Mapping the state of play of renewable gases in Europe

Susanna Pflüger,
EBA
Ireland,
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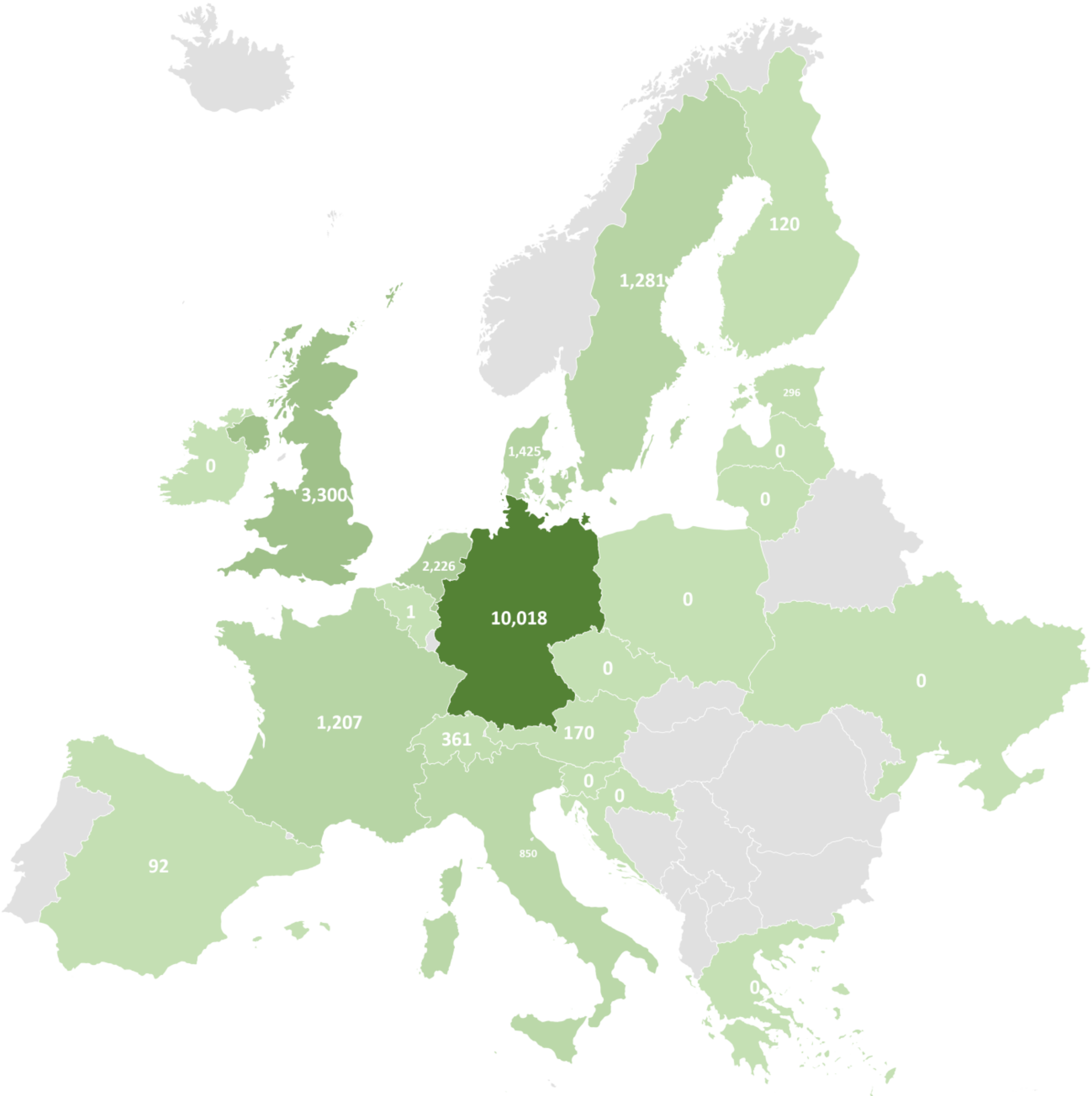
Europe – Renewable gas production per country (GWh/year)

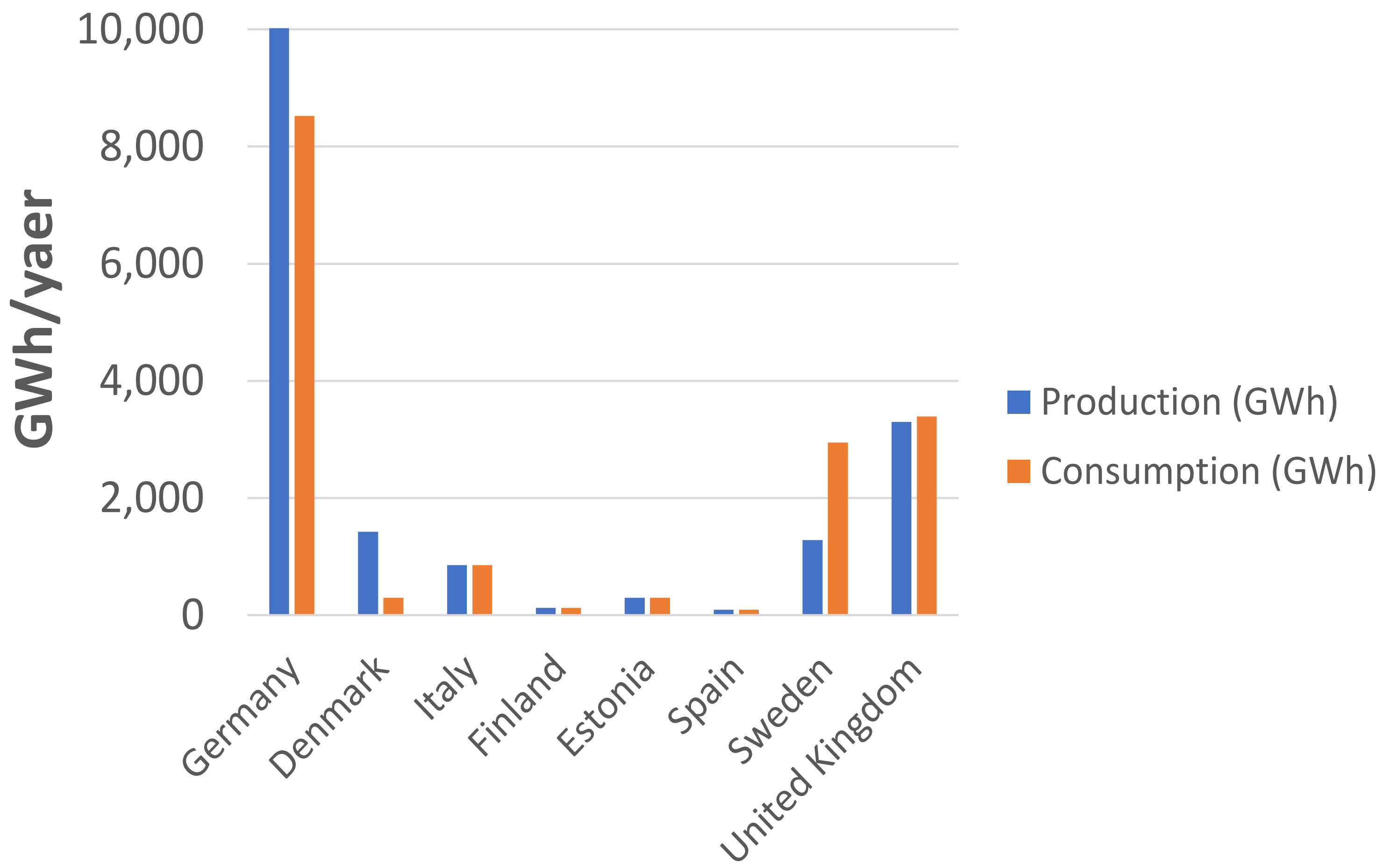
- Data for countries involved in the REGATRACE project
- Most recent data (mostly 2018)
- Countries with biggest produciton are Germany, UK, the Netherlands, Denmark Sweden and France
- Only Sweden and Germany reported renewable gas production via gasificaiton or power-to-methane

- EBA stats (end of 2019): 725 biomethane installations with 2,43 bcm produced, 2,5% liquified



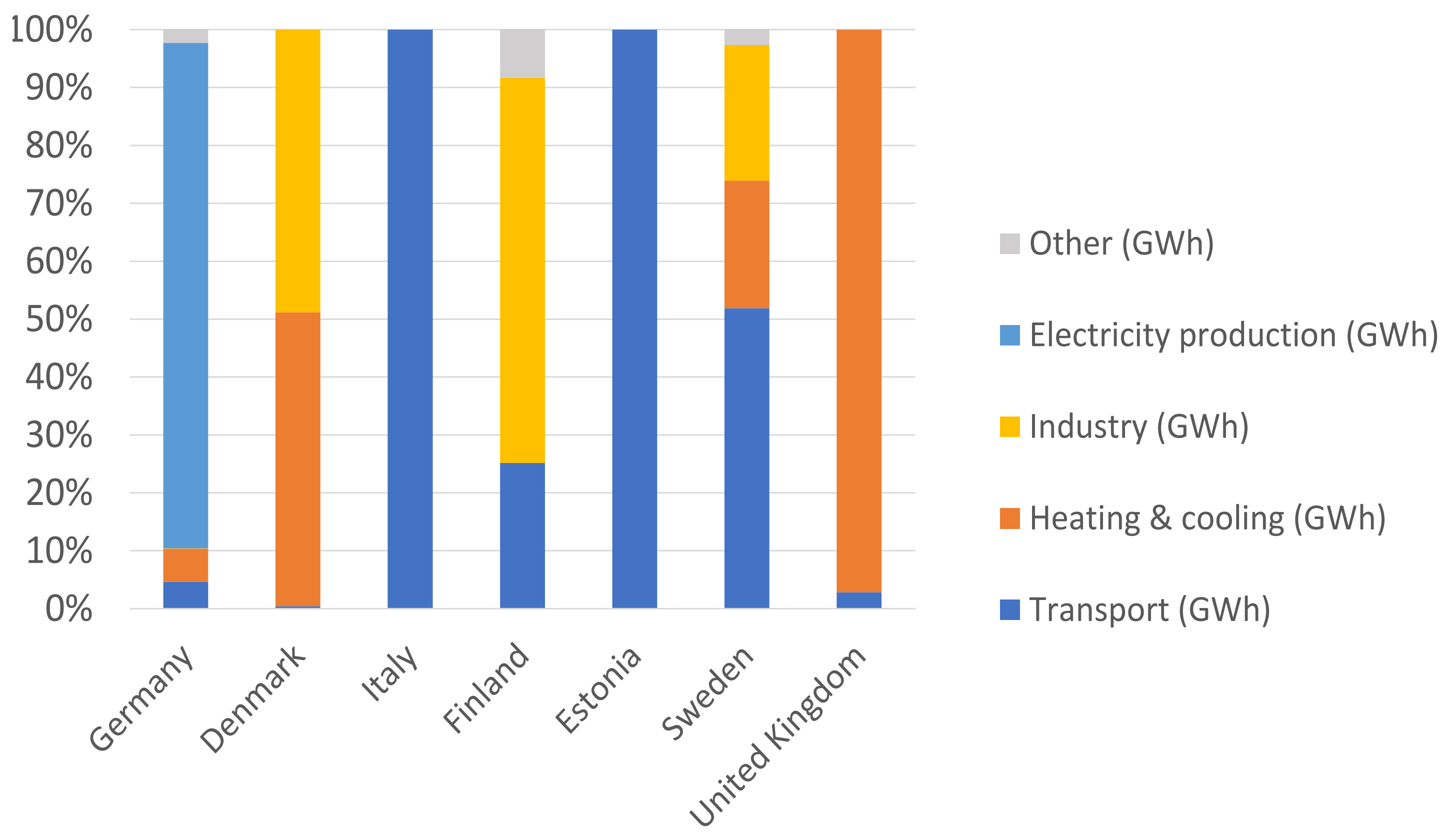
Europe – Total biomethane production compared to total biomethane consumption per country

- Graph shows only countries where data is available on both production and consumption
- Consumption in a country = end-use application was in this specific country
- For most countries well balanced
- Sweden: incentives are focused on on consumption side, whereas most other countries incentives are focused on production side ➔ Sweden is an importer of biomethane



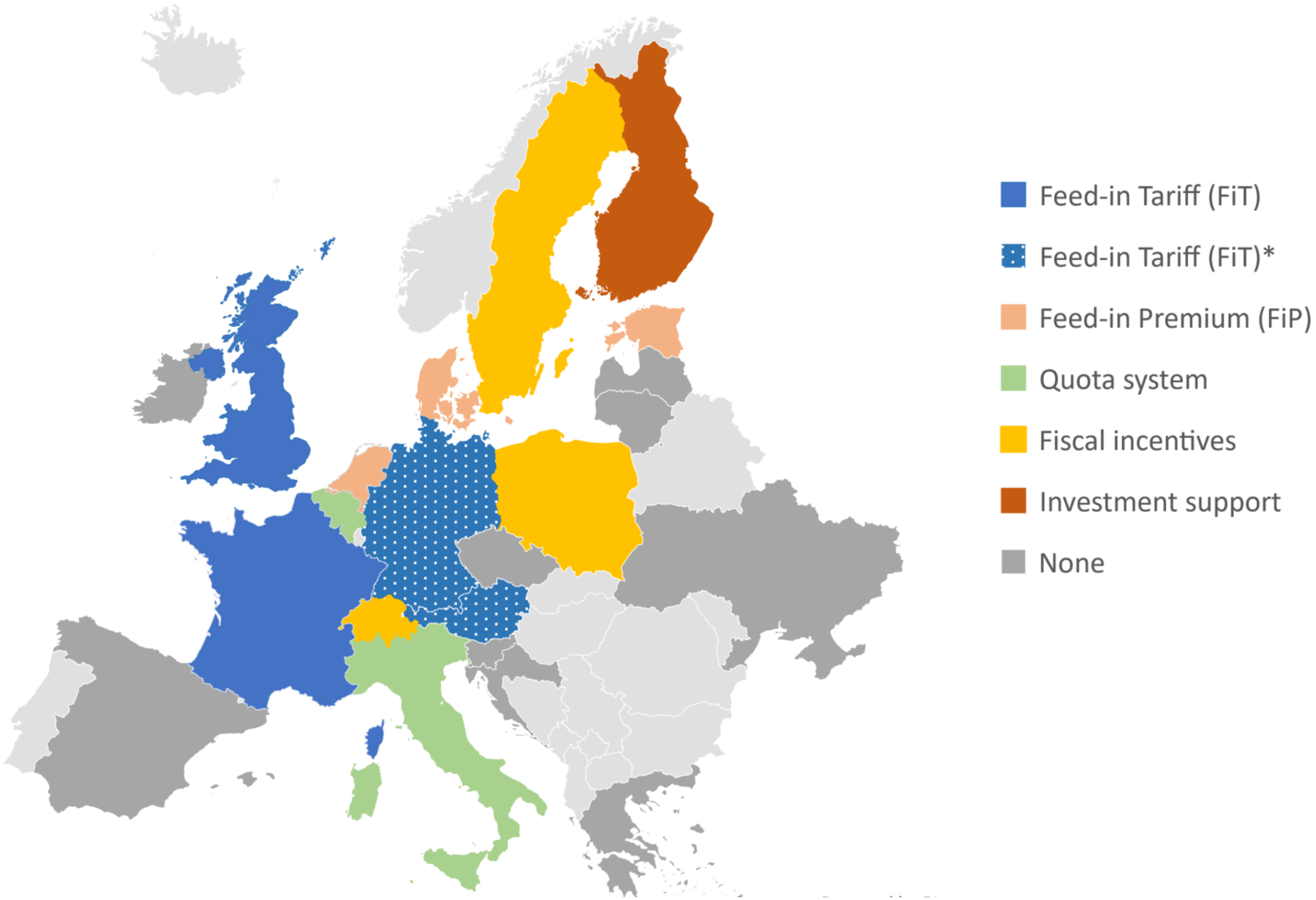
Europe – Consumption of biomethane per sector and per country

- Distribution of different end-use applications for biomethane
- Counting methods can be different between countries
- End-use pathways are depended mostly on regulations
- Sweden: transport due to favourable support scheme
- Italy: transport, facilitated by the already existing infrastructure and methane vehicle fleet
- Germany: CHP units due to Feed-in Tarriff



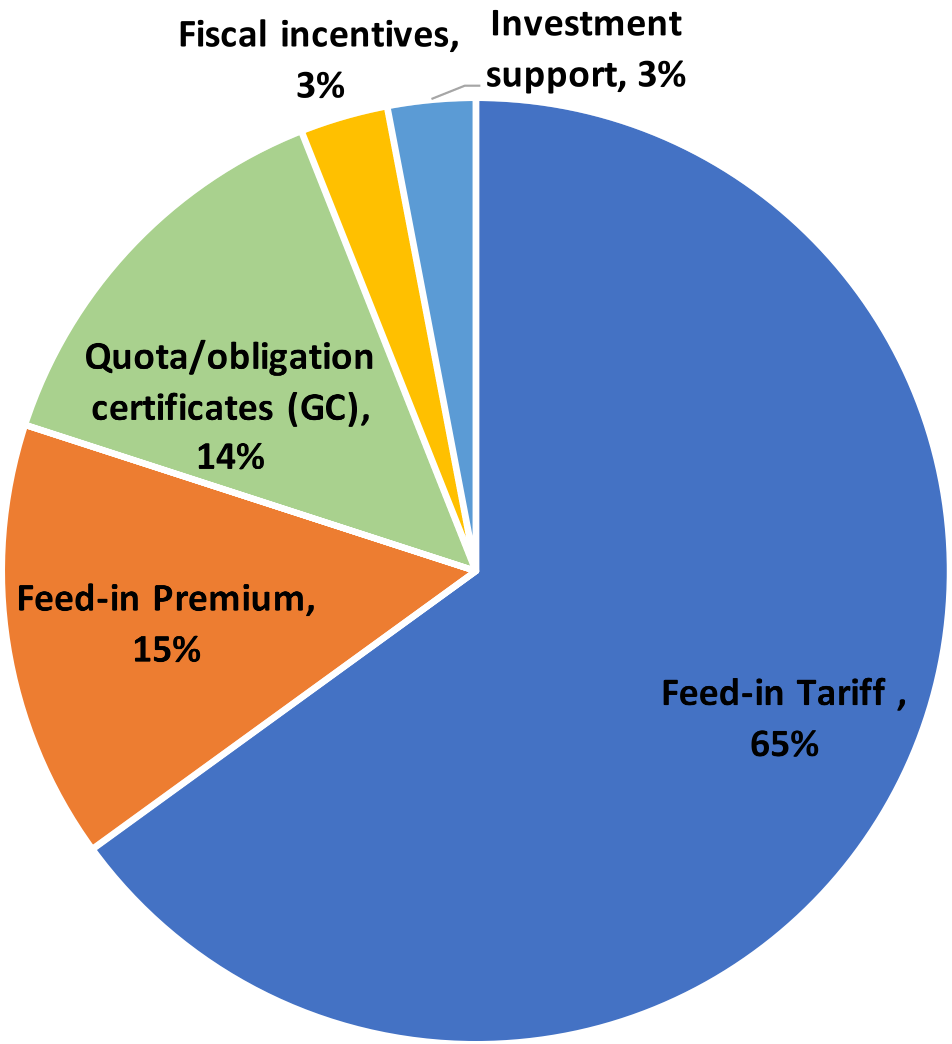
Europe – Support schemes with biggest impact on the biomethane market per country

- Most often applied suport scheme for biomethane in Europe is Feed-in Tariff
- Austria and Germany: support schemes only apply when end-use of biomethane is electricity production
- Belgium: only applicable in Wallonia
- Belgium - Flanders: currently no operational support for biomethane, but minor investment support



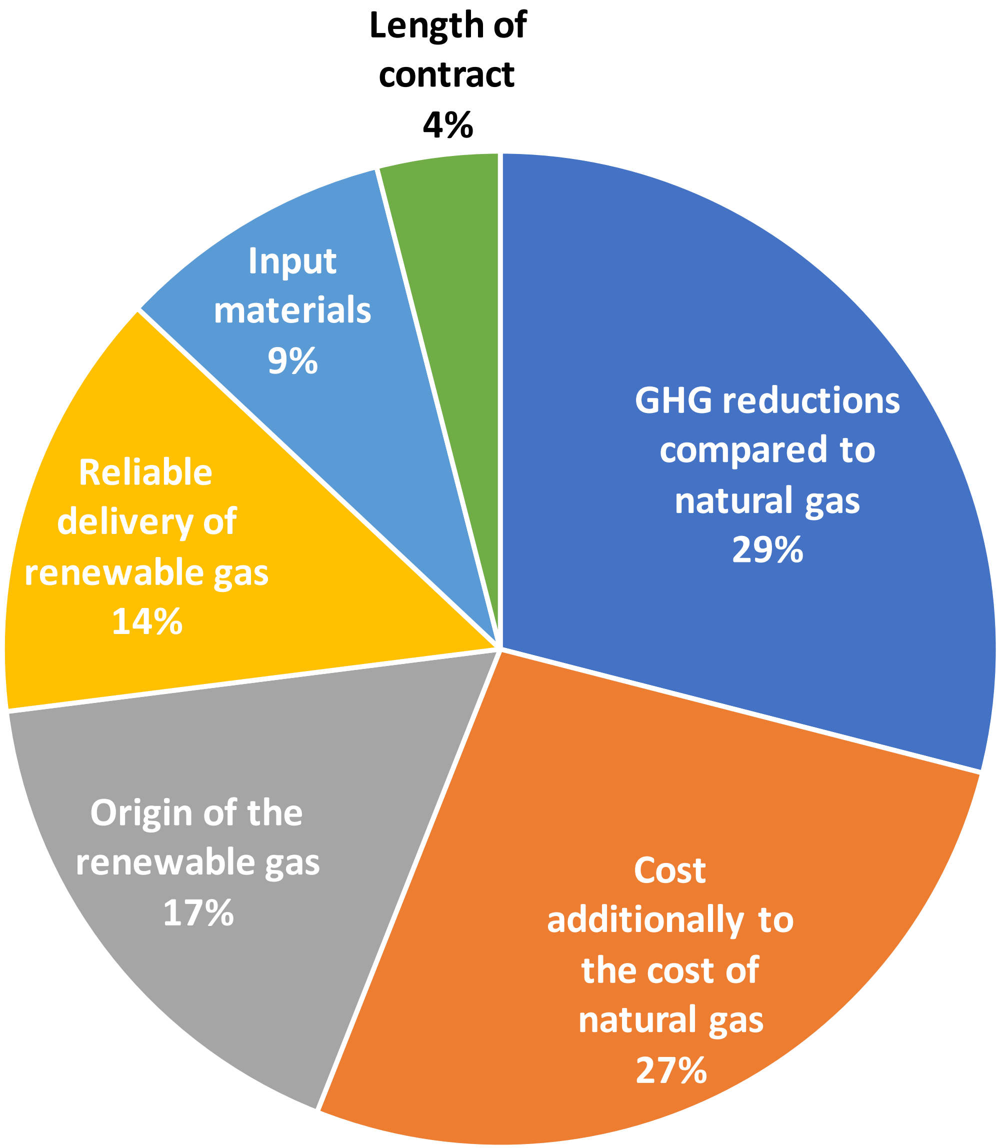
Europe – Preferred support schemes

- Preffered support scheme according to the REGATRACE survey is Feed-in Tariff (65%)
- Followed by Feed-in Premium (15%) and Quota/obligation certificates (14%)



Europe – Importance of different aspects of renewable gas for consum

- The REGATRACE online survey identified consumers preferences for types of renewable gas
- A choice experiment was conducted
- This figure shows the relative importance of different attributes of renewable gas
- GHG emission reduction have the highest impact on consumers choice (29%), followed by cost of the gas (27%)



Europe – Conclusions

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- The status of biomethane markets in member states and their current legislative frameworks are scattered in Europe. Each Member State has a different view on the subsidy and use of renewable gases.

- Many countries mention biomethane as an interesting alternative for existing biogas plants, as they can decarbonize the natural gas grid.

- The most common support scheme for biomethane in Europe is a Feed-in Tariff, followed by Feed-in Premium and fiscal incentives. Several countries have more than one type of subsidy schemes in place, which either complement each other or differentiate in the end-use application of the biomethane.

- The cross-border trade of biomethane is still limited. For most countries, production and consumption are well balanced.

- GHG reduction compared to natural gas is the aspect of the renewable gas with the highest impact on consumers choice, followed by cost additionally to natural gas.

Policy update from Brussels

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EBA
European Biogas Association

European Green deal – on the way to the first climate-neutral continent

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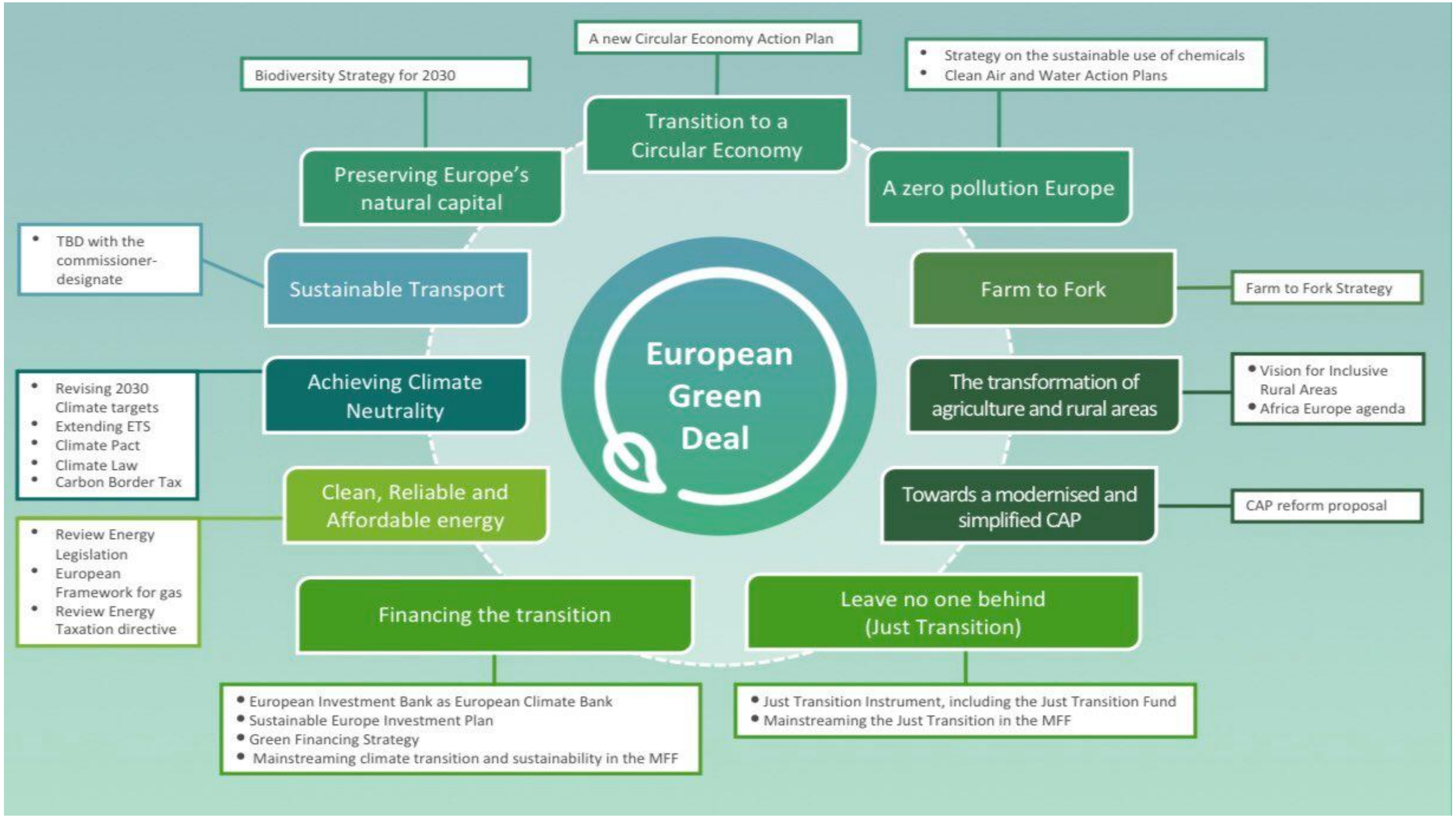


Getting fit for 55.. EU policy initiatives in 2021

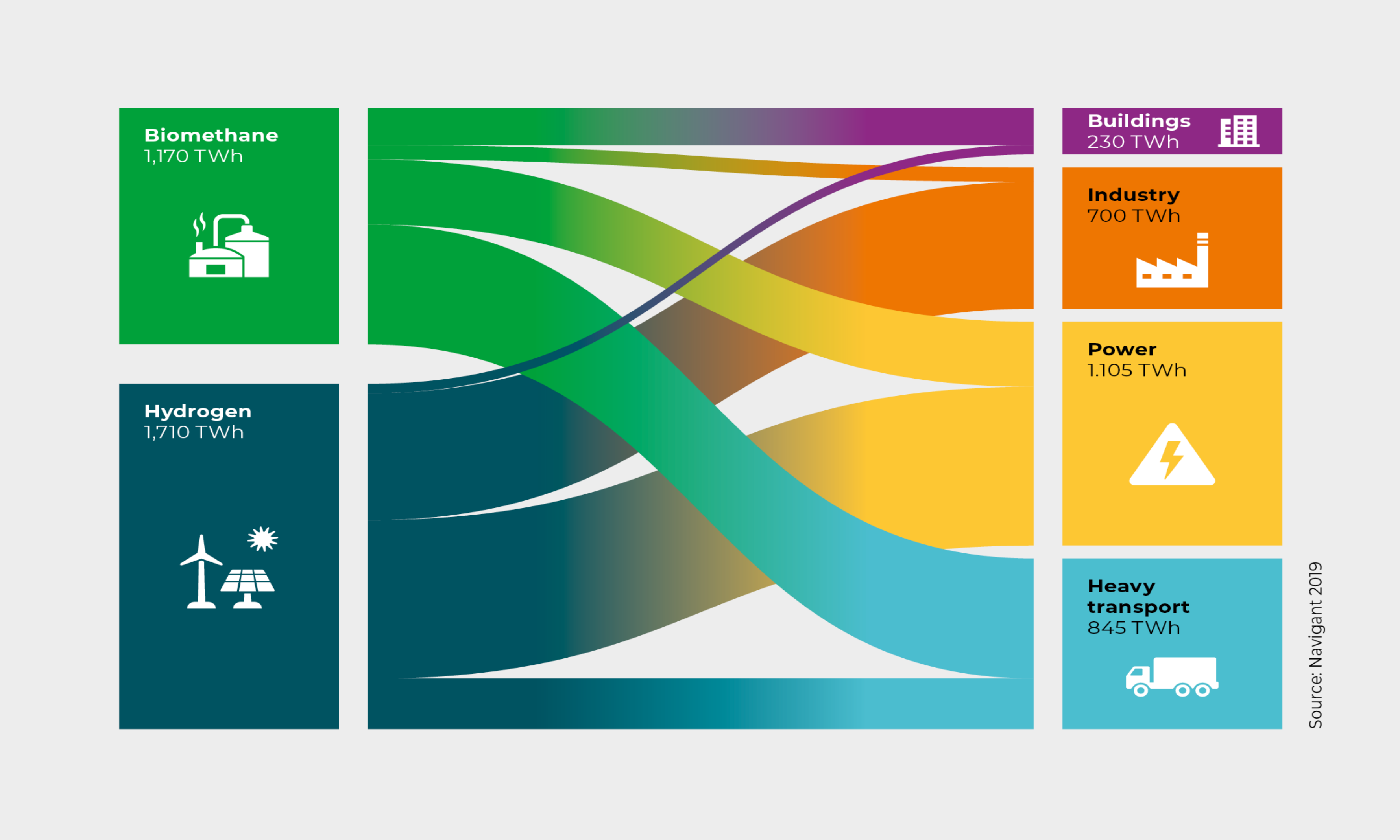
- **RED revision**: review of targets, sustainability criteria for bioenergy, guarantees of origin..
- **Methane legislation**: regulation methane leakage from the energy sector, including biogas
- **Revision of CO2 standards for cars and vans**: accounting the contribution of biofuels to emissions reduction – taking a step away from the biased tailpipe approach
- Revision of **EU ETS** expanding to the maritime sector
- + Revision of **Energy Taxation Directive, Alternative Fuels Infrastructure Directive**,…

•And more to come:

- **Fuel EU Maritime initiative** (2Q 2021??) – aiming to to increase the use of sustainable alternative fuels in European shipping and ports

- "**Gas package**" (4Q 2021) - positioning renewable and low-carbon gases in the overall energy system – new start for the biogas sector

Future of gas in Europe



- The biomethane potential in Europe by 2050: 1170 TWh
- Expectation by 2030 with right policies in place: 370 TWh
- Main uses: heavy transport & maritime transport

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Thanks for your attention!

Susanna Pflüger
EBA
Contact details:
pfluger@europeanbiogas.eu
www.regatrace.eu
www.europeanbiogas.eu

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