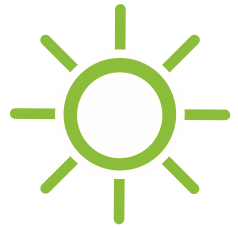


MEMBER PROFILES



DI Bioenergy The Danish Bioenergy Association

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Welcome to DI Bioenergy

DI Bioenergy – Danish Bioenergy Association, is the voice of and the forum for Danish companies engaged in the bioenergy sector.

We cover the full value chain from production, trade and distribution of sustainable bioenergy to development and production of equipment, consulting and development of new sustainable bioenergy solutions. Our members comprise companies operating within combustion of biomass for heat and power, biofuels, biogas and biorefining.

It is our vision that Danish companies showcase sustainable biobased solutions to the climate and energy challenges of the world. We work to ensure an optimal regulatory environment for sustainable bioenergy, to improve the business of our members, and to create coherence and visibility for bioenergy and the bioenergy sector.

DI Bioenergy is affiliated with DI – Confederation of Danish Industry, and is an active member of AEBIOM, the European Biomass Association.

Feel free to contact us and our members for more information.

Troels Ranis,
Director



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Aikan A/S

Aikan A/S is a part of the parent company Solum A/S, the largest supplier of compost, growth media and turf care products in Denmark. Aikan A/S and Solum Roskilde A/S make up the two main subsidiaries of Solum A/S. Since 1986, Aikan A/S has been developing methods to manage resources. The Aikan Technology, which the company has developed, can create value from household waste and other biological residual fractions. The Aikan Technology is able to integrate anaerobic digestion and in-vessel composting into a single workflow.

By using this technology, household waste and other biological residual fractions can be turned into valuable products such as biogas and nutritious declared composts. The biogas is used for generating electricity and heat while the compost is able to replace

imported fertilizers.

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BioVaekst, Holbæk

Aikan Technology has been fully implemented at the Danish plant BioVaekst close to Holbæk, which is owned and operated in cooperation with regional inter-municipal waste management companies. The plant produces more than 1 million cubic meters of methane and more than 7,000 tonnes of compost per year.



 **Aikan**®
CLEANTECH BY THE SOLUM GROUP

Babcock & Wilcox Vølund A/S

Babcock & Wilcox Vølund is a Danish clean-tech company that is an expert in extracting the greatest amount of energy and heat possible from residues from waste and biomass.

Babcock & Wilcox Vølund develops, manufactures, constructs, maintains and operates energy-from-waste plants and thus has many highly educated and specialised employees. Globally, Babcock & Wilcox Vølund has delivered more than 500 environmentally friendly energy-from-waste plants in over 30 countries.

Babcock & Wilcox Vølund has approximately 500 employees, and offices in Denmark (Esbjerg and Glostrup) and in Sweden, the UK, Poland and Slovakia.



Copenhill

B&W Vølund is currently building Copenhagen's upcoming waste-to-energy plant, Copenhill. The plant will make full and efficient use of the energy contained in the waste, and it will be possible to process all types of waste and still obtain a high level of energy recovery. Copenhill will be ready for use in 2017.

Visualization by Bjarke Ingels Group

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Burmeister & Wain Energy A/S

BWE is leading supplier of biomass boilers for power production in the capacity range of 15-400 MWe including conversions of existing boilers to biomass. The grate fired biomass boiler is considered as best available techniques (BAT) for combustion of agro biomass such as straw. In addition, BWE offers a wide range of solutions to improve performance and reduce emissions from existing power plants. In-house technology includes Low-NOx burners, fuel feeding systems and low leakage air pre-heaters.



The Lisbjerg plant in Århus

BWE has supplied straw fired boilers for Germany, UK and Denmark in range of 50 – 130 MWth. Currently the straw fired boiler including flue gas condensing at Lisbjerg supplying district heating to Århus with a fuel efficiency of 103 percent is under construction with commissioning end of 2016.

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Burmeister & Wain Scandinavian Contractor A/S

BWSC is a world-leading provider and operator of turnkey power plants, based on a wide variety of advanced technologies using traditional or dry/wet biomass fuels. Within the last three decades, BWSC has supplied more than 175 power plants to 53 countries with a total generating capacity in excess of 3,500 MW.

BWSC's biomass plants supply energy for entire communities purely based on renewable fuels like straw and woodchips. The biogas plants use organic wet waste streams, produce greenhouse gas reducing energy, and at the same time utilize and improve the fer-

tilizer quality of the digested organic waste.

CONTACT

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The Sleaford plant in Lincolnshire

The construction of a straw-fired power station in Lincolnshire, UK, in 2013 was completed by BWSC. The project was finished in a consortium between BWSC and BWE with the latter as boiler supplier. The plant is able to generate power to approximately 65.000 households and businesses.



BWSC 
Your Global Energy Partner

Daka Denmark A/S

Daka Denmark A/S operates in the international rendering industry. By processing animal by-products from slaughterhouses, food industry and agriculture, which cannot be used for human consumption, Daka produces products for the pet food, animal feed and fertilizer industry. The company also produces dried blood plasma ingredients for specialized applications in human consumption and animal feed. Moreover, Daka produces high quality energy products such as biomass for anaerobic digestion and second-generation biodiesel made from food waste and dead livestock. Daka ecoMotion utilizes animal by-products, mainly from Danish agriculture, and refines animal fats into sustainable biodiesel.

Daka employs around 300 people in Denmark and Sweden. The company has production plants in Sweden and Denmark and is part of the international SARIA Group, the leading specialist in the recycling and valorization of agricultural waste and by-products.



Daka ecoMotion biodiesel plant

The Daka ecoMotion plant in Løsning is able to produce 55 million liters of biodiesel annually. Biodiesel based on animal by-products reduces the CO₂ emissions by up to 86 percent.

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Danish Gas Technology Centre

DGC undertakes consultancy and development assignments relating to energy and the environment with a focus on biogas, natural gas and other gases. The company takes an active part in the development of a green energy system with a high degree of security of supply.

DGC participates in Danish and international projects in the areas of research and industry. By contributing to international technical regulation on gas utilization, the company keeps up to date with current rules and standards in the energy and environment sector.

DGC is a public limited company with 35 employees established in 1988 by the Danish gas sector.

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Detection of methane leaks

DGC conducts leak detection and quantification of methane loss from biogas and upgrading plants.



DGC
Dansk Gasteknisk Center a/s

Danstoker A/S

On basis of over 80 years' experience, Danstoker holds a leading international market position on industrial and district heating boilers for bio-fuel as well as exhaust gasses and traditional fuels, generating hot water (LTHW & HTHW) as well as steam.

The biofuel boilers range from 200 kW to 24,000 kW or 40 t/h steam and every boiler is adapted to suit the special characteristics of the fuel to be used, e.g. wood chips, wood pellets, straw, saw dust, forest residue, bark, fruit stones, agrifibres, etc.

The Danstoker boilers can be designed as fire-tube boilers - if required combined with panel-wall or water-tube sections for design pressure up to 86 bar-g.

In close cooperation with the world's leading suppliers of combustion and fuel handling equipment the systems are optimized to the customers' needs and expectations. Danstoker maintains a special focus on the environment and the shortage of resources.



Hungarna, Ipartelep, Hungary

Danstoker designed and delivered 3 x12 MW boiler systems, each based on a combustion-section, convection part, super heater and economizer to the Hungarna Bioeconomy Company, generating 13 bar-g superheated steam at 210oC for the production of bioethanol.

CONTACT

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DONG Energy A/S

DONG Energy is an energy company with a strong profile in renewables and with activities primarily in Northwestern Europe. Established in 2006 by the merger of six Danish energy companies, DONG Energy has transformed itself from one of the most coal-intensive utilities in Europe to a global leader in renewable energy.

DONG Energy business areas consists of wind power, bioenergy and thermal power, distribution and customer solutions and oil and gas. Within the area of bioenergy and thermal power, DONG Energy has invested in the development of two technologies, Inbicon and RENescience, which uses biomass and waste to achieve cleaner energy. The Inbicon technology uses straw and other residual products from agriculture to produce second-generation bioethanol. The RENescience technology pre-processes unsorted or residual household waste, which can then be used as raw material for the production of biogas while plastics, glass and metals can be recycled.



New Bio Solutions

DONG Energy has developed a new energy technology called Inbicon Technology for the production of second-generation bioethanol. The technology converts residual products from agriculture into fuel, which can supplement petrol and diesel. Together with the RENescience technology, these energy technologies makes up DONG Energy's future growth area called New Bio Solutions.

CONTACT

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Focus BioEnergy ApS

Focus BioEnergy is an engineering and project company specializing in servicing the industry in the transition from fossil fuel to green energy. The company focuses on conversion of biomass into energy by combusting, and thereby creating thermal energy in the form of steam. The steam production can be used in industry as process energy or in the district heating industry. Furthermore, the steam production can be combined with a steam turbine to generate electricity.

Focus BioEnergy expertise lies in the range 1 – 15 MW thermal boiler capacity with a focus on fuels such as wood chips, wood pellets, wood waste, straw and other agricultural products. Focus BioEnergy cover the range from fuel handling, combustion technology, turbine operation, flue gas cleaning and ash handling to advanced control systems.



Brewery Vestfyen

Focus BioEnergy implemented their solution of switching from fossil fuels to primary biofuels at the brewery Vestfyen in 2015. Thus, the company replaced the brewery's process of heating with oil with a process of heating with wood chips sourced from residual wood in the Danish forestry and wood works industry. This solution has enabled the brewery to reduce its carbon impact and minimize its energy expenses.

CONTACT

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FORCE Technology

FORCE Technology is a leading technology, consulting and service company on the international market. With more than 50 offices primarily based in Scandinavia, FORCE Technology serves customers in more than 60 countries around the world.

Within bioenergy, FORCE Technology amongst others provides the following specialized services:

- > Fuel switch feasibility studies
- > Design and optimisation of biomass furnaces
- > Accredited documentation of gaseous and particulate emissions
- > Design and optimization of primary and secondary emission reduction technologies

such as air staging, SNCR and bag-filters

- > Education and training of operational staff

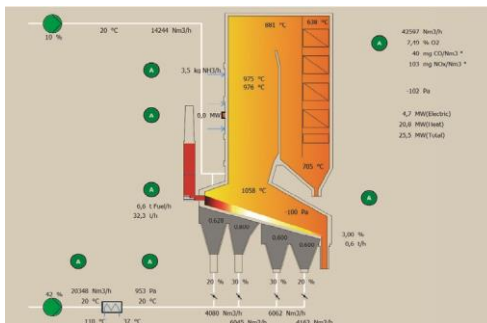
CONTACT

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Simulator based training of operational staff

FORCE Technology provides simulator based training of operational staff on biomass combustion plants. The training has a focus on improving energy efficiency, reducing the environmental impact and overall costs.



NGF Nature Energy A/S

NGF Nature Energy A/S produces natural gas, biogas and energy solutions on a national scale. The company provides consultancy for private operators as well as for companies who wishes a more efficient energy utilization. Furthermore, NGF Nature Energy is a leading player within the area of biogas.

The company services 50,000 customers around the country, which includes both private and business customers.



The Holsted biogas plant

NGF Nature Energy's biogas plant in Holsted has a biomass capacity of 393,000 tons per year. Approximately 75 percent of the biomass origins from livestock manure including deep litter and slurry from cattle and pigs. The remaining biomass consists of organic residues from the food industry and supermarkets. The energy produced will be 11 – 13 million m³ of biomethane per year. The biogas plant was constructed in 2014 – 2015.

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NIRAS

NIRAS is an international, multidisciplinary engineering company with more than 1,400 employees located in offices around Europe, the Middle East, Asia and Africa.

NIRAS provides technical solutions within infrastructure and building, water, environment and energy as well as planning, informatics and development consulting. NIRAS special trademark is an interdisciplinary and innovative approach to projects, and NIRAS takes pride in transforming clients' visions and challenges into sustainable solutions.

NIRAS was founded in Denmark in 1956. Today, NIRAS is one of the leading consultancy companies in Denmark. NIRAS has worked with climate and energy for over 30 years and focuses on climate strategies, carbon footprints, energy-saving strategies, energy-conscious constructions, district heating and cooling, bioenergy, solar energy, wind energy and waste management.



Biogas plan in Malaysia

NIRAS worked as process consultant on a biogas plant in Malaysia with the aim of making it possible to treat and utilize the biomass from 250,000 pigs.

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Weiss A/S

Weiss A/S manufactures and sells large combustion boiler plants for district heating, process steam and other applications with output ranges from 1.0 MW to 30 MW per boiler line. Based on years of experience, Weiss is offering a cost effective and environment-friendly energy production which is suitable and economically feasible on a large scale, in particular for heating plants and process industries. There are Weiss plants operating in several countries around the world.

Weiss' current focus is on decentralized waste-to-energy plants especially on export markets. Weiss A/S has developed a grate fired boiler plant, enabling combustion of sludge either as pure sludge, mixed with biomass or household/industrial waste. Sales and project management are placed in the Head Office in Hadsund, Denmark. Design, construction and service are based in Ostrowiec, Poland. Production is based in the newly established Weiss factory in Poland (7.000 m²).



Kvitebjørn project, Norway

The project commenced in 2016 and the plant will be located next to the existing waste handling plant Remiks, Norway.

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See more at bioenergi.di.dk



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