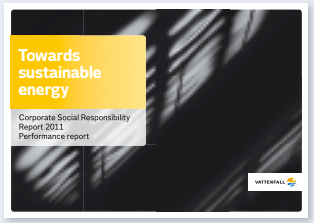

Towards sustainable energy
Corporate Social Responsibility Report 2011
VATTENFALL

Content



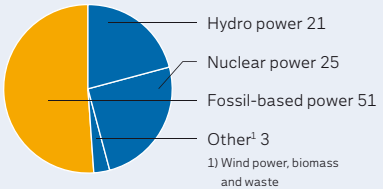
Reporting section

Found on www.vattenfall.com. The reporting section follows the GRI indicator framework, dividing environmental, social and economic performance indicators specified by GRI into sections. In addition to reporting environmental, social and economic performance, the reporting section also describes the governance structure and management systems in place.

Vattenfall today – a European energy company

Vattenfall is one of Europe's largest generators of electricity and the largest producer of heat. Vattenfall's main products are electricity, heat and gas. In electricity and heat, Vattenfall works in all parts of the value chain: generation, distribution and sales. In gas, Vattenfall is mainly active in sales. Vattenfall is also engaged in energy trading and lignite mining. The Group has 34,700 employees. The Parent Company, Vattenfall AB, is 100%-owned by the Swedish state. The core markets are Sweden, Germany and the Netherlands. In 2011 operations were also conducted in France, Belgium, Denmark, Finland, Poland and the UK. Vattenfall has more than 10 million customers.

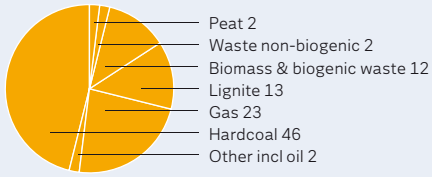
Electricity generation 2011, %



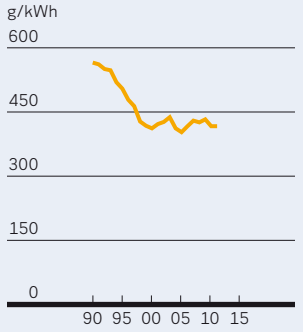
Energy production with low CO_2 emissions
Fossil-based energy production

Vattenfall's total electricity generation amounted to 166.7 TWh.

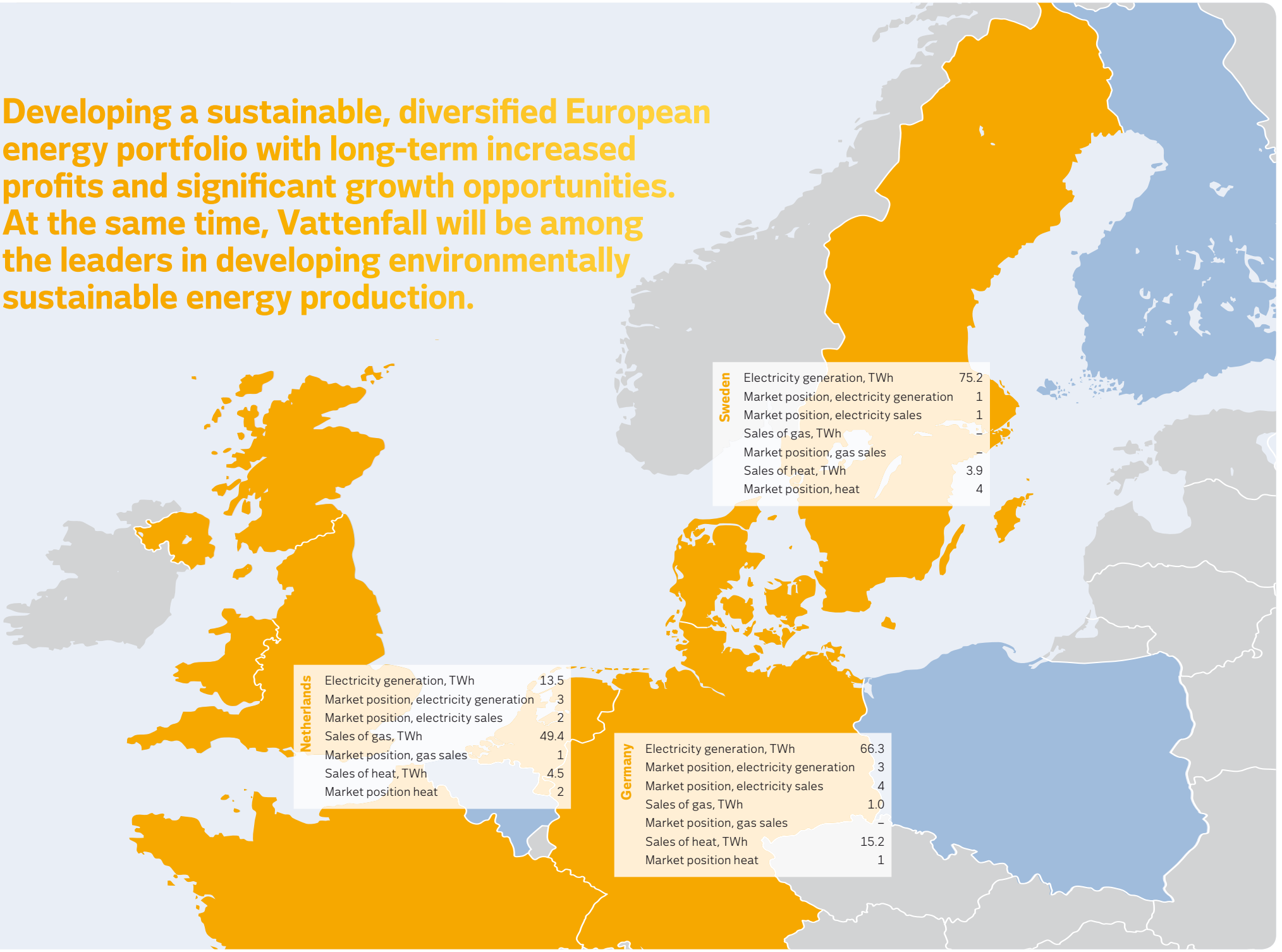
Heat production 2011, %



CO_2 emissions per generated unit of electricity and heat



Developing a sustainable, diversified European energy portfolio with long-term increased profits and significant growth opportunities. At the same time, Vattenfall will be among the leaders in developing environmentally sustainable energy production.



Increased investment in renewable energy sources

In 2011 Vattenfall took several important steps on the path to sustainable energy production. Renewable energy projects have been given a considerably larger share of the investment plan. Our expansion in wind power is continuing, and tests show potential for co-combustion of biomass in hard coal-fired power plants, which can reduce CO_2 emissions from existing assets.

Vattenfall aspires to be a leader in the development of sustainable energy production. Is it possible to do this and at the same time emit such large amounts of carbon dioxide as you do?
Yes, we can – and will – definitely play a part in leading development in this area. At the same time, we must acknowledge that energy companies begin the journey towards sustainable energy production from different starting points. In Vattenfall's case, our large-scale conventional power plants generate cashflow, which we are now investing increasingly in renewable energy production.

How far has Vattenfall come in the changeover to sustainable energy production?
We have made considerable progress. During the coming five-year period, renewable energy production will account for 55% of our investments, compared to 46% during the previous period. A substantial share of investments are in wind power, where Vattenfall is already a leading player. In the same way, we are off to an early start with biomass, where we are at the forefront developments in large-scale co-combustion. In addition, we benefit from a geographic location that gives us great access to hydro power and forest assets. Our long history of running hydro power plants is also a plus. And although nuclear power is not a renewable energy source, by virtue of its very low carbon footprint, it is helping to slow global warming.

"I believe that even seemingly contradictory demands are possible to align."

Isn't there a contradiction in the shift to more sustainable energy production when Vattenfall must simultaneously satisfy its owner's required rate of return and customers' demands for reliable delivery and reasonable electricity prices?
It is only reasonable that great demands are placed on a company like Vattenfall. I believe that even seemingly contradictory demands are possible to align. Vattenfall has been entrusted with generating economic value for the benefit of Swedish society, and we must act responsibly in every context to deliver this value. We are now investing heavily in the build-up of renewable energy production at the same time that the EU countries are acting to make carbon dioxide emissions more costly as a result of political decisions. The more expensive it is to produce electricity and heat with large emissions of CO_2, the more competitive the renewable sources of energy

become. We also have a responsibility to help customers offset higher prices through energy efficiency improvements and advice on saving energy.

What roles will the various forms of energy play in Vattenfall's production mix?
In the scenario I envision, all six energy sources that we use today will also be part of Vattenfall's future – but the distribution among them will be different than today. Wind power – which accounts for a large share of our investment plan for the next five-year period – and biomass will be more prominent. Since roughly a fourth of our energy production today is based on coal, co-firing with biomass has great potential. We are working to improve our access to raw material and are considering our own production of refined wood pellets. These have a high energy content, and tests performed in 2011 show that they work well in co-combustion with hard coal even at high concentrations. Vattenfall's ambition is also to expand in hydro power, where we plan to participate in the bidding process when hydro power assets are put on the auction block in France.

Where does nuclear power fit in with tomorrow's Vattenfall?
Nuclear power will continue to be important in the future, but it is hard to say today exactly what role it will play. The unexpected political decision in Germany to discontinue nuclear power has had substantial, negative one-off effects for Vattenfall in the short term and

"We have cut costs, carried out divestments of non-core assets, and adjusted the investment plan in a way that increases the role of renewable energy."

closes the door for nuclear power as an energy alternative in Germany for a long time to come. In Sweden, Vattenfall is investing in the modernisation and lifetime extension of the Forsmark and Ringhals nuclear power plants at the same time that we have intensified our analysis of the conditions for the construction of new nuclear power reactors that can replace the existing plants when they reach the end of their useful lives.

What will happen with coal power when Vattenfall changes over to sustainable energy production?
Following the completion of the Moorburg and Boxberg coal-fired plants in Germany, no new coal-fired power plants will be built until CCS (carbon capture and storage) technology is commercially viable, accepted by the general public and politically decided on. The newest power plants are designed to be able to incorporate CCS technology, while other coal-fired plants will be operated until they are no longer economically profitable or have reached the end of their technical lifetimes. Co-firing of biomass will be introduced in power plants where it is possible.

What lessons have you learned from the resistance to CCS technology?
At present Vattenfall is conducting work in CCS at a pilot scale, and our plans for large scale demonstration have been shelved due to the lack of adequate legislation supporting storage in Germany. One lesson is that it takes time for new technology to be accepted; another is that Vattenfall may have taken on too much alone in its work with CCS technology. In retrospect, we can say that we should have sought closer co-operation with Germany's steel and chemical industries and developed CCS technology together with them.

What advances did Vattenfall make in sustainability in 2011?
During the year, we created conditions for long-term sustainable energy production by laying a solid foundation for major investments in renewable energy sources. We also delivered in accordance with our stated strategy – we have streamlined and cut costs, we have carried out divestments of non-core assets, and we have adjusted the investment plan for the coming five years in a way that increases the role of renewable energy.

I want to acknowledge the positive spirit with which employees throughout Vattenfall's large organisation embraced the major

challenges they faced in 2011. Not least in connection with extraordinary events, such as political developments in Germany, or the severe storms that swept over Sweden and knocked out the power to many homes. Vattenfall's employees have delivered above and beyond expectations. As CEO, I am very proud to see such dedication.

What were you less satisfied with during the past year?
As I already mentioned, the unexpected decision in Germany to discontinue nuclear power, which had a major negative impact on Vattenfall. We can also say that we did not fully remedy the problems at Ringhals, and the fire that broke out during the spring was the kind of event that just can't happen at a nuclear power plant. At the same time, however, operating reliability at the Swedish nuclear power plants has improved – during the cold winter of 2010/2011, all seven reactors generated electricity, and this winter six of seven reactors are on line.

Looking several years ahead in time, how do you envision Vattenfall with respect to sustainability?
First and foremost, Vattenfall's CO_2 exposure will be considerably lower than today, and our entire system will be permeated by sustainability. Today society does not have the level of trust in the energy industry and Vattenfall that is necessary for a long-term, successful partnership. In my future vision, we have restored this trust and are a reliable player and partner in the build-up of a sustainable and energy-efficient society.

We will be a company that has a closer relationship with its customers. Advice on the best ways of saving energy is becoming increasingly important, and for me there is no question that Vattenfall will have the expertise and enthusiasm to offer that advice.

Like today, Vattenfall will work throughout the entire value chain and in several areas of Europe, making us a key partner in the development of tomorrow's sustainable and energy-efficient society. Sustainable Cities, One Tonne Life and our collaboration with Volvo on a plug-in hybrid car, which will be launched later in 2012, are just a few examples where we have already teamed up with others in extensive projects aimed at lowering energy use and increasing sustainability.

Stockholm, March 2012

Øystein Løseth
President and CEO

Strategy for sustainable energy

Finding balance to meet expectations

The expectations of Vattenfall's stakeholders – and those of the energy industry – can be illustrated by the "Energy Triangle" at right.

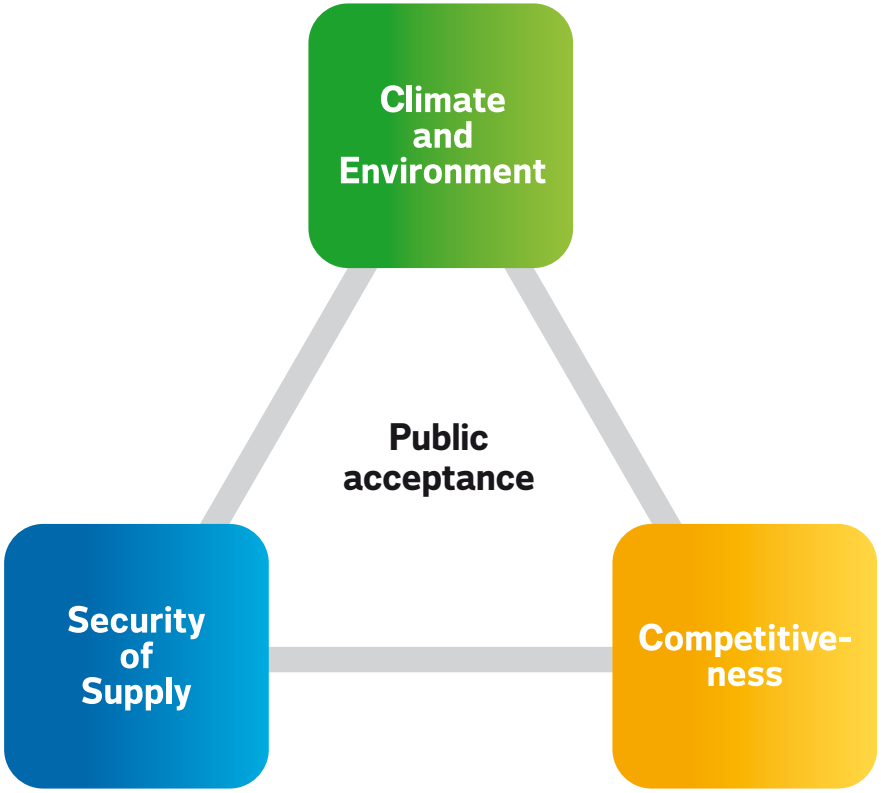
The illustration shows the need to balance expectations about security of supply, reducing environmental impact and keeping energy affordable through cost competitiveness of energy production, distribution and use.

In our industry, security of supply entails both the secure sourcing of fuels and reliable production and delivery of electricity and heat, to meet demand essentially 100% of the time. On-demand availability of electricity and heat is taken as a given by most of Vattenfall's stakeholders.

Increasingly governments, civil society, customers, and investors are raising their expectations about the environmental sustainability of the energy sector. While concerns about climate change are paramount, stakeholders also expect utilities to increase their use of renewable energy sources and to become more resource-efficient overall.

Finally, stakeholders want energy delivered at a competitive cost. This is equally true for households, for whom energy is claiming an increasing share of disposable income, and large industrial customers, governments and investors. While prices are set by policy and market mechanisms, companies must have competitive costs if they are to gain access to markets and customers.

Some options are strong in all three dimensions, but in many cases



Energy triangle
The energy triangle represents society's efforts to balance three dimensions in the development of the energy system. When these dimensions are in balance public acceptance of the industry improves.

trade-offs between them must be made. At Vattenfall, we develop our business in this context: if our strategy reflects the balance that society wants to see, we will gain the public's trust and, eventually, market share.

The European energy system: transitions and tensions

The European energy system is changing, driven primarily by concerns about climate change and resource availability and sustainability. The so-called 20-20-20 targets have led to new policies to reduce the EU's greenhouse gas emissions, increase the use of renewable energy sources, and improve the overall energy efficiency of the economy by 2020. (Read more about Vattenfall's own targets for 2020 on pages 9–11.)

Beyond 2020 even more ambitious goals have been articulated, particularly with respect to greenhouse gases. The European Commission has made it clear that emissions should be reduced by 80% or more by 2050, and that this implies electricity generation that is decarbonised by 95% or more. This low-carbon electricity would then power more electric cars, heat pumps, and industrial processes that formerly relied on fossil fuels.

Many tools to support this transition have been identified, and some of them – particularly renewable energy technologies like wind, bioenergy and solar photovoltaic power – are growing very rapidly in response to these policies. (Read more about Vattenfall's investment in renewables on page 8.)

"The European energy system is changing, driven primarily by concerns about climate change and resource availability and sustainability."

Sustaining this rapid growth – and encouraging other technologies such as carbon capture and storage (CCS) and smart grids – will be necessary to live up to Europe's ambitions. However, this effort is already putting pressure on the energy system, both technologically and economically, and that pressure is likely to increase and strain the balance in the energy triangle. Vattenfall and its competitors must work with stakeholders to find win-win solutions where possible and acceptable trade-offs where necessary.

While increasing the role of renewables reduces dependence on finite and often imported fossil resources such as oil and coal, it is creating challenges for the secure delivery of electricity. Variable sources like wind and solar introduce an element of irregular supply and cannot be increased or decreased in response to demand. If system reliability is to remain near 100%, investments in backup capacity, grid expansion, smart grid technologies and demand response will be needed. Vattenfall's investment strategy is therefore complemented by investments in flexible technologies that

increase system stability and balance, such as improved efficiency of hydro power and new gas capacity.

While renewable energy is becoming less expensive over time, its costs are in many cases still higher than conventional technologies and must be covered by some combination of higher prices and taxpayer subsidies. If society does not wish to pay significantly more for electricity and heat for the long-term, these costs will have to be offset by improved technology and greater efficiency. The major economic challenges facing Europe today have served to intensify the debate about the proper balance between climate action and cost. While investing to address climate change, Vattenfall remains committed to delivering large quantities of power at a competitive cost to the markets – which is a primary reason that we will continue to operate coal-fired power plants in the coming years.

Reshaping the portfolio

Vattenfall's assets – and particularly its generation portfolio – need to reflect the balance society is seeking from the energy triangle. It is not always clear which trade-offs society will make in the long-run, but a pragmatic approach is to focus on "win-win" opportunities in the short-term.

Investments in wind power, and offshore wind in particular, are well supported by policies and subsidies and are a major focus of our portfolio development and will be a major focus of our investment

Percentage of total investments in generation assets (excludes networks, IT, and gas storage), 2012–2016. From 2016 to 2020, we anticipate the large majority of investments to be in low-emitting capacity, with a focus on renewables. The remainder will cover maintenance of existing assets.

plans through 2020. Already production has grown from 1.6 TWh in 2008 to 3.4 TWh in 2011 (see page 17).

While coal power is still needed to provide affordable baseload generation, Vattenfall can reduce its CO_2 exposure and CO_2 costs by co-firing biomass in hard coal–fired plants, an approach that can be implemented relatively quickly, though it is today still dependent on subsidies. An important challenge is sourcing biomass sustainably, and we are working together with stakeholders to establish principles and best practices throughout the supply chain (see page 19). Because of the increasing use of renewables in the system, we also expect that our coal-fired plants will see lower utilisation later in the decade.

Natural gas provides a lower-emitting and more flexible option, and Vattenfall's generation from gas will increase through 2020, becoming especially important as generation from coal decreases.

Our existing hydro and nuclear power assets will continue to play an essential role, and our investments are focused on increasing efficiency and availability of existing assets. The sale of concessions in France has opened the possibility to expand in hydro power, which is being pursued.

In the longer term, the shape of the portfolio will also be defined by society's decisions and market conditions. The decision to phase out nuclear power in Germany will have an impact throughout the energy system there, but it remains unclear what balance of fossil and renewable power will replace nuclear power in the system. The long-

"The portfolio will be defined by society's decisions and market conditions."

term future of coal power, in particular, is tied to political decisions about CCS. Vattenfall believes that CCS is needed to meet climate goals affordably. But public resistance and a lack of political support in Germany have forced us to shelve our planned CCS demonstration project in Jänschwalde.

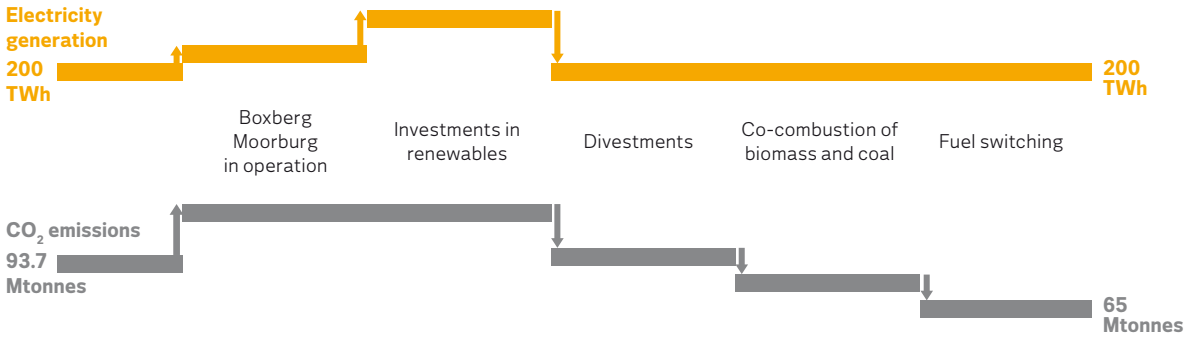
Our progress

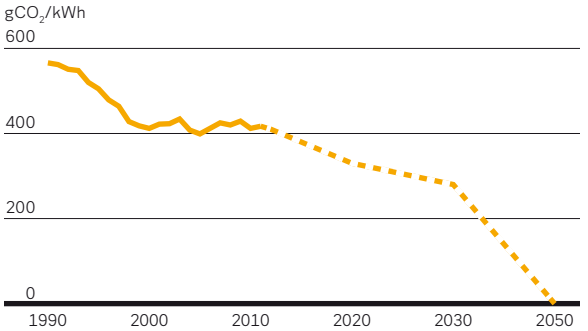
In 2010 Vattenfall's owner, the Swedish state, updated the company's Articles of Association. This revision aligned the company's objectives with the objectives being set for the European energy system: the 20-20-20 targets.

Reducing emissions: 50% by 2030

In 2010 Vattenfall adopted a strategic target of reducing absolute emissions of CO_2 in Vattenfall's generation portfolio to 65 megatonnes (MT) by 2020 in pro rata terms (see box, page 10). This target is based on the need to reduce financial exposure to CO_2 costs and can be met in part through divestments of high-emitting assets, especially outside our core markets. Although these divestments will not lower absolute emissions in Europe, they will lower the emissions

Vattenfall's roadmap for reducing CO_2 exposure 2010–2020





Vattenfall's strategy means that we will reduce our CO_2 exposure from 93.7 MT in 2010 to 65 MT in pro-rata terms by 2020. Meeting the target of reduced emissions from our portfolio will require investments in new generation (primarily wind and natural gas). Long-term, the increased production will likely reduce the need to run our coal-based plants, resulting in further reductions.

Our plan also means that we cut emissions from our existing fossil-based production, primarily by co-combustion of biomass and coal and increasing the efficiency of existing capacity. Parallel to this, our work to increase efficiency and output from our hydro and nuclear power plants continues.

For strategic and financial reasons, we are also considering divestment of certain higher-emitting plants, especially those outside our core markets. These divestments will not lower emissions in Europe per se, but they lower the emissions in Vattenfall's portfolio and provide us with the resources to invest in lower-emitting technologies.

As shown in the illustration above, Vattenfall's CO_2 exposure will go up before going down, as two major coal-fired plants that are currently under construction, Boxberg and Moorburg, come on stream in the next five years.

in Vattenfall´s portfolio. Vattenfall's emissions decreased from the reported 93.7 MT in 2010 to 88.6 MT in 2011 (in pro rata terms).

Contribution to emission reductions is best measured by the emissions intensity of Vattenfall's portfolio. Vattenfall's target is to reduce its CO_2 emissions by 50% by 2030, from 1990 levels. With today's portfolio, this would correspond to an emissions intensity of 280g CO_2/kWh, though the 50% target will be calculated based on the portfolio we own in 2030, in accordance with the Greenhouse Gas Protocol. To date Vattenfall has reduced its emissions intensity by 26.3% since 1990, adjusted for changes in the company's structure since then.

In 2011 Vattenfall's emissions intensity was 417 g CO_2/kWh. This

number is likely to increase through 2015 as new coal-fired plants come on line, before declining steadily to 2020.

Increasing renewables: 8 TWh from wind and biomass by 2020
Benchmarked against projected industry trends, Vattenfall has set a goal of generating 8 TWh of electricity from wind and biomass by 2020.

In 2011, Vattenfall generated 3.4 TWh of electricity from wind and biomass, up from 2.2 TWh in 2010.

Supporting energy efficiency: Continuous improvement in our operations and in helping our customers use energy
While the results of our energy efficiency initiatives cannot be quantified, in 2011 we initiated or strengthened energy initiatives including the following: Expanded sales efforts related to insulation and heat pumps in the Netherlands and Sweden; new and improved energy management systems for customers; and increased public awareness campaigns. See page 22 for details.

Reinforcing values and policies
To better ourselves and help us to act consistently over time, we have reinforced our corporate values and improved our policies. Our company values unite us, directing our actions:

Safety: we care about the health and safety of our employees, contractors and the society. All actions have to be taken in a safe and responsible manner.

Performance: we perform at our best and continuously evaluate our actions in order to improve.

Co-operation: we trust each other and openly work together – thinking, acting and sharing knowledge while learning from each other.

What is Vattenfall's role in society?

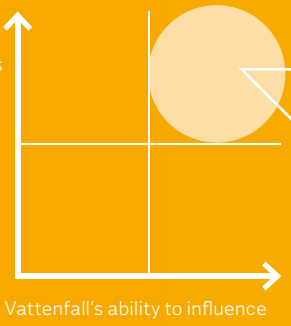
Access to energy is a precondition for the function and development of society. However, all energy generation has an impact on the environment. Vattenfall supports sustainable development in society by managing the balance between secure energy supply and environmental and social consequences in a responsible way.

An energy company is a partner to society in many aspects, with deeply rooted relationships and mutual dependence with many different stakeholders. Foundations for working partnerships are trust and confidence, something you earn. In its most basic form it comes down to using sound judgement to balance the needs and wants of our stakeholders.

Vattenfall is criticised in some areas: the investments in fossil energy sources and high greenhouse gas emissions, nuclear safety and transparency in communication and remuneration. Yet Vattenfall performs many crucial functions: delivering energy to more than 10 million customers every day, building and maintaining critical infrastructure, working with local communities and contributing SEK 4.4 billion to the Swedish state and its 9.5 million citizens.

Understanding and responding to society's expectations is crucial to Vattenfall's business. We study and respond to stakeholder expectations at every level of our business. Some of the questions and comments received through those studies are noted here – and the topics raised in this report are based on this feedback.

Materiality analysis



Emissions and climate change

Are you cutting your CO_2 emissions?

No, not yet. Emissions are expected to increase further before they begin to come down.

Read more on page 14.

Responsible sourcing

Are you sourcing responsibly?

Yes. We set standards and work with others to make them more impactful.

Read more on page 18.

Energy use

Are you helping to save energy?

Yes, we are doing a lot, but we can do more. Saving energy has never been more important.

Read more on page 22.

Nuclear safety

Is it responsible to continue?

Yes, we will continue to operate nuclear power. Nuclear will be important for many years to come.

Read more on page 26.

Employee relations

How does the energy transition impact employees?

Working in a changing context is challenging, but rewarding.

Read more on page 30.

Are you cutting your CO_2 emissions?

No, not yet. Emissions are expected to increase further before they begin to come down.

Our emissions of greenhouse gases[1] are set to increase, as two new coal-fired power plants come on line. In 2012 we will open a new lignite-fired plant at Boxberg in Germany, which we expect will emit approximately 1,000g CO_2/kWh. In 2015 we will bring the hard coal–fired plant in Moorburg, which we expect will emit approximately 710g CO_2/kWh, into full operation. These plants, although highly efficient, will increase the emissions intensity of Vattenfall's overall portfolio.

These two projects have been under development since 2006. The new generation projects that we have undertaken since then are focused on lower-emitting natural gas and wind power. The effects of new gas-fired and wind power projects on Vattenfall's overall emissions will begin to be seen after 2015.

Managing the transition

Fossil fuels are very useful: historically they have been the most energy-rich, affordable, and practical resources. The global economy was built on fossil fuels. Climate change means that this has to change, but it can't be done suddenly without disruptions. Lignite has been the most important domestically available fuel for Germany, and we will continue to operate our lignite power plants as a way of keeping the German energy system affordable and reliable through the transition to a low-emitting energy system. At the same time we will be shifting our portfolio towards renewables and gas (see 5-year investment plan, page 8).

"Our goal is to reduce the emissions intensity of our electricity and heat by 2030 by 50% from 1990 levels."

In the long-term, we expect that fossil energy combined with carbon capture and storage (CCS) will contribute to stable and affordable electricity and heat generation in Europe. At present, however, the political framework needed to make underground storage of CO_2 feasible has been slow to emerge. This is why, after years as a leading actor in the development of CCS, in 2011 Vattenfall decided to shelve its plans for a large-scale demonstration project at Jänschwalde in Germany. We continue to be active in research and development of CCS and have high hopes for the technology in the long-term.

By 2020 we aim to reduce our exposure to CO_2 prices by reducing the emissions in our portfolio to 65 MT (in pro rata terms). A certain portion of this target can be achieved through divestments, especially outside our core markets, which will not necessarily reduce overall emissions in Europe. These reductions can be best measured by an emissions intensity target.

Our goal is to reduce the emissions intensity of our electricity and heat by 50% by 2030 from 1990 levels. With today's portfolio,

1) Emissions per unit of energy, or g CO_2/kWh. Our total emissions may decrease depending upon divestments.

Future possibilities – Due in large part to planned investments in wind power, we expect that after 2016 the large majority of our capital expenditures will be in low-emitting energy sources.

this would correspond to an emissions intensity of 280g CO_2/kWh, though the 50% target will be calculated based on the portfolio we own in 2030, adjusting for changes in the company structure in the interim in accordance with the Greenhouse Gas Protocol. Vattenfall has so far reduced its emissions intensity by 26.3% since 1990.

Investing for the future

Achieving this reduction will require a number of different investments in new assets and improved performance from our existing assets, including our hydro power and nuclear power plants in Sweden.

The largest part of the new investments will go to wind power. In the coming five-year investment period, we expect 33% of our capital expenditures on generation to go to wind power. Vattenfall's wind power today is approximately half onshore and half offshore, but large offshore projects such as DanTysk and East Anglia, and upcoming projects in the UK will add the majority of new wind capacity in the next phase of investment.

Gas-fired power will help Vattenfall maintain its generation of baseload electricity and heat, with about half the emissions of coal[1]. Gas-fired plants are also more flexible and can be used to balance

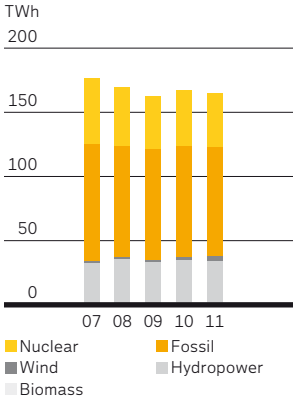
power in the system against demand – an increasingly important function as more wind and solar power is built. The gas-fired plant at Magnum in the Netherlands will open in 2012, and new gas capacity will be developed for the district heating networks in Berlin and Hamburg in Germany.

The bulk of Vattenfall's emissions come – and will continue to come – from coal-fired power and heat generation. The amount of coal-fired generation in our portfolio will decrease, as we sell off plants in non-core markets, but we also must address the emissions in our core assets. The best available option is co-combustion of biomass in hard coal plants. Vattenfall is already a major player in biomass, which fuels most of our heat generation in the Nordic countries. Our current investments involve testing and minor refurbishments to plants in Germany and the Netherlands so that co-combustion can begin there. Our ambition is to replace as much as 50% of our hard coal with biomass. Achieving high levels will depend on the availability and affordability of sustainable biomass (see page 19), and receiving the right incentives from CO_2 prices and direct subsidies.

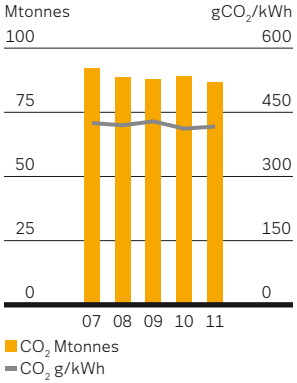
1) IPCC Guidelines for National Greenhouse Gas Inventories

Key indicators

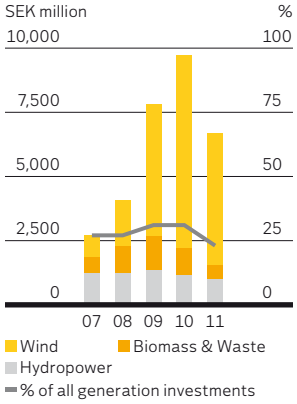
Generation



CO_2 emissions



Investment in renewables[1]



1) 2 year rolling average.

Important events

Acquisition of wind power project – Sandbank
Vattenfall acquired the Sandbank offshore wind power project in Germany, which will eventually feature 96 turbines and a total capacity of 576MW. Construction may begin as soon as 2015.

CCS project in Jänschwalde shelved
Vattenfall shelved its plans for large-scale CCS demonstration in Jänschwalde, Germany, as the necessary legislative framework covering underground storage did not emerge. Vattenfall will continue to be active in research & development of the technology, and in 2011 joined the Ferrybridge pilot project in the UK.

Nuclear power phase out in Germany
The decision to phase out nuclear power in Germany is reshaping Germany's effort to reduce greenhouse gas emissions. In the near term, increased coal- and gas-fired power production will have to cover for off line nuclear capacity, while in the longer-term even greater investment in renewables will be required.

Climate and Energy Roadmaps released
The European Commission released its Climate and Energy Roadmaps, laying out potential pathways towards an energy system in 2050 with emissions 80%–95% below 1990 levels. While the Roadmaps envision several alternative scenarios, all feature significant improvements in energy efficiency, increased use of renewable energy, and a power sector that will be essentially CO_2-neutral.

Agreement to extend the Kyoto Protocol
The COP 17 climate negotiations in Durban, South Africa resulted in an agreement to extend the Kyoto Protocol through 2017 and negotiate a replacement treaty, which will involve commitments for all countries, by 2015.

Are you sourcing responsibly?

Yes. We set standards and work with others to make them more impactful.

Vattenfall procures materials, goods, and services from more than 30,000 different suppliers. One way we can support sustainability and responsible business principles is through our relations with these suppliers. By setting and maintaining standards for the conduct of our suppliers, we also do our company a service, by decreasing risks that can interrupt our supplies, raise costs for our operations and damage our reputation and relationships with stakeholders.

Much of our purchasing – for example, our purchases of machinery or engineering services – is done from companies in the European Union and other areas with strong regulatory enforcement and a strengthening practice of corporate social responsibility. Nonetheless, we seek to establish and apply consistent standards for all our suppliers, building on the principles of the United Nations' Global Compact, taking into account current environmental best practice, human rights and reasonable safeguards of ethical performance.

Sourcing fuels responsibly

Responsible sourcing of fuels is particularly challenging. The supply sources for hard coal, biomass, uranium, and natural gas are often located far from Vattenfall's home markets, and the supply chain for their production and delivery can often be complex and difficult to follow. In some cases, such as coal and natural gas, supplies include spot market purchases from pools of suppliers. Many of these fuels are sourced from countries with different standards of regulatory oversight and enforcement, placing a greater responsibility

"By setting and maintaining standards for the conduct of our suppliers, we also do our company a service, by decreasing risks."

on Vattenfall as a purchaser. And in some cases, such as biomass, issues surrounding sustainability and responsible production are widely debated, and best practices are still being defined. Vattenfall has had a checklist for biomass purchases since 2009, but is now developing a framework that can be applied globally, adding food security and social aspects to environmental criteria, and providing a way to measure and report results.

Issues of concern for hard coal sourcing include mine worker safety, labour/management relations, corruption, and local environmental and social impacts of mining. For biomass, life cycle greenhouse gas emissions, environmental impacts of cultivation, effects on food production and prices, and impacts on local economies are all important considerations. In sourcing uranium, mine worker health and safety, local ground water impacts, consideration of indigenous populations, landscape restoration, and supply chain security and integrity are paramount.

Given these complexities, Vattenfall works with three kinds of tools to ensure responsibility in our sourcing:

Important events

Biomass sourcing in Liberia

In 2011 Vattenfall took the first deliveries of wood chips from Buchanan Renewables Fuel (BR Fuel). In the initial phase Vattenfall will source 500 thousand tonnes of biomass from depleted, non-producing rubber trees in Liberia. During the year, BR Fuel adopted a CSR policy and updated its environmental policy, and both are currently implemented in the company. Vattenfall's venture has nonetheless been criticised in a report by the Dutch non-profit SOMO and the Liberian Green Advocates, which claim that small holders are not being fairly treated and that the production is driving up prices of charcoal, among other criticisms. A project called Farmbuilders had in fact already been formed by BR Fuel to focus on small holders and specific issues related to them.

Bettercoal initiative

Bettercoal, registered in the United Kingdom, is a non-profit, membership-based initiative whose mission is to advance the continuous improvement of corporate responsibility in the coal supply chain. The industry-led initiative seeks to improve business practices at the mining level by engaging stakeholders and is based on a shared set of standards, the Bettercoal Code.

Establishing sustainability criteria for biomass

Vattenfall finalised an agreement with the city of Berlin, establishing sustainability criteria for woody biomass to be used in heat and power generation there. The agreement covers criteria for environmental, social, and greenhouse gas accounting for the full supply chain. The standard will apply only to biomass combusted in Berlin, but will be co-ordinated with voluntary standards used throughout Vattenfall.

A Supplier Code of Conduct. While conditions vary among our suppliers, it is important that we have an overall code of conduct that "sets the bar" for doing business with Vattenfall. Vattenfall adopted a code in 2008 and is continuously revising it for more effective implementation. This general policy applies to all suppliers but is also the framework for the development of tailored policies, for example concerning nuclear fuel, biomass and coal.

Due diligence and audits. Ensuring that our suppliers are living up to the Code of Conduct and our expectations of them require that we evaluate their operations, both before entering a contract and via follow-up audits.

Both types of evaluation can typically include a review of inherent country risks, including the supplier's country's acceptance and implementation of important treaties and conventions, reviews of health, safety, and environmental management systems in place at the supplier company, and a "good citizen review" that looks at relationships with society and neighbours. Audits are designed as follow ups of initial due diligence and vary in frequency based on perceived risks.

Contributing to joint initiatives

Our ability to impact practices among our suppliers is limited if we act alone – suppliers who do not accept one company's conditions can sell to that company's competitors, creating pressure towards the "lowest common denominator" standards in the industry. This is especially true where fuels are sold in large spot markets and not contracted directly. For this reason we are working with our industry peers to develop joint standards, sometimes in conjunction with regulatory developments, and other times on a purely voluntary basis.

Together with the World Nuclear Association, we have worked to define 11 principles for managing radiation, health and safety, and environmental issues. The resulting joint policy document, "Sustaining Global Best Practices in Uranium Mining and Processing", aims at sustaining best practice and promoting it among new participants in the uranium supply chain.

Vattenfall, together with its peers in the European energy sector, has taken a similar initiative to improve corporate responsibility in the hard coal supply chain. The Bettercoal initiative seeks to establish a Code of Conduct in coal mining that supports continuous improvement by suppliers and sets a framework for purchasers' own policies. The initiative also enhances transparency within the supply chain, allowing participating companies to share information about the social, environmental and ethical performance of suppliers (see box, page 20).

What do we purchase?

Some key data on traded commodities and fuels.

9.2 Mtonnes hard coal Our purchases are made mainly through bilateral contracts with coal suppliers. We purchase both for use in our own plants and for sale to 3rd parties.

8 bcm gas Vattenfall maintains commercial relationships with several major upstream and midstream players, who themselves source gas from locations including the North Sea and Russia.

1,278 tonnes uranium Vattenfall sources uranium from Namibia (approximately 30%); Australia (approximately 30%); and Russia (approximately 40%).

600 kilotonnes biomass Biomass is sourced internationally, from locations including Liberia, the Baltic region, the Iberian peninsula and Canada. Large volumes (for example waste wood) are also sourced locally and not in global markets.

27 million CERs Vattenfall contracted 60 projects representing approximately 27 million Certified Emission Reductions (CERs), each equivalent to one tonne of avoided CO_2. These projects do not reflect Vattenfall's compliance purchase of CERs but our involvement in the so-called primary market for the Clean Development Mechanism (CDM).

Are you helping to save energy?

Yes, we are doing a lot, but we can do more.
Saving energy has never been more important.

It may seem odd that a company in the energy business wants to help people use less of its products. But there are good reasons for Vattenfall to work on energy savings, both in our own operations and on behalf of our customers. In fact, the reasons for doing so have never been more compelling.

First, our industry is growing increasingly competitive. If we are to succeed in the electricity and heat markets, we will have to be cost-competitive in our generation of electricity and heat, which means we must maximise the efficiency of our operations.

The second, equally important driver of our work on energy savings is our customers. Both businesses and households expect us to help them make better use of our main products, because saving electricity and heat helps them save money and decreases their environmental footprint. In many cases our customers demand services and products that help them do so.

Finally, society expects us to do so. The transition to a sustainable energy system will be much more affordable and practical if economically beneficial energy savings measures are put in place. This reality has driven a demand for both information and for new products and services outside of our traditional markets.

“Businesses and households expect us to help them make better use of our core products.”

Efficiency in our generation

Upgrading components in our power plants in order to improve efficiency is a regular part of our work. But we’re also testing other ways to improve the efficiency of our operations: in Germany we’re working on upgrading the fuels in our lignite plants, and even on redefining the notion of the power plant.

Lignite is Germany’s primary source of energy. However, more than 50% of the fuel’s weight is water, which has significant impact on the net efficiency of conventional lignite power plants. Since 2008, Vattenfall has been working in its pilot plant in Schwarze Pumpe, Germany, to develop an efficient process – called pressurised fluidised bed drying (PFBD) – to reduce the moisture content of lignite before combustion and thus increase efficiency. Tests show that the process results in a net efficiency increase of up to 5% along with a 10% reduction in CO_2 emissions. Dry lignite will also help lignite plants operate more flexibly and, eventually, will be required for the incorporation of carbon capture and storage (CCS) technology. The process remains expensive, however, and will likely become commercialised only with a much higher CO_2 price.

In order to safeguard grid stability we are also developing a “virtual power plant”. Our virtual power plant transmits information between the grid and decentralised heat pumps and small scale combined heat and power (CHP) units at our customers’ sites. When the grid reports a surplus of wind power, the control room instructs

Vattenfall and partners have begun work on transforming the electricity grid in Gotland, Sweden, into a "smart grid". The project involves upgrading the existing grid with smart components, building an energy-storage facility, improving communication and testing the ability of various marketing models to influence customers' energy habits. Because Gotland's electricity already includes more than 30% locally-generated wind power, and because the island's grid can be separated from the mainland's, the project could serve as a model for future power systems.

heat pumps to use the extra electricity to make heat to be stored for later use. When the grid reports a shortfall of wind power, the control room instructs connected CHP units to generate extra heat and power, with the latter being fed into the grid to compensate for shortfalls. This arrangement can result in more efficient use of intermittent energy sources like wind, and a decrease in the need for backup power plants.

Our customers' efficiency needs

Our customers want to find ways to save energy, too. In many cases the best energy savings technologies are not new. In the Netherlands, Vattenfall is a market leader in insulation, having installed 4.3 million m^2 since 2008, including cavity wall, floor, and loft insulation. See page 25 for information on the ambitious insulation work at Kroeven.

Sometimes the best product is advice. In the Netherlands our Ebatech consultants provide personalised advice on energy efficiency and other sustainability objectives, and in Sweden we perform "Energy Audits" for our business customers. Several of our product packages also include advice from experts – not just on technology, but on behavioural changes that can save energy.

For many customers, information is the most important tool, and

in each of our core markets we offer digital tools that help customers manage their energy use. In Sweden, Energy Watch provides real-time visualisation of the electricity being used by appliances in the home, and comes with analysis tools to help users find savings. In the Netherlands we offer E-Manager, a similar data and analysis package that also allows for remote control of lights, thermostats, and appliances. In Germany the Energy Controlling Online (ECO) tool allows our business customers to monitor their energy use online.

Vattenfall also feels a responsibility to inform the general public about the potential to save energy. In the Netherlands our Energie-Genie.nl website provides information targeted at school children. In Finland and Sweden we have initiated high-profile "challenges" whereby families attempt to reduce their energy consumption and CO_2 emissions. The Finnish challenge used celebrity families to drive media interest, while in Sweden, the "One Tonne Life" project, initiated with Volvo Cars and A-Hus (see box, right), reached more than one-third of adult Swedes, half of whom said that the project inspired them to take action in their own lives (TNS/SIFO 2011).

Growing awareness about the potential for energy savings has also created new areas of business for Vattenfall, such as the "Sustainable City" partnerships in Uppsala, Hamburg, Berlin and Amsterdam, which provide services ranging from efficient heat and customised technology solutions to services and analysis. In all three of our core markets e-mobility has become a new business for Vattenfall, as efficient electric cars become an increasingly attractive alternative to conventional combustion engine cars.

Important events

Launch of E-Manager
In November 2011 we launched E-Manager, our monitoring and analysis tool for energy savings in the Netherlands.

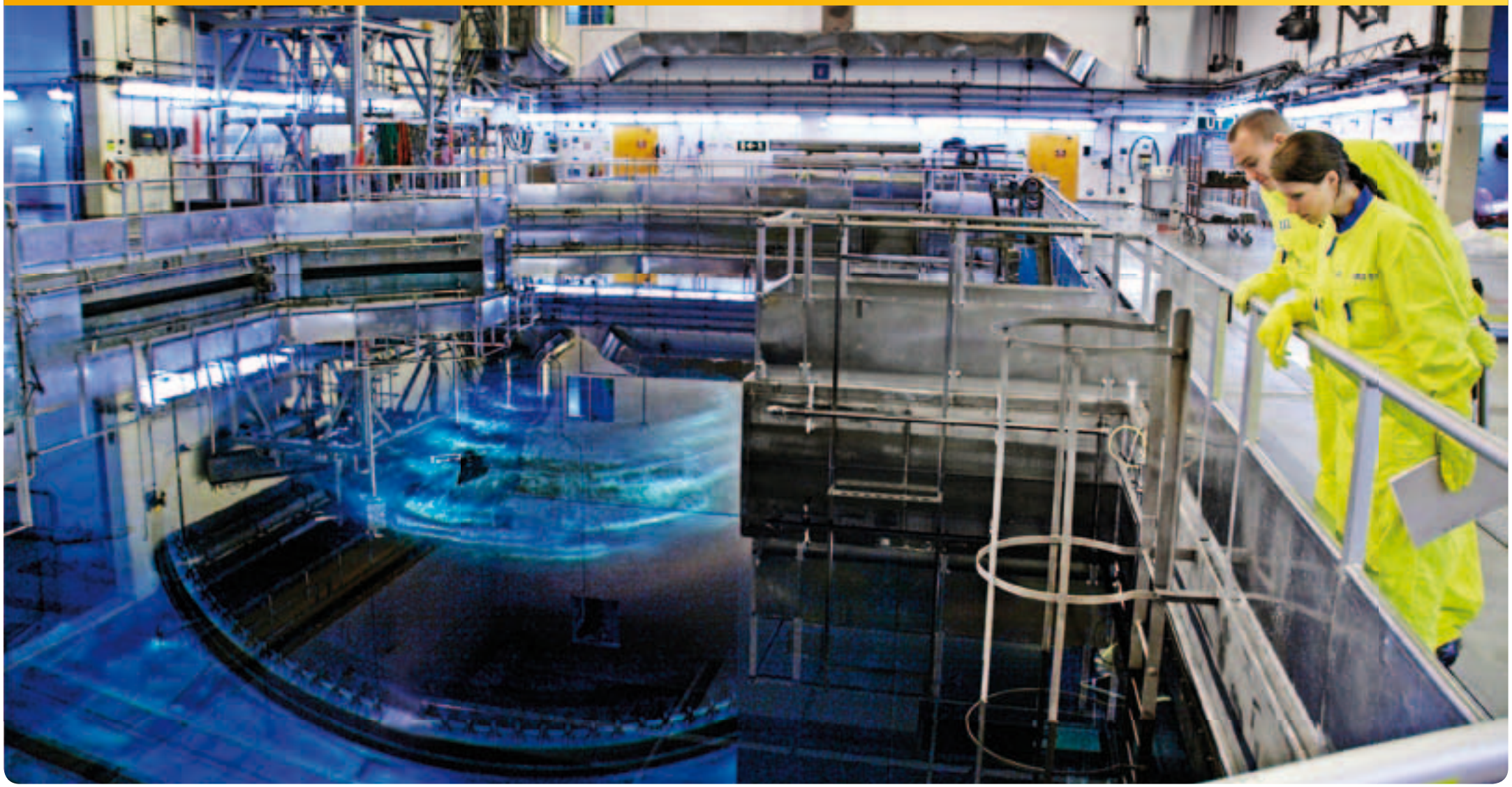
Kroeven project
In 2011 we delivered insulation to 120 of 246 homes being renovated at the Kroeven project in Roosendaal, the Netherlands. The renovated homes are expected to reduce gas consumption by 77–86%.

Heat pump package offering
In 2011 Vattenfall began offering a heat pump package in Sweden. The package includes inspections and expert advice, and can reduce energy consumption and costs by 30–55%.

One Tonne Life
The One Tonne Life project saw the Lindell family in Sweden attempt to reduce their CO_2 footprint from 7 tonnes to 1 tonne per person per year. Many of the measures taken were related to energy efficiency: a high-efficiency home, a plug-in hybrid electric car and advice from Vattenfall experts helped them reduce their emissions by 60% without comprimising comfort of quality. The project generated a great deal of media attention to the effort.

Is it responsible to continue?

Yes, we will continue to operate nuclear power.
Nuclear will be important for many years to come.



The tragic tsunami in Japan in 2011, which killed tens of thousands of people, also caused serious damage to the Fukushima Daiichi nuclear plant that resulted in the release of radioactive material. This event had serious implications for energy markets globally and galvanised changed popular opinion against nuclear power in a few countries. In Germany, all nuclear power will now be phased out by 2022 at the latest, and the reactors at Krümmel and Brunsbüttel have lost their licences to generate electricity with immediate effect. We expect compensation for financial damages caused to our nuclear operations in Germany.

Nonetheless, we believe that nuclear power will be an important technology for many years to come. Nuclear power can make important contributions to keeping costs low and securing the electricity supply, and can do so with very low life cycle emissions of greenhouse gases. While Belgium, Switzerland, and Italy also took steps away from future nuclear development, it is clear that the technology will continue to be an important option for other countries, including Sweden, where we are committed to continuing as a responsible operator of nuclear power.

Stress-testing safety

Our first responsibility will always be the safety of our operations, which cannot be compromised. Yet we must also improve the availability of our nuclear assets, especially in view of the high and increasing demands on safety systems and routines.

“Our first responsibility will always be the safety of our operations, which cannot be compromised.”

During 2011 all EU countries performed stress tests of their nuclear power plants. After reporting from national regulators, the following general conclusions can be drawn:

- All plants are approved for continued operation.
- Safety requirements related to earthquakes, floods, and damage to multiple units on a single site will be increased.
- Similar areas of improvement were identified across Europe, namely related to electricity provision, cooling, and emergency response.

The Swedish authorities reported: “We have identified several areas where additional analyses are necessary. However, our overall assessment is that Swedish facilities are robust and there is no reason for us to impose any restrictions on facility operations.”

Even before the stress tests, Vattenfall had been investing substantially in improved safety at its nuclear power plant as well as in reducing their environmental impact and increasing their capacity.

Nonetheless, unplanned, extended outages have occurred in

recent years. Although the availability of our plants has not met our targets, in each situation we have lived up to our safety responsibilities. In 2011, Ringhals was forced to significantly extend the ordinary yearly outage at one of the units. A small fire during the outage left a severe amount of soot inside the reactor building, which required extended work. Availability of our plant at Ringhals was reduced to 59.9% in 2011.

The low availability at Ringhals 2011 was in contrast to the very high availability of our Forsmark plant (86.2%, vs. 71.8% in 2010). We see it as our responsibility to maintain high availability at every plant we operate in order to maximise the benefits that nuclear power can provide in the form of stable, inexpensive and low-emitting electricity. We have undertaken extensive modernisation efforts at our Swedish operations to improve availability and output in the future (see box, page 29).

Phase-out in Germany, a new look at Sweden

In Germany, both of our plants at Krümmel and Brunsbüttel had been off line for long periods for refurbishment and modernisation (related to damaged equipment outside the reactors, see CSR Report 2009) when the government made its decision to phase out nuclear power. This means that these plants, along with six others operated by other companies, will never be restarted.

This decision does not regulate the issue of compensation for the financial losses of the nuclear operators, and Vattenfall expects compensation for its losses and hopes to reach a settlement with the German government.

Vattenfall is currently evaluating the new situation in Germany with regard to necessary changes in the German organisation. This also includes future demands in qualifications and the number of employees.

In Sweden, we are spending more than SEK 50 billion to extend the lives of our nuclear plants. At some point, however, they will have to be replaced or retired. In 2010 the Swedish parliament decided that existing reactors could be replaced with new nuclear capacity. Vattenfall is currently undertaking an intensive analysis to better understand under what conditions such capacity could be built, including both economic factors and how high safety and environmental requirements can be met.

Ongoing work plant-by-plant

Ringhals

More than SEK 22 billion will be invested in more than 300 discrete projects to improve safety and increase availability and production at Ringhals. These include:

Ringhals 1: Six new low pressure turbines; environmental certification of cabling and strengthening of automatic borine injections; ongoing exchange of safety switchgear. From 2014 we will undertake safety-strengthening measures at local transformers.

Ringhals 2: Strengthening of the auxiliary feed water system in 2013; work on various aspects of the cooling systems through 2014.

Ringhals 3: Safety upgrades and finalising of modernisation of turbine island; a new local transformer installed; planned replacement of the high pressure turbines.

Ringhals 4: New steam generators and pressuriser installed; instrumentation and control system installed, installation of pre-heaters including piping work and retrofit of high-pressure turbines.

Forsmark

More than SEK 10 billion is being invested in projects to extend the plant's life and adjust to new safety and environmental requirements. These include:

Lifetime extension projects: Focused on securing long-term operation of the plant, including replacement of older components.

Long-term maintenance planning: Inventory of components and systems, and recommendations for renewal and replacement plans.

Capacity increases: Measures to increase the total capacity by 410MW are being planned, though these are variously dependent on regulatory permission and strengthening of the connection to the grid.

Germany

Due to the German government's nuclear phase-out decision, our nuclear Brunsbüttel and Krümmel power plants lost their licences to generate electricity.

In Brunsbüttel we will enter a post-operational phase. We are planning and preparing the decommissioning and dismantling of the plant. *In Krümmel* we are in the phase of a long-term standstill.

How does the energy transition impact employees?

Working in a changing context is challenging, but rewarding.

The energy industry is going through an upheaval. Technological, economic, and behavioural practices hundreds of years old are now increasingly seen as unsustainable, and much of society expects energy companies to lead the transition to new models.

At the same time ,energy remains fundamental to our lives. Our stakeholders assume that the electricity and heat that we deliver will be available and affordable, even as we attempt to overhaul the systems used to deliver them.

This situation puts Vattenfall's employees in a unique situation: The work we are undertaking is hotly debated in politics, the media, and among the general public – yet much of it is simultaneously taken for granted. Vattenfall's employees are required to balance these challenges. We need to embrace the urgency of change while delivering continuity; we must open up to new perspectives and ideas but continue to meet the fundamental demands of our jobs.

This situation places high requirements on Vattenfall's people – both current employees and those we hope to recruit.

The changing mix of skills

On a technical basis, we require the knowledge and skills necessary to work with a broad portfolio of technologies. For some important energy sources, such as offshore wind, the technologies are new, and Vattenfall is competing for a scarce supply of skilled and experienced professionals. Other energy sources, such as lignite, have a long history, but present challenges related to sustainability. These challenges can involve demonstrating and implementing technological improvements but also, such as in the case of carbon capture and storage (CCS), building public acceptance for new approaches.

"We must open up to new perspectives and ideas but continue to meet the fundamental demands of our jobs."

Over and above their required technical skills, Vattenfall's employees face challenges of leadership. The changes in our industry require leadership in the field, where the ability to innovate on the fly and deliver big projects to ambitious standards is a daily reality. Leadership is also required in daily office life. Vattenfall's managers must be clear in their expectations and visible to their teams, and they must show in their decision-making the courage their employees are expected to exhibit in their work. Strengthening these characteristics of leadership, and reinforcing the company's core values of Safety, Performance, and Co-operation, are supported by the company's ongoing leadership training through the Vattenfall Management Institute.

Securing skills and strengthening our sense of leadership will help the company to face its ongoing challenges. Vattenfall's development into a European company also means that our people must

understand multiple markets with different conditions, as well as the Europe-wide energy context. Not every conflict can be avoided: tensions in society related to sustainability and the so-called energy triangle (see page 6) exist within the company, as well. Scarce resources and competing priorities are challenges. Balancing secure, affordable energy with the transition to sustainability is not easy, but in many ways finding that balance is its own reward.

Rob van der Plas, Energy Advisor, the Netherlands
Rob van der Plas advises Vattenfall's customers in the Netherlands about how they can use less of our main products: electricity, heat, and gas. That's less, not more.

"They don't always understand why we as an energy company are helping them to save energy," he says of his customers' reactions to his personal visits. "I always say that when you go to any good dentist, they'll tell you to brush your teeth."

Rob's reports might advise customers to take simple, behavioural measures, or he might advise them to install insulation or new appliances.

"Sometimes the smallest thing in the house uses a lot of energy," he says. "Today I visited a customer who has a new house, and her electricity consumption was very high – a broken thermostat kept going on, keeping the bathroom at 26 degrees, even in the summer."

Rob has worked at Nuon and now Vattenfall for 27 years. He understands the questions about his role, but he believes the relationship with customers is gaining in importance.

"Some colleagues think what we do is fantastic, but we hear criticism about the costs we incur as well. A year ago I was the one who was selling core products instead of advice. But I have always told customers that what I do benefits both sides. That's still true."

Sture Wasseng, Plant Manager, Idbäcken CHP, Sweden

What happens when wood buildings are demolished? When telephone poles come down? When wood and plastic and paper get all mixed together?

These days, people who have this kind of waste can't take it to a landfill – the EU's environmental regulations won't allow it. So they bring it to Sture Wasseng at Vattenfall's Idbäcken CHP plant in Nyköping, Sweden.

Idbäcken has pushed its plant to be able to handle these fuels – as Wasseng says, to always be "a few years ahead." This means pressure to innovate and invest in better systems. But it also means access to cheaper fuels that make the plant more profitable.

Using tomorrow's waste wood today is economical, but only works if Wasseng and his team can handle these impure fuels without creating problems for the boiler or harmful emissions to the air. Innovations in boiler design and operation and, increasingly, fuel handling and waste separation, have been key.

"Of course we've had the occasional problem," Wasseng says, "but working with challenging fuels has built it into the culture here. Everyone starts from the assumption that we're going to deliver heat that the community can rely on, and that we're not going to emit any unnecessary pollutants."

Katja Müller, Programme Manager for Vattenfall's Continuous Improvement Programme (CIP) in Cottbus, Germany

Katja's work touches on many aspects of Vattenfall's operations, but is always about efficiency.

"Being more efficient makes us a stronger partner to society" Müller says. "That's especially important because we are one of the biggest employers in the Lausitz region."

Improving vocational training can help Vattenfall keep its standing as an employer. "Local communities know that our training is excellent. The CIP Programme wants to keep that focus on quality, and wants to find more time for training apprentices, while decreasing the amount of administrative work the trainers have to do."

Societal debates about sustainability and responsibility have a particular resonance in Lausitz, with its long history in coal mining. "Sustainability is absolutely an issue," Müller says. "We have to take care with this transition – and we have to try to win support for CCS."

Responsibilities to the local population are felt deeply. "A lot of people are affected by our mines – in the worst case, they may have to move house and lose a part of their personal background," she relates. "We really have to do what we can to help these people establish new homes where they are happy."

What is next?

The "Turbulent Teens" (see *Vision 2050*, WBCSD) are ahead of us and the energy industry is seeking to clarify that we are not just part of the problem, but also part of the solution. The industry is entering a period of transition towards a more sustainable energy system. Long term targets are set, the direction is clear, and first steps on the journey are being taken from various starting points. However, the optimal path to secure access to affordable energy with minimal impact on climate and society still needs to be defined. The key unknown factors are available technical solutions, economic viability and public acceptance. We continue to work hard on these challenges, and the following elements will define our progress in the near and medium term:

"The key unknown factors are available technologies, economic viability and public acceptance."

Trust

The private sector must *build trust* in its role as a contributor to society and to sustainable development. This is especially true in the energy industry, where trust remains extremely low and public acceptance is especially important to the investment environment. Public trust in Vattenfall, specifically, has fallen to unacceptable levels in recent years. We cannot succeed as a company without reversing this trend.

Technological development and innovation must accelerate. The costs of emerging renewable energy technologies must continue to decline to ensure the widest possible adoption. Facilitating technologies – grids, energy storage, and IT applications for networks and end users – must get better, cheaper, and smarter. Vattenfall is active in all of these areas. Though we will not always be a pioneer, we aim to be a significant contributor to accelerating technological change.

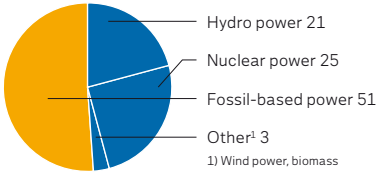
Partnership must become the first option. Private companies in competition can solve many problems, but the energy industry needs collaboration with other industries, with the public sector and with civil society to effectively set a course. Vattenfall is working with partners in new ways – from our collaboration with national and city governments, to our dialogues with NGOs, to our work on Smart Sustainable Cities and E-Mobility. Along the way the industry must open up – trust and partnership cannot succeed without transparency. Balanced and open communication is the first step, but improving our measurement of environmental and social performance is also important.

To succeed in all of these we need to understand where our stakeholders stand, understand their concerns and expectations. We need to strengthen our relationships, and incorporate stakeholder perspectives in all relevant aspects of business management and operations. We are looking forward to working with you.

Key indicators

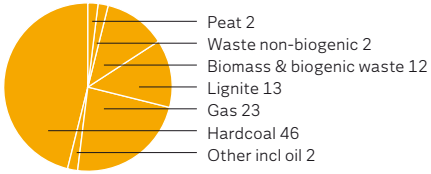
	2011	2010	Change, %
Net sales, SEK million	181,040	213,572	–15.2
Operating profit excl. items affecting comparability, SEK million	28,562	39,952	–28.5
Return on equity, %	8.6	10.0	–
Investments, SEK million	35,750	41,794	–15.5
Electricity generation, TWh	166.7	172.4	–3.3
Sales of gas, TWh	53.8	63.3	–15.0
Sales of heat, TWh	41.6	47.1	–11.7
CO_2 emissions, million tonnes			
Sweden	0.40	0.59	–32.2
Finland	0.23	0.28	–17.9
Denmark	4.4	6.4	–31.3
Germany	67.8	70.1	–3.3
Poland	5.8	6.4	–9.4
Netherlands	8.1	7.8	3.6
Total	**86.7**	**91.5**	**–5.2**

Electricity generation 2011, %

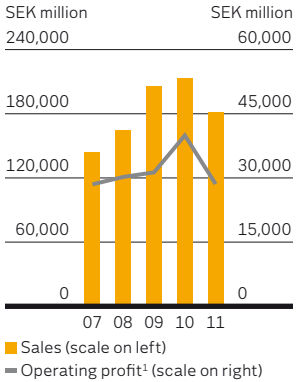


Vattenfall's total electricity generation amounted to 166.7 TWh.

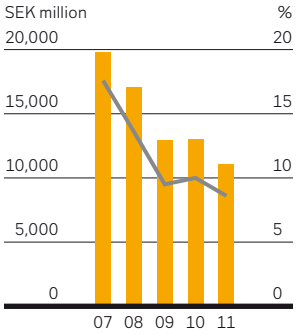
Heat production 2011, %



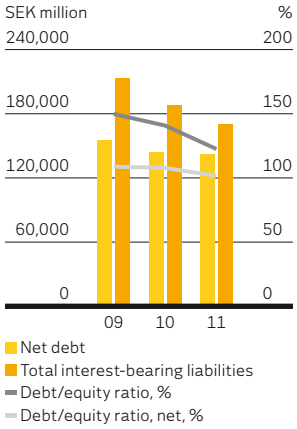
Sales and operating profit



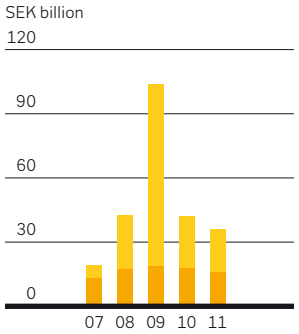
Profit for the year and return on equity



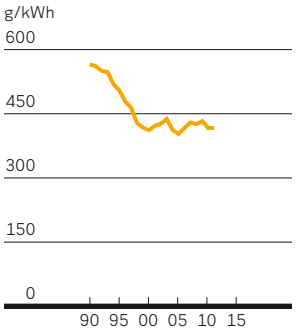
Net debt



Investments



CO_2 emissions per generated unit of electricity and heat



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Other publications

Vattenfall's Annual Report 2011.

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Vattenfall considers that the information contained in this report presents a true and fair picture of Vattenfall. The CSR Report has been assessed by a third party as described in the combined assurance report.

The financial data presented in the report is taken from Vattenfall's audited annual accounts. The reporting currency of Vattenfall AB is Swedish kronor (SEK). For detailed information on Vattenfall's financial status and performance, the reader is kindly requested to refer to the Annual Report.

Production: Vattenfall AB and Intellecta Corporate AB.
Photos: Vattenfall AB and Getty Images. Illustration (p.24): Kjell Eriksson. Printing: Ineko. Repro: Turbin.

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Corporate Identity Number 556036-2138

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