

# Bigadan, a pioneer in providing renewable energy to the industry

The production of biogas is rapidly increasing in Denmark. Bigadan was one of the first companies to use the technology, and is — with more than 30 years of experience — still one of the leading companies in the field.

The Company name 'Bigadan' is a contraction of the words Biogas Danmark. And that is exactly, what the business is about – from engineering and construction of biogas plants to ownership and operation. Bigadan has been involved in more than 40 large scale biogas plants in 17 different countries where manure and industrial waste co-digest – with Arla Foods as one of its clients through almost a decade.

So the company has helped Arla in its green conversion — and the dairy still believes in biogas as a future source of energy. Both are good reasons to visit Bigadan and hear more about the benefits of biogas and the company's skills.

## From pioneers to an experienced partner

Bigadan has its headquarters in East Jutland, outside Skanderborg on a country estate, where stables and barns are turned into offices. Here we meet COO Henrik Vestergaard Laursen, who guides us

through the company history, makes status and names the visions.

He begins the story in the 1980's where the interest in finding alternative sources of energy was in its infancy. In Funen, foresighted entrepreneurs started Bigadan, in order to develop and sell biogas plants. During the first years Bigadan had different ownerships until 2000, where the company was established in its present form.

But some of the employees— including the CEO Karsten Buchhave — have been on-board almost since the start. So clients can benefit on the experience and knowledge, that the company has build, Henrik Vestergaard Laursen notes.

Bigadan started out selling plants – and still provide engineering and construction services to large-scale co-digestion biogas plants, but since 2001, ownership and operation of large scale biogas facilities are two other main business fields.

## The Arla-case in Herning

The cooperation with Arla Foods in Herning is an example on, how to solve a clients' challenges. Around 2009 Arla had set some aims for the use of renewable energy. One of these where to use more biogas.

At the same time Bigadan had bought two biogas plants — north and south, of Herning, respectively Studsgård and Sinding. The plants, that run under the common name Herning Bioenergy, receive manure from local farmers and industrial organic waste from local food processing companies to produce biogas.

In 2014 Bigadan was to decide, whether they should renew a contract with the energy company, that provided energy to the households of Herning – or produce biogas for the natural gas network – or seek cooperation with Arla. The the choice fell on Arla.

BY LENE MIKKELSEN WALSH  
FOTOS: BIGADAN



## Facts: The benefits of biogas

Biogas is a renewable energy that can replace natural gas. It is produced by anaerobic digestion of organic material. Biogas production is thus a combined energy production and a waste treatment technology. When manure is used for biogas production, the emission of greenhouse gasses from handling and storage of slurry is reduced. And by-product is high quality natural fertilizer. The CO2 emission is almost as low as that of electricity.

Source: Danish Energy Agency



COO Henrik Vestergaard Laursen



Studsgård biogas plant is one of two plants near Herning owned by Bigadan. The plants deliver raw gas for Arla's power plant, which uses the energy at its dairies in the area.

## Further information

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Therefore, in 2015, an 8.000 m<sup>3</sup> digester was constructed at Studsgård. Both Herning plants were connected with Arla's facilities around Videbæk through a more than 40 km gas pipeline, so the plants are able to deliver gas to Arla's energy plant which produces energy for Arla's nearby dairies. Furthermore substantial expansion on both plants were initiated.

Bigadan delivers the raw gas, and Arla has converted some of their boilers, so that they can use biogas in steam production, as well as they have invested in gas engines, that can generate electricity and heat.

The cooperation between Bigadan and Arla in the Herning area now runs in its fifth year. Arla has since set up different solutions with biogas all over Denmark with different companies. At the moment Arla use 27 pct. green energy in its industrial plants — primarily through biogas and woodchips plants.

### Bigadan looks across borders

Bigadan is on the top-tree list of the biggest players on the Danish marked for biogas, owning ten plants and with a solid history cooperating with in-

## Facts: Biogas production in Denmark

The total production of biogas in Denmark is expected to more than triple from 2012 to 2020, reaching a total annual production of 15 PJ. The measuring unit petajoule (PJ) is equal to one quadrillion (10<sup>15</sup>) joules. The total energy consumption in Denmark was 645 petajoules in 2018. According to The University of Southern Denmark today has a potential for producing biogas to 94 petajoules.

Source: Danish Energy Agency

dustrial clients such as Arla and other energy-intensive companies.

COO Henrik Vestergaard Laursen describes the Danish marked for biogas as both open for green conversion through biogas, but also saturated at the moment. Therefore, Bigadan also looks for export opportunities

Most of all the COO would like to see biogas being used for heavy transport, but that is another story — hopefully to be continued, according to Henrik Vestergaard Laursen. ●