The target price for a 75 kW biogas plant according to the Ecogas system

1	**planning, authorization, expertise, documentation**	×
2	**construction site equipment**	×
3	**earth- and road construction, foundations, drainage**	×
4	**grounding / potential equalization**	×
5	**vessels**	
	fermenter Ø 16 m, h 6 m, V ~ 1206 m³, built-in depth 1 m, incl. leak detection system und insulation	✓
6	**technical building**	✓
7	**air-supported roof**	
	double air-supported roof for fermenter, h = ¼ des Ø, incl. air blower	✓
8	**plant construction**	
	feeding shaft	✓
	2 substrate nozzles with inspection glass and motor	✓
	stone fang	✓
	pump 18,5 kW incl. underframe	✓
	heat exchanger	✓
	piping in the technical building from V4A	✓
	compressor	✓
9	**gas technology**	
	mounting box for gas line incl. gas pipe made of V4A	✓
	snooper mini	✓
	over-/under-pressure safety device	✓
	condensate shaft	✓
	desulphurization	✓
	gas flare, manually	✓
10	**heating / ventilation / air conditioner engineering building**	✓
11	**PE-lines**	✓
12	**systems engineering and control technology**	✓
13	**combined heat and power unit (CHP) 75 kW in the container**	✓
14	**electricity feed-in**	×
15	**starting-up**	✓
16	**installation- and transport costs**	✓
	price offer (net)	**499.000 €**

legend
✓ included in the price
× not included in the price

Financial advice and capital procurement

Because of our many years of experience in finance
we would be glad to help you in this regard.

Contact us.

75 kW biogas plants according to the Ecogas system

Benefit from the attractive EEG-remuneration for small plants

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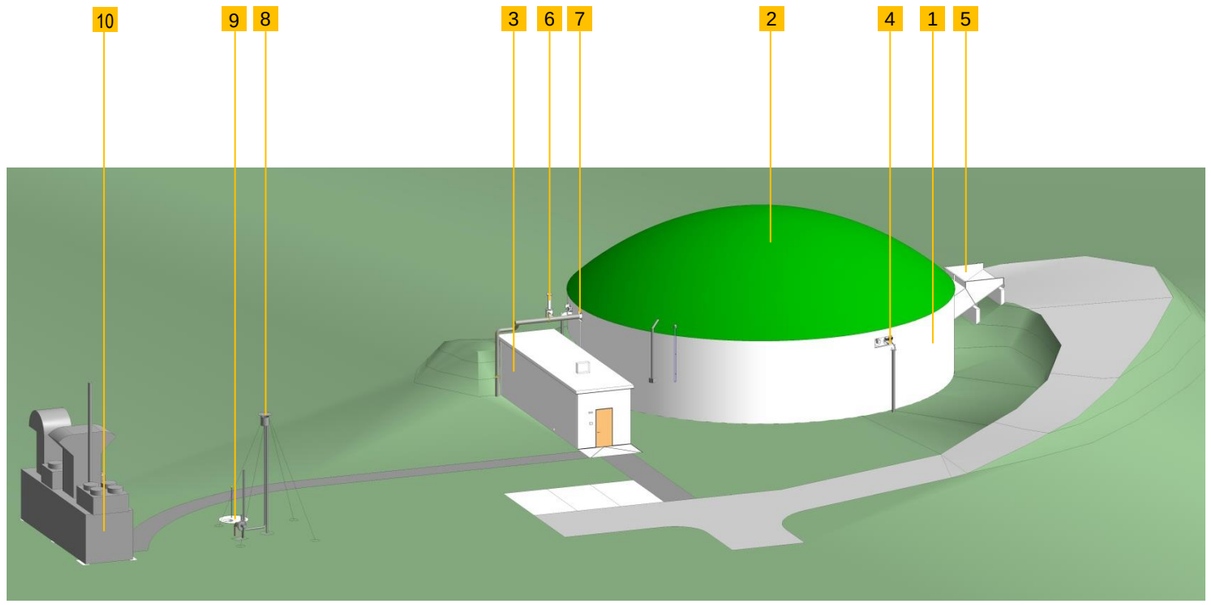
Invest in a small biogas plant of Ecogas

Use liquid manure and solid manure and open yourself an additional source of income. Benefit from the attractive EEG-compensation for 75 kW plants. Improve the solid manure and liquid manure in your agriculture into valuable economic fertilizer. In addition you can reduce your own energy costs with a corresponding heat concept or achieve more profits.

With the Ecogas small biogas system we offer you a low-maintenance and cost-effective solution in the 75 kW class. The components used are from well-known manufacturers and long-time tested in various plants from our company.

We would be happy to make an individual offer for you.



1	fermenter	6	over-/under-pressure safety device
2	double air-supported roof	7	gas outlet with gas line (V4A)
3	technical building	8	gas flare
4	substrate nozzle (V4A) / irrigation	9	gas condensate shaft
5	solid manure application / feeding shaft	10	combined heat and power unit (CHP)

Your use / your advantage

- additional income – attractive EEG-remuneration
- independence from electricity-, heat-, fertilizer- and producer prices
- acceptance of a farm complex is very high with the people
- manageable investment costs
- low maintenance costs through the use of low-maintenance components
- improvement of the fertilizer quality
- exclusive use of existing economic fertilizer is possible

KTBL-calculation for an exemplary substrate mix: 1.400 t cow liquid manure and 3.000 t solid manure

fermentation and yields		
substrate	4.400	tons per year
substrate supply dry mass (dm)	20,2	% of the fresh mass
substrate supply organic mass(odm)	84,2	% of the dry mass
average residence time in the fermenter	51	d
required fermenter space (net volume)	684	m³
burden of the rotten room	3,0	kg odm/(m³ fermenter room * d)
raw gas production	329.435	m_n^3/year
	37,6	m_n^3/h
methane from that	181.189	m_n^3/year
energy content		
raw gas ($H_{i,n}$)	1.806.457	kWh/year
combined heat and power unit (CHP)		
motor type of the combined heat and power unit (CHP)	Gas-Otto-Motor	
energy from ignition oil	0	kWh/year
hours of full use	8.500	h/year
electrical power	75	kW_{el}
electrical efficiency	35,2	%
combined heat and power unit (CHP)- and transformer losses	1,0	%
thermal power	111	kW_{th}
thermal efficiency	52,3	%
rated power	72	kW_{el}
fed in electricity	630.050	kW_{el}/year
produced heat quantity	945.452	kW_{th}/year
fermented substrate and storage of fermented substrate		
fermented substrate	3.974	tons per year
dismantling rate of the total mass	9,7	% of the fresh mass
dismantling rate of the organic mass	56,8	%
desired storage period	6,0	months
storage of fermented substrate (net volume)	1.987	m³

substrate	dry mass(dm)		reference value biogas yield (standard gas)		methane content	annual amount		price of sub-strate	sub-strate costs
	% i.t. fresh mass (fm)	from that organic (odm) % i.t. dm	l_n/kg o dm	m_n^3/t fm	vol.-%	t sm/year	Gew.-%	€/t fm	€/year
cow solid manure 25 % dm	25,0	85,0	450,0	95,6	55,0	3.000	68,2	0,00	0,00
cow liquid manure with food rests, 10 % dm	10,0	80,0	380,0	30,4	55,0	1.400	31,8	0,00	0,00
sum						4.400	100		0,00
weighed medium	20,2	84,2	439,5		55,0				
By using a gas Otto-Motor, an aggregate with a power of 74,9 kW_{el} can be installed.									
Your substrate selection corresponds to a small liquid manure plant according to § 46 EEG 2014.									

Economic calculation

power generation (8.500 oh)	637.500 kWh	
electricity revenue (until 09/2018 - 22,89 ct/kWh)		145.920 €
substrate costs		0 €
operating costs (own power, maintenance etc.) [circa.]		40.000 €
financing costs [circa]		50.000 €
excess without heat utilization		55.920 €
heat quantity free for sale / year (8.500 Bh x 30 kW)	255.000 kWh	
heat revenues by full use (5 ct/kWh)		12.750 €
surplus including heat utilization		68.670 €