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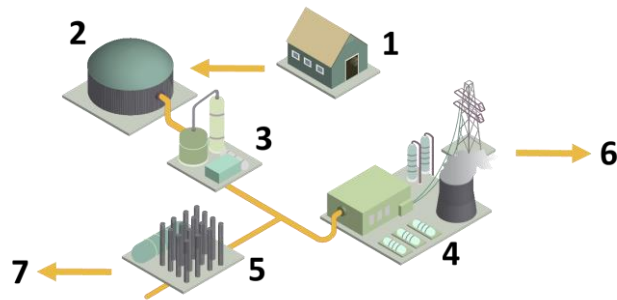


Zero-carbon technology for biogas purification

Biogas is currently seen as the main short term solution to reduce carbon footprint in energy sector. It's primarily a mixture of methane and carbon dioxide with a number of toxic impurities (H_2S , NH_3 , siloxanes), which should be removed before utilization in generators (CHP plants) or injecting into the grid. Daedal Affiliated has developed low cost and zero-carbon solution to upgrade raw biogas to the required quality for end users. **DA** units are scalable and could be tailored to meet the highest standards.

How does it work?

DA units are fully electrified and could be powered by renewable electricity. The units could be easily integrated into existing networks and are not sensitive to possible fluctuation of contaminant concentrations in biogas. This solution ideally fits all types of biogas, including streams with high amounts of ammonia present.



Schematic representation of integration of **DA** units into biogas value chain: (1) agricultural/food waste; (2) digester; (3) **DA** biogas purification system; (4) CHP plant; (5) membrane separator; (6) electricity for customers; (7) biomethane for grid or final use.

Economics

As a case study, analysis of existing biogas plant in Germany has been performed. **DA** units offer more economical solution than existing coarse desulfurization and fine absorbers giving final IRR of 60% and payback time of 1.3 years.

Estimation for existing biogas plant		
Total plant production, m ³ /h	775	
S, wt.%	0.2	
NH ₃ , ppm	500	
Upgrading unit*	Existing*	DA unit**
IRR ²	14%	60%
Payback years	4.9	1.3

*Existing biogas plant location: Germany

**Cost estimation excludes CO₂ separation unit; Price estimation for power 0.04 €/kWh

² IRR – investment on 2 years with 10 years of operation

More details

If you are interested in **DA** technology or would like to get more details on our solutions, you could reach us at info@dadada.ee or drop us a call at +372 712 42 44