

**INVEST IN**

**DENMARK'S MOST**

**ENERGETIC CITY**



**INVEST IN**

**AALBORG**

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**Aalborg is well known as home of some of the world's leading energy researchers and companies from the wind energy and utilities sectors – just to name a few areas of specialisation. This is also the reason why the energy cluster House of Energy has its main office in Aalborg. Whether your business is in innovation, production, consultancy services, logistics or any other part of the value chain, you are likely to find suitable suppliers, partners and employees in Aalborg.**

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### **Pioneer in sustainable energy solutions**

Denmark is a pioneering country when it comes to innovation in sustainable energy. Danish research and development have paved the way for modern solutions within the area of wind energy, and there is a long-standing tradition for district heating, which is the most prevalent form of domestic heating in Denmark.

Focal points include the environmental benefits of a better utilisation of excess heat from industry and production companies and the application of renewable sources of energy.

Companies in the immediate Aalborg area make world leading products such as district heating pipes, pumps, biomass plants, solar heating systems and energy planning software. In this way – and in many other ways – Denmark is a living lab for various sustainable energy technologies.

This is just one of the reasons why Aalborg's innovative research and business environment could well be the perfect choice for your next investment or establishment of new activities.

### **Wind Energy**

The North Danish wind energy industry consists of project developers, utilities providers, wind turbine manufacturers, component suppliers, logistics and service companies – simply, companies involved in all phases of planning, installation, operation and maintenance.

### **House of energy**

There is a strong networking tradition between the university, the industry and the local authorities, ensuring a consistently high level of innovation and earning North Denmark a strong position in energy related fields.

This tradition is carried on and developed by House of Energy – Energy Cluster Denmark which facilitates cooperation and nurtures joint innovations. This dynamic and innovative cluster operates within the fields of wind energy, district heating, green gasses, energy efficient solutions and the integrated energy system.

### **Close cooperation with ICT companies**

In the energy system of the future, disciplines such as smart cities, artificial intelligence, machine learning, big data and Internet of Things will play an important role. As a result, House of Energy has a strategic cooperation with Brains-Business - the well-established North Denmark Danish ICT cluster.

The ICT sector in Aalborg has grown from a historical regional foothold in the ICT industry, which stems from a unique research community based around Aalborg University and a series of large, international corporations with R&D departments in Aalborg.

### **The recipe for success**

- › **World-class research and education**
- › **Political support and public investments**
- › **Innovative, local companies**

**INVEST IN**

**WORLD-LEADING**

**TECHNOLOGIES**

The North Danish energy cluster is characterised by:

- › **Unique synergies between industry and research**
- › **World-leading technologies**
- › **Focus on networking and collaborations to spark innovation**

# WORLD CLASS RESEARCH

# AT AALBORG UNIVERSITY

## 400 energy researchers

During the last 30 years, Aalborg University has specialised in certain important areas related to the energy sector, and world class research is conducted here. For example, the university conducts cutting edge research to improve reliability, energy efficiency and cost reduction for future wind power systems. There are more than 400 energy researchers at Aalborg University.

## Energy systems of the future

Just to mention a few of the departments, which carry out research and provide education of the highest international standard, one is the Department of Energy Technology. This department employs 185 specialised researchers, including a team working on projects related to the production of methanol and fuel cells, their applications and potentials.

In this way, the university contributes with new knowledge that can be directly applied for industrial purposes and renders methanol and fuel cell technologies more durable, efficient, reliable and competitive. The Department has been focusing on these research areas for more than 15 years and sees great potential in methanol as the fuel of the future.

## Most cited Professor in the world

Another is the Department of Electronic Systems, which is one of the largest departments at Aalborg University. Aalborg University is world leading in the field of power electronics and ranks as no. 6 in the world in this field. Recently, Frede Blaabjerg, AAU Professor in Power Electronics, took first place as the researcher with the highest number of citations per publication in engineering in the world.

The recognised international journal THE (Times Higher Education) provides the rankings based on publications from 2011-2015 and 10 different subject areas.

## The best Danish university at cooperating with private companies

According to a survey performed by the Confederation of Danish Industry, Aalborg University is the best in the country at cooperating with private companies. 44 % of all dissertations at Aalborg University are completed in cooperation with a private company, and graduates from Aalborg University are in high demand among energy sector stakeholders around the world.

At the same time, the university as a research institution does very well in international rankings. In certain fields, Aalborg University ranks very high, for example engineering (no. 4 in the world according to an analysis from MIT from 2018). The university also achieves a five-star ranking by the QS World University Rankings, putting Aalborg University on a par with Harvard, Oxford, Cambridge and Stanford.

The energy cluster in Aalborg is home to some of the world's leading academic experts, specialists and private companies.

Our core areas include:

- › Wind Energy
- › Utilities Services, including District Heating and Cooling
- › Fuel Cell Technology
- › Solar Heating
- › Wave Energy
- › Energy Planning
- › Smart Grids and Smart Cities
- › Power Electronics
- › Biomass and Bio Technology
- › Intelligent Transport Systems, Electro and Green Fuels
- › Offshore Activities

# POWERFUL ENERGY COMPANIES

## IN NORTH DENMARK

**Some of the private companies that drive the region's powerful position in the energy sector are:**

### **Aalborg CSP**

Aalborg CSP is a supplier of steam generators and power plants within the CSP (Concentrated Solar Power) segment. These power plants include thermal oil and molten salt parabolic trough plants, and direct steam and molten salt tower plants. Using molten salt as heat transfer fluid allows the solar plant to reach 24/7 on-demand power generation.

### **Siemens Gamesa**

The Siemens Gamesa Renewable Energy in Aalborg is the world's largest wind turbine blade factory. It is the Siemens Gamesa headquarter for blade production development and employs approx. 1,500 people. The factory includes a test centre and an R&D department and has been active since the late 1990s.

### **Liftra**

Liftra is an engineering company that designs and delivers equipment for heavy lifting and transportation to the wind power industry. Energy companies, service providers, manufacturers and logistics companies are clients with the company, which was founded in 2003 and has departments in Denmark, Spain, Poland, USA and China.

### **Xtel**

Xtel is an independent development company with experts in hardware and software development. The company specialises in wireless technology and Internet of Things (IoT), which enable companies to make everyday electronic appliances intelligent by harvesting data. These data are converted into valuable knowledge that, when used intelligently, can help companies improve their product and the customer experience.

### **Logstor**

Logstor is a leading manufacturer of preinsulated pipe systems for district heating, cooling, industry and oil and gas purposes. Logstor's head office is located west of Aalborg, and the company employs around 1,200 people in 12 different countries. Production is carried out at the group's eight factories in Denmark, Finland, Poland, Romania and Sweden.

### **Verdo Energy**

Verdo Energy Systems is a turnkey supplier that develops and builds energy plants including biomass, solar heat, mobile and combination plants for the industrial market as well as utilities providers.

### **Ballard Power Systems Europe**

Ballard Power Systems Europe operates within the field of commercial application of fuel cell solutions. The company focuses on three business areas: zero-emission fuel cell buses, technology solutions enabling customers to accelerate fuel cell programs with customised engineering services and providing reliable fuel cell backup power solutions to support critical infrastructure for the IT and telecommunications industries. It has offices in Canada, Europe, USA and China.

### **SerEnergy**

SerEnergy is another world leading commercial fuel cells manufacturer. SerEnergy's fuel cell and reformer technologies and products are applied in the transport sector, in distributed power generation and in the telecom industry.

### **Xergi**

Xergi designs and builds biogas plants and delivers related services such as project development, procurement, commissioning and operation. The company has an inhouse R&D department working towards developing new technologies and offering support for plant operators. For example, tests are performed in-house in a biochemical methane potential (BMP) analysis.

### PowerCon

PowerCon is an engineering company specialised in electrical power conversion, especially the development and production of full-scale electric power converters. The company was founded in 2009, and the most common use of PowerCon's products and designs are in wind turbines.

### Aalborg Energikoncern

Aalborg Energikoncern is the utility company in Aalborg covering both heating, cooling and gas. District heating fulfills 98% of Aalborg's needs and the municipality aims to be a fossil-free by 2050.

The plan includes phasing out the coal fired CHP plant by 2028 in favour of renewable energy technologies such as surplus heat, heat pumps, and seasonal thermal storages, geothermal and other sources. New energy technologies that could be relevant in relation to future heat production, will be tested in the form of pilot systems.

### Serman & Tipsmark

Serman & Tipsmark is specialised in hydraulic solutions for industrial, offshore/marine, mobile and energy production purposes. The company is headquartered near Aalborg and has two additional service departments in Denmark.

### NEAS Energy

NEAS Energy is an international energy asset management company that provides physical and financial optimisation of renewable and conventional assets operating in European power, gas and energy certificate markets. The company employs approx. 300 people and is headquartered in Aalborg with additional offices in the UK, Germany, Sweden and Singapore.

### EMD international

EMD is a global company supplying software and consultancy services for design, planning, documentation and operation of wind energy projects as well as complex distributed energy projects. EMD is headquartered in Aalborg and has sales offices in the UK, USA and China.

### Bladt Industries

Bladt Industries is an international steel contractor specialising in large-scale steel structures. The company operates within three areas of business, providing steel solutions for the wind and renewable energy sectors, for the oil and gas industry and for infrastructure purposes.

## 5 REASONS TO

## INVEST IN AALBORG

**You have the world at your doorstep** in Aalborg, which is situated in North Denmark and has direct flights to European capitals, a dynamic international port and an extensive network of road and rail connections.

**With its 212,000 citizens**, Aalborg ranks as the third largest municipality in Denmark. The city is constantly growing and has a relatively young population not least thanks to its renowned educational institutions. The city has a well-educated population and is home to Aalborg University with its more than 23,000 students.

**The total workforce amounts to 270,000 people** within commuting distance. North Danes are characterised by their dedication, flexibility and high-level qualifications.

**There are about 11,000 international employees in Aalborg**, and 4,500 international students. At present, more than 26 % of all employees in the private sector work in a company with foreign owners. Aalborg's diverse talent pool is constantly expanding and providing greater multilingual capabilities as well as new global opportunities.

**Companies with a Danish subsidiary** qualify for financial support from the Innovation Fund Denmark (Innovationsfonden) and the Regional Development Fund (Regionalfonden).

[www.investinaalborg.dk](http://www.investinaalborg.dk)

#### **About Invest in Aalborg**

Invest in Aalborg is a partnership between the Port of Aalborg, NOVI Science Park, Aalborg University and the City of Aalborg. It is the partnership in an increasingly globalised city that will ensure you a single point of contact and easy access to prime locations, world-class research, local business know-how and the local authorities.

Let us help you build your business case. Our services are driven entirely by your needs and are independent and free of charge.

#### **Contact us**

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