



BIOMETHANE FOR EUROPE

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AS A LEADING BIOMETHANE TRADER IN EUROPE LANDWÄRME CONNECTS PRODUCER & CONSUMER



BIOMETHANE PRODUCTION

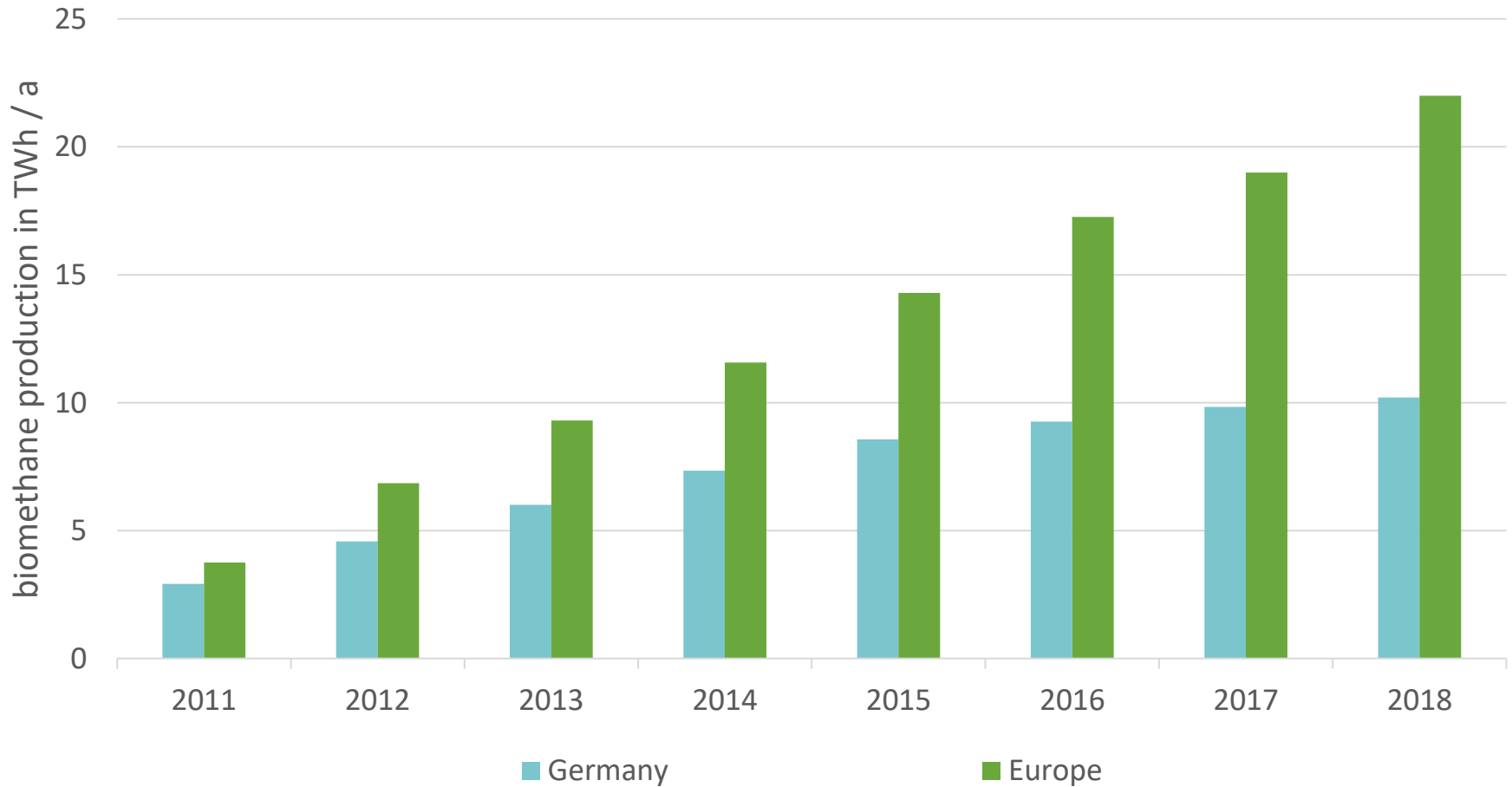
TRADING

SERVICES



From our offices in Berlin, Budapest, Dortmund and München a team of 60 manages a portfolio of over 3 TWh and supplies over 300 utilities & consumers with biomethane

BIOMETHANE PRODUCTION HAS BEEN GROWING CONSTANTLY IN EUROPE IN THE LAST DECADE

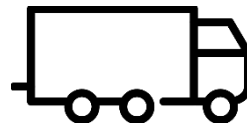
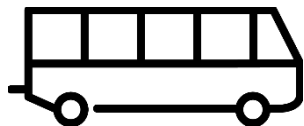


SOME MILESTONES ALREADY ACHIEVED: 100% BIOMETHANE AS CNG FUEL



100 % BIOMETHANE HAS RECENTLY BECOME REALITY AT THE
CNG FILLING STATIONS IN DENMARK, SWEDEN AND IN THE NETHERLANDS.

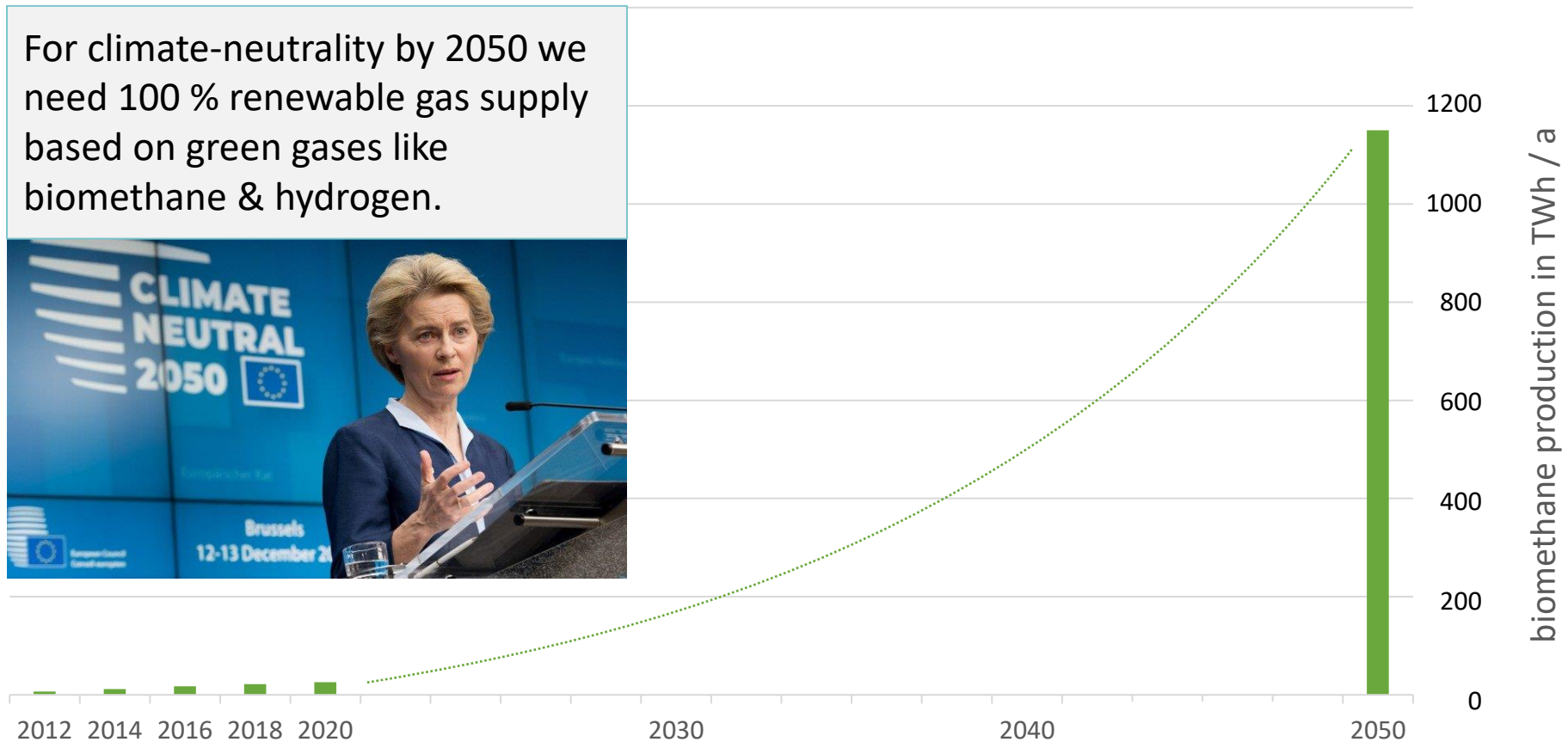
THIS CAN ALSO BE ACHIEVED IN GERMANY AND UK THIS YEAR.



TO REACH THE EU GREEN DEAL TARGETS BY 2050 THE SPEED OF GROWTH HAS TO ACCELERATE



For climate-neutrality by 2050 we need 100 % renewable gas supply based on green gases like biomethane & hydrogen.



BIOMETHANE WITH CCS CAN CREATE THE NEEDED NEGATIVE EMISSIONS AFTER 2050



*It is not only about reducing emissions anymore. It is about concepts to reduce CO₂ in the atmosphere.

RISING CO₂ PRICES WILL LEAD TO COST PARITY WITH FOSSIL GAS AND FUELS



- As CO₂ prices and CO₂ taxes rise, biogas and biomethane will reach cost parity with gas
- Local biogas application like rural combined heat and power generation will start to be competitive at a CO₂ price of 50 €/ t
- Injected biomethane starts to be competitive at a CO₂ price of 200 €/ t
- Injected biomethane with income/credits from carbon capture and storage or usage will be competitive at a CO₂ prices of 100 €/ t

CASE EXAMPLE SWEDEN

- CO₂ tax has been around 100 € / t for the last years
- Decentral Bio-LNG production is already competitive towards fossil diesel or imported LNG



RENEWABLE GAS SUPPLY: COMBINATION OF MATURE AND UPCOMING TECHNOLOGIES



- Biomethane is a mature technology.
- It can contribute to rapid climate benefits already on a short and mid-term basis at lowest possible cost and to greatest effect.
- It is perfect for coupling sectors because it is versatile and can be used across sectors
 - power generation
 - fuel
 - chemical industries
 - heating
- New technologies such as power-to-gas and hydrogen are still in a phase of development.
- Thus, their contribution is rather relevant to reach the 2050 targets. Due to the reallocation of financial sources the new technologies will be available for the industry rather later.

**Biomethane provides rapid climate benefits
at the lowest possible cost and to the greatest effect**

TO START THE GROWTH OF BIOMETHANE WE NEED ONE INTEGRATED MARKET WITHOUT BARRIERS



- Legal barriers prevent cross-border trading of biomethane and Bio-LNG
- Despite the European Court ruling in 2017, several EU countries continue to implement import restrictions
- Mass-balancing has to be seen on the whole gas infrastructure
 - within and between countries
 - toward LNG
- It must be fully implemented and accepted in national and EU regulations



TO REACH 2050 TARGETS THE CIRCUMSTANCES FOR BIOMETHANE HAVE TO CHANGE



- **Quick implementation of RED II** in the member states
- **Reliable CO₂ prices** and credits for CCS
- **Increase feedstock availability** in every county: Obligatory waste separation and obligatory fermentation of organic waste and manure
- Promote **usage of digestate** as an organic fertilizer and as soil improver
- Provide **investment incentives** for
 - smaller plants to reduce biomass transportation
 - renewable sources for energy demand of the biomethane production



BIOMETHAN
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