

Hydrogen Generation System

Hydrogen generation systems manufactured by BayoTech™ are a reliable source of locally produced low-carbon, low-cost hydrogen.

Hydrogen generation systems from BayoTech™ can be sited at or close to the point of use, producing reliable, low-cost, low-carbon hydrogen.

Compact in size, our modular systems tap into existing natural gas pipelines or co-located biogas resources to produce up to 1,000 kilograms of hydrogen per day. Building on technology first developed by Sandia National Laboratory, BayoTech’s proprietary design leverages high heat recuperation to achieve greater energy efficiency. Our patented reformer uses 20-30% less energy, saving money and reducing carbon footprint.

BayoTech’s systems can use biomethane (RNG) derived from biogas as a feedstock, significantly reducing the carbon intensity of hydrogen production. BayoTech partners with leaders in carbon capture technology that integrate with our hydrogen generation systems for even lower carbon intensity.

BayoTech’s hydrogen generation systems are designed to operate autonomously and are remotely monitored from a central control room. The system is designed with a target availability of 98% including planned and unplanned maintenance activities. BayoTech’s quality management system for the H2-100 hydrogen generation system is ISO 9001:2015 certified. Our BayoCare program guarantees performance and provides monitoring, routine inspection and annual all maintenance including parts and labor.

Adding BayoTech’s high-pressure, high-capacity storage and transport options enable highly efficient distribution to local hydrogen uses where needed. This highly efficient model of local production and distribution from a hub makes hydrogen more affordable, sustainable and accessible.

H2-1000

Hydrogen	
Flow	1,000 kg/day
Composition	SAE J2719 (Fuel Cell Grade)
Purity	>99.999%
Pressure	160 psig (11 bar)
Utility Requirements	
Pipeline Natural Gas	122 – 140 SCFM (3.5 – 4 CMPPM)
Electricity (480V)	2,000 – 2,300 kWhr/day
Potable Water	3,890 – 5,760 gal/day (14,725 – 21,800 litres/day)
Nitrogen	Shutdown & start-up only (105 SCFM for 4 hours) (3 CMPPM)
Instrument Air	65 – 75 SCFM (1.8 – 2.1 CMPPM)

Specifications are subject to change without notice. Updated 3/2022.

**FOR MORE INFORMATION, OR TO CONTACT US,
PLEASE VISIT WWW.BAYOTECH.US**

FEATURES

- » Produces up to 1,000 kg/day
- » Larger units up to 5 and 10 tons per day in development
- » >80% production efficiency
- » Can be fed with renewable natural gas (RNG) or paired with carbon capture for carbon-zero and even carbon-negative hydrogen
- » Cost certainty and guaranteed performance through BayoCare maintenance, service, and remote monitoring package
- » ISO 9001:2015 certified

APPLICATIONS

- » Fueling large fuel cell vehicle fleets
- » Blending into natural gas pipelines
- » Feedstock for glass, steel, and electronics manufacturing
- » Ammonia production for agriculture
- » Petroleum refining

Dimensions (W x L x H)	
Process Module	10' x 30' x 12', ~40,000 lbs (3 x 9 x 3.7 metres, 18,145 kg)
Vertical Reformer Modules (two)	10' x 12' x 25', ~40,000 lbs (3 x 3.7 x 7.6 metres, 18,145 kg)
WTS/REI Module	10' x 25' x 12', ~15,000 lbs (3x 7.6 x 3.7 metres, 6,800 kg)
Emissions	
Process Water	1,000 – 2,880 gal/day / (3,785 – 10,900 litres/day)
CO2	9,090 kg/day
SOx	Negligible
NOx	53 ppmw
CO	89 ppmw
Noise	ANSI/CSA FC-5, 76dB(A) at 23 feet / (7 metres)