



# **FLEXIBILITY, INNOVATION AND SUSTAINABILITY WITH GAS**

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# The Energy Union and its pillars

PRIORITY

## Energy Union and Climate

Making energy more secure, affordable and sustainable

Energy Security

Internal Energy Market

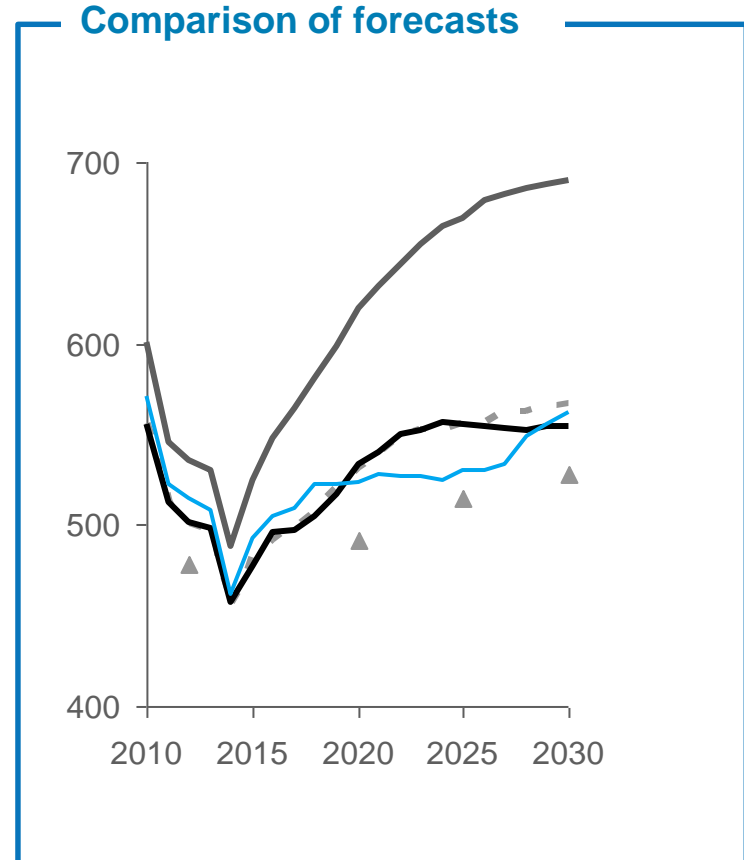
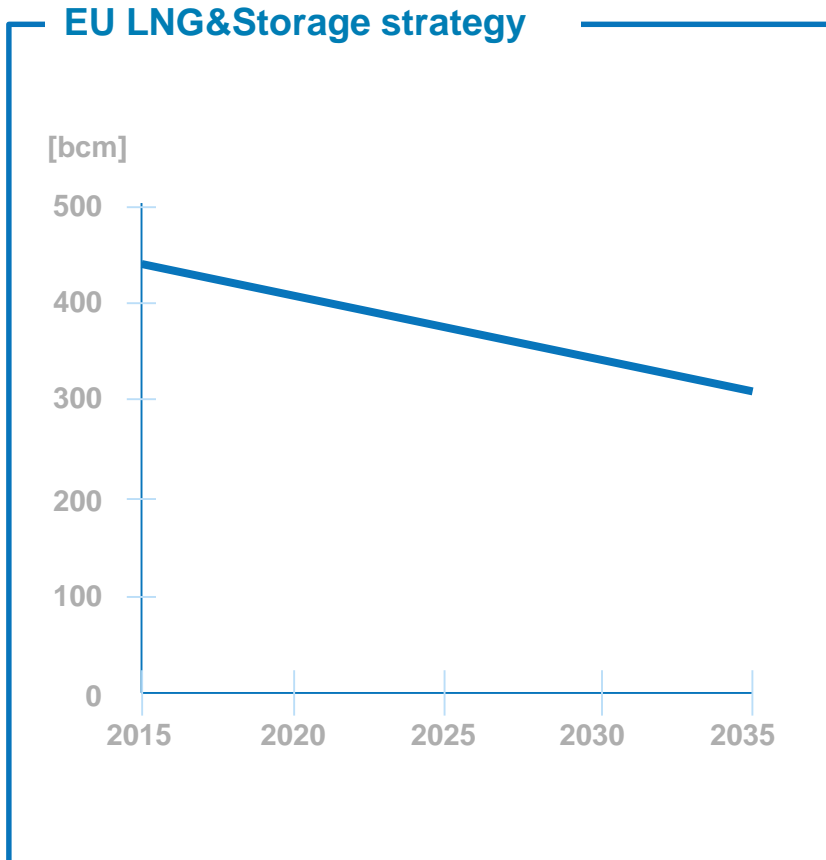
Energy Efficiency

Greenhouse Gas Emissions

Research and Innovation



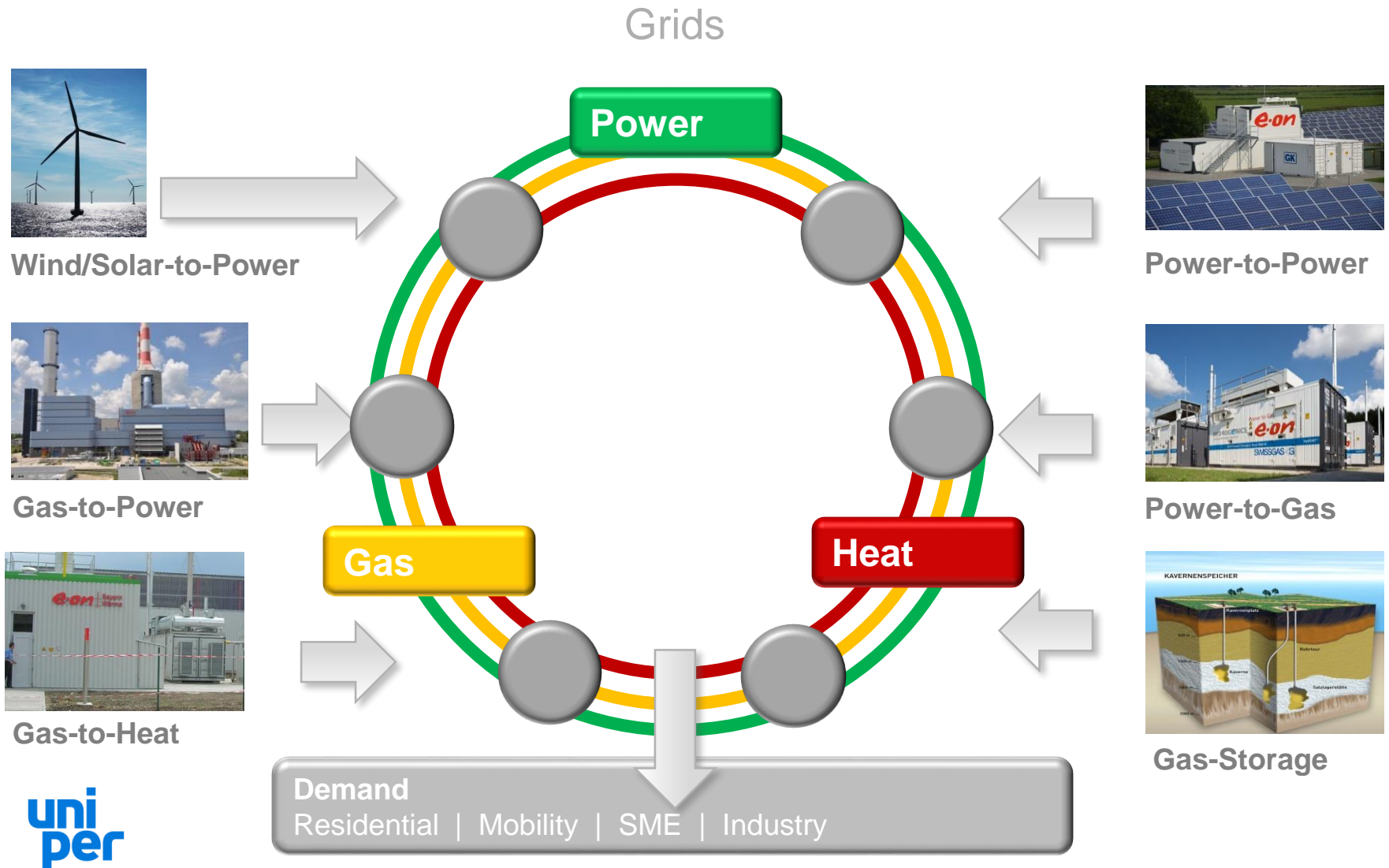
# 1. Gas will be an important pillar of the future energy mix



Source: PRIMES EE27 scenario based on 2013 reference scenario, using 2010 Eurostat data, and for the year 2030 involves 40% reduction in GHG relative to 1990, 27.8% renewables energy as a share of final energy consumption and 27.4% energy savings relative to a 2007 baseline.

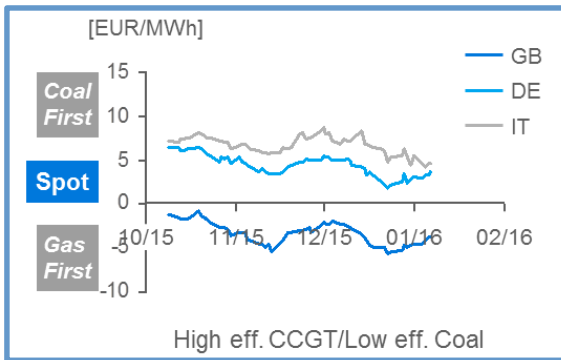
- - WM14H2      — WM15H1      — Pira 15\_Apr  
 — IHS 15\_Jul      ▲ IEA WEO 2014

## 2. Gas is the perfect provider for flexibility



# 3. Gas can achieve quick-wins for a sustainable energy future

## In Power Gen



### Old Coal

- Efficiency: 35%
- CO2/GHG: 950 kg/MWh

### Modern Gas CCGT

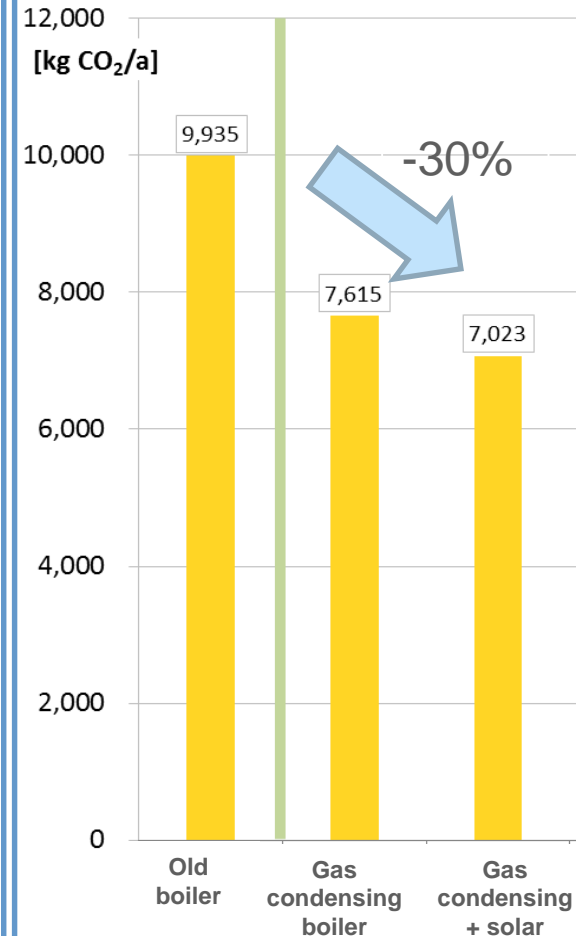
- Efficiency: 60%
- CO2/GHG: 340 kg/MWh

## In Transport



minus 30% CO2  
 minus 70% NOx  
 minus 95% PM

## At Home



# 4. Gas has great potential for innovation and for learning curve effects

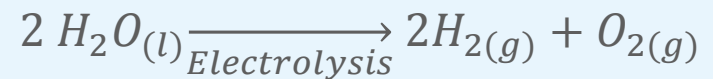
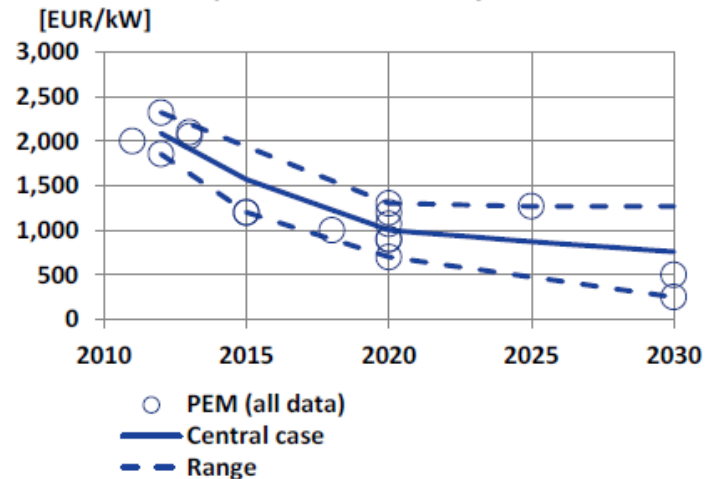
## Micro-CHPs/Fuel Cells



- Ambition Japan: make fuel cells the computer chips of the 21<sup>st</sup> century
- Goal of installing them in 5.3 million homes by 2030

## Renewable Gas

### Capital cost for PEM systems



- Rapid development on electrolysis, first PEM projects
- Green Hydrogen as 2<sup>nd</sup> generation bio fuel

Source: E4tech Sàrl with Element Energy Ltd for the Fuel Cells and Hydrogen Joint Undertaking, February 2014

# What needs to be done?

▶ We need to acknowledge that gas is an important pillar of the energy future

▶ We need a proper assessment of full system cost when considering different energy scenarios

▶ We need to consider the quick-wins with gas for decarbonisation when drafting future energy strategies & policies

▶ We need an ambition for gas in the EU's R&D strategy