

BTH 400



PSA Module

Reformer Module

Biogas to Hydrogen

400 kg / day Green Hydrogen
out of Biogas or Biomethane.

Process

The BTH 400 plant produces pure green hydrogen out of biogas (CH₄-CO₂-mixture) or biomethane by means of the classical steam reformer process.

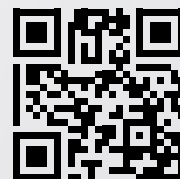
The unit consists of pre-fabricated containerized submodules, which are easily transported on roads.

The biogas feed-stock is compressed, water is demineralized in the **Media Supply Module**.

The **Reformer Module** consists of highly integrated M50 FLOX® reformers, which are operated in parallel.

Inside the **PSA Module** the hydrogen-rich reformat is cooled, dried and enters the PSA (Pressure Swing Adsorption).

Product hydrogen gas of the PSA meets high purity standards for fuel cells or industrial use.



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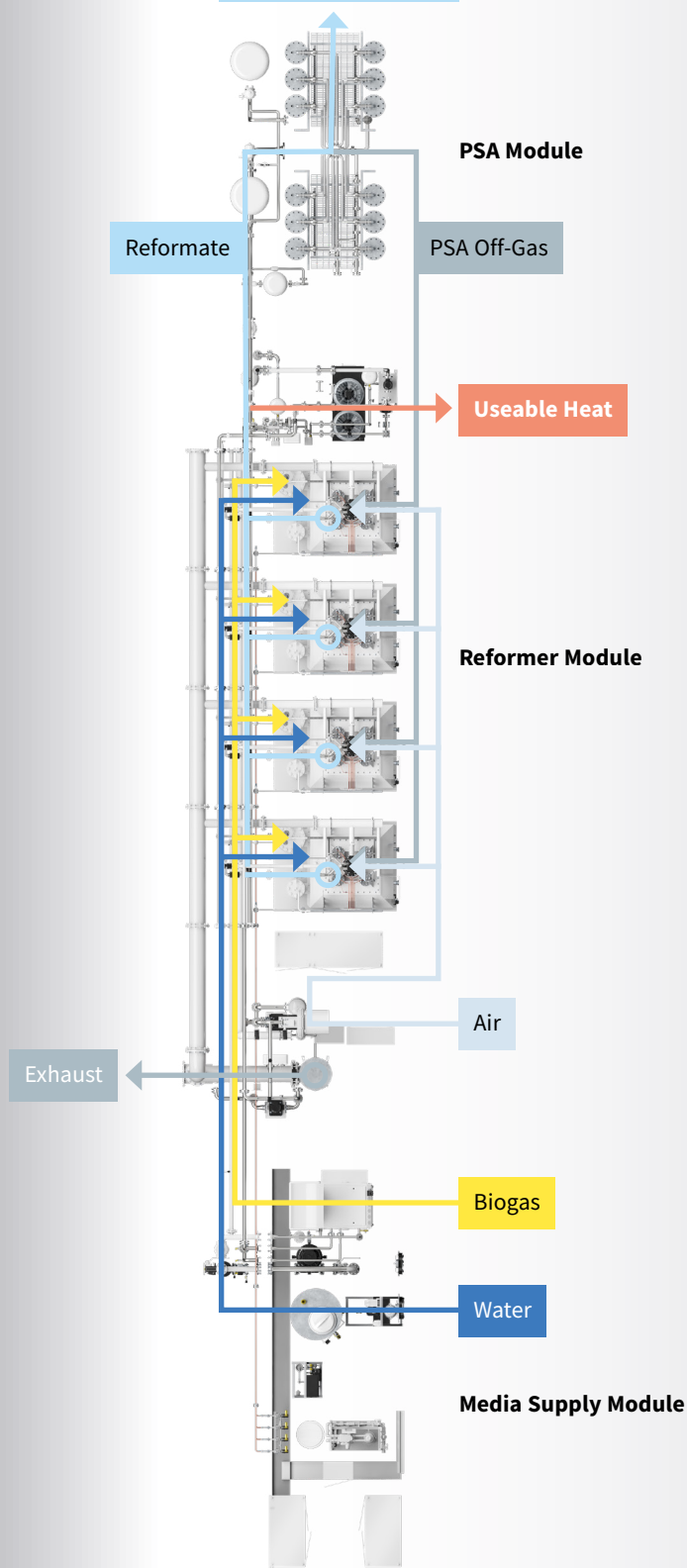
Media Supply Module



eflox



Hydrogen Bio



TECHNICAL DATA

Output

TYPICAL VALUES

Nominal Hydrogen Yield	400 kg / day @ 10 bar
Hydrogen Quality	ISO 14687 (FC-grade)
Usable Heat (Option)	appr. 240 kW @ 80°C (cooling water)
Efficiency	up to 90 % (Hydrogen based: 60 - 70 %, thermal 20 - 30 %)

Input

TYPICAL VALUES

Biogas Consumption*	10 Nm ³ /kg H ₂
Biogas Quality	50 - 100% CH ₄ , 200 mbar, S<1 mg/Nm ³ , Si<0,1 mg/Nm ³
Water Consumption	100 l/h (depending on water quality)
Electricity Consumption	2-3 kWh / kg H ₂
Turn Down Ratio	Regular operation 100% - 40 %, Standby operation <40%

* 50 - 60% methane in biogas

Scope of Supply

25' Media Supply Module

biogas compressor, water treatment system and integrated control cabinet.

40' Reformer Module

with 4 M50 FLOX® reformers, reformat cooler.

PSA Module

with skid-mounted PSA Purifier.

Commercial Terms

Indicative Pricing	3.0 Mio € (exW, Renningen)
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All technical data subject of change due to technical progress, might differ according to customer's interfaces, like biogas composition, water quality, etc

