



The role of the European grids in seeking energy independence

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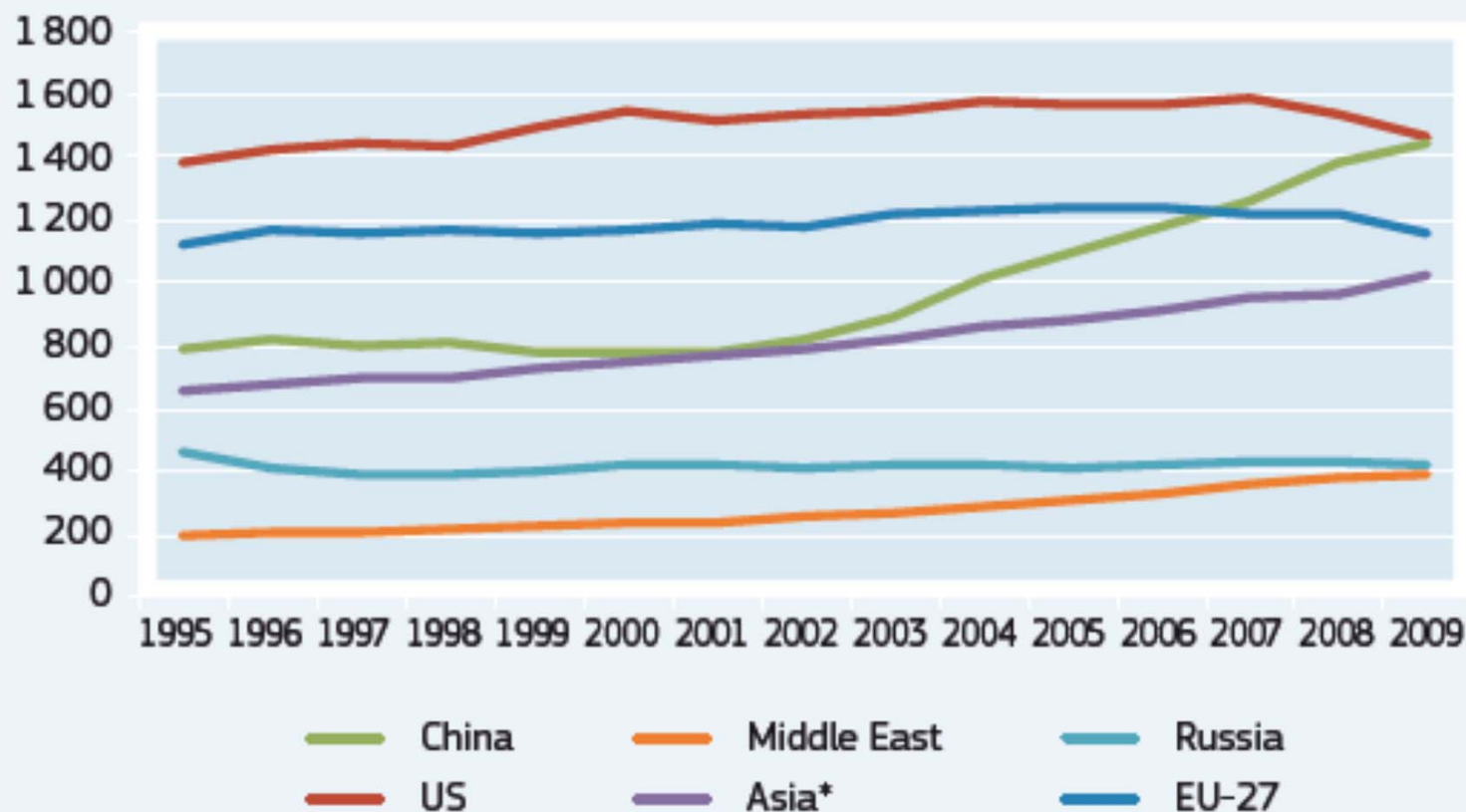
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Shaping the future of gas transmission

EU Energy consumption : the 3rd worldwide market

Evolution of Final Energy Consumption by Main Region (Mtoe)

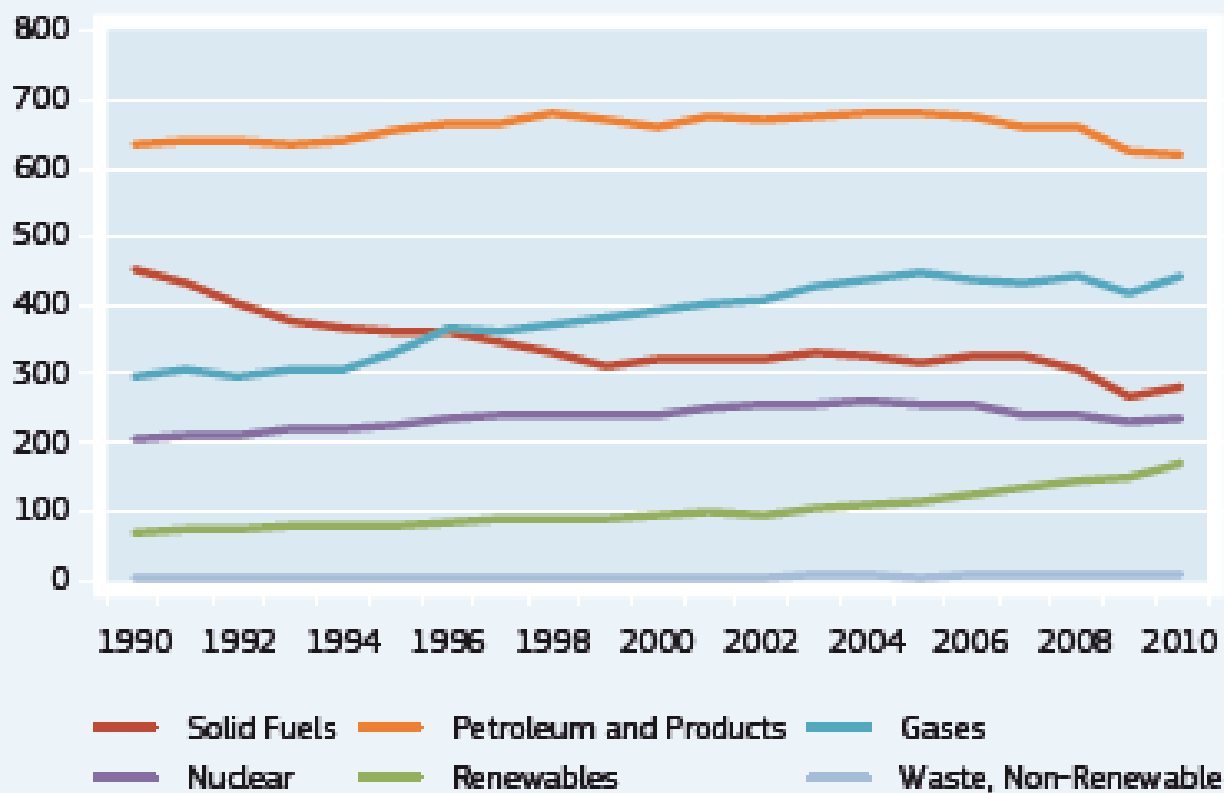


*Excluding China – Source: IEA, May 2012

Importance of oil, gas and coal

Gross Inland Consumption

By Fuel – EU-27 – 1990-2010 (Mtoe)



Significant market differences

Crude Oil

- Worldwide market
- Imports: mainly via oil tankers
- Low transportation costs
- Large crude oil storages

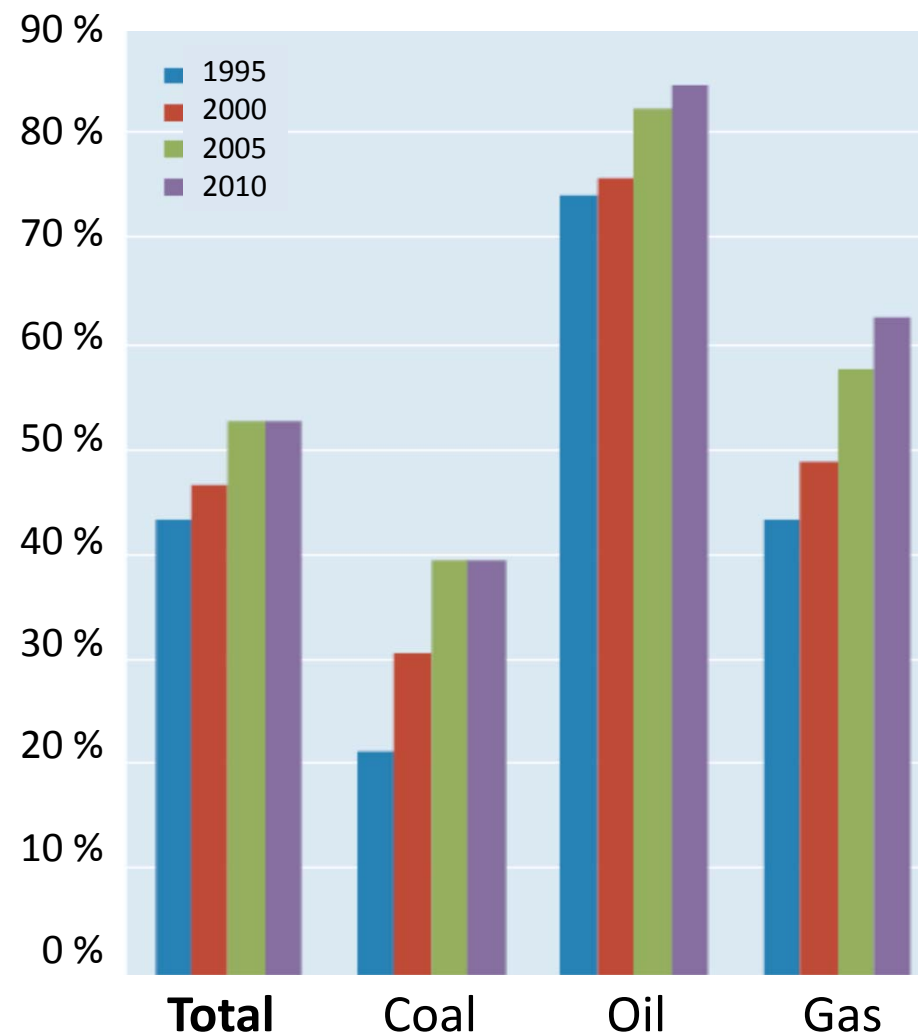
Electricity

- National / European market
- Domestic production
- Limited interconnection capacities
- High transportation costs
- No storage

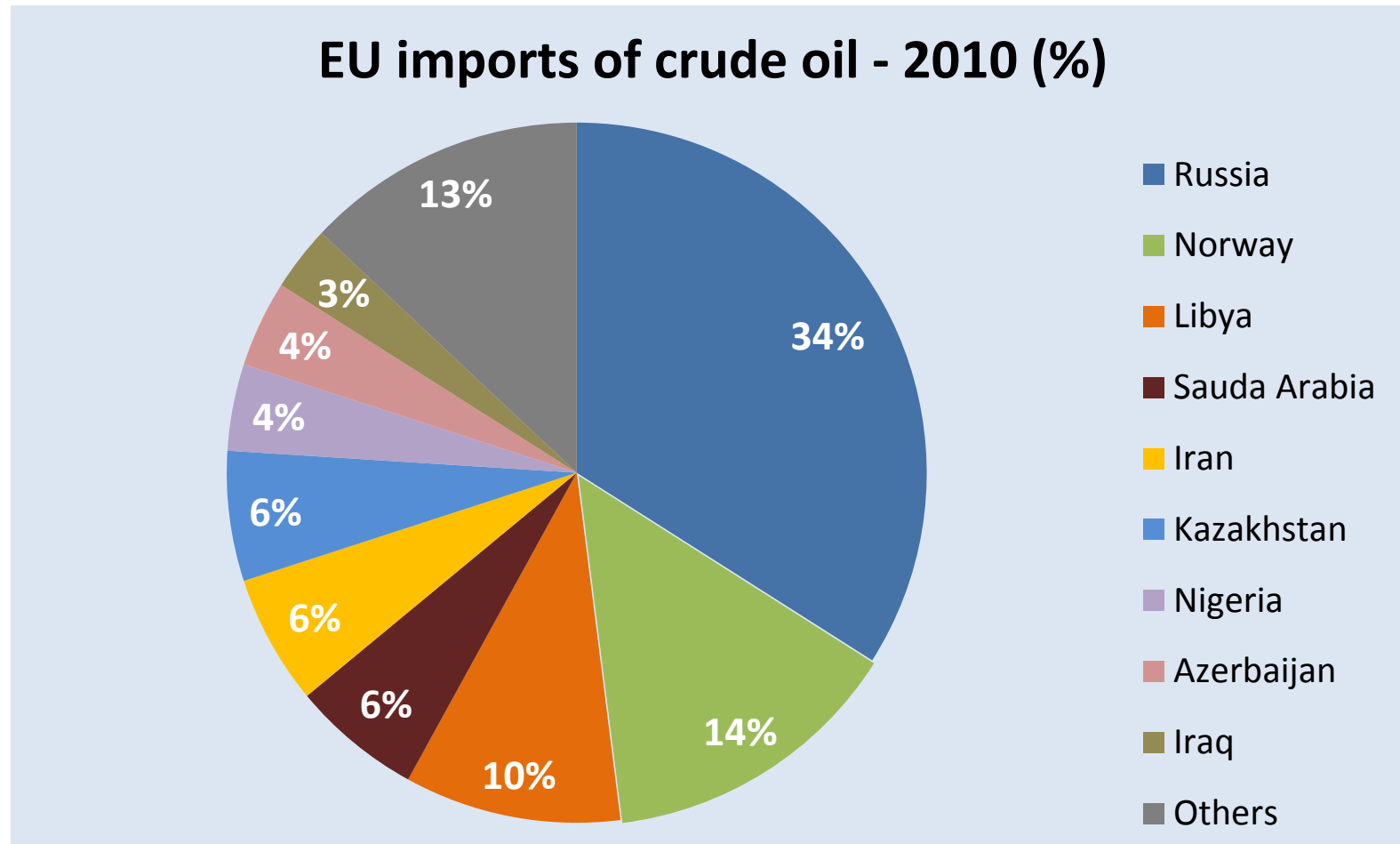
Natural gas

- European market / LNG linking markets in the world
- Imports: mainly via gas pipelines
- key importance of cross border flows
- Structural dependence of central Europe on Russian gas
- Large natural gas storages

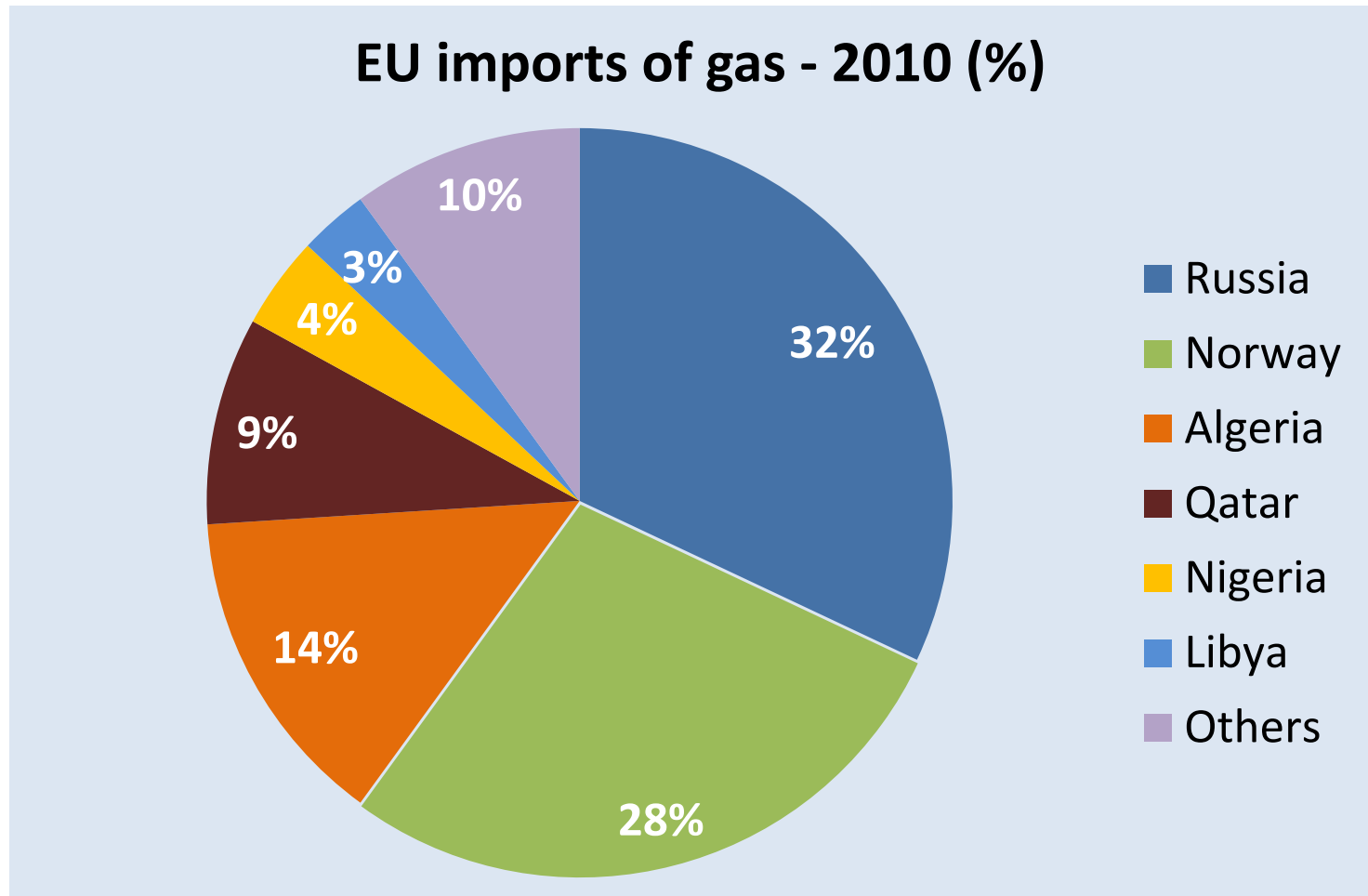
EU-27 energy import dependence



Russia & Norway: the 2 main oil exporters



Russia & Norway: the 2 main gas exporters

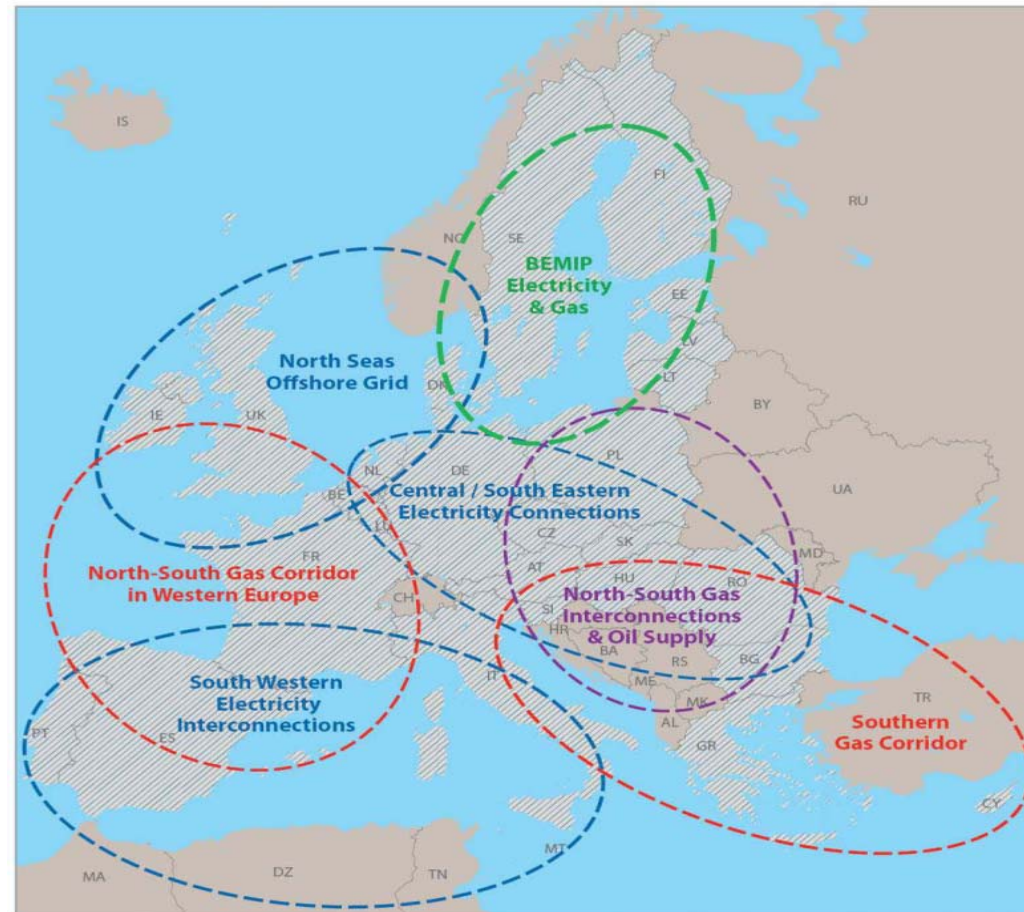


European energy grids

➤ Key contribution to:

- Imports and security of energy supply
- Competition on the wholesale market
- EU Market integration
- Transition to a new European Energy mix

Priority corridors in Europe

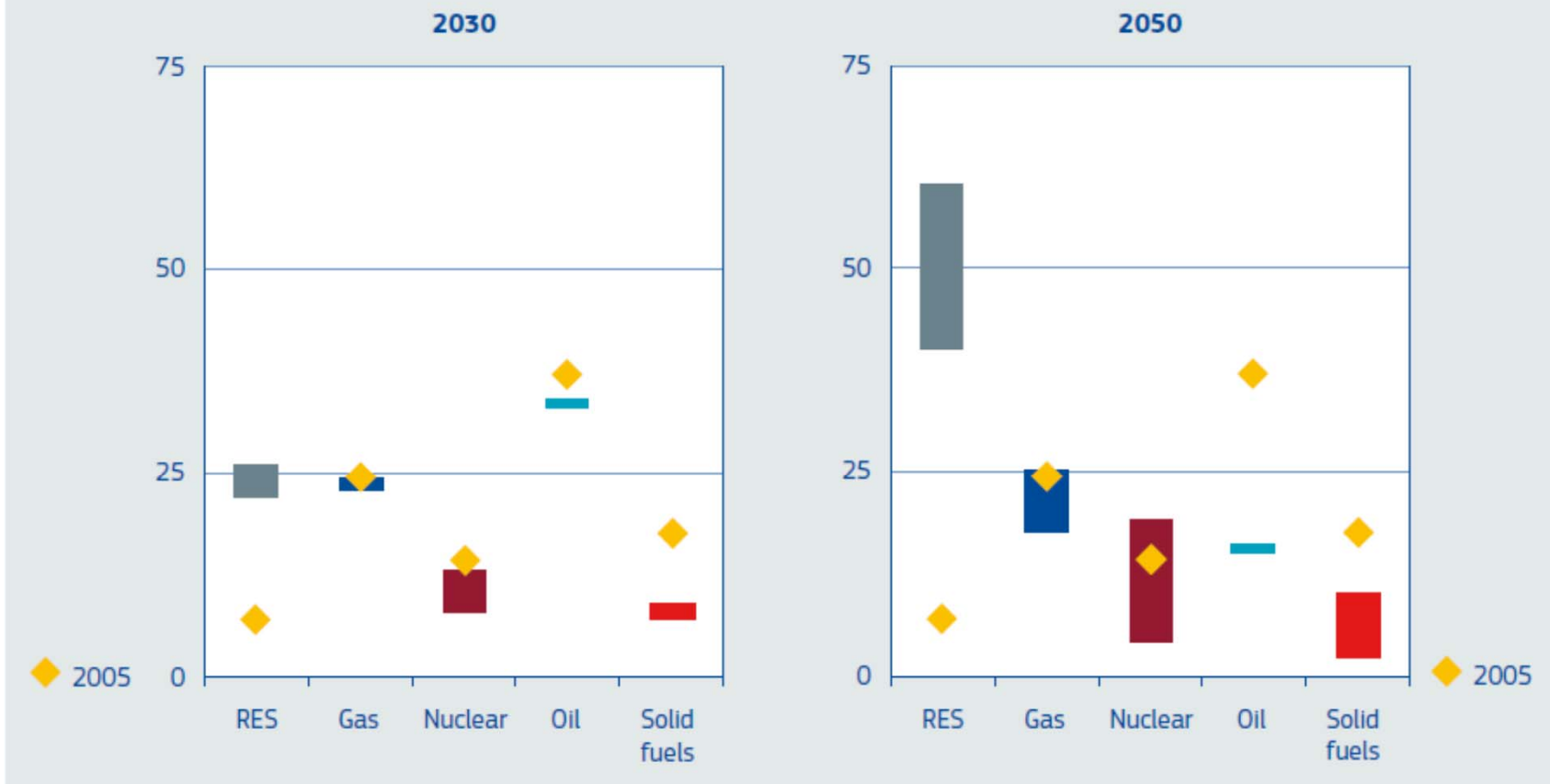


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- Gas
- Electricity
- Electricity and gas
- Oil and gas
- Smart Grids for Electricity in the EU

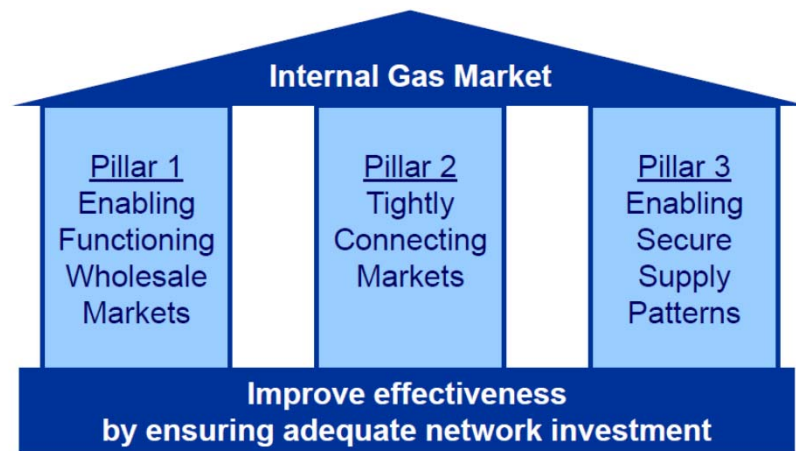
European energy roadmap

Graph 1: EU decarbonisation scenarios — 2030 and 2050 range of fuel shares in primary energy consumption compared with 2005 outcome (%)

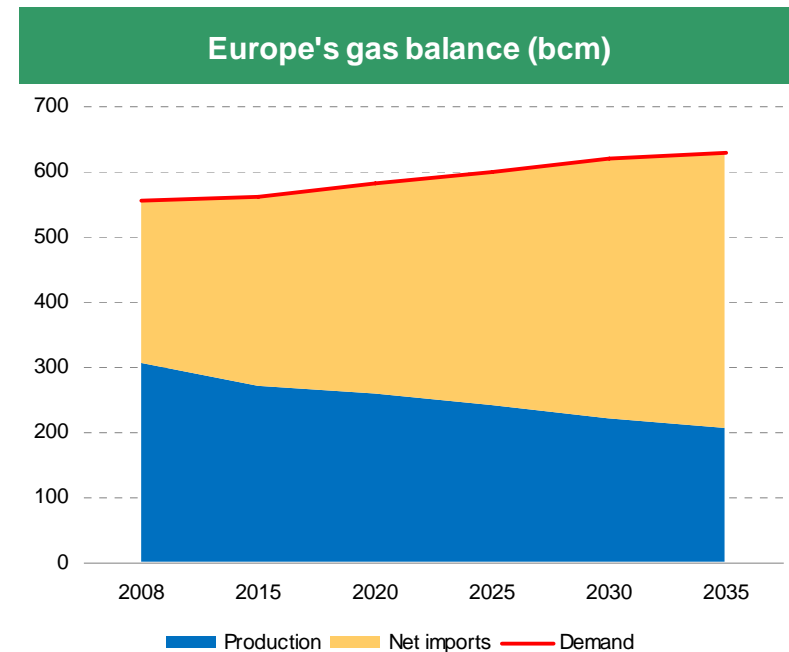


Challenges for the European gas grid

- Increasing gas imports
- Connection of new supply sources to Europe
- Security of supply



The Gas Target Model concept



- Competition between gas sources
- Market integration
- Electricity & gas markets interactions

Impact of the future gas pipelines

Influence zone of Norwegian gas

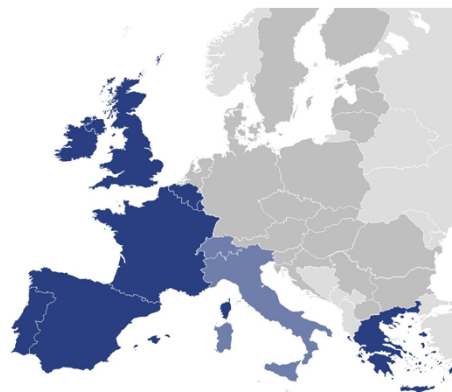
Influence zone of LNG

Influence zone of Russian gas

Reference case 2011 FID



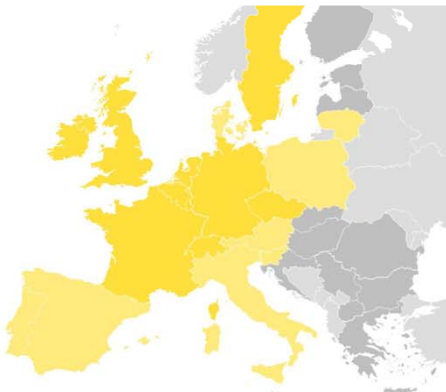
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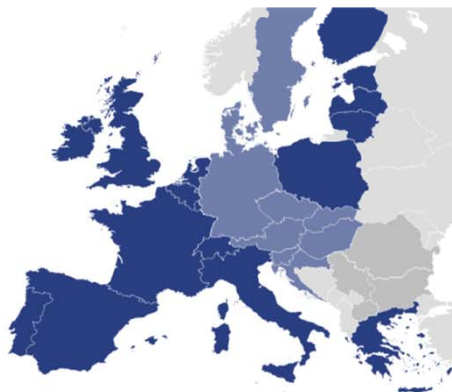
Reference case 2011 FID



Reference case 2020 non-FID



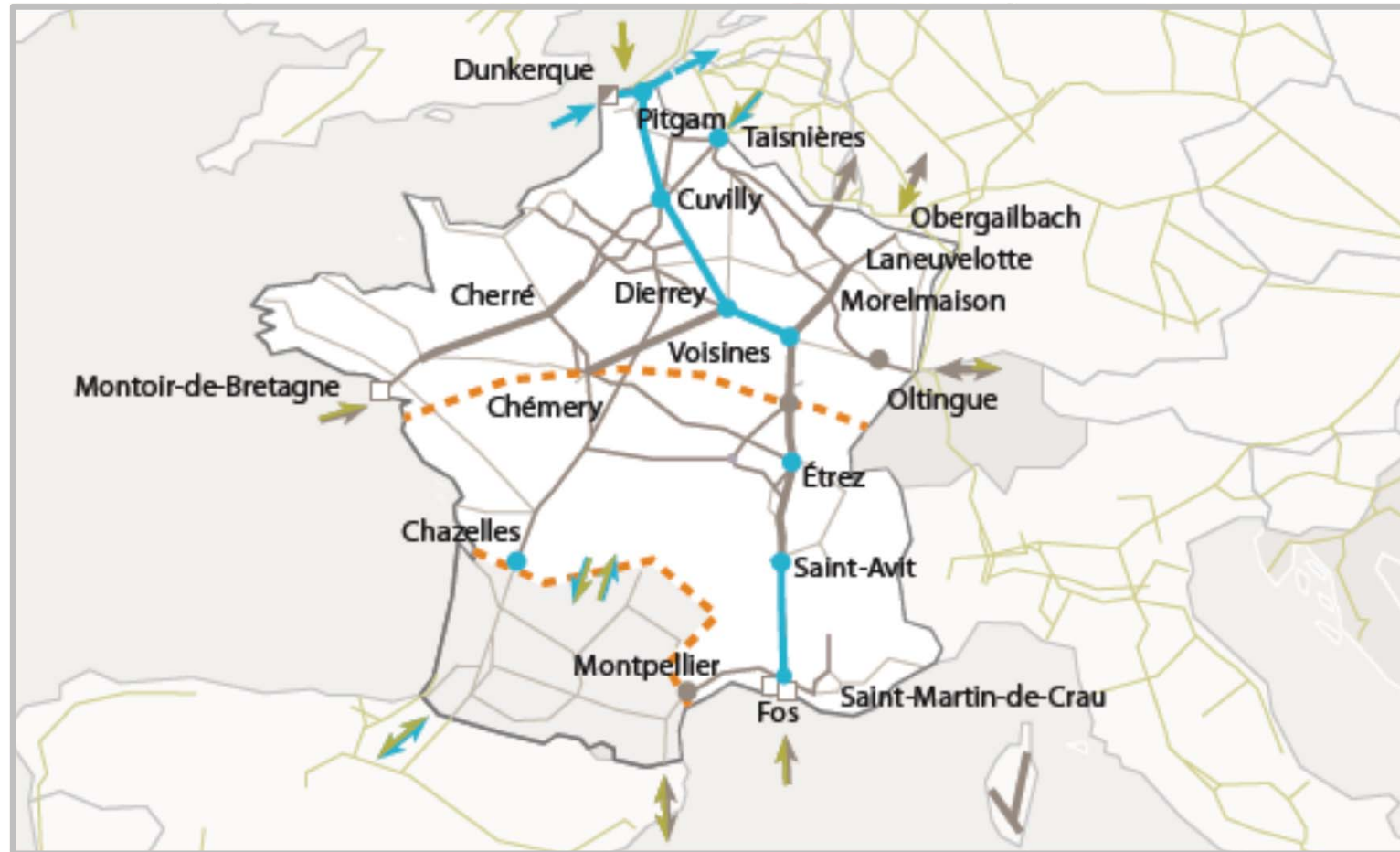
Reference case 2020 non-FID



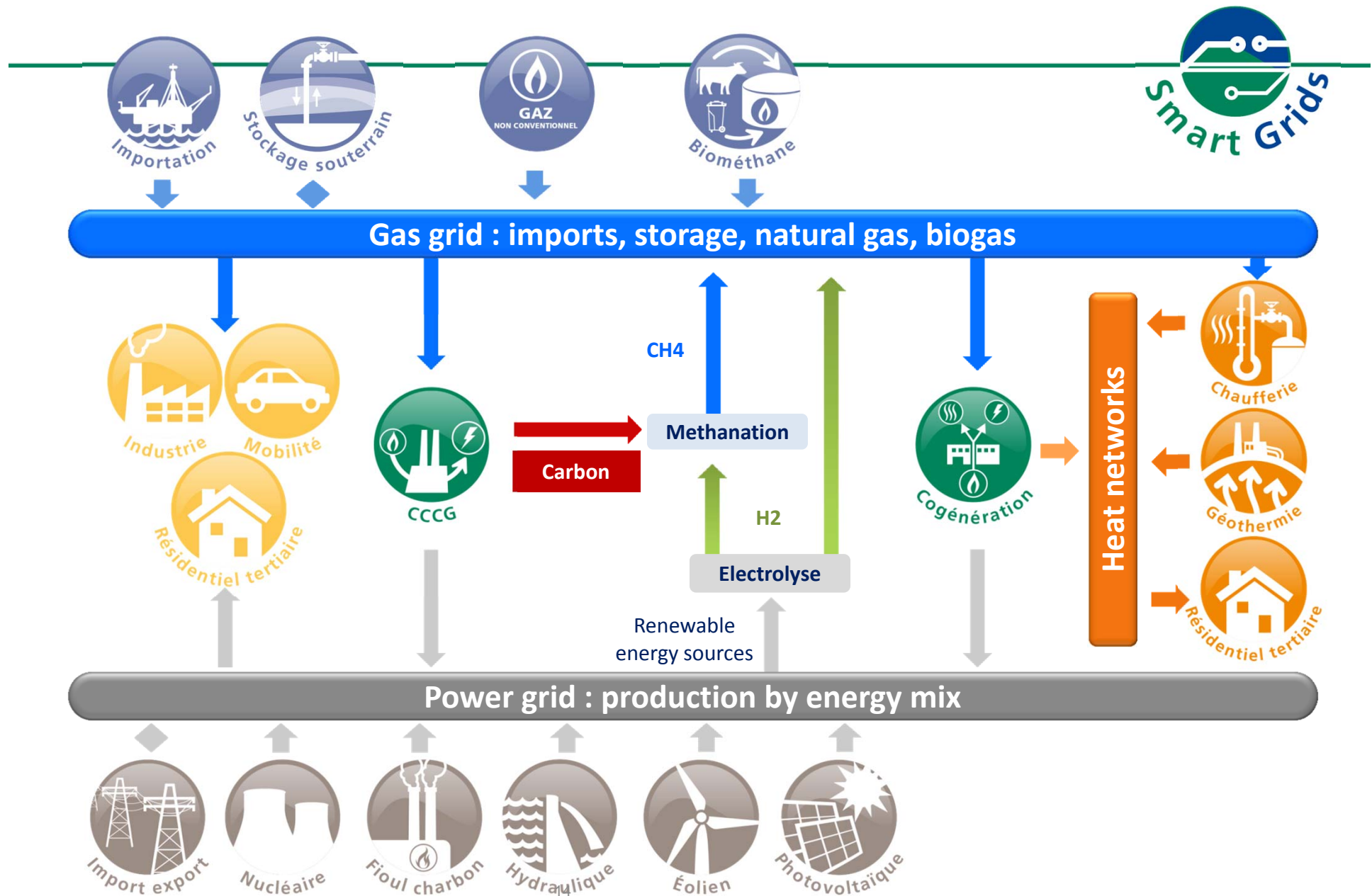
Reference case 2020 non-FID



Gas pipelines and new projects in France



Smart grids for a global efficient energy system



Key advantages of the gas transmission system

- Limited costs compared to gas prices
- A major contribution to security of gas supply
- A major contribution to competition on the wholesale market benefiting to final consumers
- A key role for promoting indigenous energy production and preparing the future European energy mix



Thank you for your attention



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