



# THE PROSPECTS FOR GAS IN EUROPE: SCENARIOS FOR THE FUTURE

Clingendael International  
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# Europe's Gas Puzzle and Natural Gas Benefits

## Europe's gas puzzle

### Rising demand for low-carbon electricity

*Gas vs. coal vs. nuclear vs. renewables:*

*Acceptable, Affordable, Available*

### Domestic gas supplies declining

*A growing role for Norway*

*Steady supply of NL gas for next decades*

*Unconventional gas could add to supply*

### Rising imports

*Concerns over security of supply – misplaced?*

## The three A's

### Environmentally **A**ceptable

*Natural gas plants 50-70% lower CO2 emissions than coal plants*

### Financially **A**ffordable

*Replacing coal with gas is cheapest way to achieve emission reduction targets*

### **A**vailable

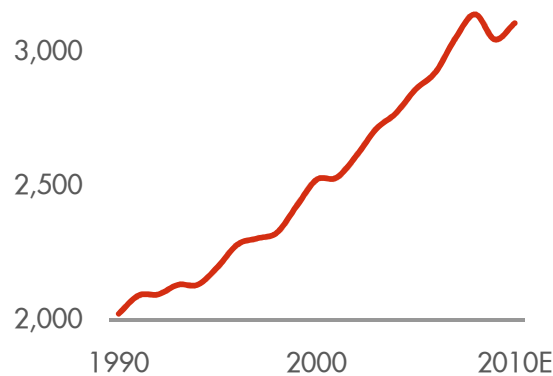
*Diversity of supply options  
Fast growth of LNG, New pipelines,  
Unconventional Gas*

# Natural Gas: A Destination Fuel

## Available

- Abundant global gas resources  
~250 years reserves at current production
- Europe within reach of 70% of global proven gas reserves
- Diversity of supply options

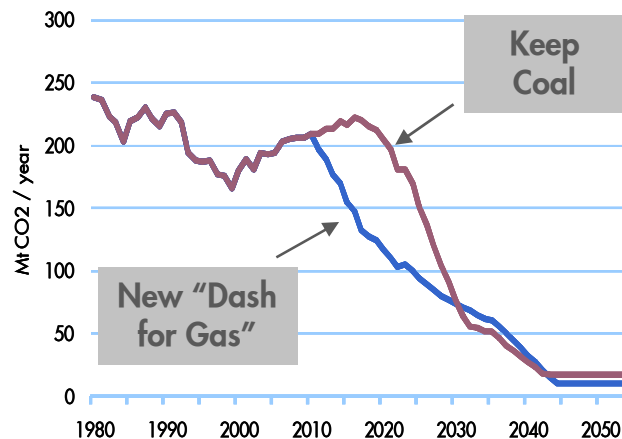
BCM



## Acceptable

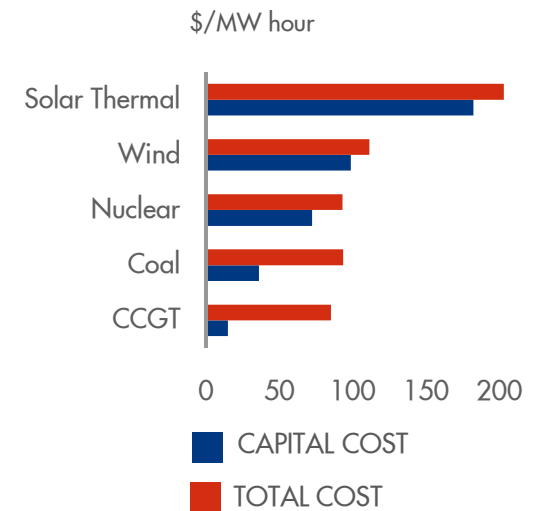
- Replacing coal with gas for electricity generation is the cheapest and fastest way to meet CO<sub>2</sub> reduction targets
- Gas is most efficient use of finite CCS pore space

### Potential UK Power CO<sub>2</sub> Emissions

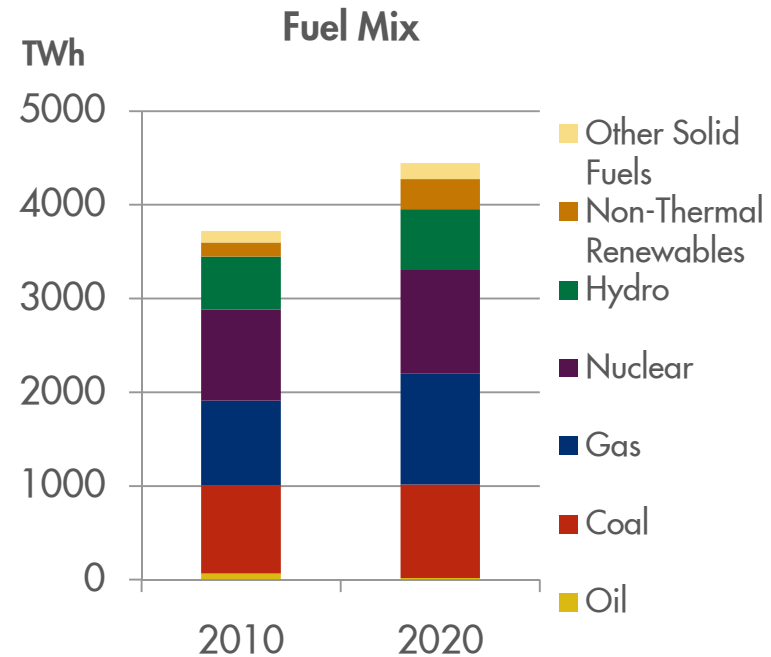
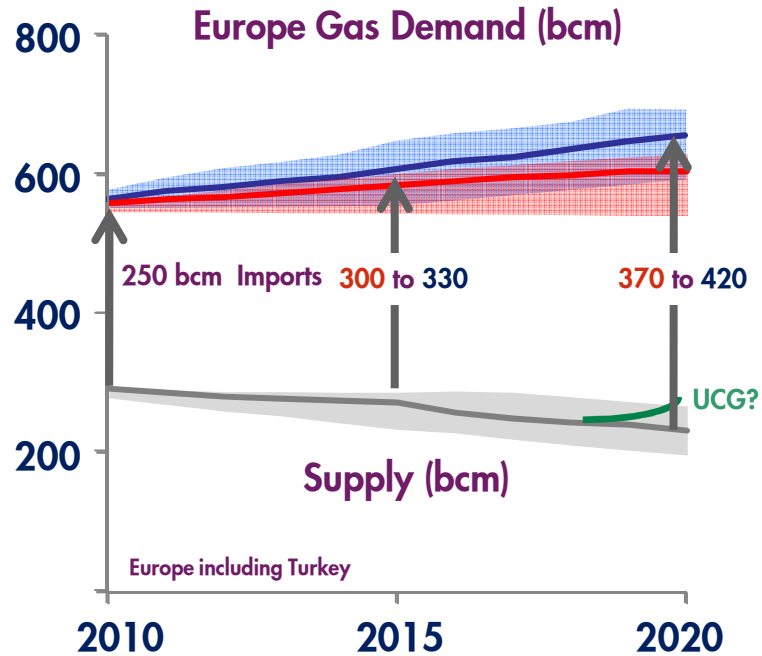


## Affordable

- CCGT cheapest to build
- Similar operating cost to coal and nuclear
- Gas is cheapest to complement wind/solar
- Allows appropriate phasing of renewables expenditure & development without severe fiscal trade-offs



# Supply & Demand in Europe: Imports set to increase



Source: WoodMac

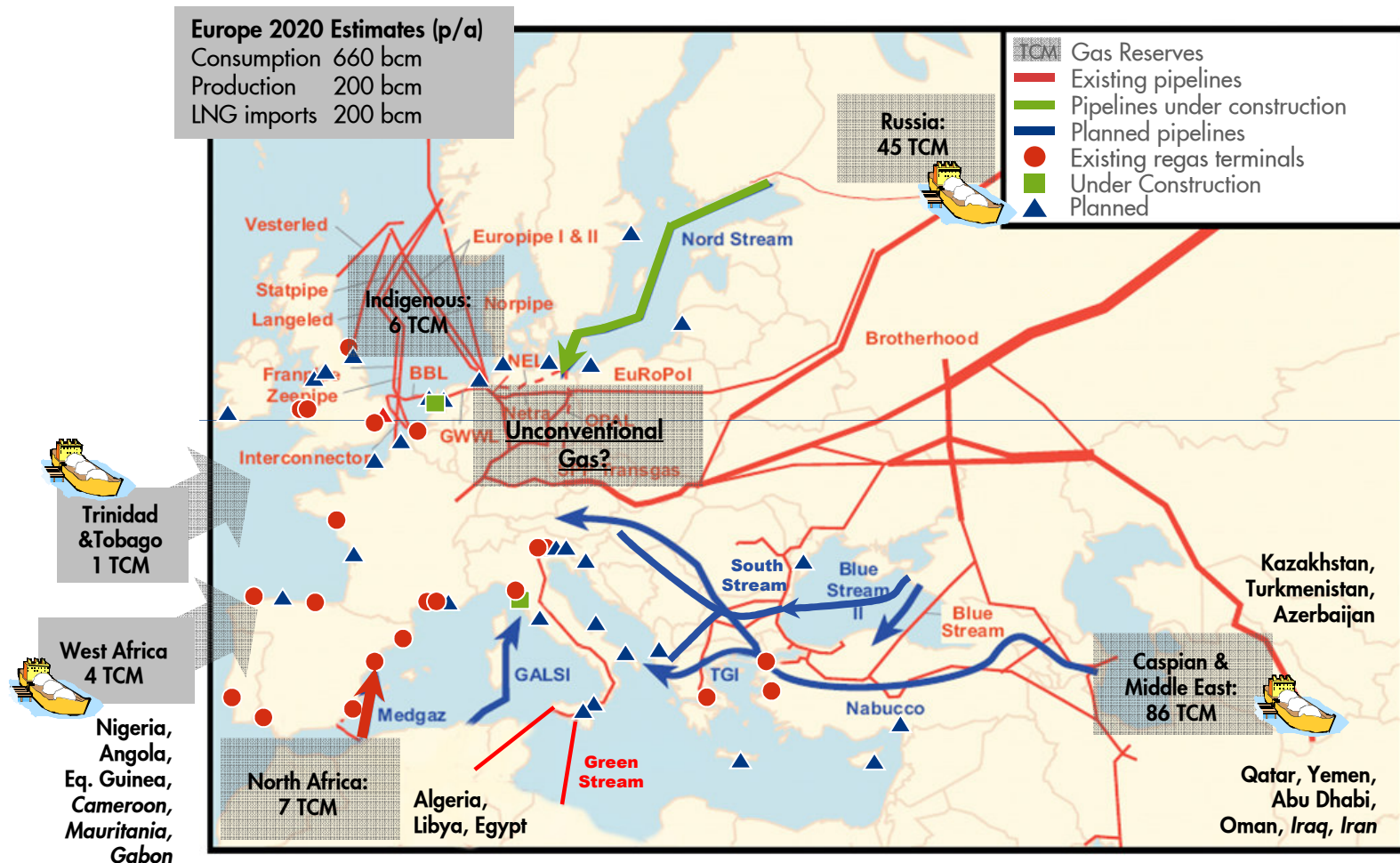
Two demand outlooks:

- Moderate Growth (base case)
- Flat Demand

Signposts:

- Implementation of the EU Green Agenda
- Role of gas in Power Sector

# Availability: Europe's Gas Supply



Abundant **global** gas resources ~250 years reserves at current production (IEA)

Sources: Wood MacKenzie, CERA, IEA

# Natural Gas For Europe: A Destination Fuel

- Natural gas is:
  - ...**Available, Affordable and environmentally Acceptable**
- Replacing coal with gas for electricity generation is:
  - ...**the cheapest way to meet CO2 targets**
- Part of the future energy mix – **a destination fuel**

## Requirements for security of supply:

- Send **positive signals** to suppliers about natural gas
- Invest in **infrastructure**: LNG import terminals, pipelines, storage
- Support new gas projects by **contracting for purchases early**
- Security of supply / demand: requires focus **on long-term contracts**

