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**Energy transition in Europe: the case for gas and gas infrastructure**

By

Pascal De Buck, Managing Director and CEO of Fluxys

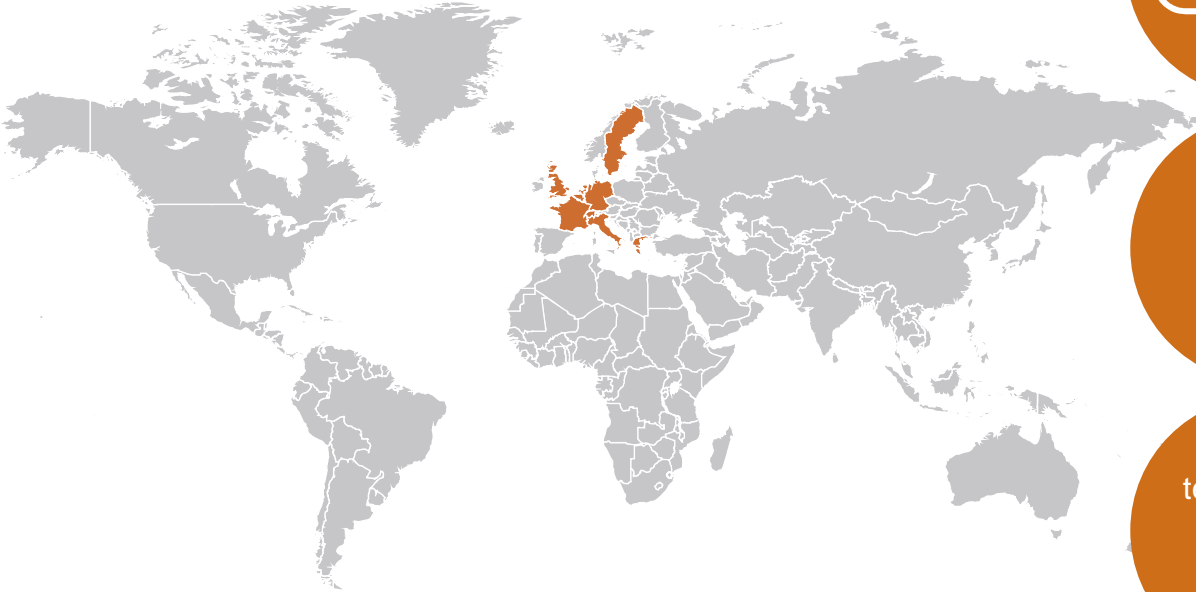
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Energy transition in Europe:  
the case for gas & gas infrastructure




Pascal De Buck | Managing Director and CEO Fluxys

# FLUXYS: GAS INFRASTRUCTURE COMPANY



Transmission



Storage



LNG terminalling

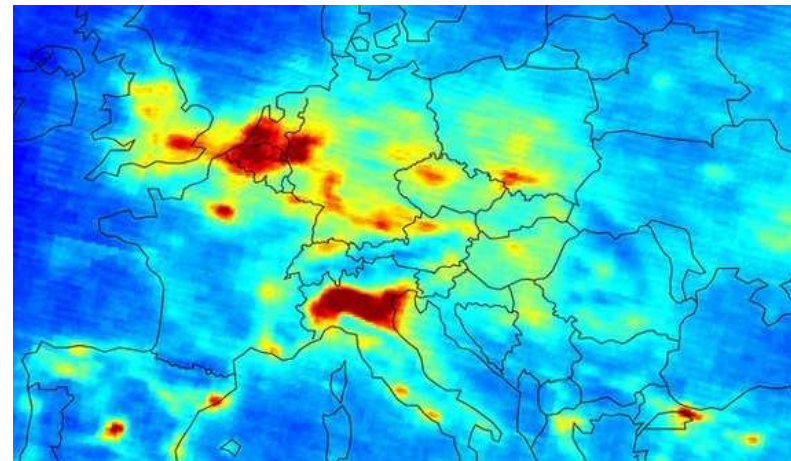


## EUROPE'S DOUBLE CHALLENGE: CLIMATE CHANGE AND AIR POLLUTION

Ambitious 2030 targets  
towards a low-carbon economy

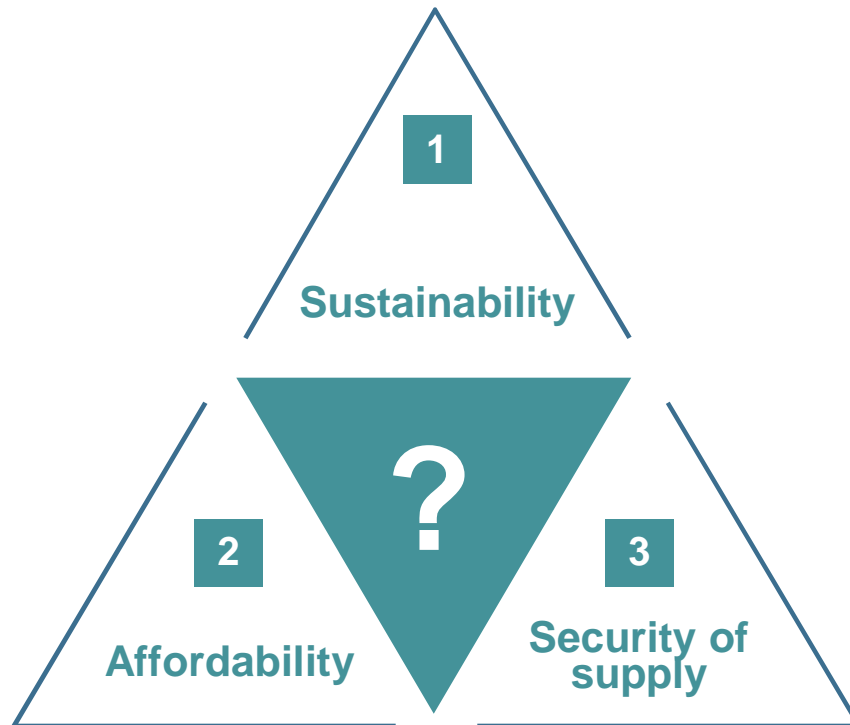
- At least **40%** reduction in **greenhouse gas emissions** compared to 1990
- At least **27%** **renewable energy**
- At least **27%** **energy efficiency** compared to business as usual

Attacking the invisible killer



Premature deaths from air pollution  
estimated at c. 500,000 per year

[Environmental satellite European Space Agency – nitrogen oxide  
levels over Europe]

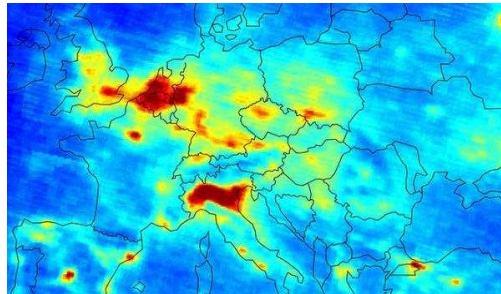


## HOW TO TACKLE THE ENERGY TRANSITION TRILEMMA?

- Start today with all means available to save on carbon budget
- Open mindset away from one-size-fits-all idea of full electrification
- Use each energy source where it brings most benefits
- Electricity and gas systems are complementary: make them work together

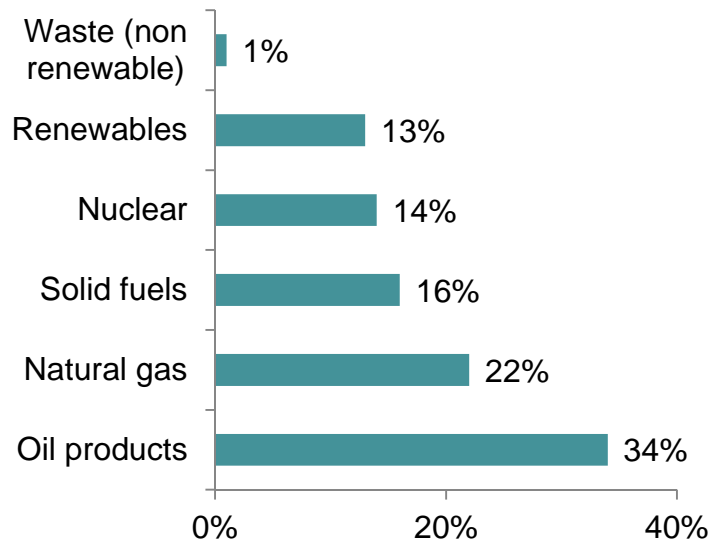
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## Climate change & air quality



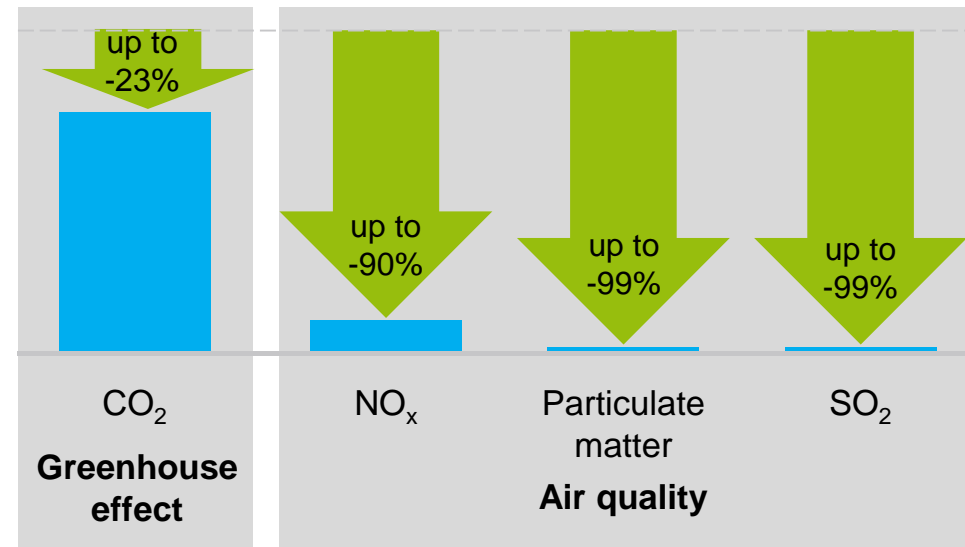
## GAS: PARTNER OF WIND AND SOLAR SHORT AND MIDDLE TERM: NATURAL GAS

Europe's primary energy mix



[EU DG Energy Reference Scenario 2016]

Emissions: natural gas compared to diesel, petrol, fuel oil or heavy fuel oil



[DNV, Volvo Trucks, Roland Berger]

Switching oil & coal to natural gas: immediate alleviation of climate change and air pollution

## Heating



Gas heating technology  
best solution for existing  
building stock

## Electricity generation



Hard coal & lignite still  
accounts for c. 21% of  
electricity generation

## Transport

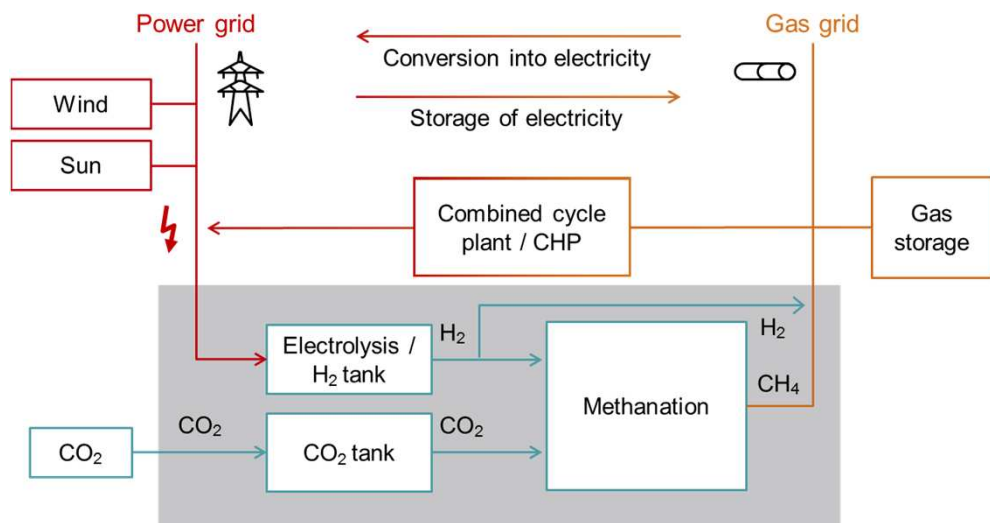


c. 26% of greenhouse  
gas emissions originate in  
transport and shipping is  
a massive source of air  
pollutants

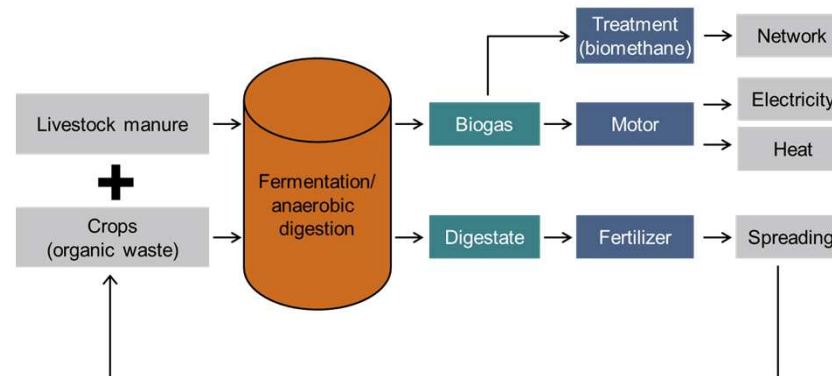


# GAS: PARTNER OF WIND AND SOLAR IN THE LONGER RUN: GREEN GAS

## Power-to-gas technology: convert excess power from renewables into gas

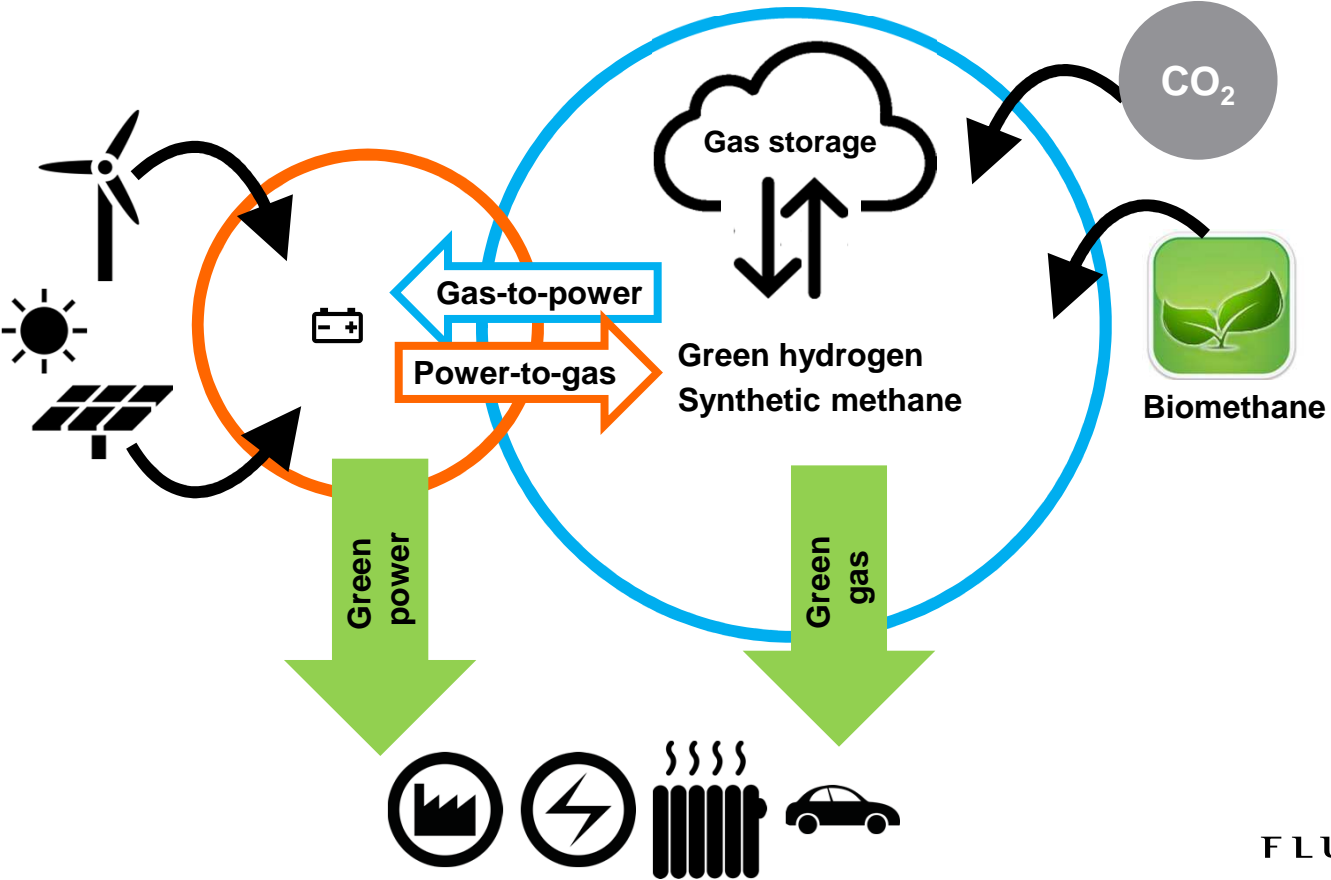


## Biomethane



**Ecofys Gas for Climate study:  
Potential of c. 122 bcm/y of green gas in Europe**

# MAKING THE GAS AND POWER SYSTEMS WORK TOGETHER

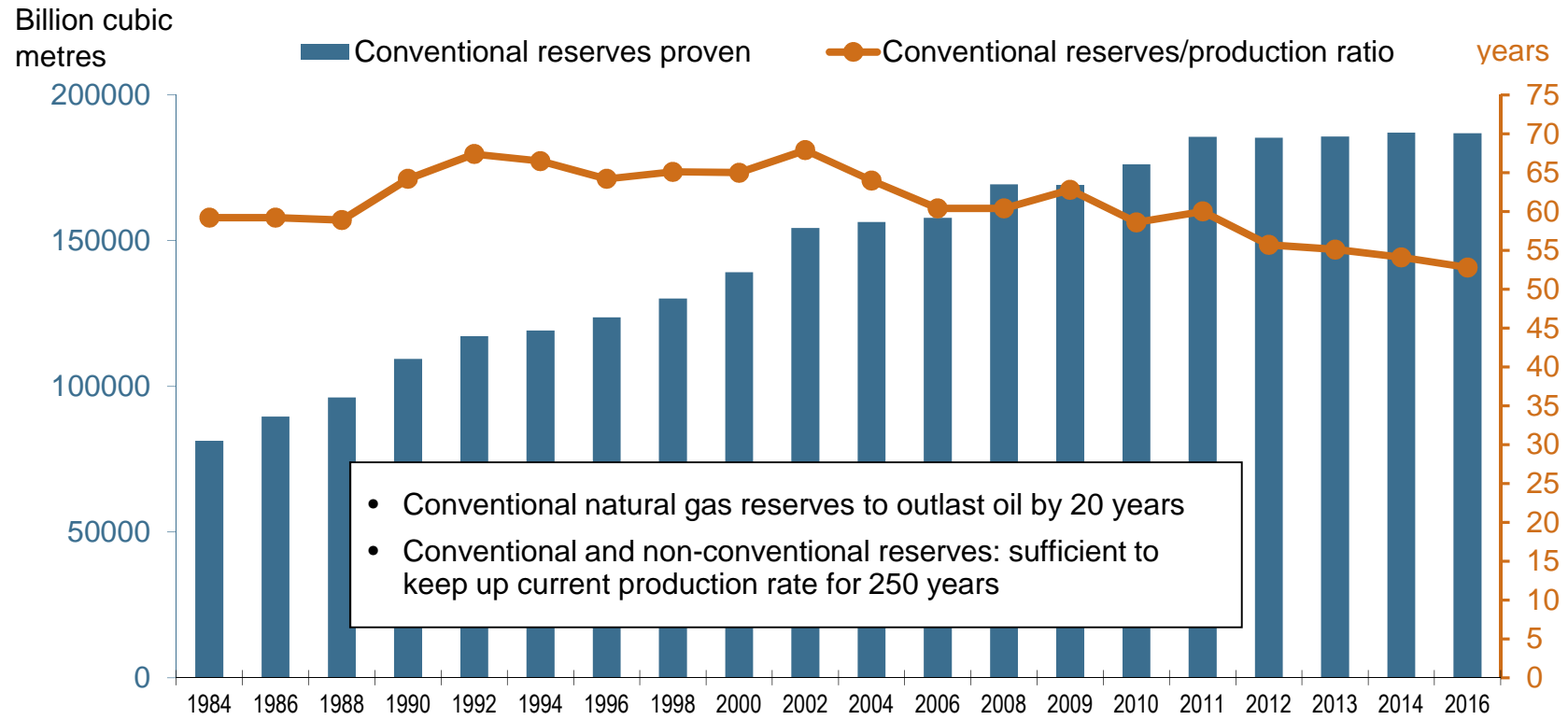


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## Security of supply

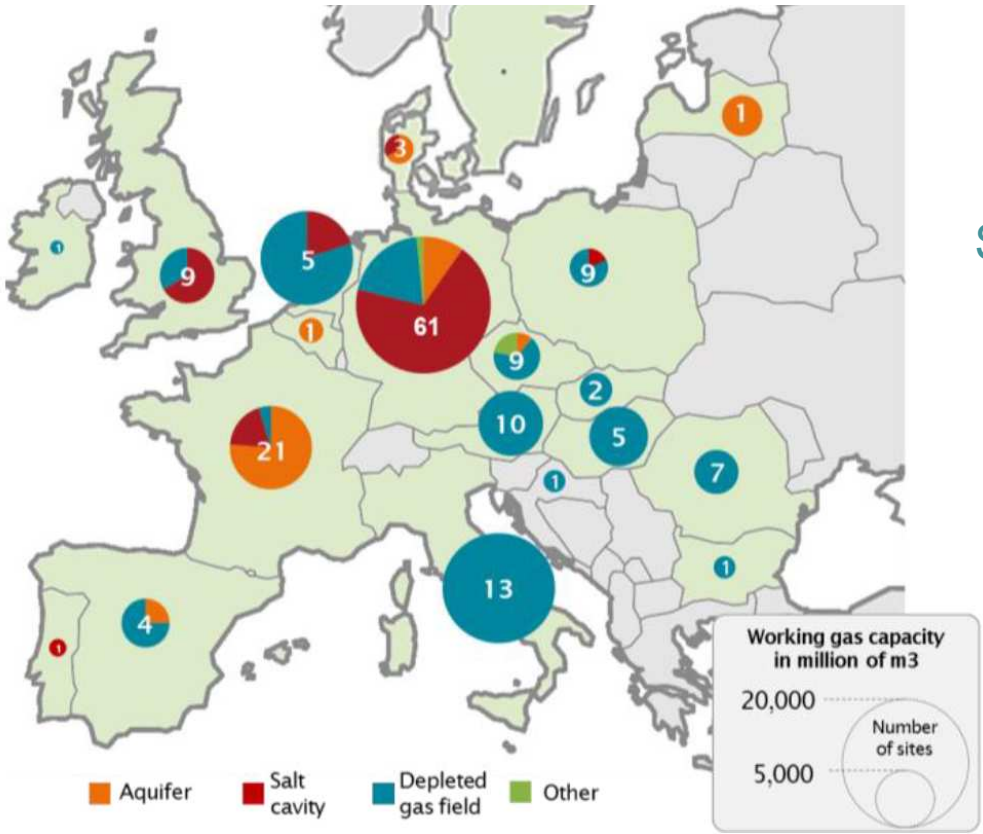


# NATURAL GAS ABUNDANTLY AVAILABLE



BP Statistical Review of World Energy Full Report

# AND ADDITIONAL FLEXIBILITY FROM GAS STORAGE: THE ENERGY SYSTEM'S SUPER BATTERY



1100 TWh gas storage available

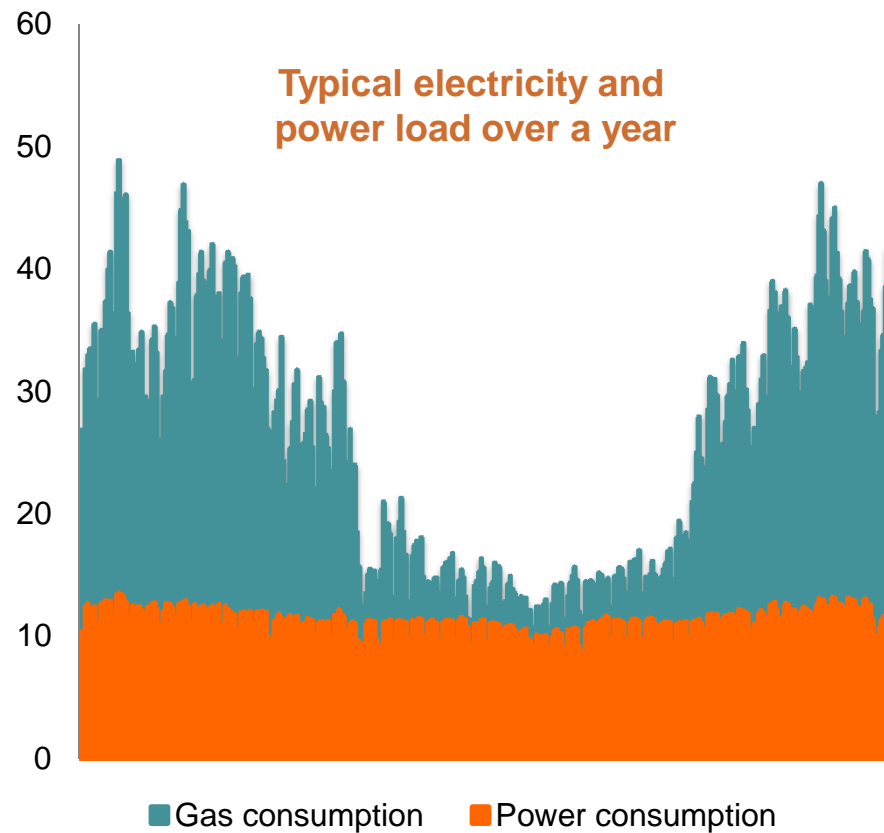
= 1/3 of yearly power generation in Europe

= yearly renewable power generation in Europe

3

A competitive  
energy system

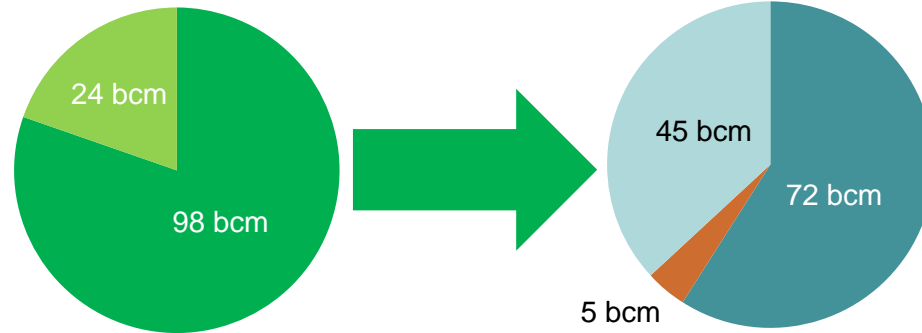
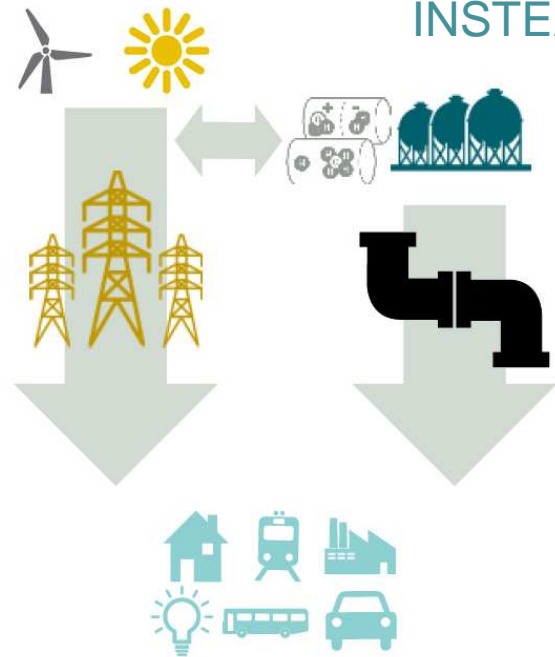




## OPTIMUM USE OF GAS & GAS INFRASTRUCTURE CURBS INVESTMENT IN THE ENERGY SYSTEM

- Electricity alone will not be able to meet peak energy demand unless massive additional investments are made in power infrastructure
- Gas transmission infrastructure on average 10 times cheaper than power lines/cables

## COST BENEFIT OF DIRECT USE OF GREEN GAS INSTEAD OF FULL ELECTRIFICATION?



■ Biomethane

■ Green hydrogen

■ Heating & power generation

■ Transport

■ Industry

Ecofys Gas for Climate study:  
societal cost savings of €140 billion per year by  
2050 compared to a decarbonised energy system  
without any role for renewable gas



## ENERGY TRANSITION IN EUROPE IN A NUTSHELL

- Gas & gas infrastructure are an integral part of the solutions to successfully achieve the energy transition: they deliver on all three challenges to tackle
  - Climate change & air quality: efficient decarbonisation and curbing of air pollutants
  - Security of supply: flexible gas-fired generation enables variable generation with wind and sun
  - Cost: using gas & gas infrastructure brings societal cost savings of €140 billion per year by 2050
- Short and middle term: natural gas
- In the long run: green gas as an additional renewable energy source next to wind and sun
  - Incentive schemes to develop
  - Regulatory framework to evolve

FLUXYS

