



TEST LINE #3

Biogas reforming &
Bio-Methane Pyrolysis

Technical data sheet
July 2025

H₂shift

Test Line 3: Biogas reforming & Bio-Methane Pyrolysis

At the time of the deliverable, test line 3 infrastructure is under development and the below parameters represent the expected values for the operating platform, and could be updated once commissioning is completed.

Operating conditions		Notes
<i>Temperature</i>	<i>Value</i>	
Maximum process temperature - Reforming [°C]	800	Maximum temperature at the outlet of the reformer reactor
Minimum process temperature - Reforming [°C]	25	Temperature of the biogas input stream
Maximum process temperature - Pyrolysis [°C]	450	Maximum temperature at the outlet of the pyrolysis reactor
Minimum process temperature - Pyrolysis [°C]	25	Temperature of the bio-methane input stream
<i>Pressure</i>	<i>Value</i>	
Maximum process pressure - Reforming [bar(a)]	9	
Minimum process pressure - Reforming [bar(a)]	1	
Maximum process pressure - Pyrolysis [bar(a)]	4	
Minimum process pressure - Pyrolysis [bar(a)]	1	
Fluids		Notes
<i>Gases (inlet)</i>	<i>Value</i>	
Biogas stream [Nm ³ /h]	25	Composition [vol/vol%]: 55 CH ₄ , 45 CO ₂
Bio-Methane stream [Nm ³ /h]	20	Composition [vol/vol%]: 98 CH ₄ , 1.7 N ₂ , 0.3 CO ₂
<i>Water (inlet) - Reforming</i>	<i>Value</i>	
Water inlet stream [Nm ³ /h]	47.6	Considering a steam to carbon ratio in the reforming equal to 3.5
<i>Gas/steam output</i>	<i>Value</i>	
Reforming output [Nm ³ /h]	97.8	Composition [vol/vol%]: 40.5 H ₂ , 12 CO, 11.5 CO ₂ , 35 H ₂ O, 1 CH ₄
Pyrolysis output stream [Nm ³ /h]	29.8	Composition [vol/vol%]: 66 H ₂ , 33 CH ₄ , 1 N ₂
Solid Carbon stream [kg/h]	5.2	
Gas analysis		Notes
<i>Instruments</i>	<i>Value</i>	
Continuous gas analyzer with IR/TCD sensors for specific gases	No	
Mass spectrometer	No	
Gas chromatography	Yes	
Other	No	
Control and acquisition system		Notes
<i>Control system</i>	<i>Value</i>	
Programmable control system [yes/no]	Yes	Control system allows programmable cycles, can be modified
Remote control [yes/no]	Yes	Control system installed on local PC/workstation, possible remote control