# An Outlook on the German Gas Grid Landscape

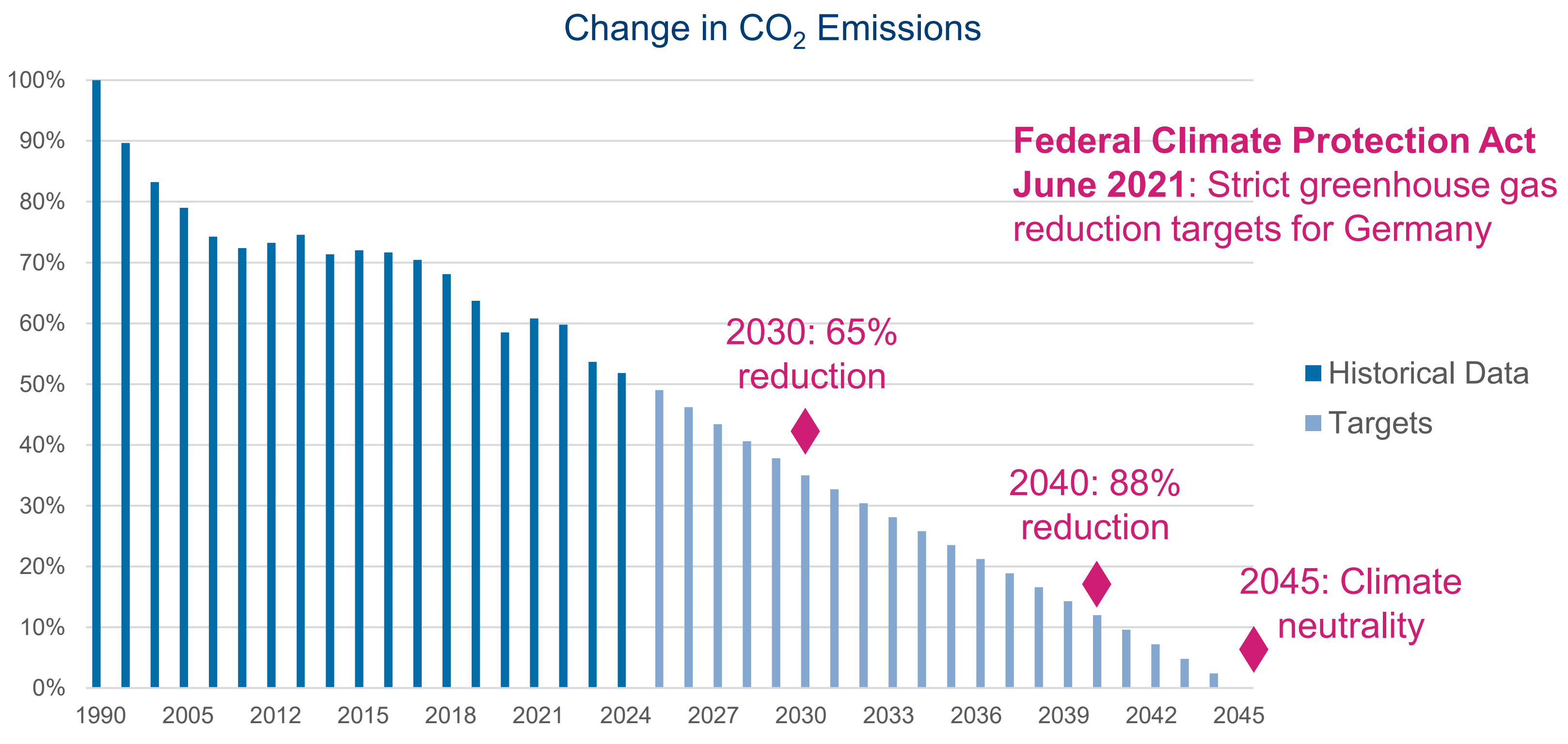
Gunnar Brandin & Bård Strand

OGE

# OGE at a Glance

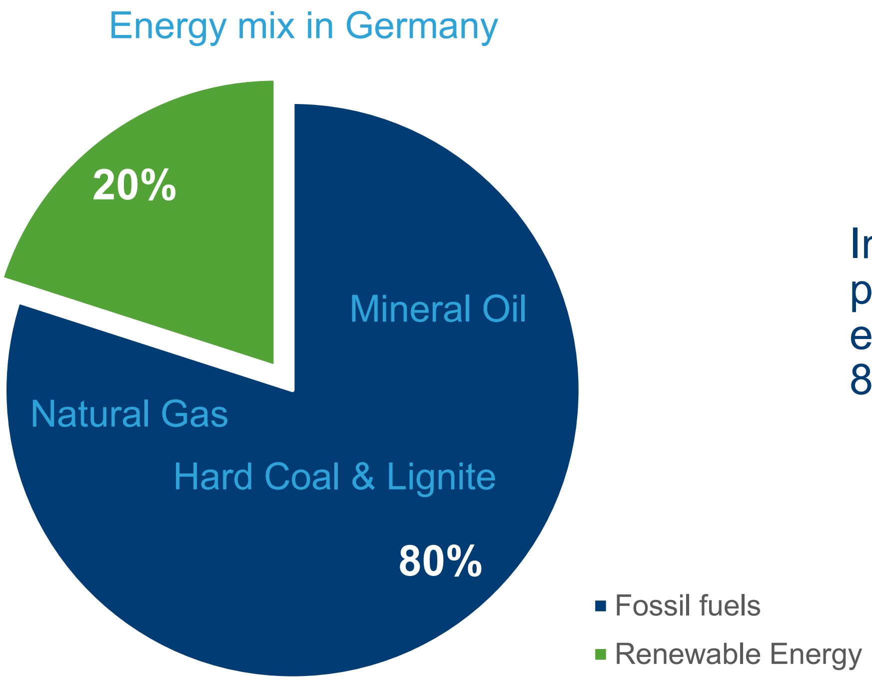
- One of Europe's **leading gas transmission system operator**
- Responsible for **planning, building, operating, monitoring and marketing** the OGE pipeline network
- More than **2,000 employees** at the OGE Group

# Germany's Climate Protection Targets




Source: umweltbundesamt.de

# The Challenges of Decarbonization Require New Solutions

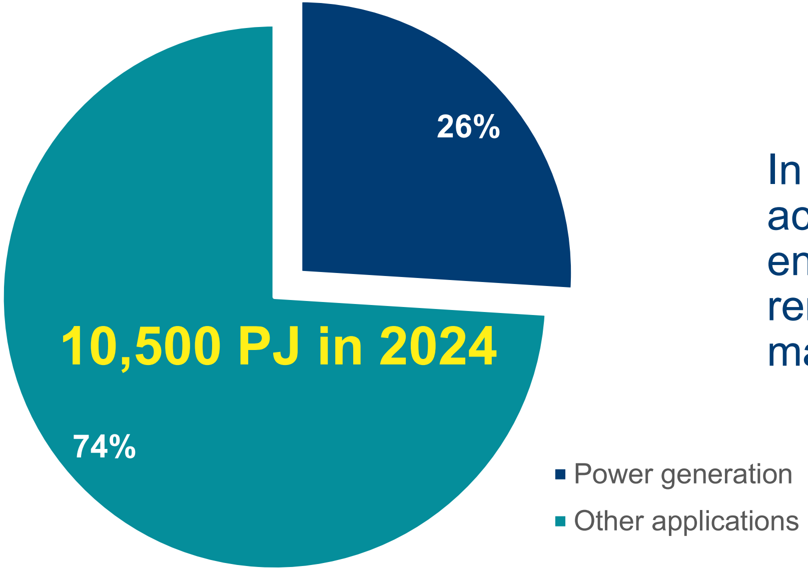



In Germany, 20% of energy production comes from renewable energy sources. The remaining 80% is generated from fossil fuels.

Source: ag-energiebilanzen.de

# The Challenges of Decarbonization Require New Solutions

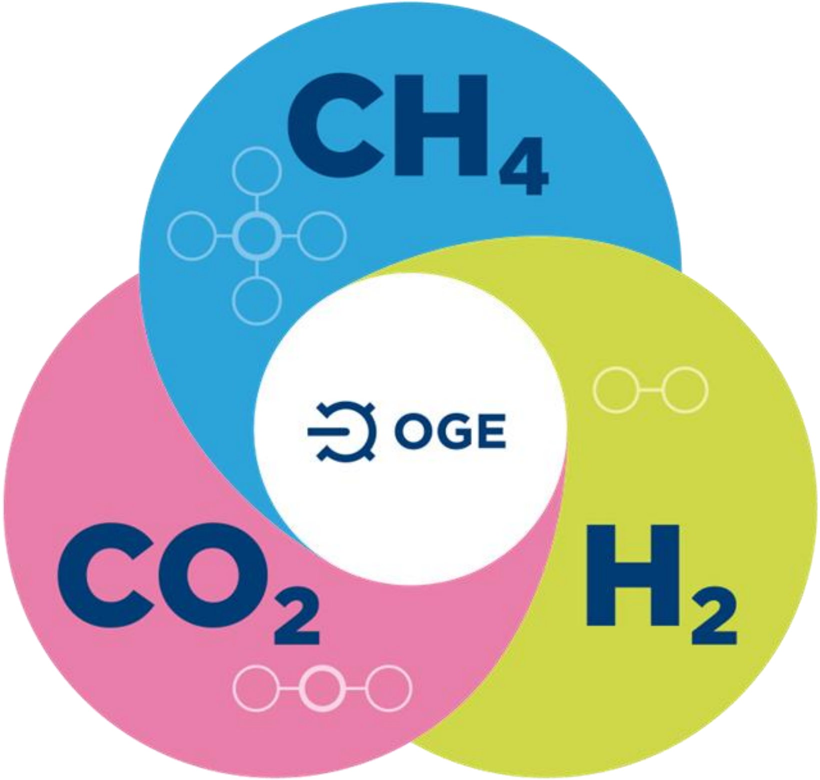
Share in Primary Energy Demand in Germany




In Germany, energy production accounts for just 26% of primary energy consumption, with the remaining 74% dedicated to material applications.

Source: ag-energiebilanzen.de

# Our Areas of Business




$CH_4$ Ensuring security of supply, repurposing pipelines

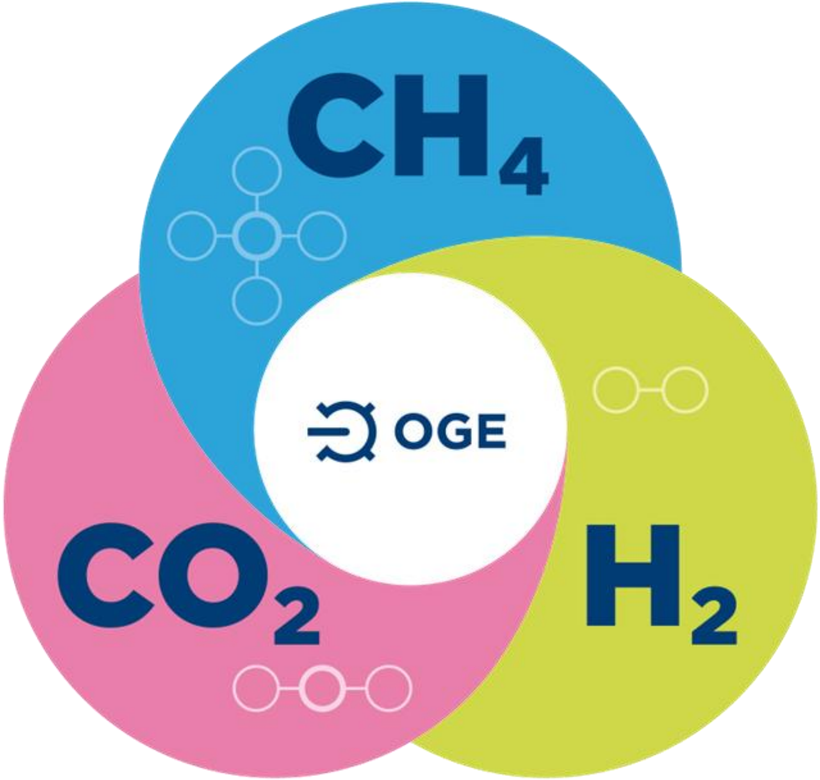
$H_2$ Developing new business areas with OGE core competences

$CO_2$ Expanding OGE's core competences

Natural Gas

# Our $CH_4$ Infrastructure

# Natural Gas Division




- Fundamental contribution to security of supply
- Many years of expertise
- Biomethane with huge potential

# The Natural Gas Network of OGE

approx. **12,000** km
of pipelines

approx. **30**
compressor stations with total capacity of around 1,000 MW

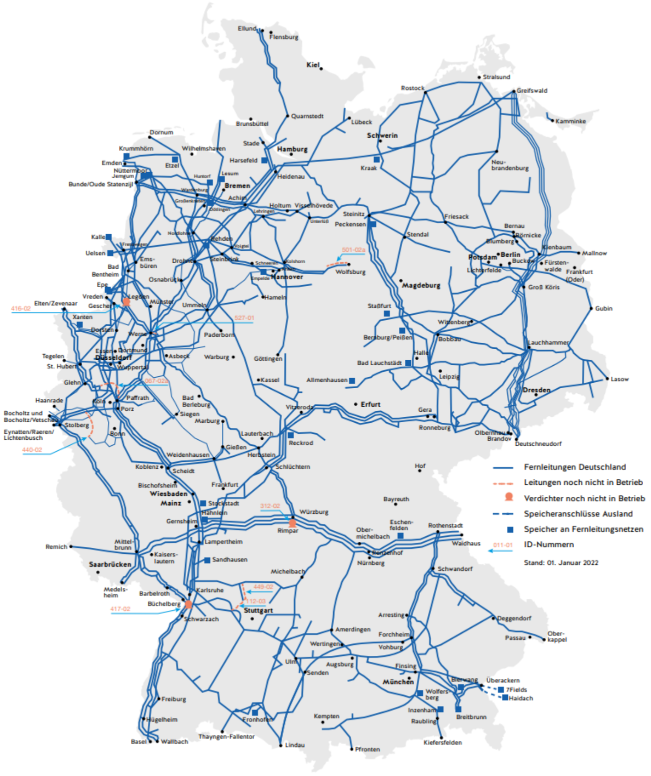
**994**
exit points

**18**
cross-border interconnection points

approx. **111** GW
annual peak load in 2024

approx. **247.500** GWh
total annual offtake by resellers and end users in 2024

# Natural Gas Transmission Network in Germany




Sources: data.bundesnetzagentur.de, fnb-gas.de

## Key figures for the transport network

— Number of network operators: 15

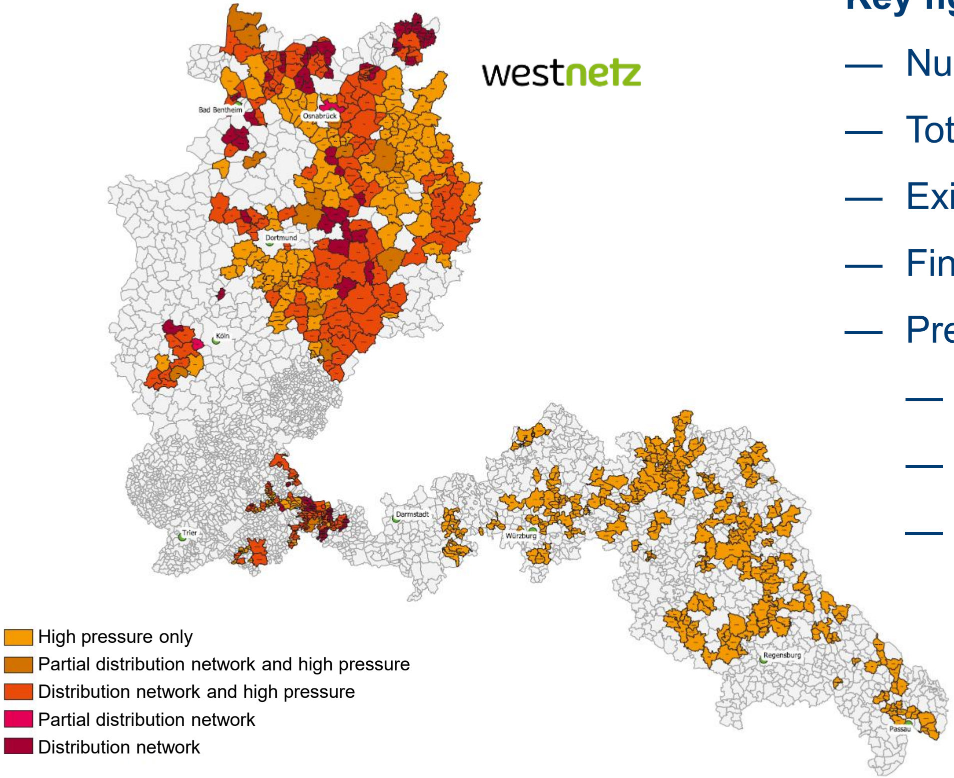
fluxys Deutschland
terranets bw
gasunie crossing borders in energy
Ferngas
bayernets erdgas transport systeme
Wir transportieren Gas. nowega
NEL
Lubmin-Brandov Gastransport
GRTgaz Deutschland
GTG NORD
ONTRAS
OGE
GASCADE
fluxys TENP
Thyssengas

— Exit points: approx. 3,500

— Final consumer supply (2023): approx. 140 TWh

— Pressure range: 16 to 100 bar

# Natural Gas Distribution Network in Germany




## Key figures for the distribution network

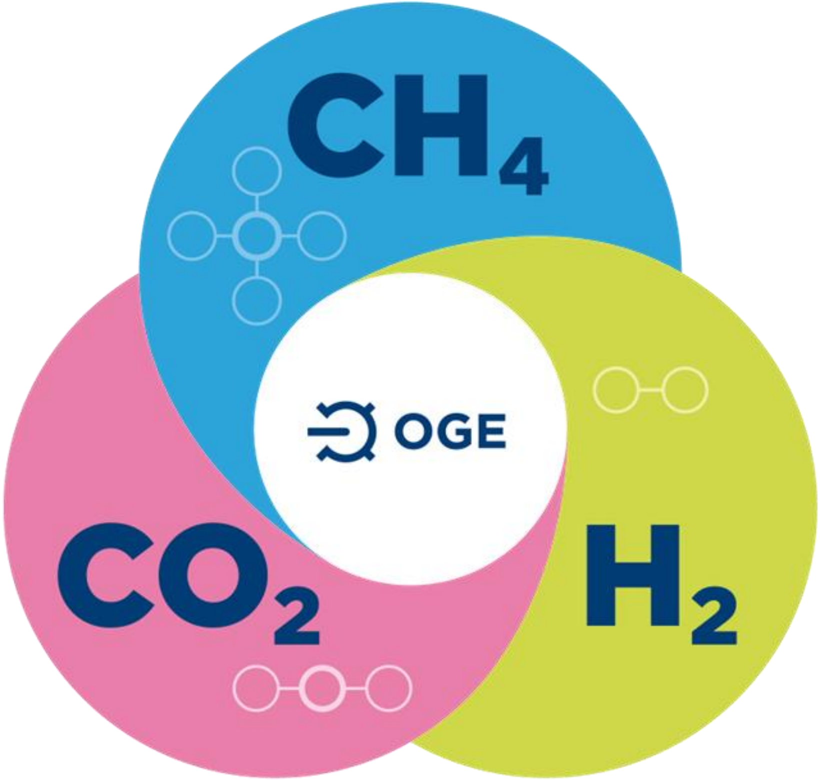
- Number of network operators: approx. 700
- Total length: approx. 560,000 kilometers
- Exit points: approx. 11 million
- Final consumer supply (2023): approx. 650 TWh
- Pressure ranges:
  - High pressure: above 1 bar to 16 bar
  - Medium pressure: 100 mbar to 1 bar
  - Low pressure: below 100 mbar

Sources: data.bundesnetzagentur.de, westnetz.de, h2vorort.de

Hydrogen

# Our $H_2$ Infrastructure

# Hydrogen Division



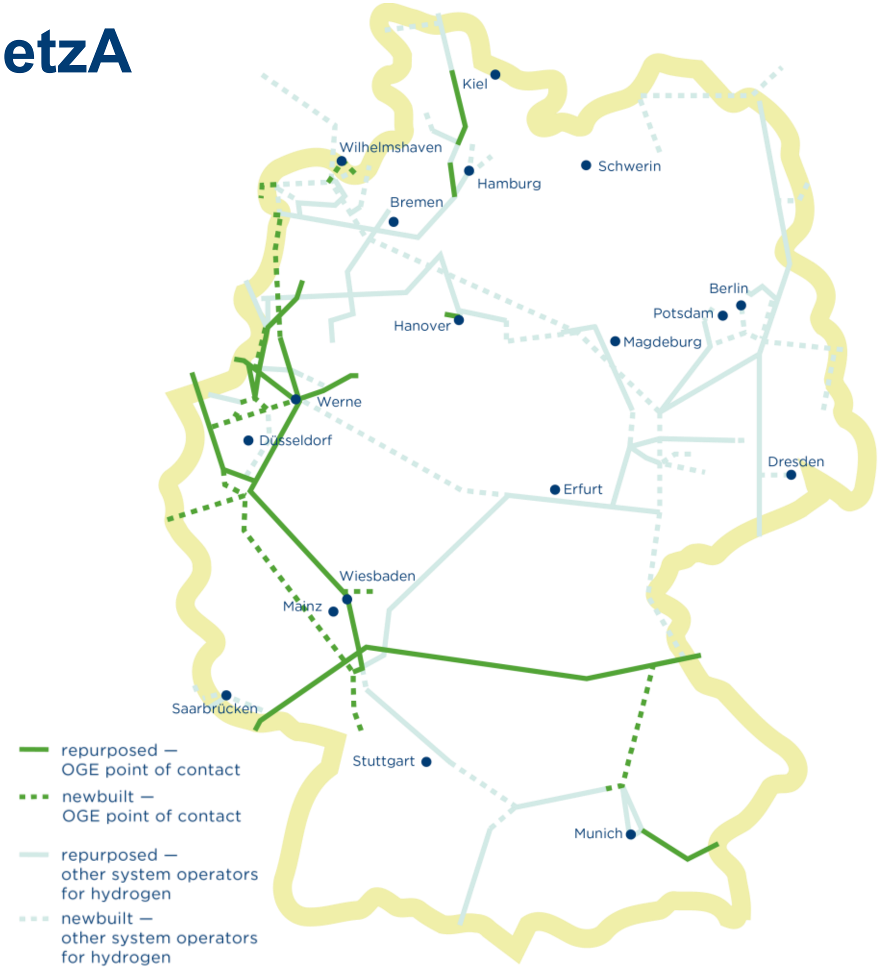

- Second pillar of the energy transition alongside electricity
- Seasonal storability
- Gas infrastructure already in place
  ➔ Assets and expertise

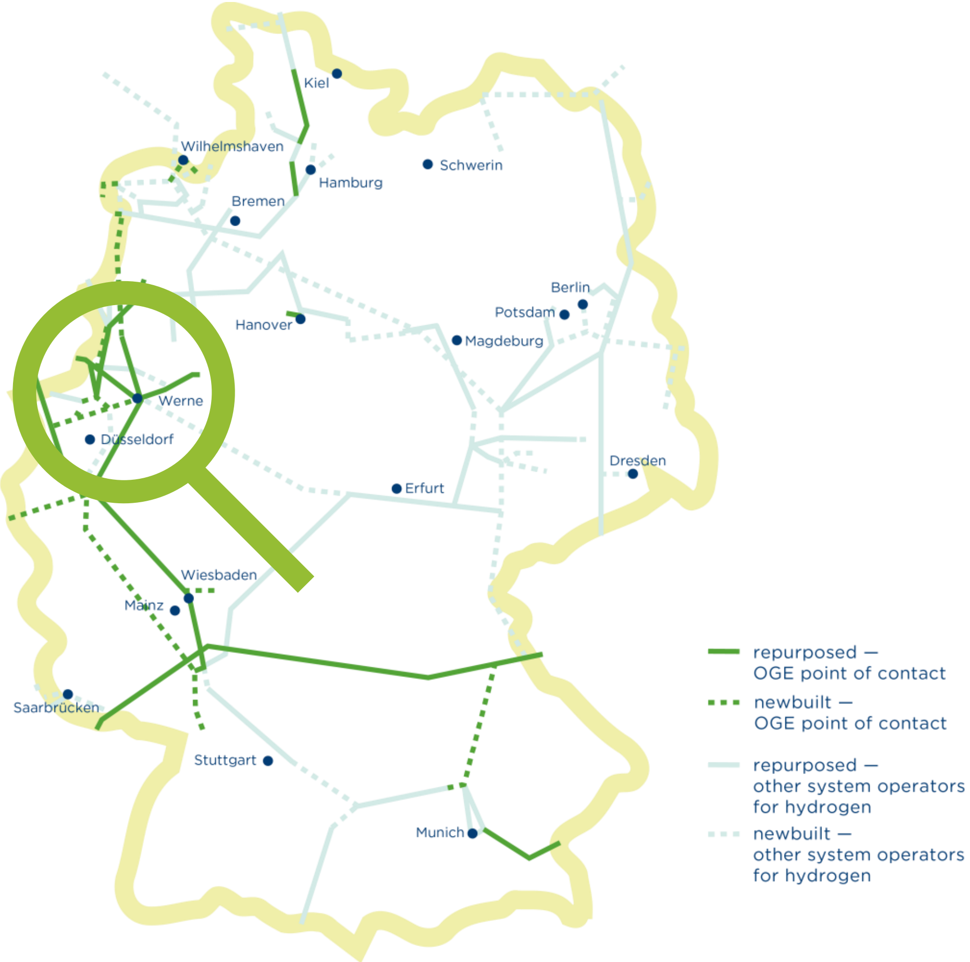
# $H_2$ Core Grid Approved by BNetzA

~ 9,000 km in total

60% repurposing

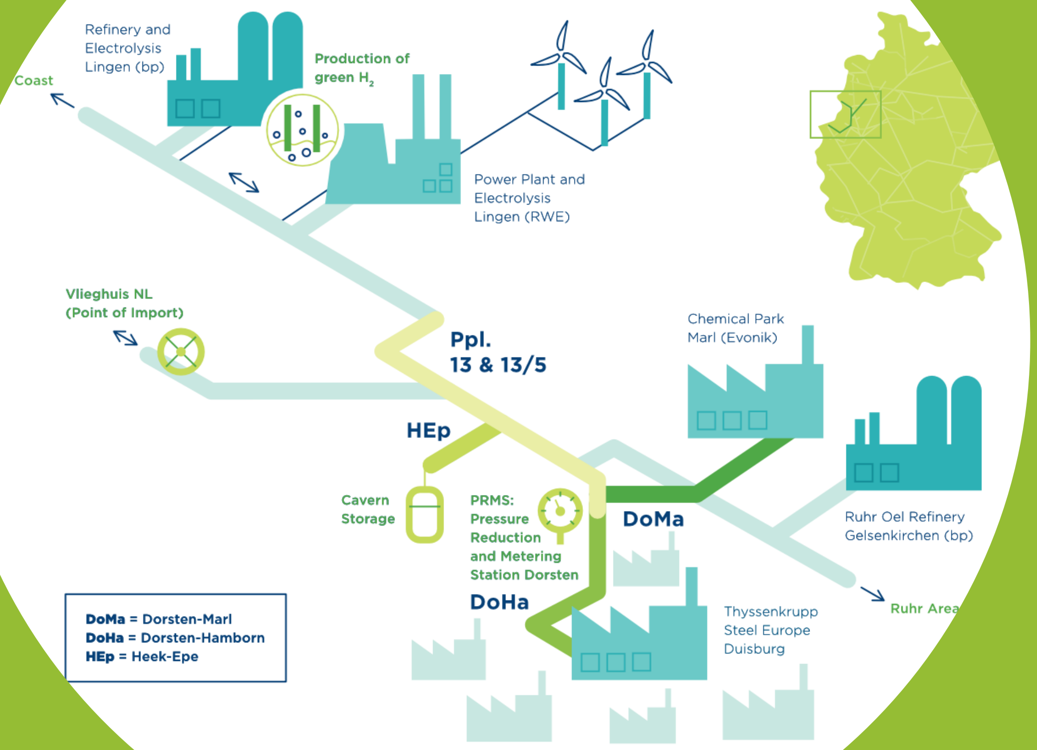
~ € 20 bn investments





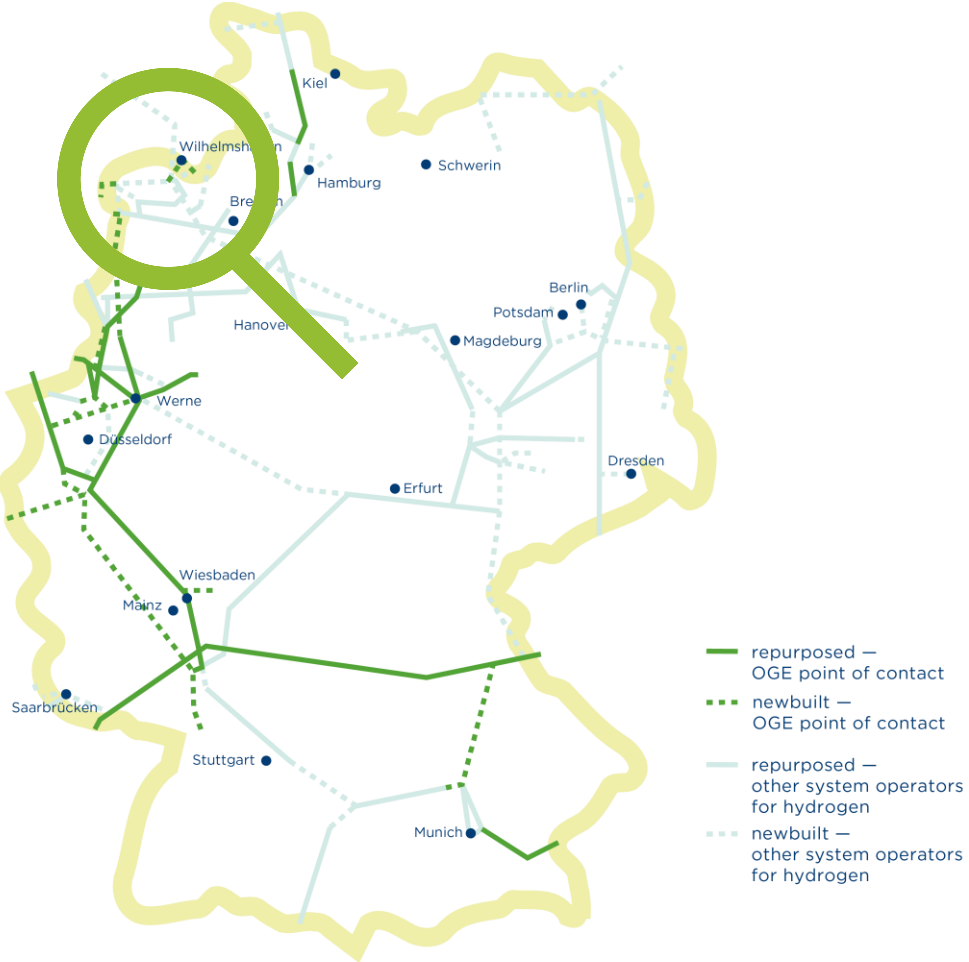

# We are already delivering $H_2$ infrastructure…

# … with GET $H_2$




Provides transport infrastructure for **first full scale hydrogen value chain** in Germany by **2027**

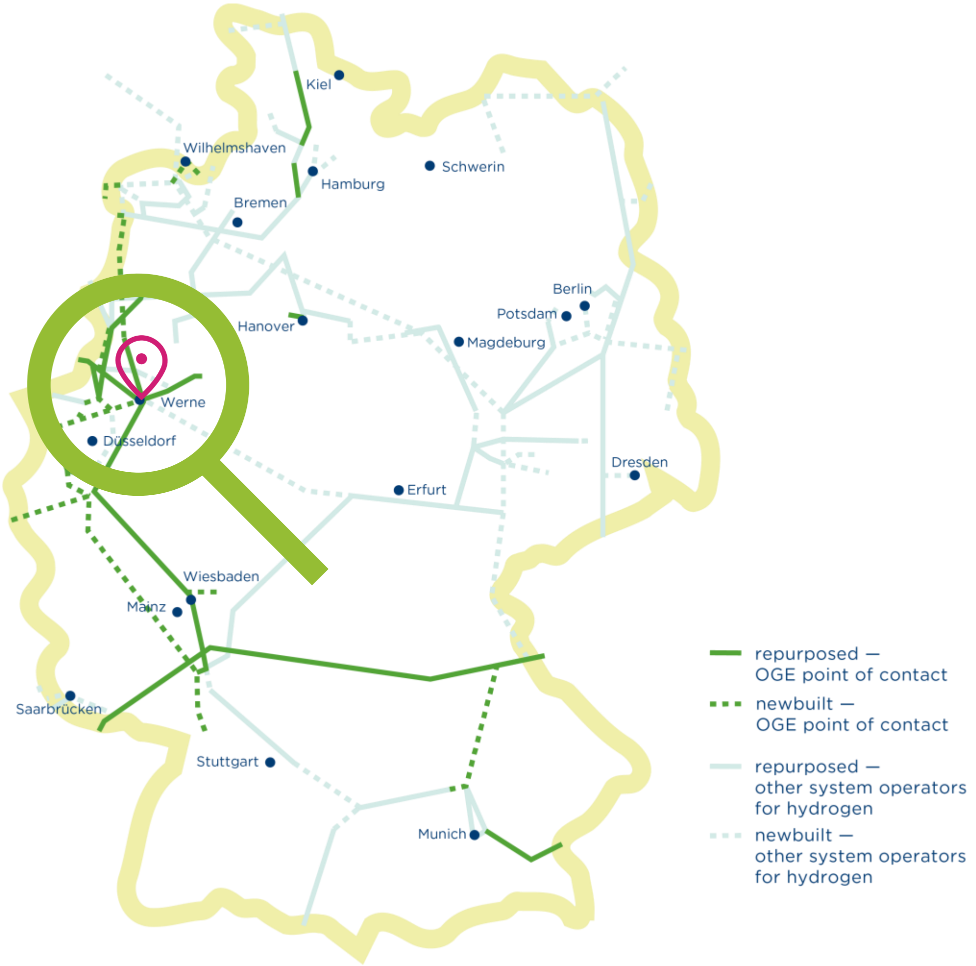
- **Conversion** of existing natural gas pipelines Bad Bentheim–Dorsten and Lingen–Bad Bentheim to hydrogen transport pipelines
- **Construction** of four new hydrogen transport pipelines: Heek–Epe (HEp), Dorsten–Marl (DoMa), Dorsten–Hamborn (DoHa), and 500 / 500.1 and 501 in the south of Lingen


Kiel
Hamburg
Schwerin
Berlin
Potsdam
Magdeburg
Werne
Düsseldorf
Dresden
Erfurt
Wiesbaden
Mainz
Saarbrücken
Stuttgart
Munich
repurposed —
OGE point of contact
newbuilt —
OGE point of contact
repurposed —
other system operators
for hydrogen
newbuilt —
other system operators
for hydrogen

# … around Wilhelmshaven


- **WKL**, **NRL I and NRL III** connect important import routes from Wilhelmshaven (supply) to the Ruhr area (demand)

  Planning approval process started, and construction is scheduled for 2026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Bremen
Berlin
Potsdam
Hanover
Magdeburg
Werne
Düsseldorf
Dresden
Erfurt
Wiesbaden
Mainz
Saarbrücken
Stuttgart
Munich
repurposed — OGE point of contact
newbuilt — OGE point of contact
repurposed — other system operators for hydrogen
newbuilt — other system operators for hydrogen

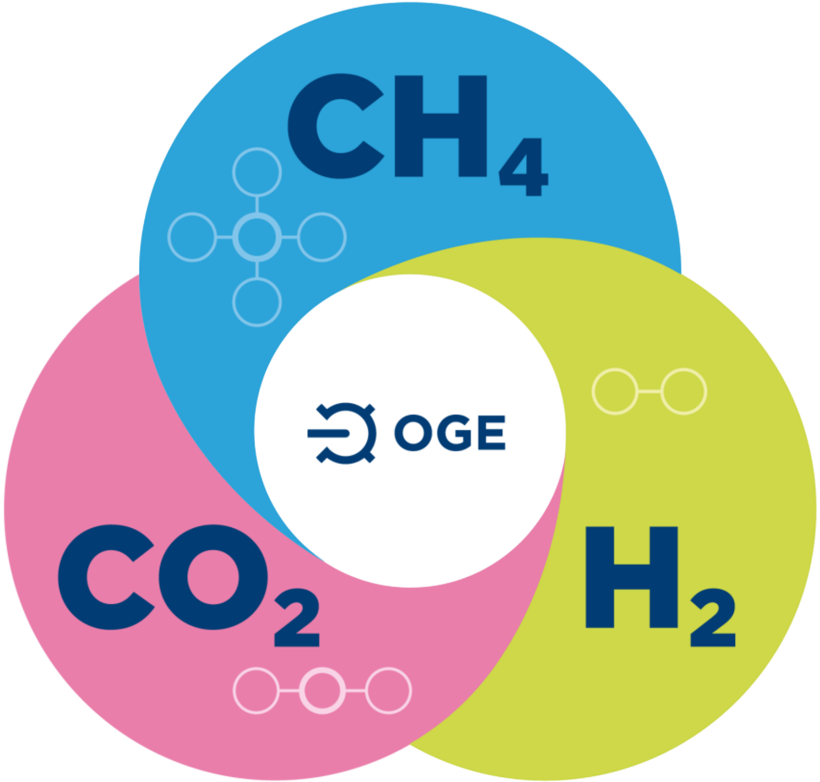
# and on our $H_2$ Training Site

- safe / efficient handling of OGE H2-assets
- Training as a service for other TSOs / DSOs

Carbon Dioxide

# Our $CO_2$ Infrastructure

# Carbon Dioxide Division



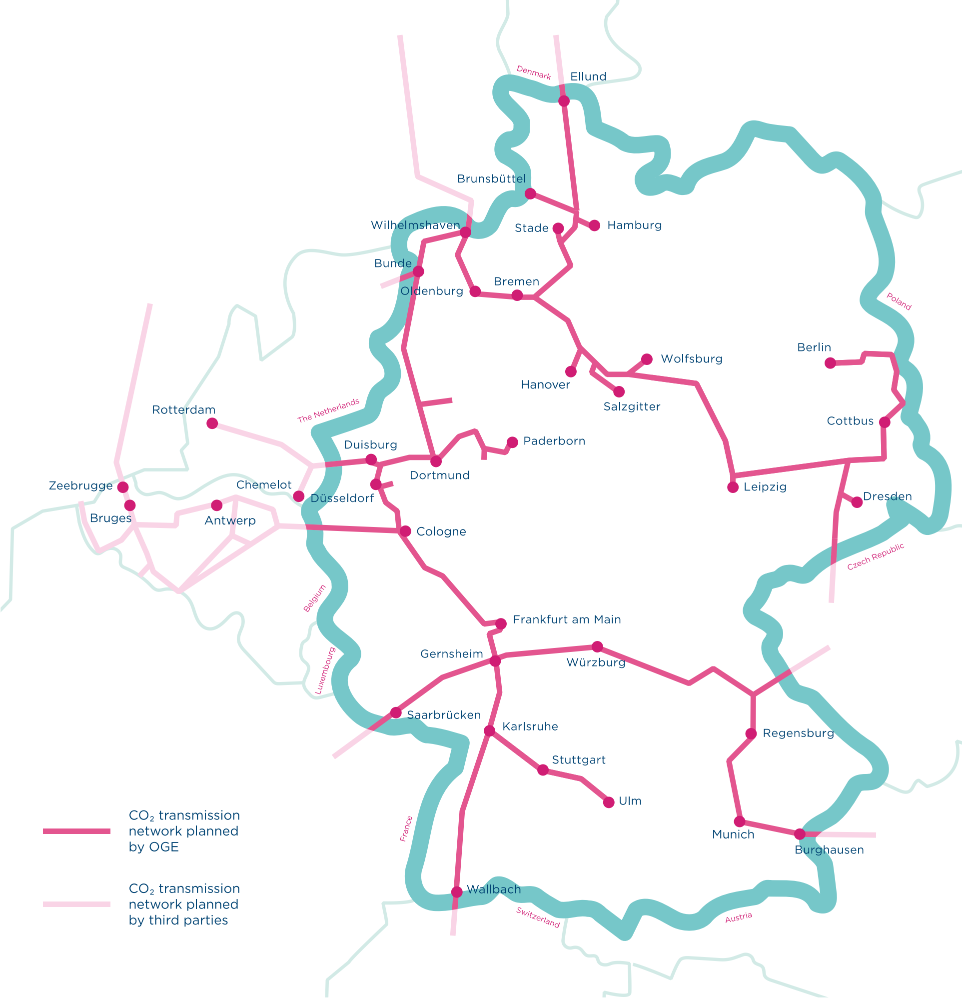

- Utilizing the opportunity of our pioneer position
- Enabling a circular economy
- Third pillar of the energy transition alongside electricity and $H_2$

# Climate Protection and $CO_2$

## Three key components to achieve the climate targets:

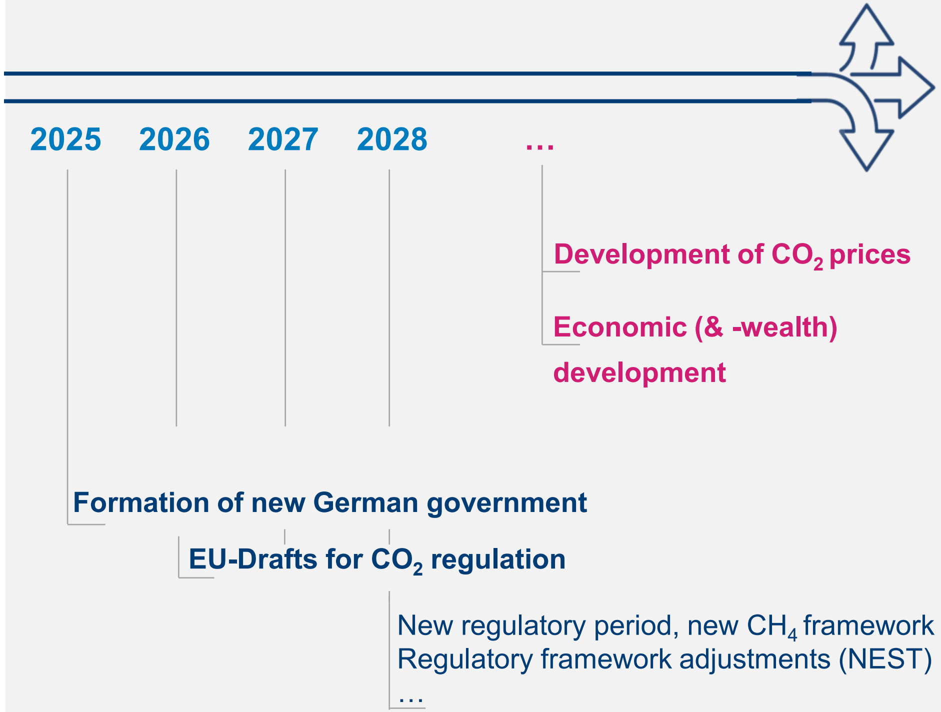
1. **Avoiding** $CO_2$ emissions
2. **Ramp-up** of renewable energies and green gases
3. Climate-neutral **management** of $CO_2$ and carbon

**$CO_2$ transport** as a key element



# How do we cope with dynamic external factors?

# OGE's Strategy Aligns with the Cornerstones of the Future Energy System and Proactively Considers Numerous Forthcoming Influential Developments

# Energy flows through us.

OGE