

# The Role of Gas in the Energy Transition

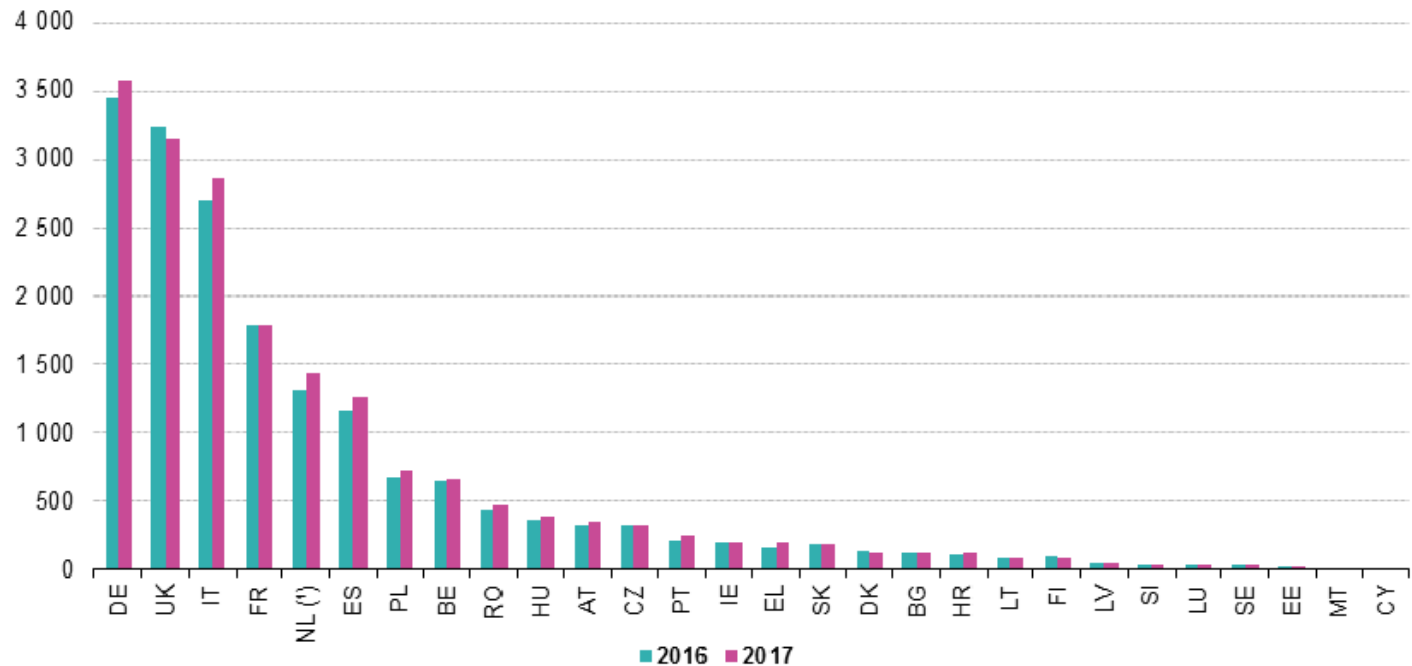
Brussels  
7<sup>th</sup> May 2019

- energy policy sets the legal framework for power supply including transmission and distribution of electricity and gas
  - while there is broad consensus on the role of electricity in energy supply...
  - ...it is unclear whether gas will also play a role in the future energy world; and if so, to what extent
- GEODE – association of European independent gas and electricity distribution companies
- historically, the grid-bound energy supply evolved from gas supply (electricity followed decades later)
- *but* the question remains, if gas is a sustainable energy carrier?

# Current Gas demand in EU – gross inland consumption



Gross inland consumption of natural gas, by country, 2016-2017

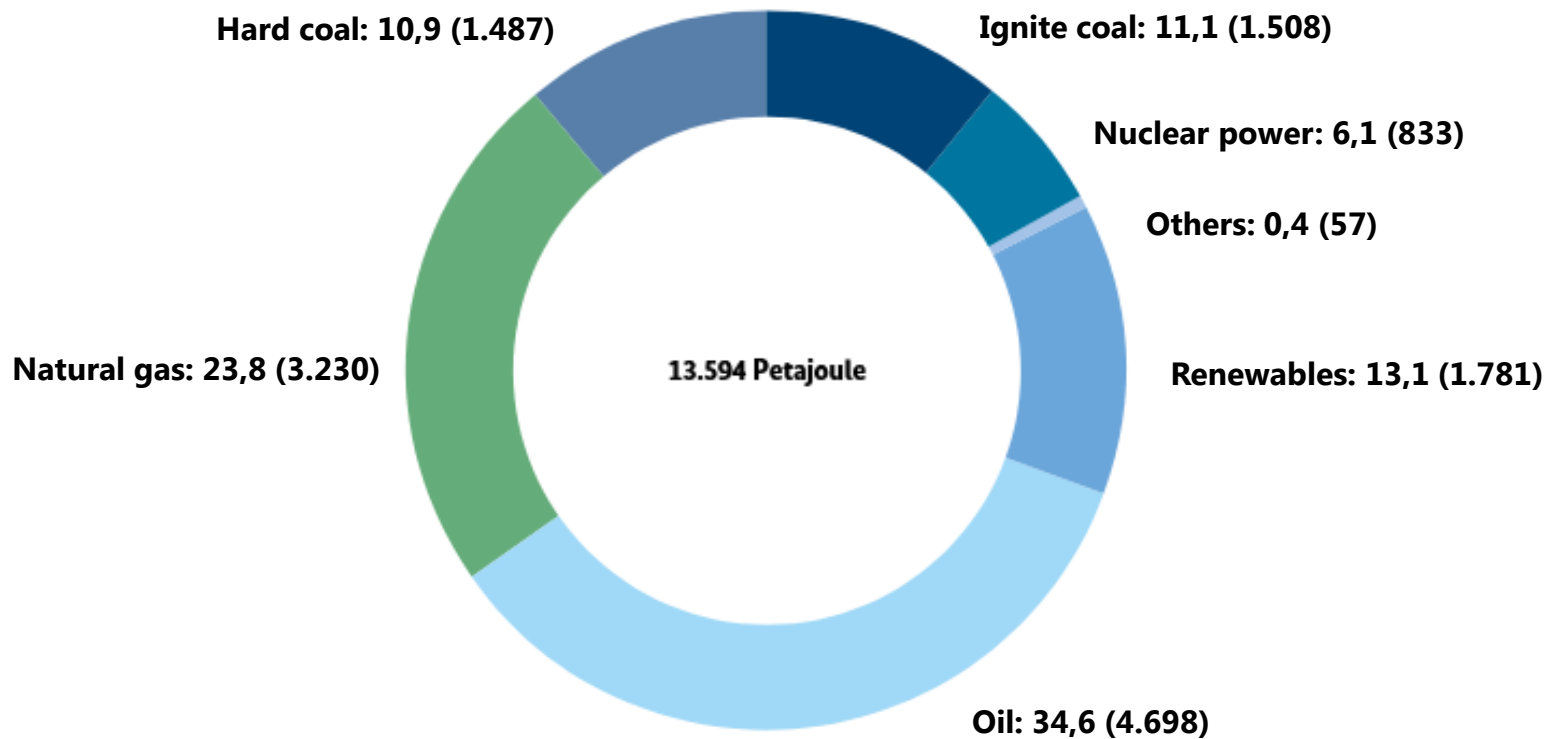


(\*) Provisional data for 2017  
Date of extraction: 01/06/2018  
Source data: nrg\_103m

# Current Gas demand Germany - primary energy consumption 2017



**primary energy consumption 2017**  
in Prozent (Petajoule)\*

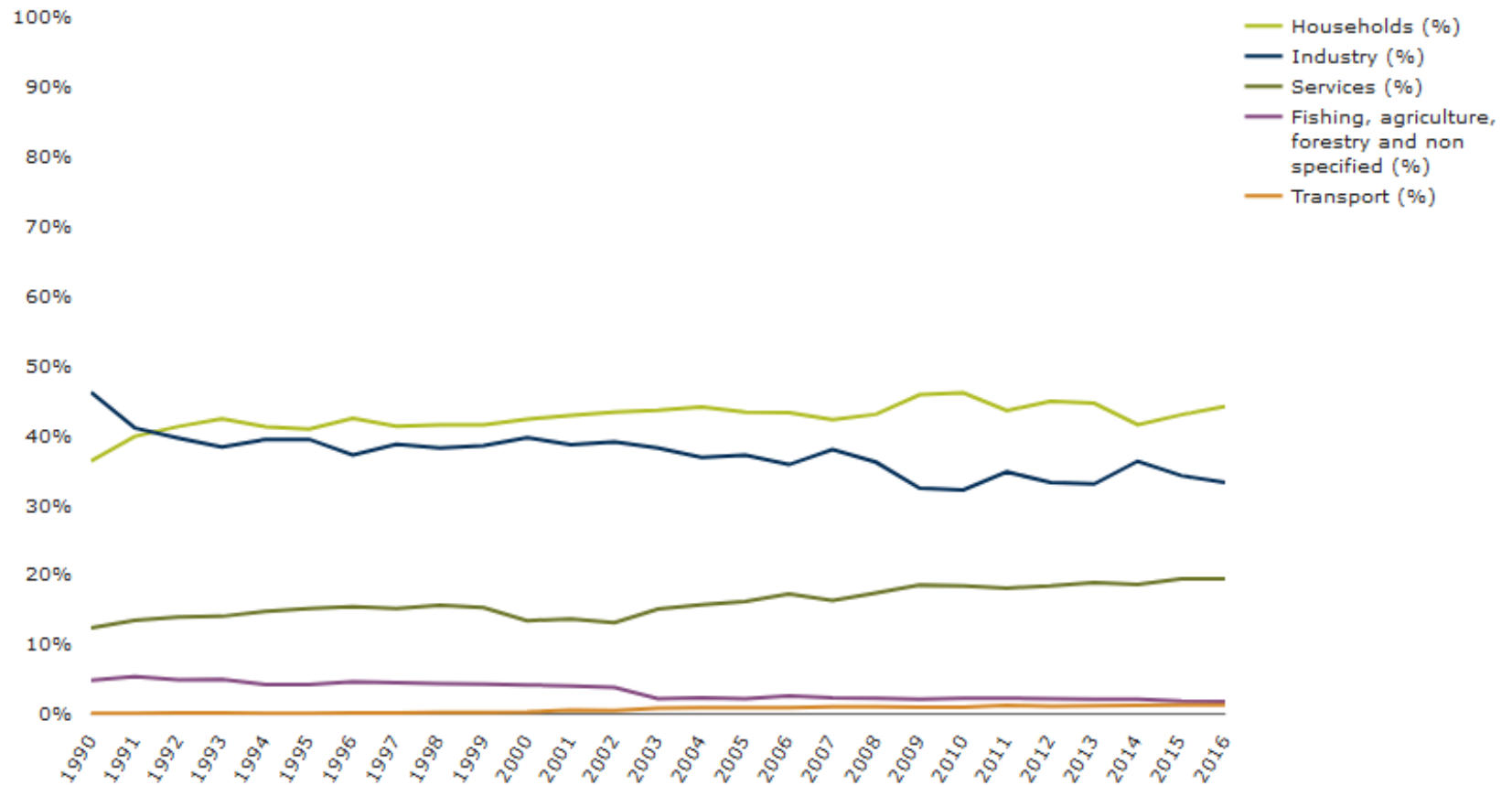


Quelle: Arbeitsgemeinschaft Energiebilanzen, Stand: Juli 2018

# Current Gas demand in EU – natural gas consumption by sector



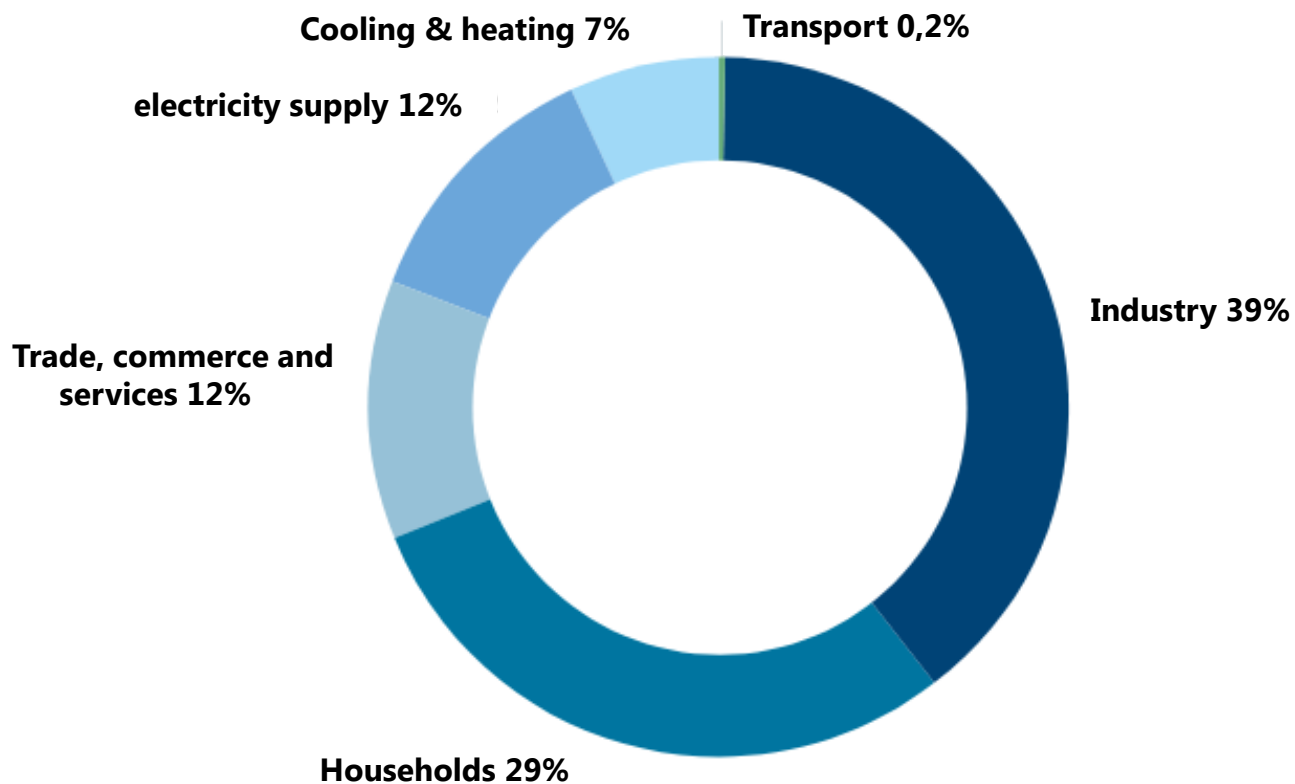
Shares – Final energy consumption of natural gas by sector



# Current Gas demand Germany - natural gas consumption by sector



## Shares of gas demand by sector



Natural gas sales do not include gas-industry own consumption

Quelle: BDEW, Stand 02/2019

## COP 21, Paris Agreement

- limit the increase in global average temperature to well below 2°C, ideally **1,5°C**
- **reduce worldwide GHG emissions by 80-95 %** compared with 1990 until **2050**

## European Union

- 2020 climate and energy package
  - -20% GHG emissions, 20% renewables, 20% energy efficiency
- 2030 climate and energy framework
  - -40% GHG emissions, 32% renewables, 32,5% energy efficiency

- the term „renewable“ is not confined to electricity sources
- gas is not necessarily a fossil fuel → renewable gas sources are being discussed more frequently
- technologies have developed over time and will hopefully continue to develop even faster in the future



### Which consequences for energy policy?

➤ EU and German energy policy send no clear signals:

- While green and synthetic gases are increasingly recognized...  
„The use of the existing gas infrastructure with "green" gas in particular significantly reduces the costs of decarbonisation and at the same time increases security of supply and acceptance of the energy system transformation as a whole.”

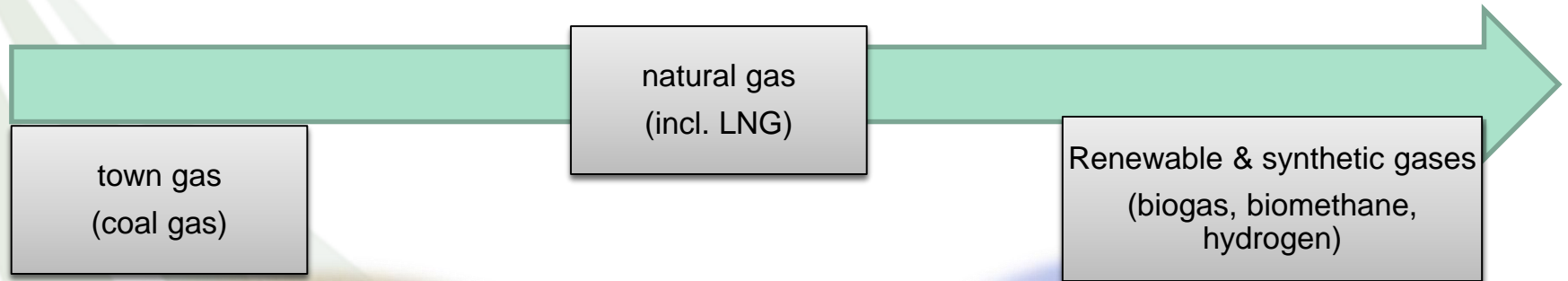
*(Dr. Matthias Janssen, Frontiers Economics Ltd.)*

- ...the political discussion still circles around natural gas  
„The European Commission will in future concentrate more on [natural] gas and greenhouse gas reduction in order to promote affordable decarbonisation. [Natural] Gas has its place in decarbonisation.”

*(Dr. Florian Ermacora, Head of Wholesale Markets  
Electricity and Gas at DG Energy)*

# What does the term „Gas“ refer to?

Gas as an energy carrier; its origin, however, changes over time:



### Coal exit

- phase out of coal-fired power generation until 2038
- commission stresses importance of natural gas for security of supply & grid stability
  - switching Germany's "grid reserve" capacity, currently at 2.3 gigawatts (GW), from coal to gas until 2022
  - acceleration of permission process for new gas-fired power plants

### LNG

- Plans to build terminals to import LNG (Brunsbüttel, Stade or Wilhelmshaven)
- New legal framework for investments
- Nordstream 2

- Politically, it is mostly acknowledged, that natural gas will play an important role in supply in the short and medium term
- Natural gas will serve as a “bridge technology“
  - for renewable energies
  - for green gases and synthetic gas
- short to mid term natural gas will play an important role in the transition to a decarbonized energy system, replacing coal and constituting a back up in a growing renewable energy system (grid reserve)
  - lower overall energy costs (electricity generation cost, supply costs)
  - grid utilization
  - less carbon dioxide emissions than any other fossil fuel

- But: investments in network infrastructure are long-term decisions; it's questionable, if natural gas will survive in long-term
- to reach the GHG emission goals of the Paris Agreement by 2050 further decarbonisation of the energy sector is imperative
- increasing the share of renewable energy and efficiency measures will lead to a lower natural gas demand
- the scope is not yet foreseeable
- against this background, open questions for the national and european gas infrastructure remain

- Crucial question: Will natural gas supply be replaced by green/synthetic gases or will it come to an end?
- The distinction between natural and renewable/synthetic gas is not yet depicted in the current EU and national energy policy
- There are legal frameworks for renewable electricity (e.g. EEG) but the development and political/legal recognition of renewable and synthetic gases is rudimentary
- If we want an EU energy policy that promotes a sustainable gas policy we need to question this situation
- EU and national governments need to set the course for a consequent gas policy that promotes a long-term, sustainable development of gas infrastructure

A forward-thinking gas policy pursues two goals:

1. **The immediate saving of a significant amount of CO<sub>2</sub> emissions**

*There, the aim is to replace worse fossil fuel with better ones*

- In the heating market
  - replacing oil heating by gas condensing heating with solar thermal technology; or simply replacing old gas heating systems by new ones
  
- In electricity generation
  - replacing coal-fired power plants or oil-fired power plants with gas-fired power plants

### 2. The subsidy-free preservation and purposeful extension of the existing gas infrastructure (grid and storage) for the future energy supply

*The aim is to preserve the existing gas infrastructure for the future transport of green and synthetic gases*

- This needs to be consistently implemented politically, for instance:
  - Tax depreciation for highly efficient gas condensing boilers
  - Appropriate design of the framework conditions for Power2Gas



- If business models for gas supply are found for the next 20 years, this would provide a *subsidy-free* infrastructure that **can** play a decisive role in the gas supply of the future
- In addition to the infrastructure, we would need:
  - rapid technological progress with synthetic gas
  - further cost depression, for instance the economic viability of hydrogen
  - consistent gas-policy on national and EU-level that integrates all forms of gas
- Such investments are to be understood as a **hatch investment**
  - In order to keep the possibility of green/synthetic gas supply open
  - Gas infrastructure as a necessity for a carbon free gas supply in case of scientific success

**THANK YOU!**



**Thank you for your  
attention!**

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