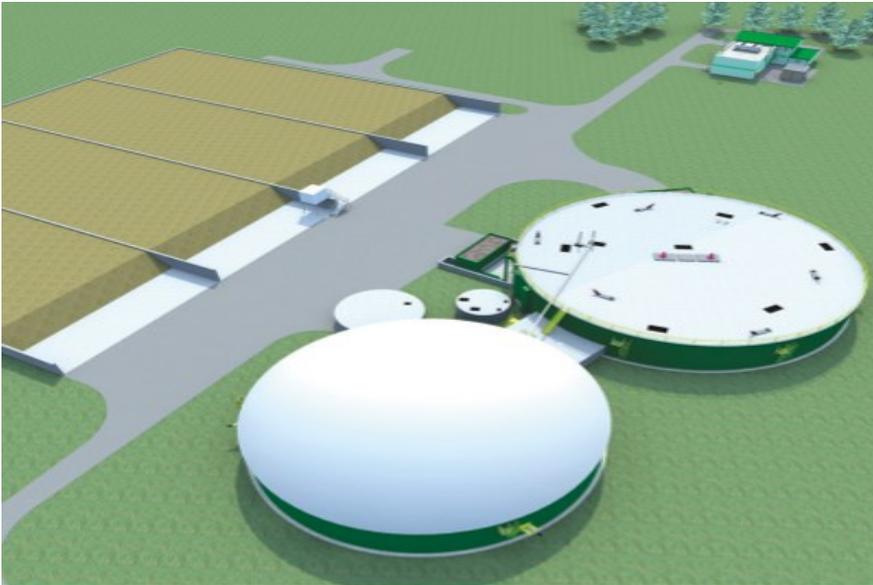


# The first biogas plant in Serbia

## SUCCESS STORY



Picture: Oberlauterbach plant, Schmack Biogas GmbH

### Operator

**Biogas Energie und Wassertechnik GmbH**

### Location of the project



**Vrbas, Serbia**

### Contact details

**Mirotin Energo, d.o.o.**

**+381 21 6350 780**

**office@mirotinen.rs**

## Project results

### *Socio-environmental:*

- Renewable electricity or heat supply



Picture : Opening ceremony Vrbas biogas plant - Biogest

## Project outline

In the course of constructing this biogas plant, the plant manufacturer had to overcome numerous problems, which were related, on one hand, to project implementation in a non-EU country and, on the other hand, to the general conditions for renewable energy from biogas in this target market.

Since Serbia doesn't belong to the EU and there was no existing biogas plant at the time, project in Vrbas had to overwhelm numerous administrative and legal hurdles. First of all, instruments for support of energy production from biogas were not existing or underestimated according to Serbian law, in e.g. low tariffs for electricity or no investment subsidies. Local authorities and grid operators lacked previous experience with such projects, which made the permitting procedure and connection to the grid more difficult. Also different than in other parts of Europe climate conditions had to be taken into account (colder winters, hotter summers). Existing infrastructure, e.g. manure storage, was not sufficient for the investment and had to be adopted. Last but not least, bridging the language was also a challenge for the Austrian plant manufacturer and constructor.

## Technical data

### Year of plant construction:

2012

### Year of performed service:

2011 - 2012

**Plant size:** 1,000 kW<sub>el</sub>, 2,074,463 Nm<sup>3</sup>/h,  
237 Nm<sup>3</sup>/h,  
45,960 t fresh material/y

**Digester volume:** 5,300 m<sup>3</sup>

**Gas storage:** 3,100 m<sup>3</sup>

**HRT :** 60 days

### Process temperature:

Mesophilic, ~ 40°C

### Type of raw material:

70% Agricultural waste  
30% Energy crops

### Utilisation of biogas:

Supply of electrical power to about  
3,000 households

### Heat utilisation:

Supply of the regional hospital

### Utilisation of digestate:

Separation, distribution on agricultural  
fields

### Total investment costs:

~ €6,000,000

### Subsidy:

FIT is 14.22 euro cent/kWh, heat price  
is still under negotiation

## Performed actions

In order to build the first biogas plant in Serbia, the technology supplier together with the future operator had to perform much more work than in case of many other projects located in other countries. The Serbian law is not unified with the EU directives, thus the company law, labour law and tax law have been deeply studied and the differences were incorporated into the project planning. For trading with the outside of the EU, the constructor had to ensure export credit guarantees from his national agency, pass the customs clearance at Serbian authority and at the same time to monitor price fluctuations of exchange rates. Due to several reasons some parts of the biogas plant had to be produced locally, but the investor managed to find local suppliers and subcontractors, who delivered products adequate for a biogas plant. Part of the work was performed with national and international consultants, who contributed to internal acquisition and expansion of the necessary know-how. Finally, the qualified staff was found and trained for constructing and operating the biogas plant.

## Results of performed service

The first biogas plant in Serbia was completed in a short time, within less than 4 months of the construction process and with only 6 weeks of start-up for reaching the full load. The raw materials are provided by Mirotin Group, one of the largest agribusinesses in Vojvodina Province. The plant, which in 70% is fed by manure and agricultural residues, has an excellent efficiency of above 95% of full load (average) and can supply now 3.000 nearby households with electricity. Apart from material effects of the investment, also some non-visible profits have been gained. Opening of the first Serbian plant was celebrated with the Prime Minister and numerous representatives from politics, industry and media, which made the biogas project known in the whole country. Also, a very good constructor-customer relationship has been established, and it became a starting point for the future cooperation and biogas investments in this target country.