PLANT HARDWARE

VEDA

Virtual Equipment and Digital Analysis

Sensors in.
Insight out.

The unit fitted to your plant: sensors that stream live readings to EsyCloudSim and let you test changes on the virtual plant first.



Retrofit
Fits plants already running

Sensors
CH_4, H_2S, pH, temperature, flow, level

HIL
Test changes on the virtual plant first

90-day
Pilot to prove value on your plant

THE CHALLENGE

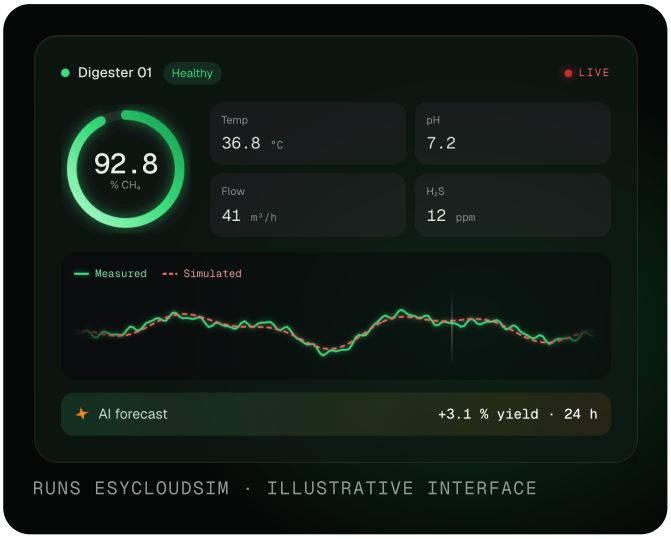
Many biogas plants run with few instruments and manual checks, so problems surface only when output drops. Changing control settings on a live plant is risky without a safe way to test them first.

OUR APPROACH

VEDA fits to your existing plant and measures what matters, continuously. It streams to EsyCloudSim, and its hardware-in-the-loop lets control changes be tested against the live digital twin before they touch the plant.

HOW IT WORKS

1. **Fit**
   VEDA is installed on your digester — no rebuild needed.
2. **Sense**
   Gas quality, pH, temperature, flow, pressure and level, measured continuously.
3. **Connect**
   Data streams securely to EsyCloudSim.
4. **Test**
   Hardware-in-the-loop checks control changes against the live twin.
5. **Act**
   Alerts and recommendations before output drops.



RUNS ESYCLOUDSIM · ILLUSTRATIVE INTERFACE

KEY FEATURES

- Sensor suite: CH_4, CO_2, H_2S, O_2, pH, temperature, pressure, flow and level
- Hardware-in-the-loop: test control logic against the live digital twin
- Retrofits to existing plants; built into Sci-BGM
- Connects to existing PLC and SCADA
- Industrial protocols: MQTT, OPC-UA, Modbus TCP, REST
- Secure streaming to EsyCloudSim
- 90-day pilot to prove value on your plant

MEASURES AND CONNECTS

Monitored	Connects via
CH_4 and gas composition	MQTT · Sparkplug B
H_2S	OPC-UA
pH and temperature	Modbus TCP
Reactor pressure	REST / HTTP
Gas flow, feed flow and level	Existing PLC / SCADA

BUILT FOR

Biogas & CBG plant operators · Multi-site fleets · City gas distributors · Municipal & institutional plants

Let's discuss your project.

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