Panel discussion: Open reflection - on TSO/DSO interactions

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The operation of the grids will change with a wider variety of gases being injected and with an increased sectorial integration

Some thoughts for the discussion

- What will higher injection of renewable gas at the DSO level mean for DSO/TSO cooperation and balancing
- How do we include increasing amounts of renewable gases in the rules of the internal market
- The future role of gas DSOs in the energy transition
- Building a TYNDP with a truly holistic view of the energy system, as well as a coherent vision of sector coupling.
- What are the really important issues for the gassector to tackle in the next 2 years?

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Balancing and metering rules have to take into account, that we want to green the grid

Biomethane is injected with flat load profiles whereas consumption fluctuates. P2G injections will run with the wind, sun and the needs of the electricity system. Daily balancing could prove to be limiting as long as the volumes are low.

Metering rules are very strict regarding the calculation of the calorific value. Adjusting the gas to exactly the same value as the grid is expensive especially for small plants. Cheaper measurement equipment is needed e.g. sensors. And in future a metering of kWh instead of m^3.

Close coordination of operations between TSO and DSO. Renewables will mainly be connected to the DSO grid.

The larger the amount injected at the DSO level, the more often gas will have to be deodorised, compressed and injected to the TSO grid

1 More flexible Biomethane balancing in Germany

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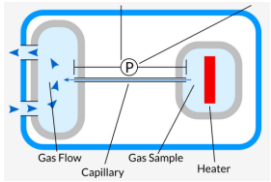

New cheaper sensor technologies develop

3 Fluxys TENP plant for reverse flows

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For the last TYNDP the potential for renewable and decarbonized gas for estimated at a very low level due to missing data

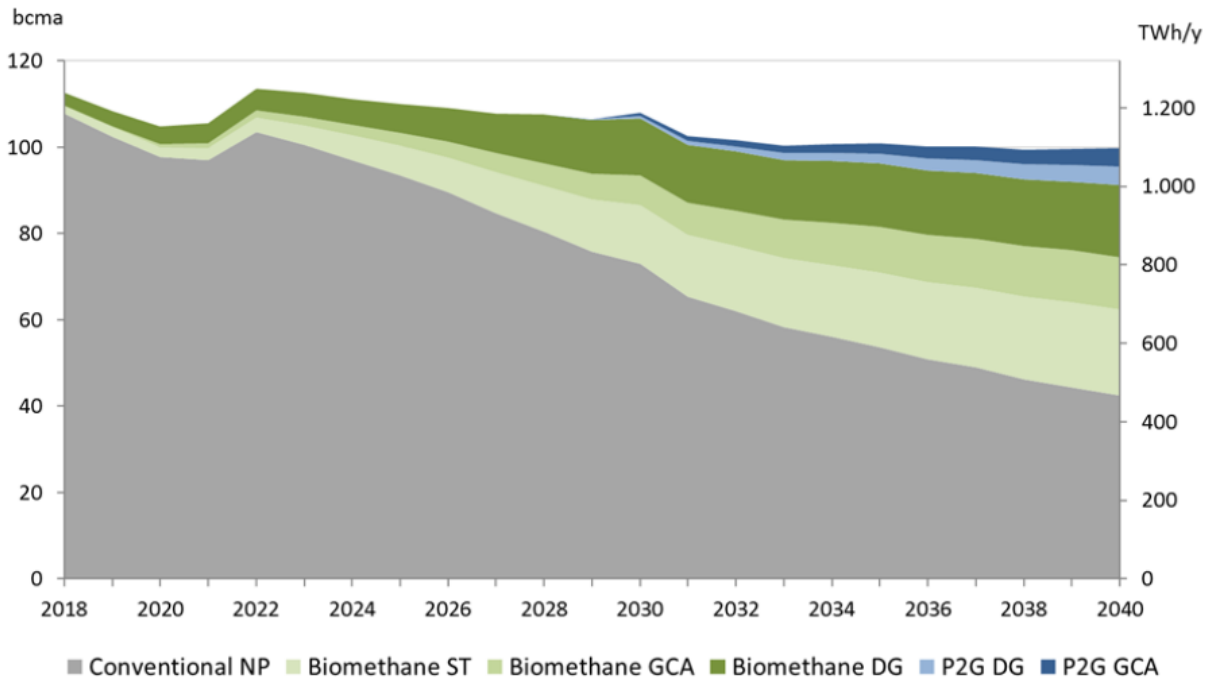


Figure 40: Potential EU indigenous and green gases production 2018-2040

bcma	2020	2025	2030	2035	2040
National Production *	98	93	73	54	42
Biomethane GCA	3	10	20	28	32
P2G GCA	0	0	1	5	9
Biomethane DG	7	17	34	43	49
P2G DG	0	0	1	2	4
Biomethane ST	2	7	13	17	20
P2G ST	-	-	-	-	-

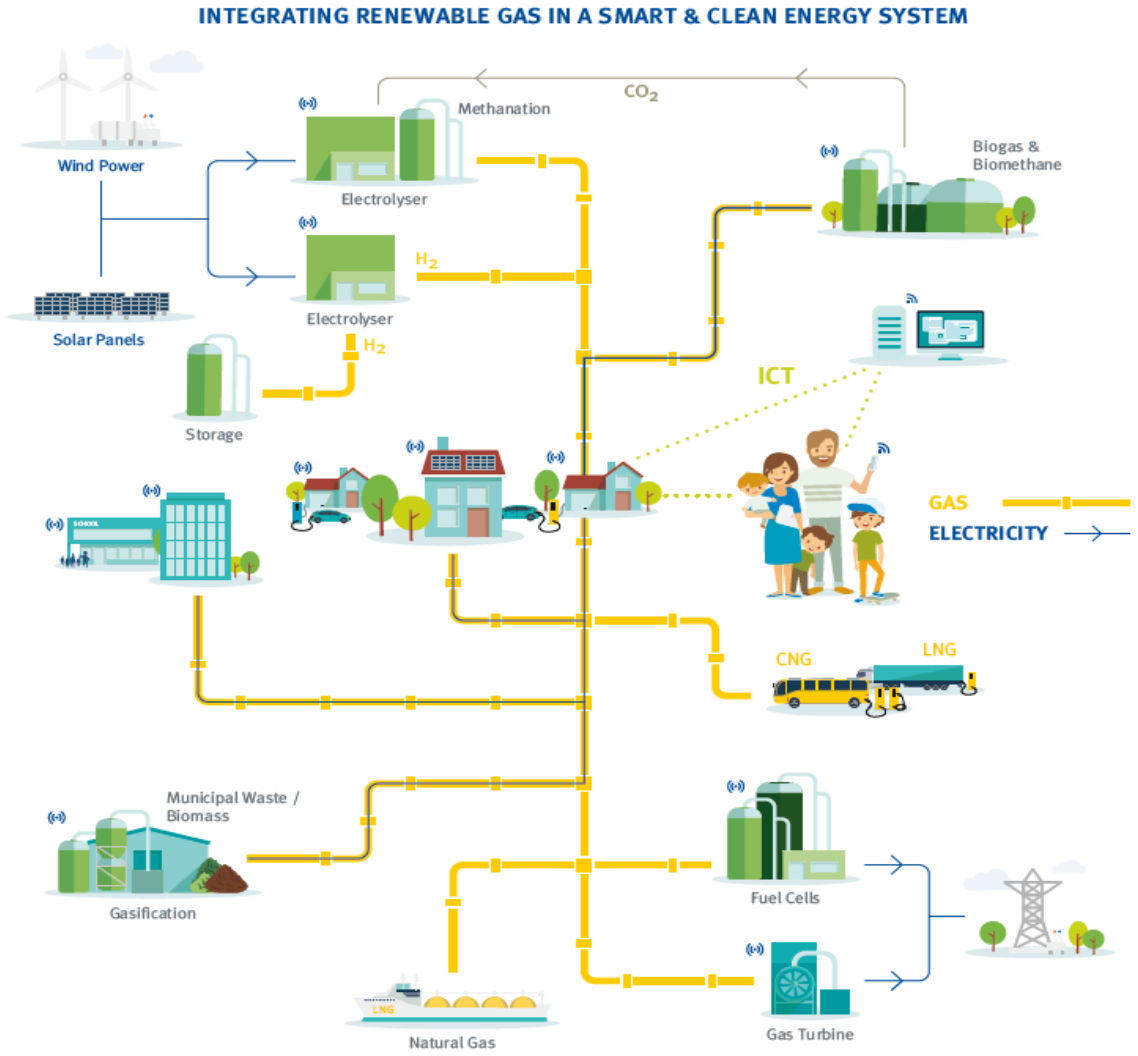
Table 1: Potential EU indigenous and green gases production 2020-2040

How can this be changed?

- Grid development plan for all DSO no matter what size - e.g. EC proposal in the electricity directive ➔efficient?
- Grid development plan for all DSO connected to the TSO – e.g. similar to the DSO capaci-ty booking system in DE
- Member state studies for future potential e.g. ADEME in FR
- ……..

➔the DSO have to join the efforts of the scenario building in 2018!

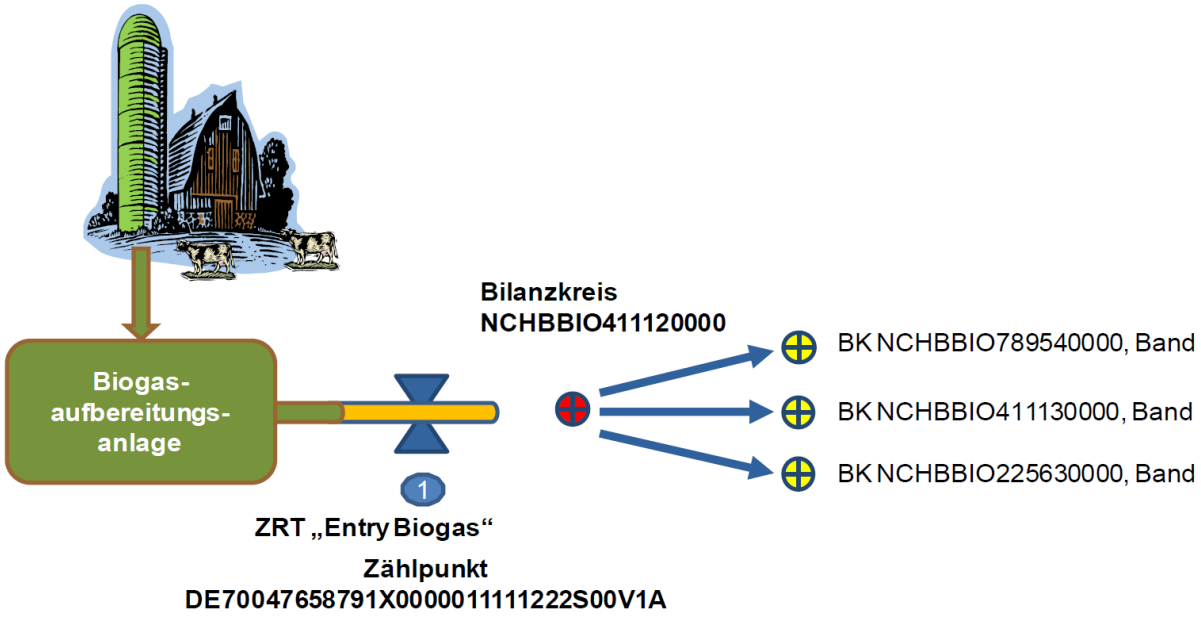
2,2 Mio. km of existing gas grids enable the integration and distribution of renewable and decarbonized gas to all sectors

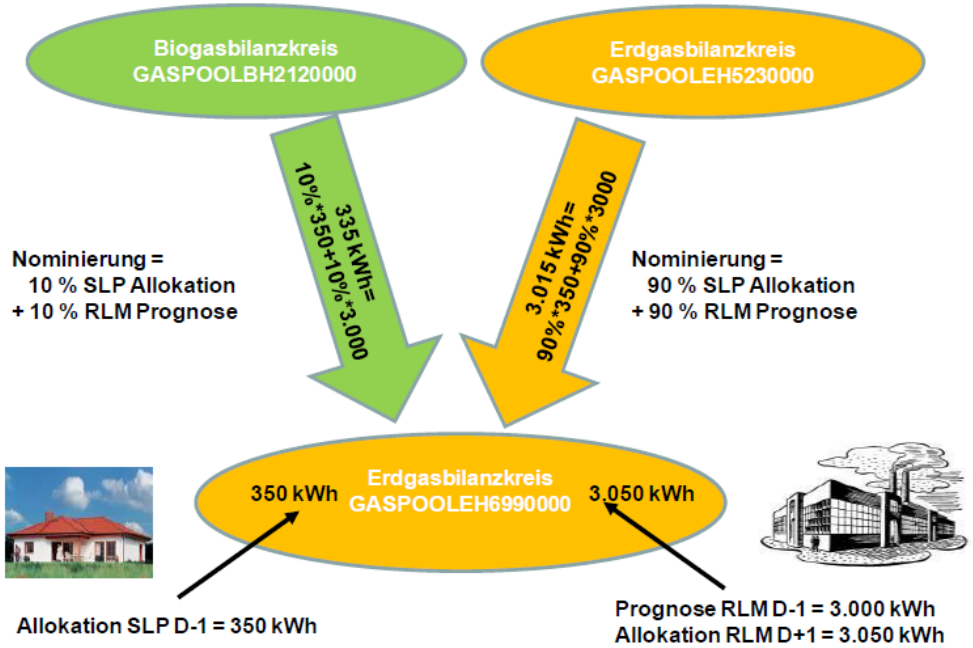


The new Dena study “Integrated energy transition” has analyzed in depth with 2 universities and 60 participating companies of various backgrounds 4 different scenarios. **Technology Mix is the winner** with more robust and cost efficient results than the pure electricity scenarios. Their biggest advantage lies in the utilization of existing infra-structures which leads to higher societal acceptance, a more resilient system, a faster integration of new technologies and lower transition costs.

Backup

Example from Germany to give Biomethan balancing a chance





Biogas Balancing groups receive a flexibility of 25 % calculated on the base of the sum of the annual physical injection points. The cumulated balancing differences have to stay within the flexibility range. Biogas also includes Hydrogen.