E-Methane modules

Benefits at a glance

- Patented, proven and with all necessary process licenses
- One-stop and integral package solution (incl. hardware and software)
- Guaranteed product quality for grid injection or liquefaction units

Everllence

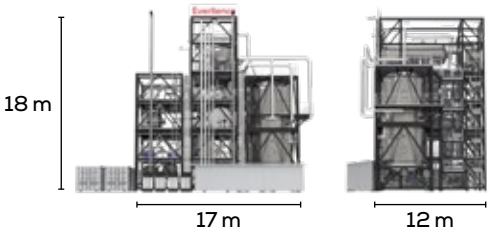
E-methane modules

DWE Power-to-gas (PtG) solutions

Production input / output

	1 MW_{el}	50 MW_{el}	100 MW_{el}	200 MW_{el}
Nominal E-methane production (Nm^3/h)	50	2,500	5,000	10,000
CO_2 input (Nm^3/h)	50	2,500	5,000	10,000
H_2 input (Nm^3/h)	200	10,000	20,000	40,000
HP steam outlet (54 barg) (kg/h)	130	6,250	12,500	25,000
LP steam outlet (3 barg) (kg/h)	50	2,500	5,000	10,000
Process pressure (outlet) (barg)	20	20	20	20
Process temperature (°C)	270	270	270	270
Min. / max. load (%)	30 – 100	30 – 100	30 – 100	30 – 100
Ramp rate (%/min)	2.5	2.5	2.5	2.5
Auxiliary power consumption (kW)	100	250	350	400
Max. power consumption (kW)	200	900	1,200	1,600

The specified dimensions apply to 200 MW_{el}. Further information on other dimensions on request.
Last updated May 2025



General

From gas grids to liquefied natural gas (LNG) applications – our Power-to-Gas solutions drive the transition to net-zero. By feeding renewable hydrogen (H_2) and captured CO_2 into our e-methane reactor module, we enable the production of carbon-neutral methane, also known as synthetic natural gas (SNG). This synthesis process yields a climate-friendly energy carrier that can be seamlessly integrated into existing gas infrastructure or stored for long-term use.

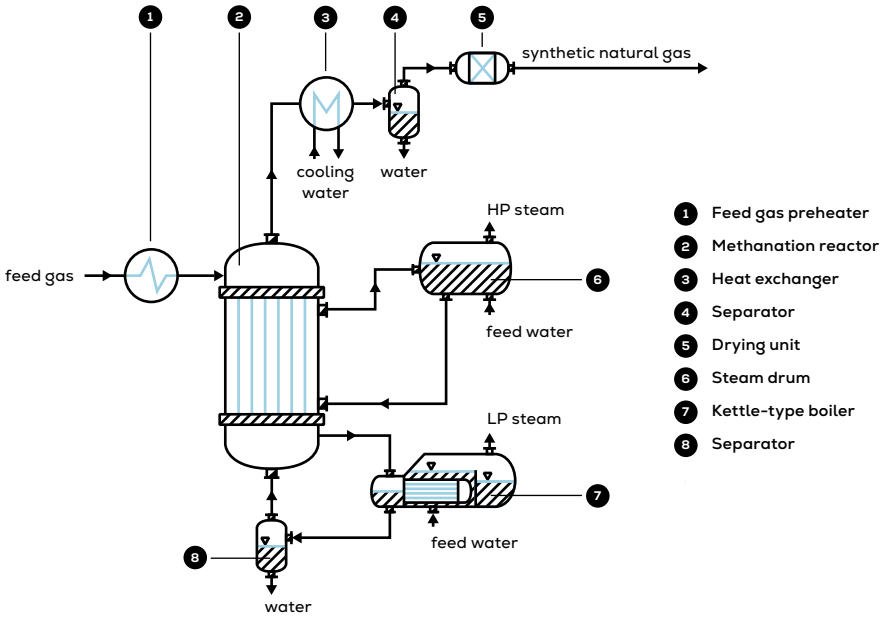
Why DWE E-methane reactor modules?

We at Everllence are frontrunners in PtG Technology with reference projects of up to 6.3 MW and standard design packages for 1/50/100/200 MW_{el}, we can customize your reactor for up to 1000 MW_{el}. We offer a compact design that allows you to use only one reactor instead of three or more for the same output. By waiving the usual modular approach you profit from economy of scale as well. Additionally our reactor systems do not use rotating equipment which results in minimal electrical consumption and an outstanding lifetime. As the process requires only one pass through a single reactor, so no recycling or post-process gas treatment is necessary, product quality suitable for direct injection in gas grids or liquefaction units is possible.

Quality Booster

We offer an optional third reactor stage – the Quality Booster – which increases methane purity from ~95 % to 98 %. This results in a CO_2 residual content of max. 50 ppm(v) in the product, enabling direct liquefaction, or a residual H_2 content of up to 400 ppm(v), which meets U.S. pipeline standards and allows direct grid injection. The enhanced process has been successfully tested and validated.

Methanation synthesis



Applications

Typical CO_2 sources for e-methane production

- Waste incineration plants
- Biogas upgrading
- Biomass gasification
- Industrial processes (e.g., cement, steel)
- Direct Air Capture (DAC)
- CO_2 pipelines

Direct uses of e-methane

- Injection into existing gas grids
- LNG production
- Power and heat generation
- Fuel for heavy-duty transport
- Maritime fuel

Contact

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