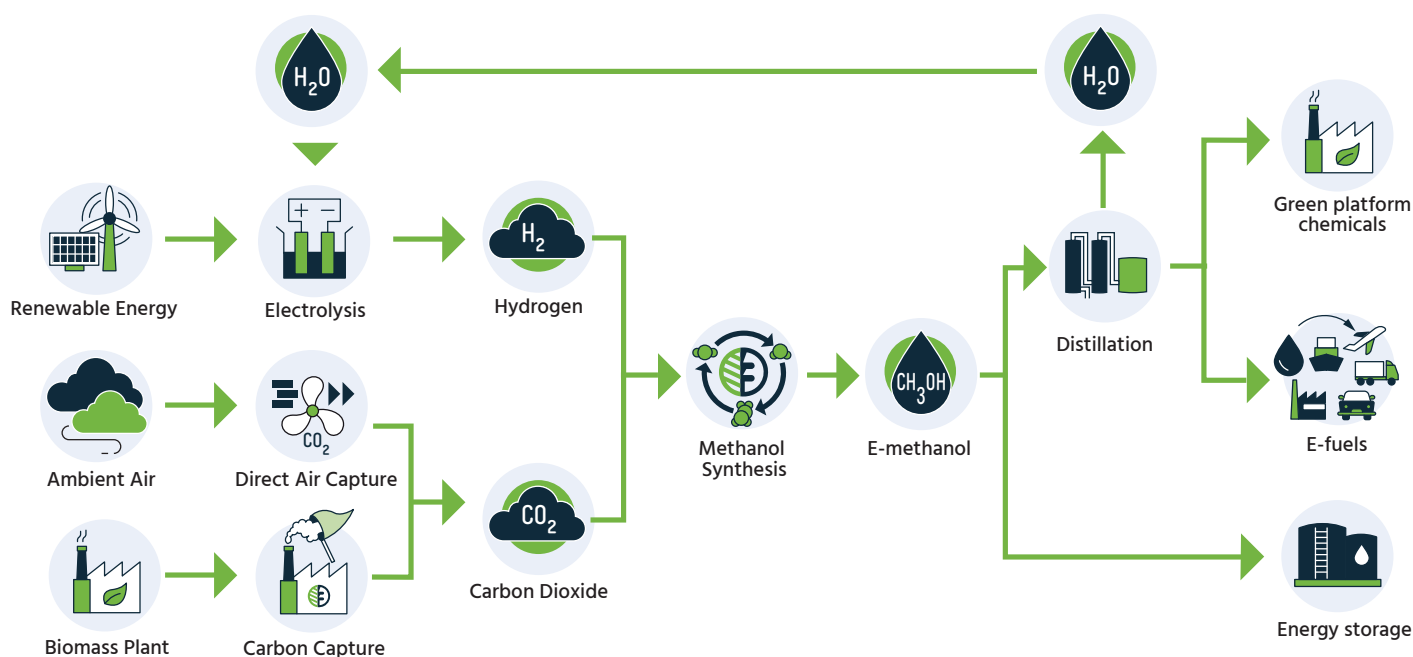


POWER TO X

THE BRUSCHE SUSTAINABLE METHANOL CONCEPT

The Brusche Sustainable Methanol concept offers a relatively simple, reliable, flexible and efficient solution for converting (surplus) renewable energy into green platform chemicals and e-fuels. Additionally, the resulting product provides a safe and effective option for energy storage.



The perfect product-market fit

The production of green electricity from wind and solar sources is steadily rising. This growth is putting strain on the electricity grid, leading to temporary shutdowns of wind turbines and solar farms to prevent overloading. This underscores the urgent need for a safe, reliable, flexible, transportable and efficient storage solution. Producing methanol close to these renewable energy sources enables effective management of seasonal and intermittent fluctuations in energy production.

The Brusche Sustainable Methanol concept's key benefits:

- High yield;
- Energy efficient operation;
- Scalability;
- Operates without recycle compressor;
- Intermittent operation;
- Flexibility;
- Robustness;
- Easy maintenance.

Methanol

Methanol, the simplest alcohol, is traditionally produced from carbon monoxide (CO) and hydrogen generated from natural gas. It is, however, also possible to convert CO₂ (obtained from biomass, air or flue gases) and green hydrogen to renewable methanol in a similar manner. In its liquid state at room temperature and ambient pressure, methanol serves as an efficient medium for energy storage and transport. Through additional distillation, it is refined into e-methanol, widely recognized as both a key platform chemical and a clean, sustainable fuel.

POWER TO X THE BRUSCHE SUSTAINABLE METHANOL CONCEPT

Input

The Brusche Sustainable Methanol concept uses hydrogen (made with green electricity) and carbon dioxide as input materials. The required CO₂ can be obtained at any location from air using Direct Air Capture (DAC) or captured from a biogas plant or industrial waste stream. Brusche Process Technology can also provide the technology for DAC, Carbon Capture and Liquefaction.

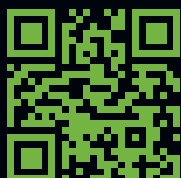
Output

The primary output, liquid crude methanol, serves as a safe and efficient energy carrier or storage medium. In a subsequent distillation step, the process yields pure methanol and clean water. The water can be reused for hydrogen production, while the pure methanol can act as a versatile platform chemical or be further refined for use in E-fuels.

Compared to e.g. hydrogen, ammonia or methane, methanol offers several benefits:

- Safe handling;
- Easy transport by normal tanker trucks or pipelines;
- Easy storage;
- Easy conversion to a wide range of valuable chemicals;
- Sustainable when produced from sustainable input.

Reach out to explore how we can support your industry or process!



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