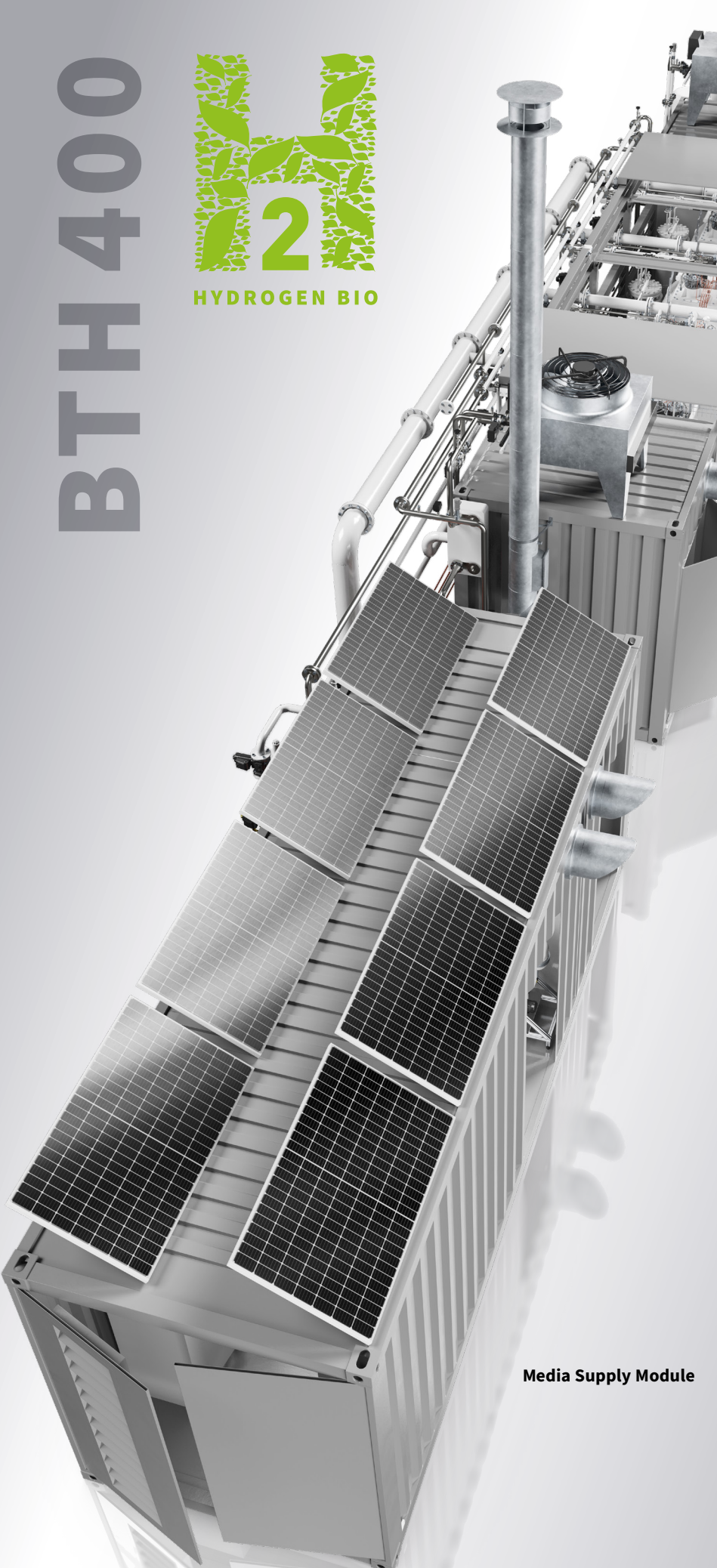


# BTH 400



HYDROGEN BIO



PSA Module

Reformer Module

Media Supply Module

## Biogas to Hydrogen

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

### Process

The BTH400 plant produces pure green hydrogen out of biogas (CH<sub>4</sub>-CO<sub>2</sub>-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<sup>®</sup> 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.

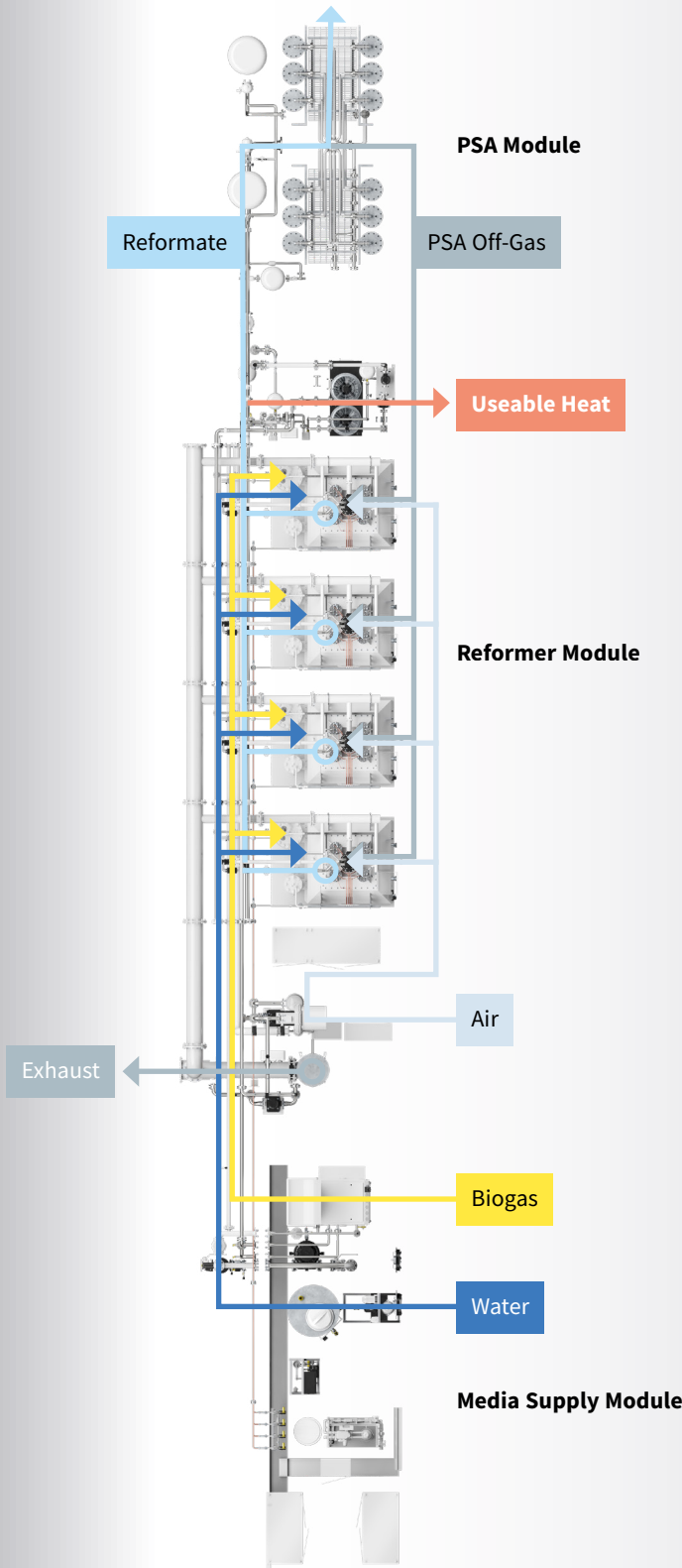


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## Hydrogen Bio



## 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 <sup>3</sup> /kg H <sub>2</sub>
Biogas Quality	50-100% CH <sub>4</sub> , 200 mbar, S<1 mg/Nm <sup>3</sup> , Si<0,1 mg/Nm <sup>3</sup>
Water Consumption	100 l/h (depending on water quality)
Electricity Consumption	2-3 kWh/kg H <sub>2</sub>
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<sup>®</sup> 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