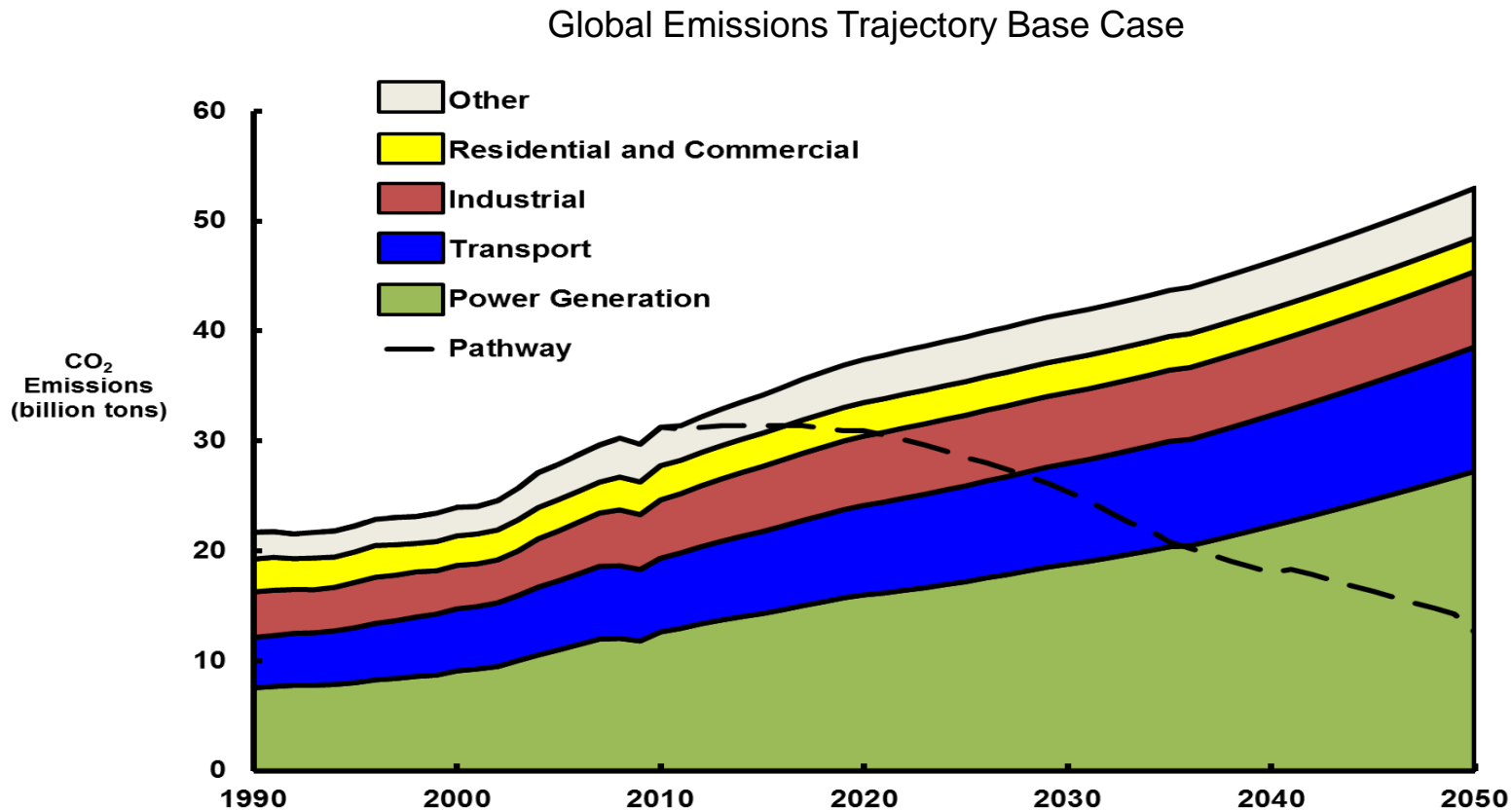
- Growing availability
- The clean properties make it attractive for urban living
- Gas in power generation is a proven, low carbon option
- Its lower carbon content—relative to the other fossil
- Highly cost competitive relative to other forms of low carbon energy
- The technologies associated with natural gas are proven



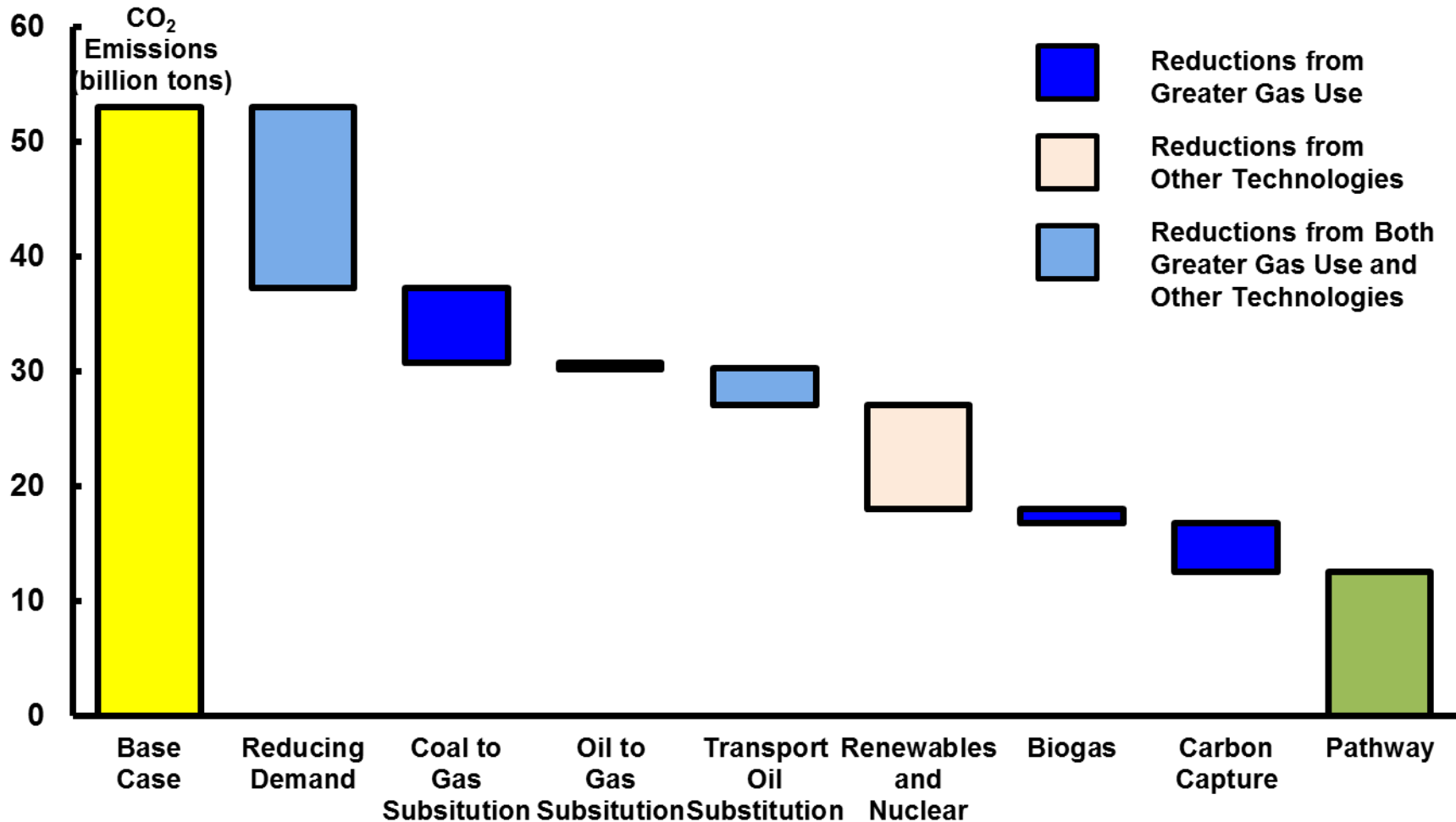
**Above all, given the huge uncertainties about the future, we need a Pathway that is flexible and can adapt to changes; not one that locks us into a single route to the future**

# The Pathway towards a Sustainable Future

The task to meet future global energy needs whilst at the same time addressing air quality and climate change concerns is challenging.



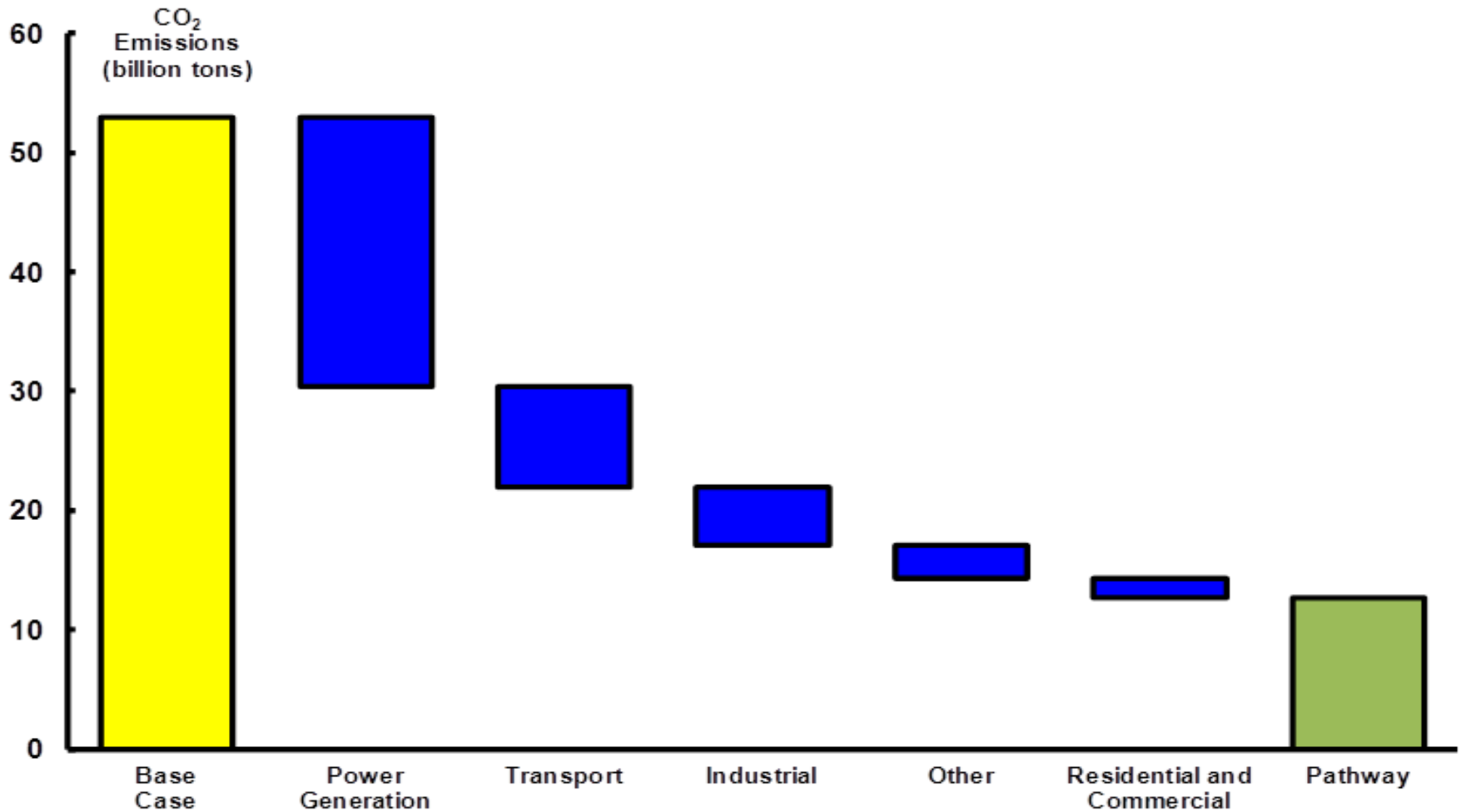
# Global Emissions Reductions by Abatement Method





# The Vision Pathway Trajectory

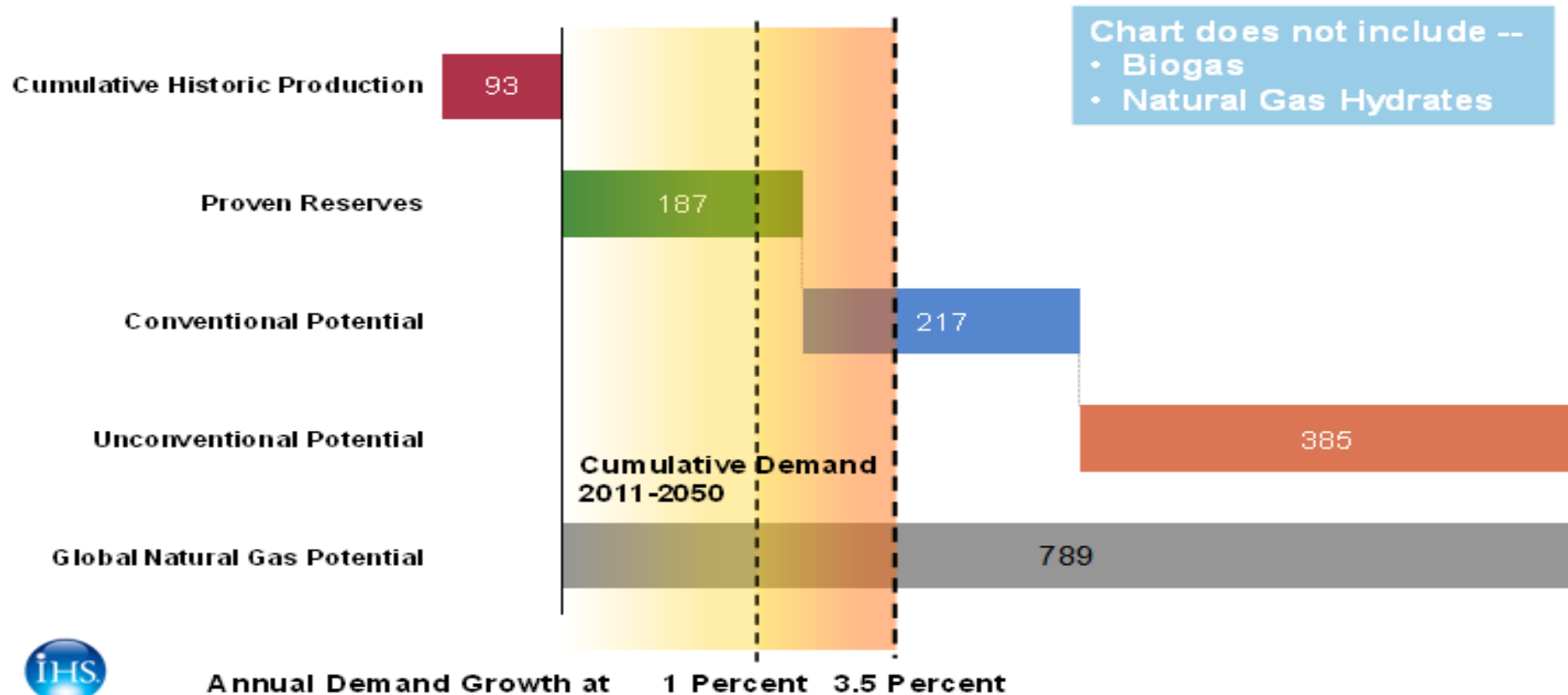
## Global Emissions Reductions by Sector



# Population & Resource Availability

## What is the Global Availability of Natural Gas? Global Natural Gas Recoverable Resources vs Demand

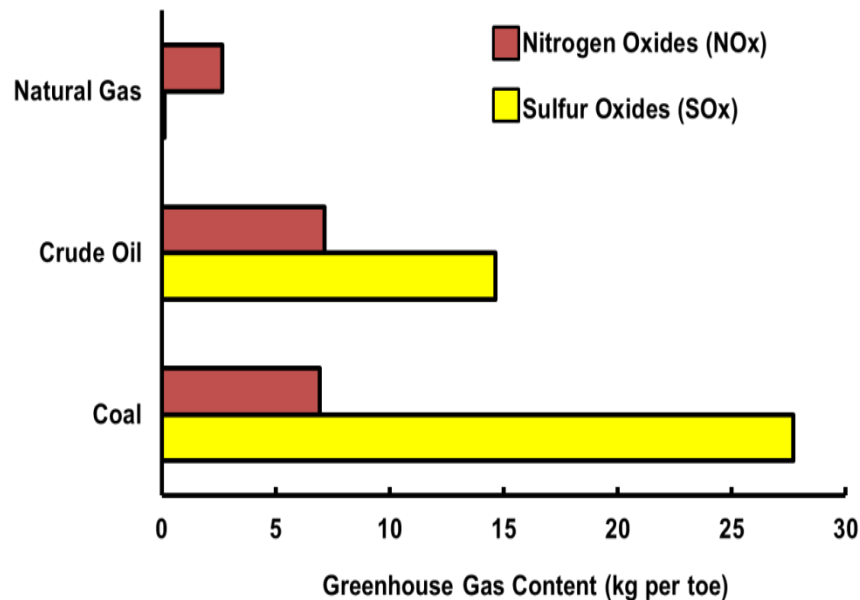
(Trillion Cubic Meters)



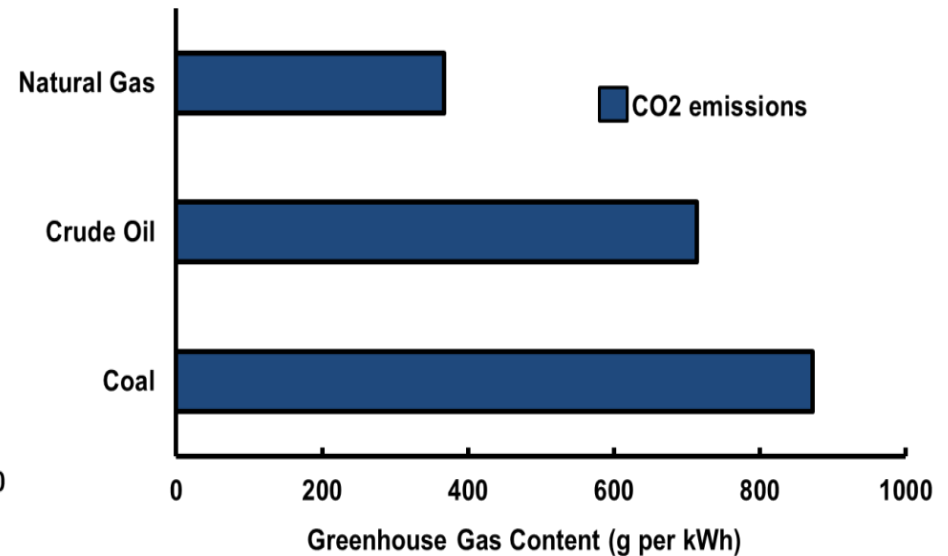
# Air Quality and Climate Change

## Natural gas is a clean-burning and low carbon fuel

NOX AND SOX CONTENT BY FUEL



Carbon Dioxide Emitted During Electricity Generation by Fuel



# Policy Enablers

Policy will be particularly important in the area where the greatest reductions in emissions are projected

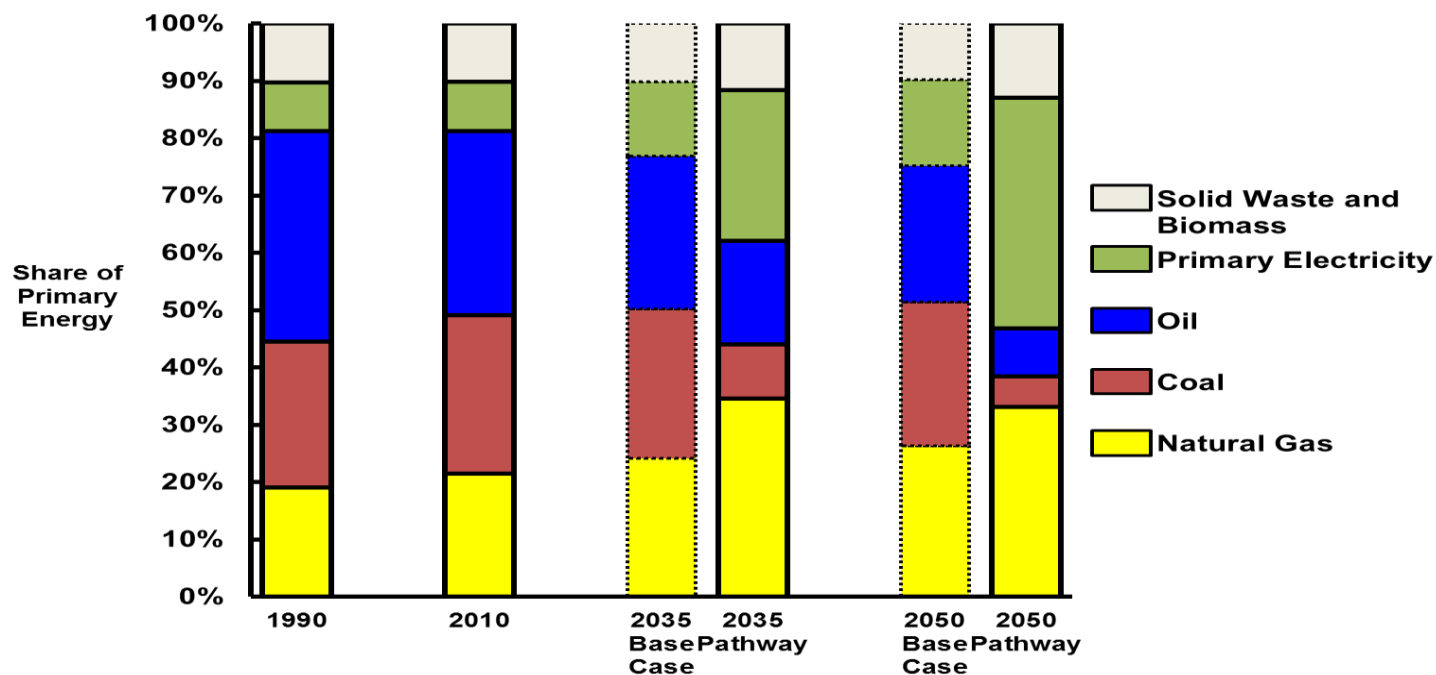
- Demand reduction/energy efficiency
- Coal to gas substitution
- Carbon capture



# Implications for Gas Demand

Natural gas grows as a key pillar of the global energy mix, reaching one-third of primary energy demand in 2050, up from one-fifth today.

Gas Market Share of Primary Energy



- In the Pathway, increased development of biogas plays an important role in reducing carbon emissions.
- The overall growth in gas consumption depends critically on carbon capture and the use of biogas. Without these two technologies, growth in natural gas would not meet the GHG emissions target

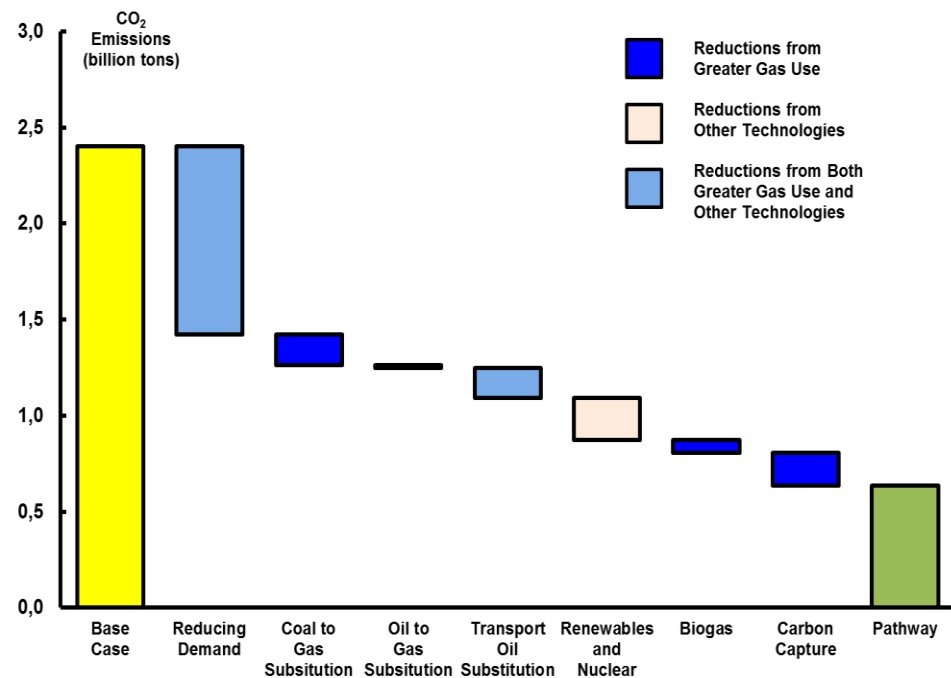
# Regional Pathways

## Commonwealth of Independent States (CIS)

As a key global hydrocarbon producer, the CIS has a long and well-developed fossil fuel energy industry. As such, existing infrastructure is older and less efficient than typical for other regions.

- Replacing older power stations with modern plant would provide significant efficiency improvements and carbon savings.
  - Modernizing older industrial facilities would also make an important contribution
  - Natural gas will be a powerful generator of economic growth

Emissions Reductions by Abatement Method—CIS



# Concluding Remarks: Global Vision for Gas

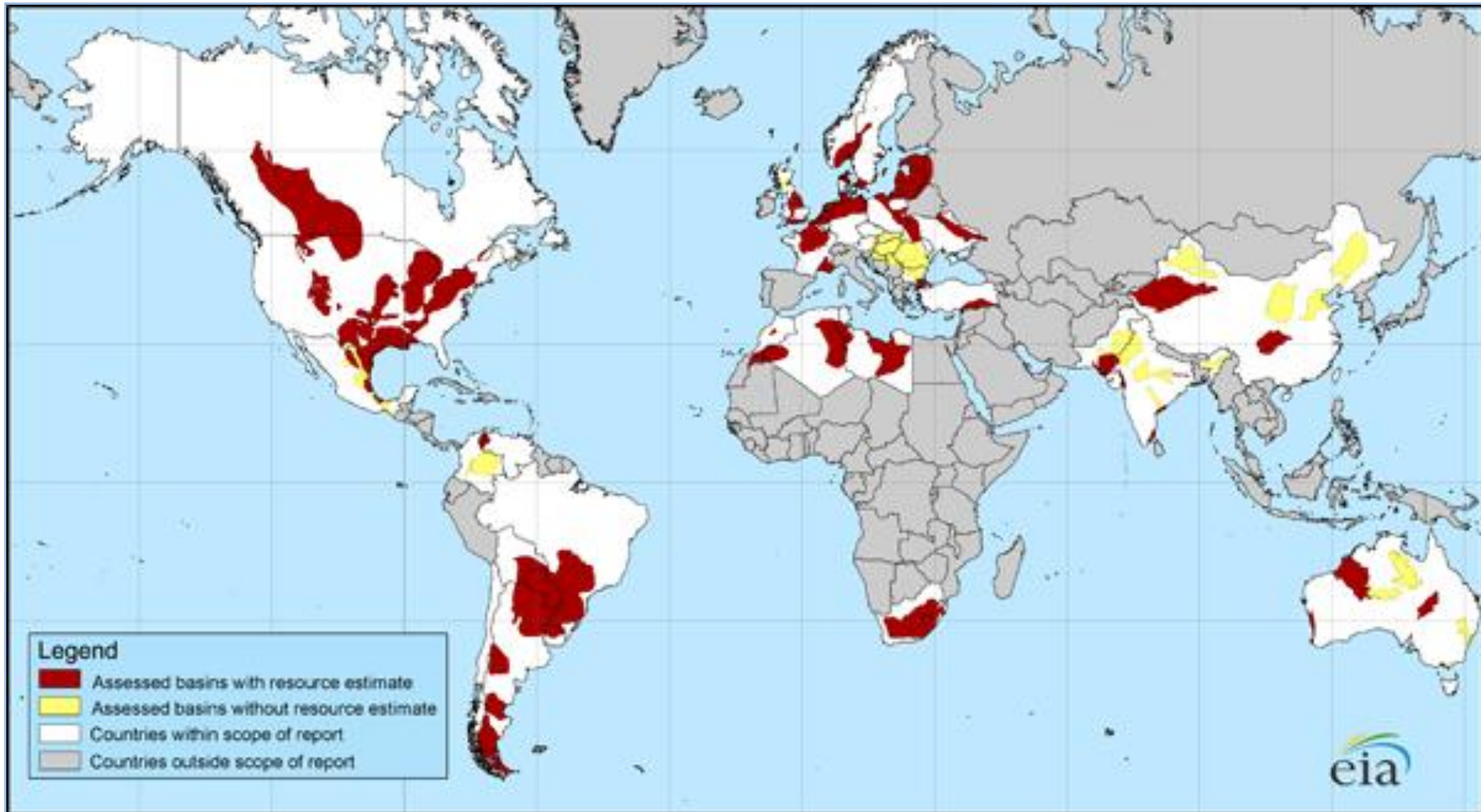
**The ‘Global Vision for Gas’ lays out a clear pathway towards a sustainable energy future.**

- There is a strong need for a portfolio approach in energy, calling upon:
  - Reductions in energy use
  - Enhanced energy efficiency
  - Expanded use of zero carbon technologies
  - Greater resort to clean-burning natural gas.



Policymakers need to recognize the critical role that natural gas has to play alongside other low carbon options, and facilitate the appropriate policy enablers as befits each region based on its particular circumstances.

# Major shale gas basins in the world





# Shale Gas: The Facts about the Environmental Concerns



**International Gas Union (IGU)**

News, views and knowledge on gas – worldwide

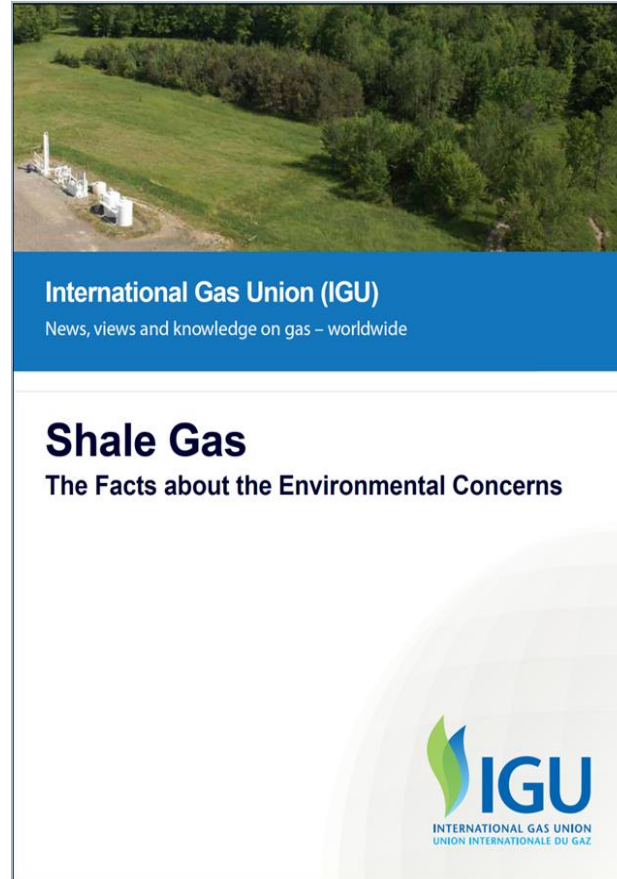
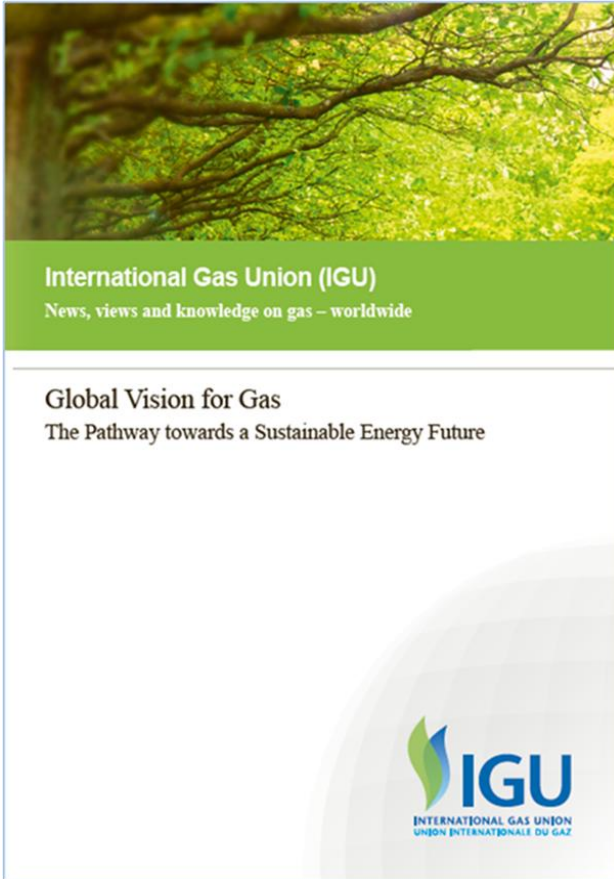
## **Shale Gas**

The Facts about the Environmental Concerns

## **New resource**

- **Rapid development**
- **Environmental concerns**
- **Contrasting views**
- **Need fact based debate**
- **Best practices**

# IGU Reports



Reports available  
on IGU website:  
**[www.igu.org](http://www.igu.org)**

# Natural Gas CARES for the World

- C** - **Clean**
- A** - **Affordable**
- R** - **Reliable**
- E** - **Efficient**
- S** - **Secure**



[www.igu.org/gas-advocacy](http://www.igu.org/gas-advocacy)

[www.igu.org](http://www.igu.org)

***Thank you for your  
attention!***



***Gas – the fuel for today and tomorrow!***