

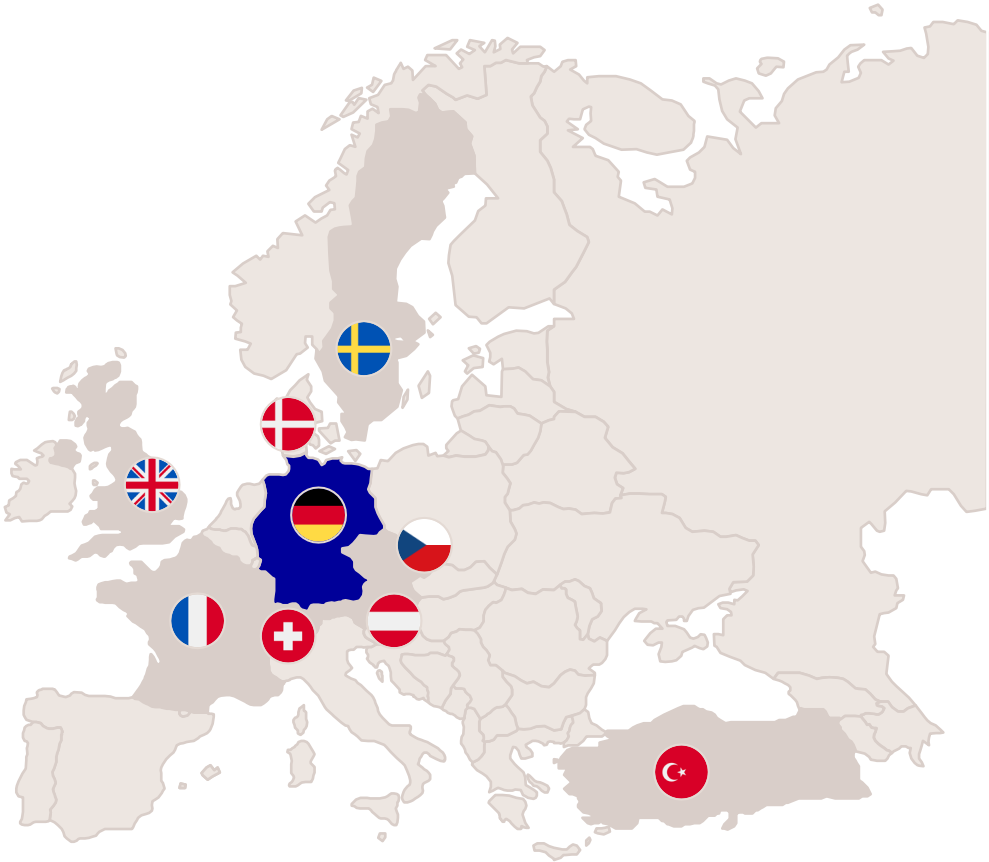
# Gasdagarna 2023

## Transition - challenges and opportunities

A thick, horizontal orange bar with rounded ends, positioned on the left side of the slide.

Gasdagarna 2023 | Tatiana Demeusy  
EnBW Energie Baden-Württemberg AG

# From an energy company to an infrastructure partner who we are - EnBW in Europe



In Germany and Europe, we operate at all stages of the energy industry value chain.



Sustainable Generation Infrastructure



System Critical Infrastructure



Smart Infrastructure for Customers



# Performance indicators of the EnBW Group



Revenue  
€ **56,002.6** million



Adjusted EBITDA<sup>1</sup>  
€ **3,285.7**  
million



Employees  
**26,980**



Number of B2C and  
B2B customers  
Around **5.5** million



Installed power plant  
output  
**13,066** MW



of which  
renewable energies  
**5,444** MW



Length of electricity grid  
**147,000** km



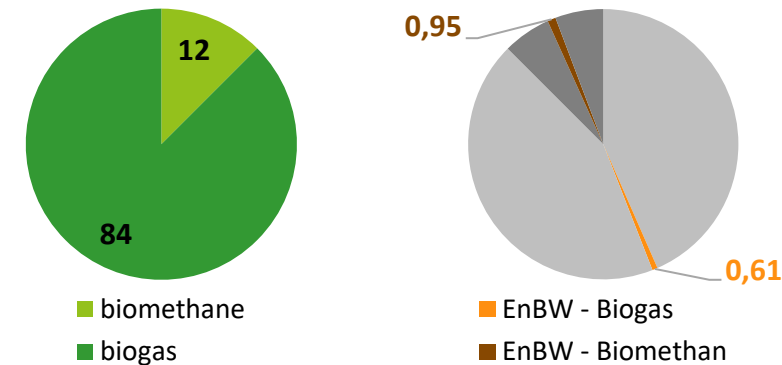
Length of gas grid  
**27,000** km

<sup>1</sup> Earnings before the investment and financial results, income taxes and amortization, adjusted for non-operating effects.

## Biogas/biomethane is currently the only available renewable gas in Europe

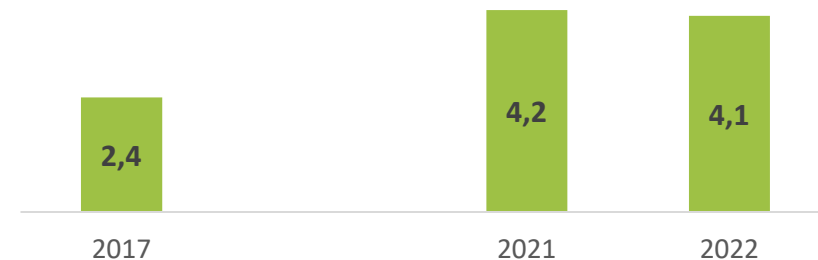
- **Germany** is (so far) the **largest biogas and biomethane producer in Europe**. **EnBW** is among the **TOP-3 in the production of biogas/biomethane** and **number 1 in biomethane trading** (bmp greengas).
- Many EU states are increasingly relying on **biomethane** to **diversify** gas supply and are launching **support systems** for the production and/or use of biomethane (Feed-in tariff, Feed-in premium, Quota, CO<sub>2</sub>-taxes etc.). An increase in cross-boarder trade is expected.
- The EU Commission's **target for biomethane feed-in is 35 billion m<sup>3</sup>/a** or 370 TWh/a of biomethane in the natural gas grid by 2030 (REPowerEU, 2022).
- No clear European strategy to achieve the 35 bcm target. Shift from on-site electricity generation to biomethane generation and increasing demand in all end-user sector necessary.

## Current generation and EnBW share in DE<sup>1</sup> | in TWh



With a total of 1.56 TWh, the EnBW Group is one of the top three producers of biogas<sup>2</sup> / biomethane.

## Biomethane trading bmp greengas | in TWh

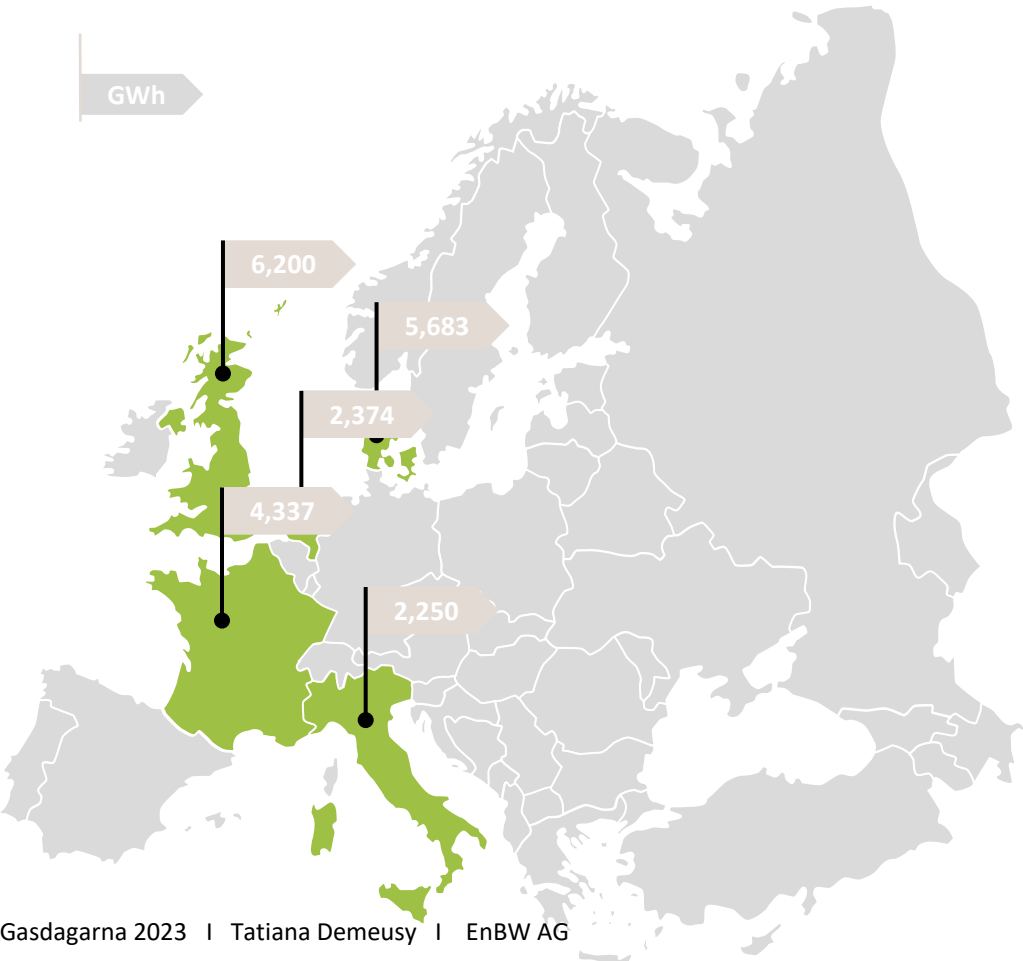


<sup>1</sup> EBA Statistical Report 2022 | <sup>2</sup> In Germany, "biogas" is the generic term for biogas and biomethane; the definition of "biogas" within EnWG § 3 No. 10f among others also includes landfill gas, sewage gas and renewable electricity-based hydrogen (RFNBO).

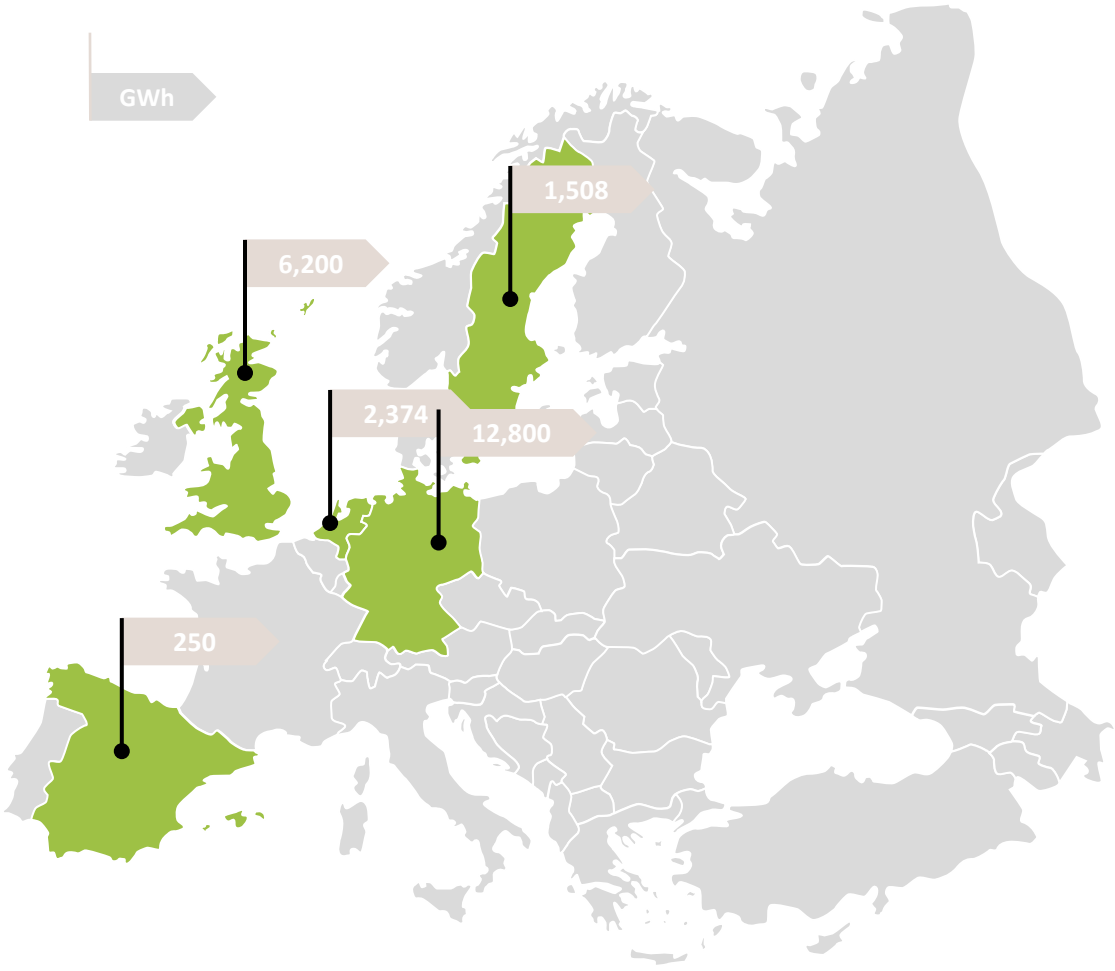
# Existing market mechanism (focus region)

Heterogeneous and sometimes strongly diverging support schemes within the EU member states

## Production-driven mechanism (Push strategy)

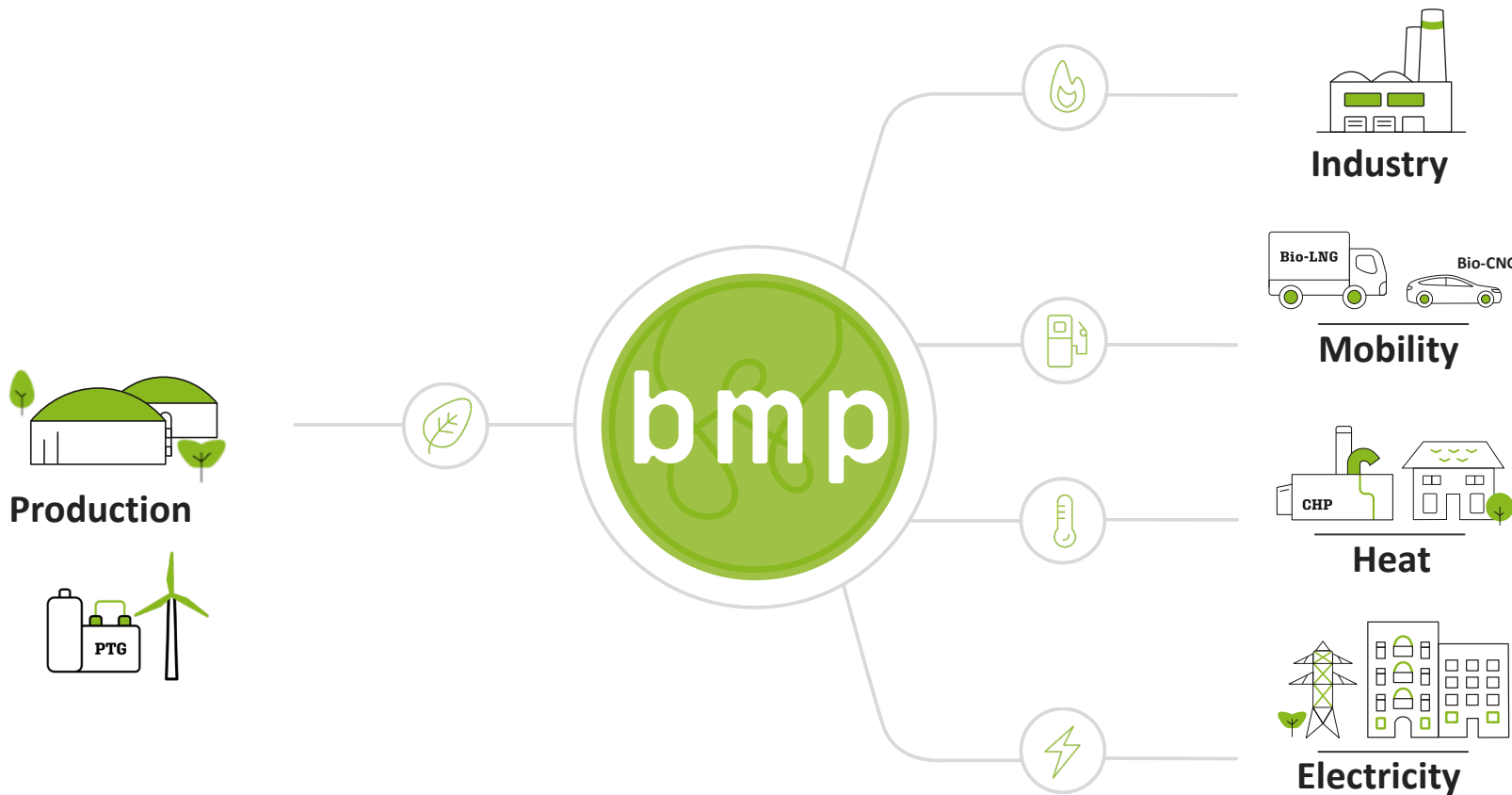


## Demand-driven mechanism (Pull strategy)



# Increasing demand for renewable gases

Fulfilment of ambitious RES targets strongly depends on the motivation to replace fossil fuels by renewable alternatives and the corresponding regulatory requirements




## Mechanism

01	Quota
02	CO <sub>2</sub> Tax
03	Feed-in tariff
04	Feed-in premium
05	Etc.

verification and certification (extract): PoS, mass-balancing, GHG emissions savings ...

# Thank you!

A horizontal orange bar with rounded ends, positioned to the left of the contact information.

Tatiana Demeusy  
gas value chain  
EnBW AG  
t.demeusy@enbw.com

# BACK UP



# Legal context of the GHG emissions reduction quota

	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>GHG-Quote</b>	7,0%	8,0%	9,3%	10,5%	12,0%	14,5%	17,5%	21,0%	25,0%
cap (energetic), food and feed crops	4,4%								
cap (energetic), used cooking oils and animal fats	1,9%								
<b>Advanced biofuels</b> (minimum share, energetic)	0,2%	0,3%	0,4%	0,7%	1,0%	1,0%	1,7%	1,7%	2,6%
	Volumes above the minimum share are accounted twice. POME is only accounted once, but is still countable towards minimum share.								
hydrogen and P2X fuels	Amounts are accounted with a factor of 2 (refinery and fuel).								
electricity	Amounts are accounted with a factor of 3 (Electricity from public charging points, private vehicles, vehicle fleet).								
Aviation Quota for PtL cerosine					0,5%	0,5%	1,0%	1,0%	2,0%
Palm oil	0,9%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
Co-Processing	Gesetzlicher Ausschluss bleibt; gemäß BImSchG nur Reststoffe (Anhang IX Teil A RED II) zulässig.								
UER-actions	Can only be accounted until including 2026.								
biogenic hydrogen	Use in road vehicles from residues (Annex IX Part A RED II) will be counted from 01.07.2023. BImSchV sets the criteria.								
others	Reference to non-denatured alcohol remains. German government to submit a report to the parliament regarding the GHG quota (technologies, costs, availability) from 2024 onwards.								

# The mechanism of the GHG reduction quota

Demand for alternative fuels depends on actual fuel demand

- The GHG reduction quota applies to the distributors of fossil fuels for road transport (diesel and gasoline), i.e. the oil companies (e.g. ARAL, Total, BP, Shell.)
- Through the use of renewable energy sources such as biofuels, biomethane, RFNBO (renewable fuels of non-biogenic origin) and the share of RE in electricity, the distributors have to reduce the emissions of their distributed fuel volumes by a legally defined amount.
- The biomass fuels (e.g. biofuels and biomethane) and RFNBO used have to fulfil the following requirements (Art. 29 RED II; nat.: Biokraft-NachV)
  - end-to-end mass balancing from the field to the "filling station/fuel depot"
  - RFNBO criteria soon to be complied (DA)
- The calculation of the emissions is based on **Annex V of RED II** (nat. BioKraft-NachV).  

$$E = e_{ec} + e_{l^{**}} + e_p + e_{td} + e_u - e_{sca} - e_{ccs} - e_{ccr} \text{ (g CO}_2\text{eq/MJ)}$$
- The GHG reduction requirement of 65 % in relation to the fossil comparator of 94 gCO<sub>2</sub>eq/MJ must be met.

