



**Connecting
Markets**

Greening of Gas Project

Michal Slabý | GIE workshop on the energy transition in the CEE region

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Recently published studies....

Gas infrastructure is well positioned to help overcome the challenges of decarbonisation



THE VALUE OF GAS INFRASTRUCTURE IN A CLIMATE-NEUTRAL EUROPE

A study based on eight European countries

April 2019

487-802_{bn €}

Savings until 2050 through the continued use of gas networks in the eight analysed countries.

7. The "optimised gas" scenario allocates 1,170 TWh renewable methane and 1,710 TWh hydrogen to the buildings, industry, transport, and power sectors. This equals about 270 billion cubic metres of natural gas (energy content). Compared to the "minimal gas" scenario, the use of gas through gas infrastructure saves society €217 billion annually across the energy system by 2050



Scope, motivation, rationale

Having in mind future challenges arising mainly from **EU decarbonization**, NET4GAS together with GasNet decided to run a pilot project to demonstrate its serious interest and prove **the future role of gas infrastructure**.

We want to produce renewable gases using the unique **Power2Methan technology** in the Czech Republic for the first time.



Project outline and goals (1/2)

- **The main aim of the investment is to prepare for potential scale-up of the production of hydrogen and synthetic methane / biomethane in the Czech Republic by:**
- Proving and showcasing the technical feasibility of such production
- Evaluating the technical compatibility of the new technologies with the existing TSO and DSO infrastructure
- Evaluating the commercial and regulatory constraints for widespread utilization of these new technologies
- Providing proven and specific material for discussions with public authorities on the further positioning of these technologies in the Czech Republic's and the EU's energy sectors
- Creating a proven framework for the cooperation on potential similar projects in the future
- Allowing our staff to acquire valuable hands on experience in implementing projects of this kind

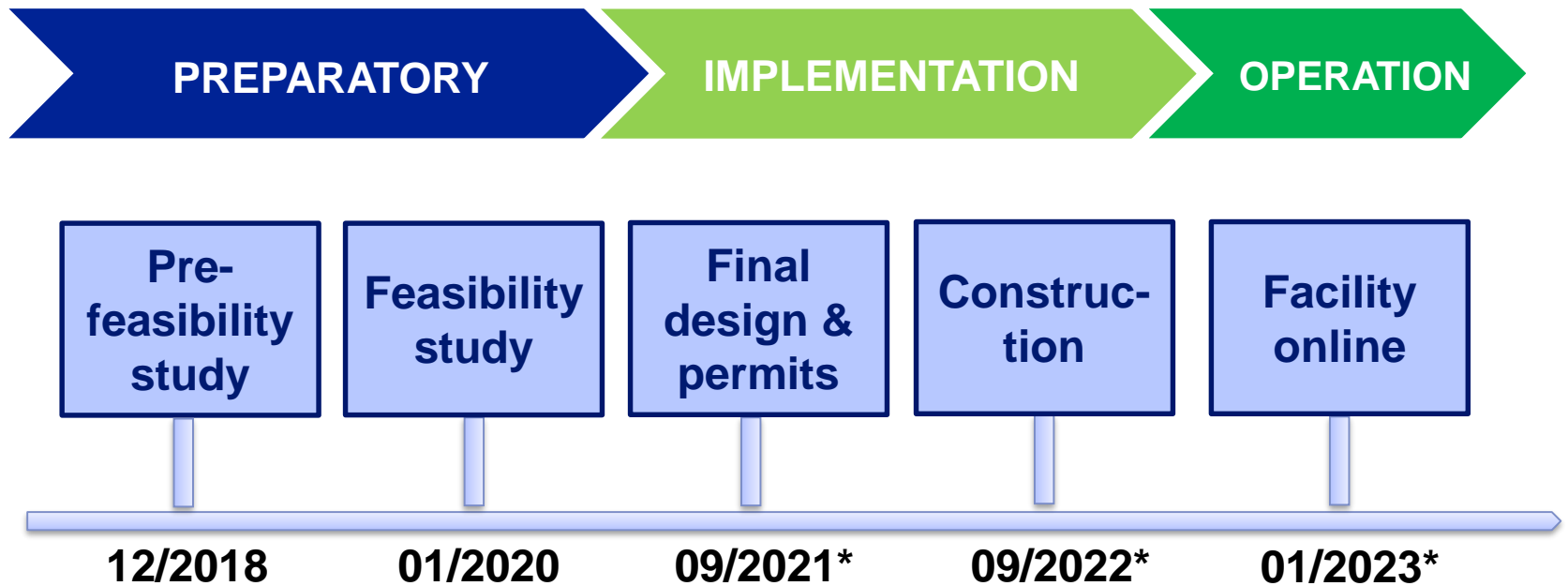


Project outline and goals (2/2)

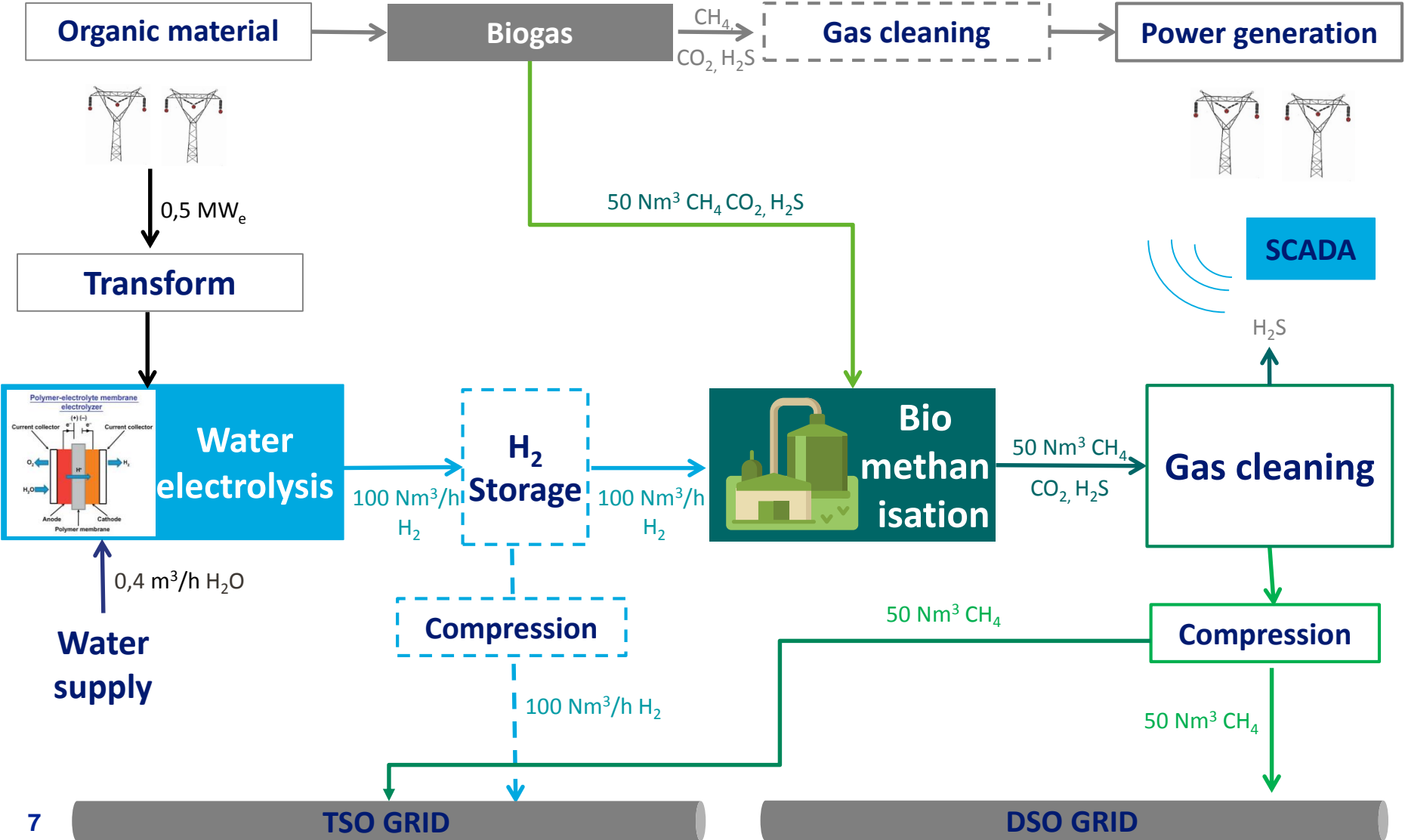
- Joint undertaking by NET4GAS & GasNet (TSO & DSO)
- Construction and operation a pilot facility for H₂ production
- Production of almost pure carbon-neutral synthetic methane by combining H₂ with CO₂ from nearby biogas plant via biological methanisation
- Injection of SNG into TSO as well as DSO grid
- The pilot project is expected to generate up to approx. **50 Nm³** of synthetic methane/biomethane
- As an option, the facility could also separately inject **hydrogen** into the TSO grid in amounts of up to **100 Nm³**.



Project phases



Technology scheme





Lesson learned...(so far in CZ)

- **Regulatory and Legal issues**
 - Low support of NRA could slow down implementation
 - Unbundling – ownership & operation of the facility
 - New type of structure for the construction law – construction parameters

- **Economics issues**
 - CAPEX
 - Negative business case
 - Regulatory/subsidy support needed

- **Operation issues (gas quality, metering)**
 - Biogas (CO_2 source) – too much O_2 (poisoning archaea) and N_2
 - Output gas (SCH_4) has too much H_2 (5%) and too wet (dew point 5°C , grids require -7°C)
 - Metering
 - Use of chromatograph with H_2 admixture (up to 20%)