



10 YEARS OF VATTENFALL

FROM KUNGLIGA VATTENFALLSTYRELSEN...



Inauguration of
Harsprånget.

To understand why Vattenfall takes the form it does it is first necessary to dip into its history.

The Kungliga Vattenfallstyrelsen ("the Royal Waterfall Board") was established in 1909 to take charge of the state's hydro power facilities. Even at this early stage there was a stipulation that the operation should be conducted in a "businesslike manner". A number of important decisions were taken in the 1990s that were to make a decisive impression on Vattenfall's future.



Älvkarleby.

Conversion into a company

The Swedish Parliament decided that from 1992 the business was to take a corporate form. The state would remain as owner, but Vattenfall AB would function independently, under the same conditions as privately owned limited companies.

Deregulation

A few years later the politicians made the decision to deregulate the Swedish electricity market and in 1996 electricity trading was opened up for competition.

Europeanisation

Other countries also deregulated their markets. During this period the European electricity market became increasingly international. In 1995 Sweden became a member of the EU, which was endeavouring to create a common European electri-

...TO VATTENFALL AB

city market.

Deregulation and Europeanisation were the driving forces behind a rapid restructuring of the European energy industry into a smaller number of larger units.

Vattenfall faced a choice of direction. To remain successful under the new conditions the company would have to grow and achieve the economies of scale that were required to retain competitiveness by having a presence on several markets.

By the mid-1990s Vattenfall had made some minor acquisitions in the neighbouring Nordic countries and had initiated collaborative projects in a number of other countries.

In the light of the remodelling of Europe's energy market that had already begun, in 1997 Vattenfall's board adopted an offensive strategy for growth, based on the vision that had been formulated during the first year as a limited company: Vattenfall was to retain and develop its position as the leading energy group in Sweden, and also be developed into one of the leading energy companies in Europe.

In the early 1990s there were a large number of independent energy companies in Sweden. Today most of them have been purchased by European operators. Vattenfall is the only large Swedish-owned



1992

Vattenfall is converted from a state enterprise into the limited liability company Vattenfall.

1995

Sweden joins the EU.

Vattenfall starts operating in Finland.

1996

The Swedish electricity market is deregulated.

The Nordpool Electricity Exchange is set up by Sweden and Norway.

Vattenfall's logo has changed over the years.



1909

1909

The restructuring of Trollhätte kanal- och vattenverk to Kungliga Vattenfallsstyrelsen marks the birth of Vattenfall.

1909-1916

The first large hydro power plants - Olidan, Porjus and Älvkarleby - are built



1920

1938

For the first time electricity can be supplied from Porjus in the north to Malmö in the south.



1936

1947

AB Atomenergi is formed.

1946

Vattenfall is assigned overall responsibility for Sweden's electricity supply.

1951

Inauguration of the Harsprånget hydro power plant, then the world's largest hydro power plant in many respects.

1952

The entire Swedish national electricity grid is hooked together.

1959

The electricity supply networks in Sweden and Finland are linked up.



1964

1969

Sweden's unspoiled rivers are protected by law.

1975 - 1976

Vattenfall's first two nuclear reactors, Ringhals 1 and 2, are commissioned. Twelve reactors are built in Sweden during the 1970s and 1980s.

1980

A referendum is held on nuclear power.

1900

1910

1920

1930

1940

1950

1960

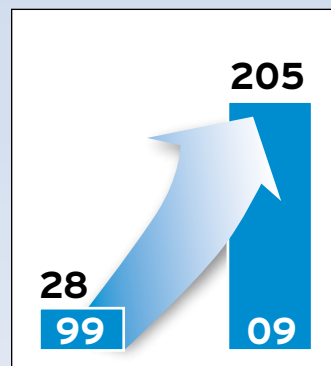
1970

1980

1990

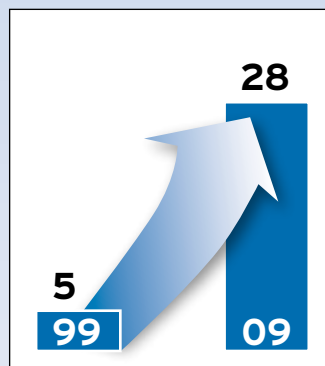
2000

Net sales,
SEK billion



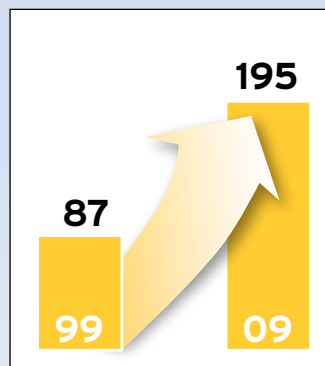
Moving into the German and Polish markets in the early 2000s increased turnover to over SEK 100 billion. The acquisition of Nuon in 2009 took it to over SEK 200 billion.

Operating profit (EBIT),
SEK billion



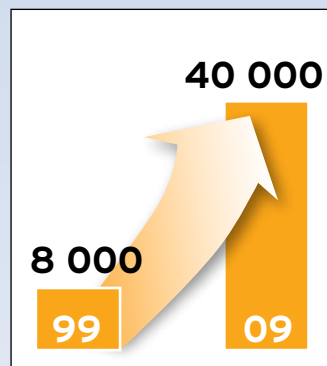
Average annual return on equity during the 1990s was 12%. During the 2000s the average has been 16 %. Of a net profit totalling SEK 123 billion since 2000, SEK 45 billion has been distributed to the owner.

Electricity sales,
TWh



Vattenfall is the largest seller of electricity in Sweden and among the three largest in Finland, the Netherlands and Belgium.

Number of employees



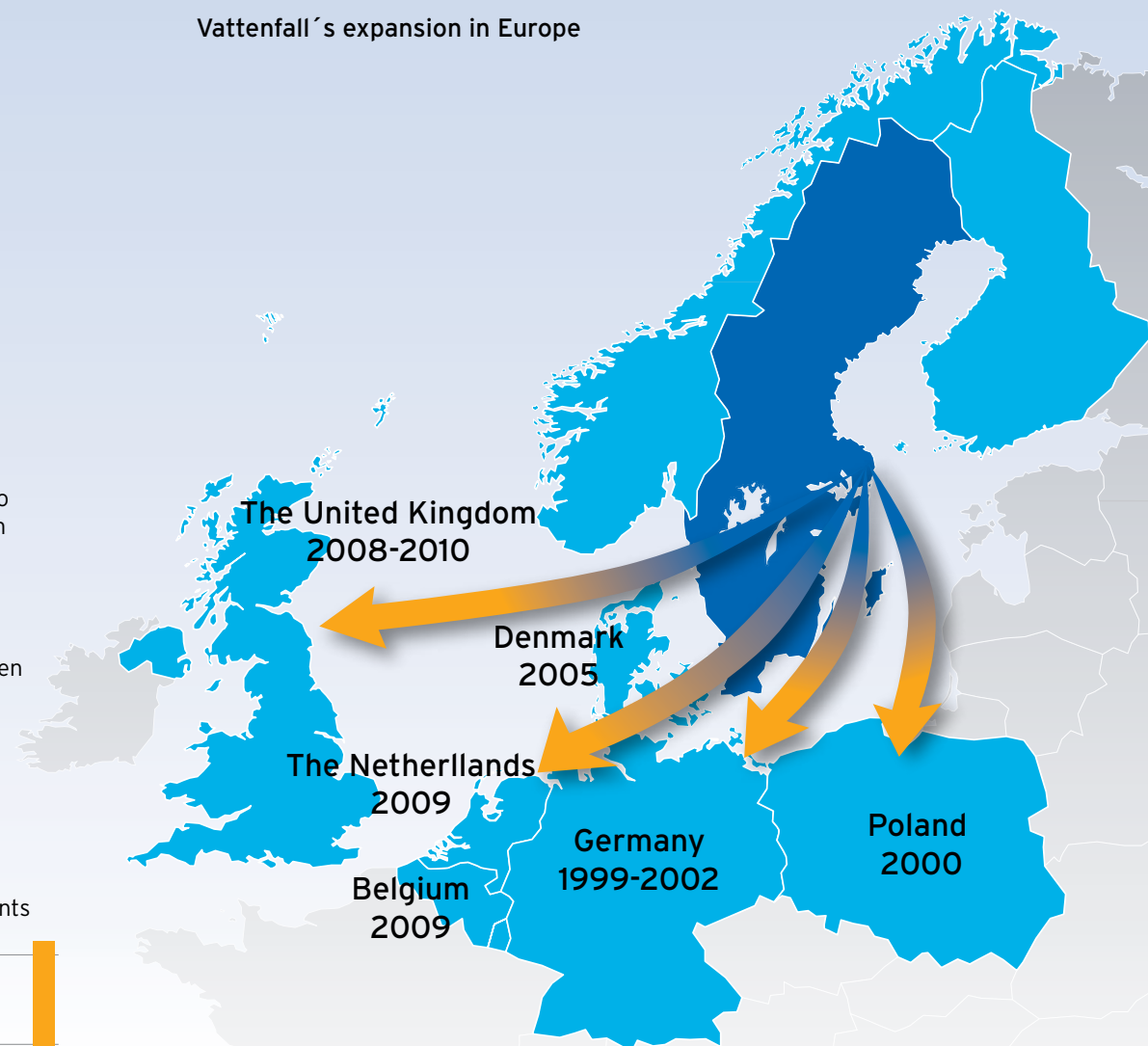
In 1999, 92% of the employees worked in Sweden. Since 2001 more than half are in Germany.

Dividend



Since 2000 annual dividends to the owner have varied between SEK one and eight billion. The proposed dividend for 2009 is 5.2 billion. Including this payment, dividends amount to SEK 45 billion during the last ten years.

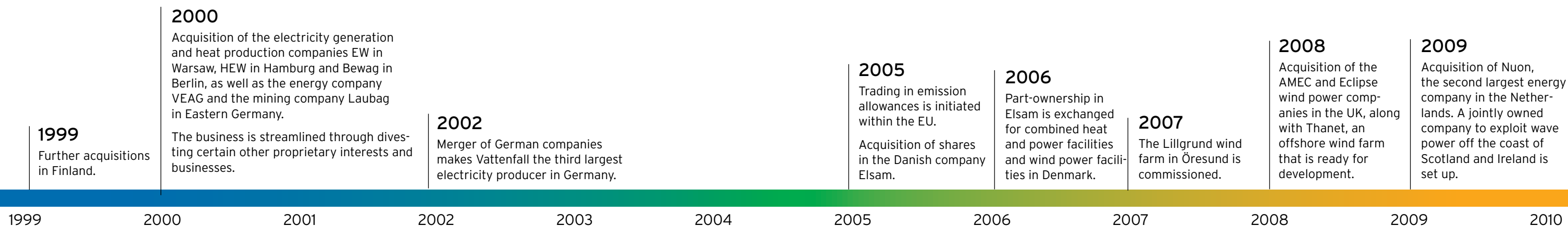
Vattenfall's expansion in Europe



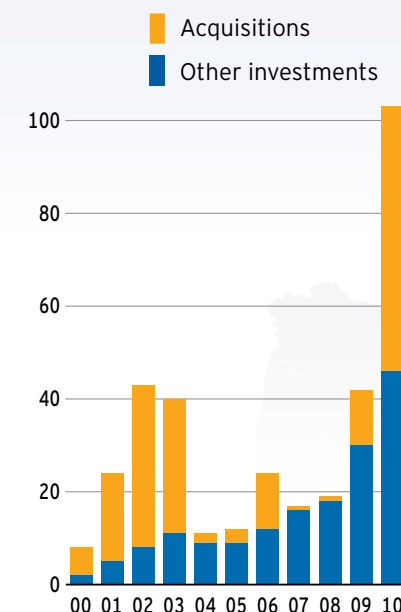
VATTENFALL OVER 10 YEARS

Vattenfall has gone from being a Swedish company to a European one, with operations in eight countries. Vattenfall is Europe's fifth largest producer of electricity and the largest producer of heat. Today operating profit is in the same order of magnitude as the entire turnover was at the end of the 1990s. This entire development has been achieved with no capital contribution from the owner.

Vattenfall 1999 - 2010



Vattenfall's investments,
SEK billion



During the ten year period from 2000 to 2009 Vattenfall invested a total of SEK 337 billion. 170 billion went on acquisitions. Approximately the same amount - 167 billion - was invested in modernisation, expansion and research and development etc. in the existing operation.



CLIMATE ISSUES AFFECT US ALL

"The most important environmental issue is perhaps greenhouse gas emissions, generated by the combustion of fossil fuels, including coal. Europe and the world will be dependent on fossil fuels for energy within the foreseeable future. Consequently, Vattenfall is deeply committed to reducing emissions, particularly of carbon dioxide and acidifying substances."

(Lars G Josefsson in Vattenfall's Annual Report 2001)

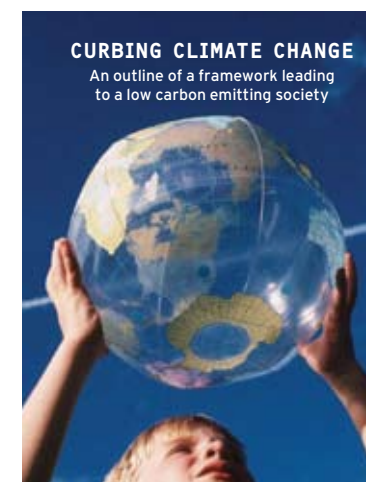


"The future in our hands" - an interview book with Lars G Josefsson.

Vattenfall is contributing to sustainable development through development projects and investments in new technology and renewable energy. Another important task is to provide information and create commitment for global solutions in relation to climate issues.

During the last ten years Vattenfall has put extensive work into broadening its knowledge of potential solutions and creating new routes into the future. A leading European energy company has the means to take new technologies from the laboratory to the market; this includes building pilot plants, cooperating with universities and colleges and developing commercial methods.

Vattenfall works with wind power, wave power, future nuclear power, co-firing with biomass fuels, capture and storage of carbon dioxide, effective customer solutions, intelligent grids and electrically powered transportation. All with the aim of making our own business climate neutral by 2050 at the latest.



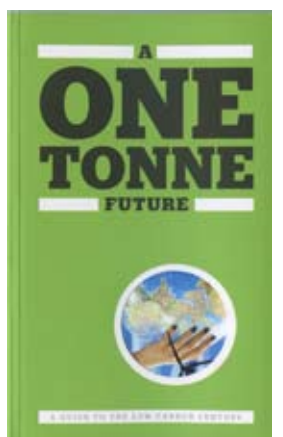
3C, Curbing Climate Change, a global initiative from business leaders to curb climate change.

However, the climate issue is a global concern. Reduced carbon dioxide emissions require initiatives in all countries and in all sections of society. That is why Vattenfall has also become involved as an opinion former in the work of dealing with climate issues at the international level.

Vattenfall worked to secure the introduction of trading in emissions allowances at the European level and has subsequently been involved in the task of creating a global market mechanism to reduce carbon dioxide emissions. Vattenfall's report "Curbing Climate Change" published in January 2006 describes how a global model for reducing emissions could be formulated.

Vattenfall's CEO Lars G Josefsson took the initiative in setting up the 3C Group (Combat Climate Change) with the aim of mobilising the business world in support of the UN's work to procure a global agreement in the climate field. By the end of 2009 some 70 of the world's largest companies had signed up to the 3C Group.

The booklet "A One Tonne Future" was produced in 2009 in conjunction with Vattenfall's 100th anniversary and addresses how it might be possible to reduce global emissions of carbon dioxide from around seven tonnes of emissions per person per year where it currently stands to one tonne over the next hundred years.



"A One Tonne Future" - a book about the climate challenge.



Hydro power - the company's origin, environmentally friendly and stable

When Vattenfall was set up just over a century ago the aim was to maintain and develop the hydro power assets that the state owned. And it was in Trollhättan that it all started with Sweden's first really big power plant.

Sweden is well endowed with an abundant supply of flowing water. Hydro power accounts for half of Swedish electricity generation and has been the backbone of Vattenfall's operation for many decades. Hydro power will continue to play an important role in enabling Vattenfall to become a climate neutral company in the long term. It is a stable, renewable natural resource that produces an extremely low amount of emissions throughout its entire lifespan.



Olidan - Trollhättan's first power plant in the River Göta Älv - was the first major hydro power project in Sweden.

However, the environment is affected by power plants, dams and water regulations, an aspect which restricts the potential for expansion. Instead the solution is to modernise the existing facilities and make them more efficient. Vattenfall's plan is to invest almost SEK seven billion in the period up to 2013 in refurbishing existing hydro power plants. Vattenfall owns and operates 112 hydro power plants in the Nordic region - the majority in Sweden, but also some in Finland. Hydro power accounts for by far the largest proportion of Vattenfall's renewable electricity generation.



Abelvattnet - Vattenfall's first newly constructed hydro power plant in 15 years. Construction started in the Swedish municipality of Storuman in 2008 and it will have an installed capacity of 4.6 MW.

Safer dams

Vattenfall is making substantial investments in increased dam safety and is an active participant in the industry's own safety work.



Ringhals, which is located on the Swedish west coast about sixty kilometres south of Göteborg, is the largest electricity producer in Scandinavia. One fifth of all electricity that is used in Sweden is generated here.

Nuclear power - important for reduced climate impact

Vattenfall has been a joint owner of Swedish nuclear power since the first reactors were commissioned in the 1970s.

Today Vattenfall is a majority owner in the companies that operate the three nuclear reactors in Forsmark and the four in Ringhals. Vattenfall has been a co-owner and operates the Brunsbüttel and Krümmel nuclear power plants in Germany, with one reactor each, since 2001. Vattenfall is a minority owner in the Broksdorf nuclear power plant.

Today around one third of Vattenfall's total generating capacity is located in nuclear power plants.



Enough electricity is generated every year in **Forsmark** in Northern Uppland to supply Greater Stockholm three times over.

Nuclear power is an important element in achieving Vattenfall's goal: to become a climate neutral power producer. If a nuclear power plant's total service life is taken into account - construction, power generation, phase-out - carbon dioxide emissions per kilowatt hour generated are almost as low as for electricity generated by hydro or wind power.

In conjunction with other co-owners, Vattenfall has invested some SEK 10 billion in existing Swedish nuclear power plants

during the 2000s in order to enhance safety, lifespan and output. Further investments are planned for the future. The total investment programme is around SEK 50 billion between 2003 and 2030.

Making nuclear power more efficient will enable capacity to be increased at the same time the need for nuclear fuel is reduced. This will result in lower operating costs and - a major benefit - less fuel wastage.

All the planned efficiency improvements are equivalent to the capacity of a large new reactor.

Nuclear power is controversial, but in an increasing number of countries it is being regarded as an important tool for reducing climate impact.



Better, safer and more efficient

By continuously looking for ways to use uranium more efficiently, Vattenfall has cut down on uranium equivalent to a full year's requirements during the last 25 years.

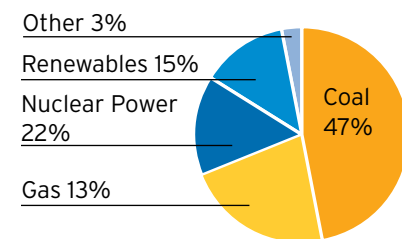
Emissions are being reduced in coal-dependent countries

As a European energy company Vattenfall operates in several countries where coal plays a major role in the supply of energy.

In Poland over 90% of all electric power is based on coal, in Germany it is closer to 50%. Countries such as these will remain dependent on coal as an energy source for the foreseeable future.

As one of Europe's largest electricity generators and with the ambition to lead the way in the environmental work, reducing carbon dioxide emissions in a variety of ways from coal-fired power stations is an urgent task for Vattenfall.

Germany's electricity generation



In some of Vattenfall's coal-fired power stations coal is gradually being replaced with biomass fuel. Another method is to invest in new technology in coal-fired power stations to raise efficiency and reduce emissions.

Vattenfall is building a facility in Hamburg for generation of electricity and production of heat that will reduce emissions of carbon dioxide by 2.3 million tonnes compared with older plants. This is equivalent to the annual emissions from one million private cars.

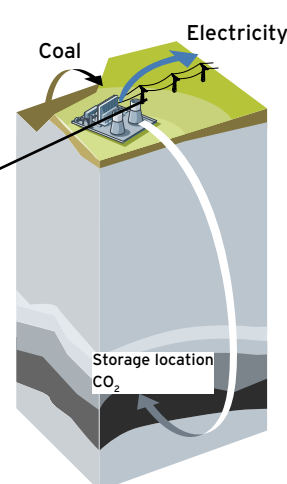
In Berlin a number of older coal-fired power plants are being replaced by two new plants that will be fired with biomass fuel. A biomass fuelled power plant is also planned in Hamburg. Sludge is being used in co-firing in a number of other plants that were previously entirely coal-based.

Since 2001 Vattenfall has been involved in the development of technology for coal-firing with very low emissions. Vattenfall is operating a pilot plant in Schwarze Pumpe.

The new technology is called CCS (Carbon Capture and Storage) and involves capturing the carbon dioxide that arises during combustion in the power plant and storing it in the bedrock. The CCS technology will mean that over 90% of the carbon dioxide will not enter the atmosphere and thereby not contribute to climate change.

Schwarze Pumpe

In September 2008 Vattenfall opened the world's first pilot plant for capture of carbon dioxide using the Oxyfuel method.



CCS technology

Carbon dioxide must be stored in porous bedrock under a layer of dense rock. This prevents the carbon dioxide from leaking out. Storage locations can be deep under the ground or below the sea bed.

INVESTMENT IN RENEWABLE ENERGY SOURCES

Energy from wind and waves

Vattenfall is investing substantially in wind power and occupies a leading position in Europe, however it is also involved in a number of new development projects that have the potential to generate electricity using the energy in sea waves.

Vattenfall's large-scale investment in wind power started in 2004 with the acquisition of the rights to build Lillgrund in Öresund. Today Lillgrund is Sweden's largest offshore wind farm. Another large project, where Vattenfall is majority owner, is Horns Rev off the coast of the Danish town of Esbjerg.

In 2004 Vattenfall generated 0.1 TWh of electricity from wind power. In 2009 it was 1.7 TWh.



Offshore wind power

Lillgrund in Öresund, which was completed in 2007, is Sweden's largest offshore wind farm.



Wind power on land

Stor-Örtiden in Åsele is Vattenfall's largest investment in land-based wind power. The wind farm will comprise 40 turbines with a capacity equivalent to electricity consumption for almost 50,000 households.

At the start of 2010 construction of eight wind farms was underway in six countries, equivalent to an overall investment of SEK 20 billion. When they are put into operation within the next two years Vattenfall's electricity generation from wind power will be doubled. The largest investment is being made in Thanet off the south-east coast of the United Kingdom. When the facility is commissioned during 2010 it will be the largest wind farm in the world.

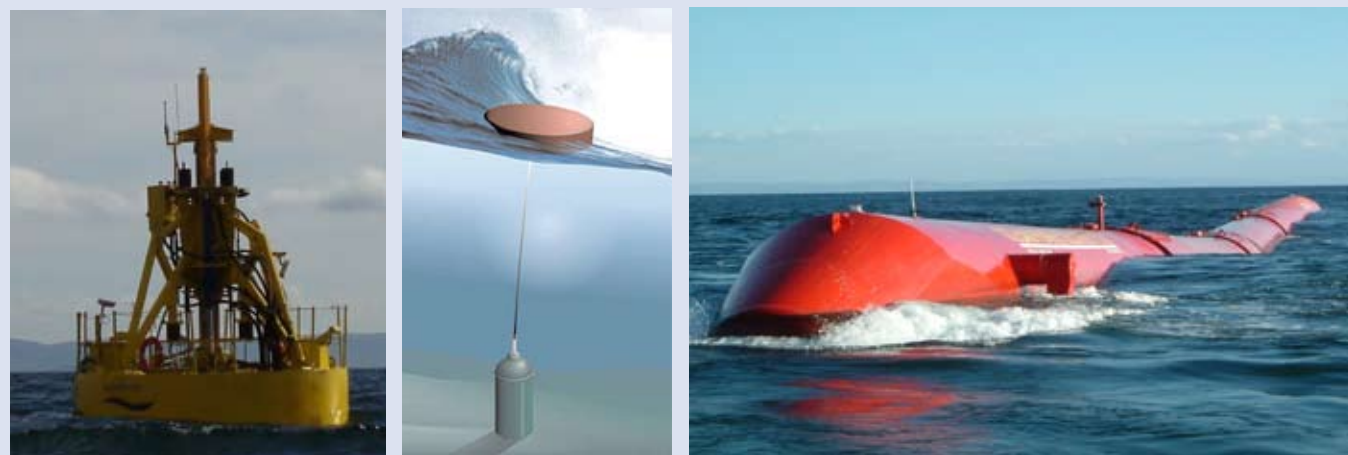


Vattenfall is planning to build a large wind farm off the coast of East Anglia.

The investment commenced when Vattenfall acquired three British wind power project companies in 2008, thereby establishing itself in a new geographic market. Supplies of electricity from Thanet will be equivalent to consumption in 240,000 households. However, Thanet will not retain its leading position in the future. Together with ScottishPower Renewables, during 2010 Vattenfall has been given the go ahead to plan new wind power sites off the east coast of England.

Annual generation from these sites should be able to accommodate the electricity needs of 4 million households.

Vattenfall has also entered into a joint venture with an Irish development company to generate electricity from wave power off the Irish coast.



Ocean energy

Ocean energy may become an important renewable energy source and Vattenfall is taking part in a number of pilot projects involving wave power off the coasts of Sweden, Norway, the United Kingdom and Ireland.

Biomass fuel, a growing resource

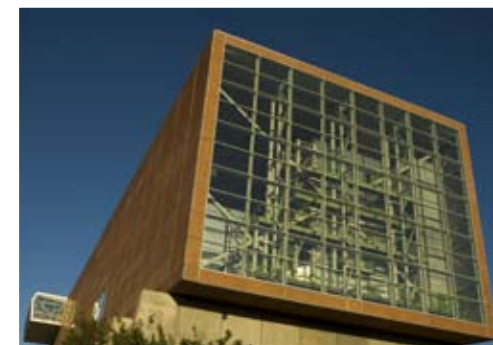
One way of reducing the impact on the climate from generation of electricity and production of heat is to use biomass fuels instead of fossil fuels. In many cases the biomass is made up of residues from forestry and agriculture or waste from the building industry and households.

Biomass is carbon dioxide neutral if the fuel that is fired is replaced by regrowth. The forest uses carbon dioxide to build up its biomass.

The carbon dioxide that is released during combustion of raw materials from the forest does therefore not increase the amount of carbon dioxide in the atmosphere.



Wood chips is one of many types of biomass fuels.



Combined heat and power in Uppsala

Uppsala Block 5 is Europe's most modern plant for waste incineration.

Vattenfall has been one of the largest users of biomass fuel within the energy sector for many years. The use of biomass fuel has increased due to the fact that the fossil fuelled heat plants that have been acquired have been converted into biomass fuelled plants.

In Sweden more than half of Vattenfall's heat production is based on biomass fuel, which makes Sweden one of the leading countries in the field.

The use of biomass fuels in Vattenfall's

production of heat and electricity is steadily increasing and today Vattenfall is one of the world's largest purchasers of biomass fuels for energy purposes.

Co-firing with coal and biomass fuels is a technology that is already available today and that is rapidly delivering results in the form of reduced emissions of carbon dioxide. During the next few years Vattenfall is therefore going to substantially increase the admixture of biomass fuels in its coal-fired power plants. It is estimated that by 2030 biomass fuels will account for more than 8% of the total energy mix compared with about 1% today.

In Denmark Vattenfall is running a project to increase the use of biomass fuels at all its plants that are currently fired completely or partially by coal or oil. In 2009 a new straw-fired boiler was commissioned at Fynsverket in Odense. The Amager combined heat and power (CHP) plant in Copenhagen has been converted for use with biomass fuels. On Nordjylland Vattenfall is building what will become the largest straw-fired power plant in the world. Investments in increased use of biomass fuels are also underway in Finland, Germany and Poland.



Amager

The Amager combined heat and power plant has been converted so that it can now be co-fired with biomass fuels. The primary material is straw. The aim is for the plant to be fired exclusively with biomass fuels.

MORE ELECTRICITY TO ACHIEVE THE CLIMATE TARGETS



An important element in the task of securing future energy supplies and tackling the climate challenge is to increase the use of electricity. Electricity is an important tool in building a society with very low emissions.

Electricity must be made clean if Europe is to realise the targets for far-reaching reductions in emissions of greenhouse gases that are to be achieved before 2050. Another important contribution is increasing the use of electricity. As an electricity producer Vattenfall's aim is to make electricity clean.

The company is also working to ensure that electricity has new areas of application at the expense of other forms of energy that are more harmful to the climate and less efficient, such as oil.

Electricity is an efficient energy carrier and a transition to electricity can lead to an overall reduction in energy use.



A transition to electrically powered cars would radically reduce the transport sector's carbon dioxide emissions.

An electric motor is considerably more efficient than an internal combustion engine. Electric cars consume about 75% less energy than petrol-driven cars.

In themselves electric cars are completely emission free. The more climate neutral electricity that is used to charge the car, the better the emissions comparison with petrol-driven vehicles.

If the electricity is generated with for example hydro power or another form of renewable energy, there is a very large reduction in emissions. In order to speed up the development of electric cars Vattenfall is collaborating with companies in the automobile industry.

Vattenfall's collaboration with Volvo is based on developing plug-in technology: cars that are charged via ordinary power outlets and that can be driven entirely without emissions. The goal is that mass produced plug-in hybrid vehicles will be launched in 2012. This venture is expected to cost about SEK three billion and will enable Sweden to remain as one of the leaders in advanced environmental engineering. In Berlin Vattenfall is collaborating with BMW on electric cars.

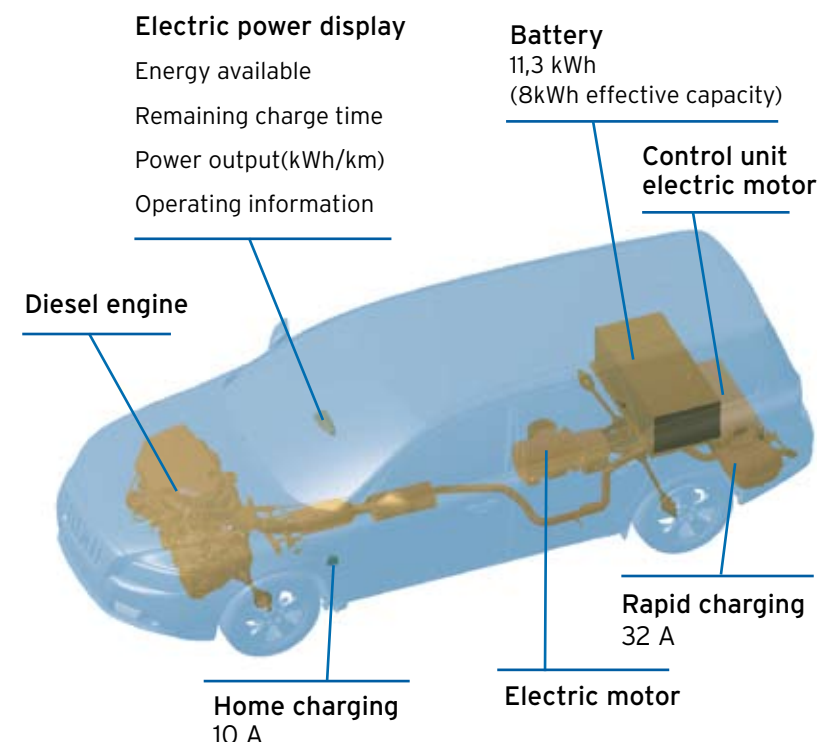
In Amsterdam Nuon is constructing a network of charging stations for electric vehicles. Heating, ventilation and cooling are other areas where increased use of electricity is making possible more energy efficient solutions.

The market for heat pumps is growing and district cooling systems are being built in a number of cities. Via Nuon Vattenfall owns and operates district cooling systems in cities including Amsterdam, Berlin and Hamburg.

Investments in electric cars

Collaboration with Volvo

In 2007 Vattenfall began a collaboration with Volvo Cars to develop electrically powered cars. It should be possible to charge the cars via ordinary power outlets and the cars will be entirely emission free. The aim is that the first cars will be marketed in 2012.



Collaboration with BMW

A collaboration has been underway with BMW since 2008 within the framework of an electric car project in Berlin, where Vattenfall is responsible for the electricity in the form of a network of electricity stations. The intention is to launch emissions free motoring in the German capital and to start to develop the infrastructure required.



VATTENFALL – COUNTRY BY COUNTRY



Letsi.

The Nordic countries

Vattenfall is the largest energy company in the Nordic region and accounts for 20% of Nordic electricity generation.

The majority of the electricity is generated in hydro power and nuclear plants. Vattenfall's electricity generation in Sweden and Finland is climate neutral.

In Denmark Vattenfall is investing in new technology to reduce emissions from its coal-based plants.

The Nordic market accounts for a third of Vattenfall's turnover.

Vattenfall generates, distributes and sells both electricity and heat. Vattenfall has some 1.1 million electricity customers and 1.3 million electricity network customers in Sweden and Finland, which makes Vattenfall one of the largest operators in the Nordic region.

Germany and Poland

Vattenfall has been operating in Germany and Poland for ten years. Operations in these countries account for 60% of the turnover.

Vattenfall's German and Polish operations have 3.7 million electricity customers and 4.3 million electricity network customers.

In Germany Vattenfall is the country's largest supplier of district heating and number three within electricity generation.

In both Berlin and Hamburg around 80% of households are customers of Vattenfall.

Vattenfall is also the largest heat producer in Poland and the largest foreign energy company in the country.

The Netherlands and Belgium

Vattenfall's acquisition of the Dutch company Nuon in 2009 entails an addition of over three million customers. Nuon has 6,000 employees and is one of the three largest companies in the Netherlands within electricity generation, electricity and gas sales and district heating.

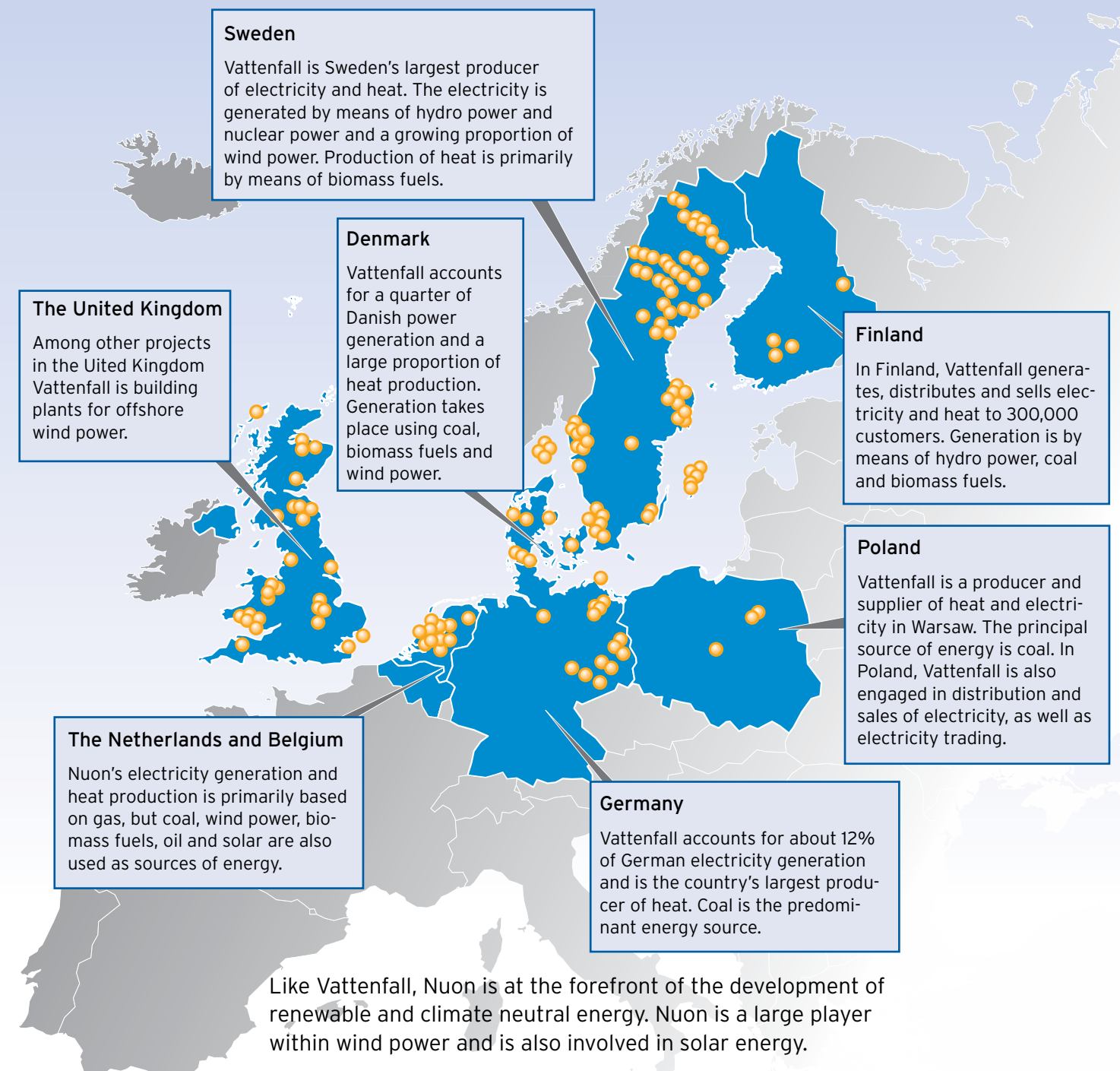
In Belgium, Nuon is the third largest electricity and gas provider. The acquisition of Nuon has also supplied Vattenfall with expertise and production within the field of natural gas. Nuon is a joint owner of 35 gas fields in the North Sea.



Klingenberg.



Nuon is building a pilot plant for CCS technology at the Willem-Alexander power plant in Buggenum, the Netherlands. Emissions of carbon dioxide will be reduced by capturing the carbon dioxide prior to combustion.



The United Kingdom

Vattenfall established itself on the British market with the acquisition in 2008 of three British wind power companies.

Thanet, which will be the largest wind farm in the world when it is commissioned, was included in one of the companies that were acquired.

Vattenfall and ScottishPower Renewables are developing an offshore wind farm that will generate electricity for four million households. Vattenfall has a company together with the Scottish company Pelamis that is constructing a facility for wave power off the Shetland Islands.

Vattenfall also has a jointly owned company to exploit wave power off the Irish coast.

A PLATFORM TO REALIZE THE VISION



During the first decade of the 21st century, Vattenfall has developed from being a Swedish company into a leading European company with operations in eight countries.

Turnover has increased sevenfold - from SEK 28 to 205 billion.

Today operating profit is in the same order of magnitude as the entire turnover at the end of the 1990s. Annual investments are ten times greater than in the late nineties.

The expansion has been possible with no capital contribution from the owner. On the contrary, Vattenfall has been able to provide its owner, the Swedish Government - and thereby the taxpayers - with revenues of SEK 45 billion in dividends.

Vattenfall has consolidated its position as a leading European energy company. However, Vattenfall has simultaneously established a clear position in relation to the climate issue: the goal of making the business climate neutral no later than 2050.

During the last ten years Vattenfall has made great efforts to create a volume of business that is sufficiently large to cope with the investments that are required for continued international competitiveness in a period when great expectations are being placed on energy companies.

The knowledge and resource base that has been developed is creating the prerequisites for Vattenfall to contribute to sustainable development in the countries in which it operates.

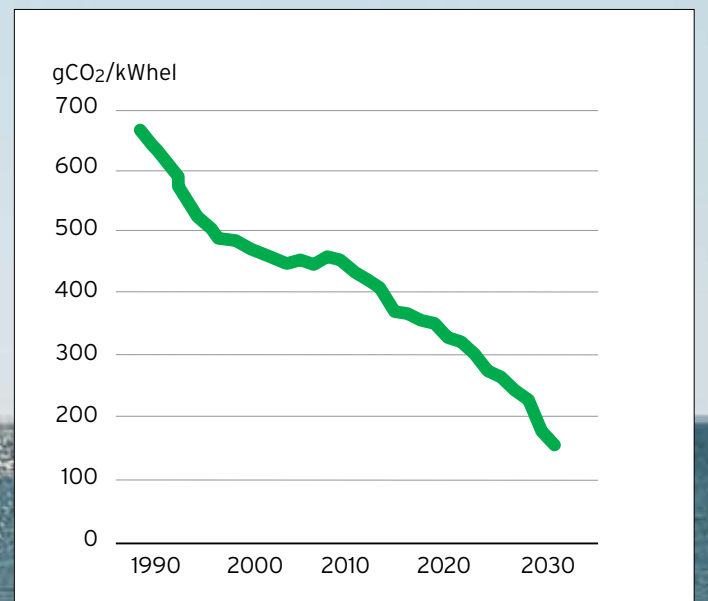
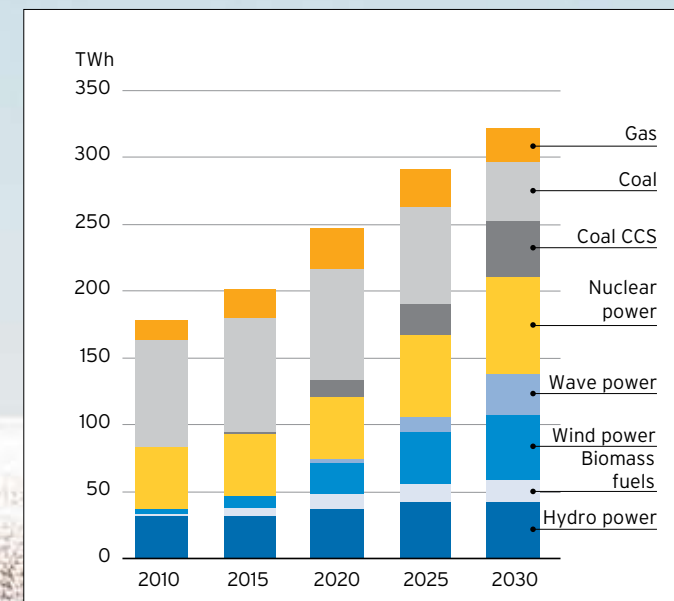
Above all, Vattenfall's contribution to sustainable development is to make electricity clean. Vattenfall is therefore developing wind power and testing ways of combined combustion of biomass in fossil-based plants. At the same time Vattenfall is working on developing future solutions such as capture and storage of carbon dioxide and ocean energy. Vattenfall's vision of becoming a climate neutral company can only be realized if the company remains commercially successful. However, the ambitious environmental and climate targets are also a business strategy for long-term profitability and growth. The energy companies that most rapidly and efficiently adapt their production portfolio and business to tomorrow's conditions will enjoy a great competitive advantage.

The past ten years have established an excellent platform to realize the climate vision and to continue to be a leading company under commercial conditions in the transition to a sustainable energy supply in Europe.

Vattenfall's production - possible development 2010 - 2030

During 2007 the target was set for Vattenfall to halve its carbon dioxide emissions by 2030 in relation to the 1990 level. This target applied to existing operations and planned plants. During 2008 the concept was widened, resulting in the vision that Vattenfall should be climate neutral no later than 2050.

This means that Vattenfall will successively increase the share of generation technologies that produce extremely low emissions and generation based on renewable sources. The diagrams below show how such a development could take place by 2030 and how carbon dioxide emissions could then be substantially reduced per unit of electricity generated.



TEN YEARS OF VATTENFALL

- From a national energy company to one of the leading companies in Europe
- From SEK 28 to 205 billion in turnover
- From SEK 5 to 28 billion in operating profit
- Investments of SEK 340 billion
- SEK 45 billion in dividends to the owner
- The company to be climate neutral no later than 2050

Cover: New HafenCity in Hamburg



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