



2010 Sustainability Report

Responsibility. Innovation. Partnership.

EnBW

EnBW Energie
Baden-Württemberg AG

About the 2010 Sustainability Report

Milestones

- › In 2010, EnBW completed the construction of the first commercial offshore wind farm in the German Baltic Sea. The **EnBW Baltic 1 wind farm** officially went into operation on May 2, 2011 at a ceremony attended by German Chancellor Dr. Angela Merkel.
- › In June 2010, we adopted our **new environmental protection strategy**, which will make a key contribution to the sustainable management of our company.
- › During the period under review, we extended our compliance regulations and made them an integral part of our operational business activities.
- › Back in 2007, the Hertie Foundation awarded EnBW "**berufundfamilie**" (**career and family**) **certification** in recognition of our family-friendly personnel policy. The certificate was awarded once again in 2010 by Federal Families Minister Dr. Kristina Schröder.
- › In July 2010, we launched a **fleet test with 500 e-bikes**. Our test drivers – the "electronauts" – collect important data on utilisation and charging characteristics to promote new mobility concepts.
- › In December 2010, EnBW joined the **UN Global Compact**, one of the world's largest and most important multi-stakeholder networks for entrepreneurial and corporate social responsibility (CSR).
- › The **Sustainability and Corporate Positioning unit** reporting directly to the CEO took up its work on January 1, 2011.

We are publishing the 2010 Sustainability Report to inform our stakeholders about the progress and ongoing development of the activities that underline the commitment of EnBW to meeting its responsibilities towards society in and beyond our core business operations. This report documents how, as a "corporate member of society", EnBW conducts its business not only successfully but also responsibly along the entire value added chain in the interests of its stakeholders. The report shows that sustainable and responsible activities are the guiding principle in the corporate strategy of EnBW – to the good of the company, to the good of the environment and to the good of society.

This Sustainability Report reflects the current political changes resulting from events in Japan and the "energy revolution" in Germany. We have decided to publish the report in the late summer of 2011 not only to provide a full picture of sustainable measures and activities during the year under review but also to allow inclusion of revised statements on the strategic challenges of the future driven by the new scenarios.

The facts and figures contained in the report refer to the entire EnBW Group with particular emphasis on the core companies. Further information on the sustainability-focused activities of the EnBW Group overall can be found on the Internet at www.enbw.com.

The Sustainability Report has been compiled in compliance with the guidelines of the Global Reporting Initiative (GRI) and also provides information on progress with the implementation of the principles set out by the UN Global Compact.

Contents



Foreword	4	Our networks	20
		<ul style="list-style-type: none"> › Future-proof transmission grid › Optimising existing transport network structures › Modernising and expanding the distribution network › Intelligent networks › Optimising distribution network operation 	
Strategy and management			
Ensuring sustainable success	6		
<ul style="list-style-type: none"> › Efficient and climate-friendly: our value added chain › New strategic focal points › Ensuring low-CO₂ generation › Expansion of wind, water and gas power plants › Establishing decentral solutions › New environmental protection strategy › Focus on sustainability › Ongoing compliance efforts › Active in the international anti-corruption network › Regular stakeholder dialogue › Provisions for business partner reviews › Membership of the UN Global Compact 			
		Research and innovation	24
		<ul style="list-style-type: none"> › Pilot and model projects › Employees and alliances 	
		Targeted environmental protection	
		Corporate goals, measures and projects	26
		Corporate environmental protection targets – 2008 to 2010	
		<ul style="list-style-type: none"> › Climate protection, resource conservation, energy efficiency › Sustainable social responsibility › Communication and raising awareness › Protection of humankind and the environment › Corporate environmental protection targets – 2011 to 2015 › The CO₂ footprint of EnBW › Certified environmental management › Transformers with environment-friendly insulation › Nature conservation, biodiversity and bird protection › Green IT › Environmentally based supplier assessment › Decontamination at the Gaisburg gas plant 	
The challenges of energy generation			
Renewables	10		
<ul style="list-style-type: none"> › Wind energy – offshore installations › Wind energy – onshore installations › Run-of-river power plants › Pumped-storage power plants › Solar energy › Biomass and biogas 			
Coal and gas-fired power plants	14		
<ul style="list-style-type: none"> › Fossil-fired power plant park › CO₂ capture › 21st century power plant › Coal trading and supplier assessment › International climate protection projects 			
Nuclear energy	18		
<ul style="list-style-type: none"> › Nuclear power plant safety › Research, development and applied resource conservation › Use of uranium resources › Interim and final storage of nuclear waste › Dialogue with the public 			

Focus on the customer

Combining convenience and climate protection

- › EnBW: well positioned
- › Products and services
- › The intelligent electricity meter
- › Electromobility for all
- › Utilisation and transparent management of solar energy
- › Transparency in the field of heat pumps
- › Services for buildings
- › EnBW subsidy service – all the information customers need
- › Energy efficiency projects at industrial customer locations
- › Hands-on trial for the "intelligent network" – MeRegio
- › Sustainable city – pilot project in the Allgäu region of Germany

Taking responsibility

Employer and employees

- › Award-winning employer
- › Family-friendly personnel policy
- › Employee headcount and personnel breakdown
- › Female employees and management personnel
- › Training and professionalisation
- › !mpuls – better together
- › Continuous communication
- › Active and healthy
- › New challenges in new business areas
- › Learning safety the easy way
- › Requirements for contractors
- › Accident figures still low

Unleashing energy

Our commitment in the social sphere

- › Active in all sporting disciplines
- › Cooperation in the arts and culture
- › Experienced-based learning for today's youth
- › Information and teaching support services
- › Stimuli for industry and research
- › Echt gut – accepting social responsibility
- › International projects and aid programmes
- › Wells for Uganda

Facts and figures – 2010

The EnBW Group by numbers

- › Electricity generation by EnBW
- › Specific emissions by EnBW
- › Electricity feed-in based on the EEG legislation on renewables
- › Input/Output charts
- › Excerpt from the EnBW 2010 Environmental Programme
- › 2010 environmental protection costs
- › Core Indicators in line with the Global Reporting Initiative (GRI)
- › Important notes
- › Publishing details and contacts



Foreword

Dear Reader,

We use energy to meet the central preconditions for the reliable functioning of our society. This is true both for a national economy and on a far smaller scale in the private sphere. As an energy company, we share responsibility for the living environment of present and future generations. This also applies to the year under review, 2010, the year before the "German energy revolution" and the catastrophe in Fukushima.

We succeeded in achieving progress with core projects in 2010, even before the political decision-makers and many among the population began calling for a change in the way we generate energy. As a result, we have made major advances in the strategic expansion of renewables and the gearing of our corporate activities towards the all-important criterion of sustainability.

What do we mean by sustainability? As a private-sector company and a corporate citizen, we have an equal obligation towards our customers, our owners and our employees as well as towards society as a whole. We see it as our responsibility to conduct successful business operations that ensure the safe, reliable, climate-friendly and environmentally sparing supply of energy at competitive prices. No more and no less.

Our sustainability engagement meets a central challenge that even the energy re-

volution has not changed: the endeavour to achieve a balance between environmental compatibility, social acceptance, cost efficiency and supply reliability. This is why we decided at the beginning of 2011 to set up a central Sustainability unit directly answerable to the CEO.

The expansion of renewable forms of energy was already one of the core elements in the corporate strategy of EnBW in 2010. With Baltic 1, the first commercial wind farm in the Baltic Sea, and Baltic 2, we were committed to one of the shining symbols of the "energy revolution" before this revolution was even talked about. Our expansion of offshore wind power has made us the German leader in this field, and no other German energy company has invested more money in renewable forms of energy.

We have continued to maintain our status as a low-CO₂ power generator in 2011 through our investment in renewables and the ongoing optimisation of our power plant portfolio. This endeavour is underpinned by the construction of the new hydroelectric power plant in Esslingen on the Neckar, the expansion of generating capacity at the Iffezheim hydroelectric facility and the continued work on the hydropower project in Rheinfelden. We intend to increase the share of renewables by around 3,000 megawatts in the period up to 2020 – mainly through the construction of new wind energy and hydroelectric power installations in Germany and Turkey.



Our commitment to the idea of sustainability also resulted in EnBW joining two leading international initiatives - the UN Global Compact and the PACI anti-corruption network. Within the EnBW Group, we have introduced binding provisions on the review of business partners, the EnBW-wide compliance management system and a group-wide environmental protection strategy.

We demonstrate responsibility for society, and our commitment to promoting knowledge and education especially among children and young people is close to our heart; but it goes without saying that we also support art, culture and sports in Baden-Württemberg as part and parcel of this commitment.

Taking responsibility means thinking ahead: we need a culture of mutual communication and a dialogue throughout society if we are to create an "energy future" that finds acceptance among the population. This is the only way we will be able to achieve the energy policy consensus we so urgently need on the further expansion of renewable forms of energy, decentral generation, future-proof mobility and the expansion of networks, storage systems and pumped-storage power plants.

It is important to us to be recognised and valued as a responsible partner in all central issues in the area of energy supply. And this is why we will continue to measure our performance by three core benchmarks: safety for the local population, cost efficiency for the customer and sustainability for society.

Hans-Peter Villis

A handwritten signature in black ink that reads "Hans-Peter Villis". The signature is written in a cursive, flowing style.

CEO
EnBW Energie Baden-Württemberg AG

Strategy and management

Ensuring sustainable success

Sustainable and responsible action is the guiding principle of our corporate strategy – for the good of the company, the environment and society.

Efficient and climate-friendly: our value added chain

EnBW has its roots in the German state of Baden-Württemberg. Germany is the main regional focus of our business activities, and we are also active in selected international markets. Our core responsibility is to supply households and companies with energy in a way that conserves resources, spares the environment and is safe, reliable and efficient at all times. EnBW has around six million customers and recorded energy sales

(electricity and gas) of 200.5 billion kilowatt hours (kWh) in 2010. We are the third largest energy supplier in Germany with roughly 21,000 employees, who generated external sales revenues of 17.5 billion € in the year under review. The EnBW business portfolio comprises the business areas Generating and Trading, Grid and Sales and Energy and Environmental Services. Our mindset and actions are shaped by the knowledge of our responsibility towards various stakeholders. Climate and environment protection play a key role, and our activities are therefore geared towards innovations and investment in the reliable, efficient and climate-friendly supply of energy – both today and in the future. More information in the 2010 Annual Report from p. 21.



http://www.enbw.com/content/en/investors/_media/_pdf/annual_reports/ar_2010.pdf

Overview of the business areas of the EnBW Group

Electricity Generation and trading	Gas	Energy and environmental services
Generation 15.498 MW of generation capacity	Storage 266,3 Mio. m ³ of storage capacity including Etzel gas storage facility (under construction)	Thermal waste disposal 870.000 t of thermal waste disposal capacity
Trading 65,5 Mrd. kWh of electricity traded	Procurement 56,1 Mrd. kWh of gas purchased including gas purchased for power plants	Contracting 1.218 MW of installed thermal output
Electricity Grid and sales	Transmission and distribution 16.000 km gas grid	Water supply 6,7 % market share in Baden-Württemberg
Transport and distribution 153.000 km electricity grid	Sales 53,6 Mrd. kWh of gas sold	
Sales 65,8 Mrd. kWh of electricity sold		

61% of the energy we generated in 2010 was CO₂-free. The resulting specific CO₂ emissions of 299 g/kWh are well below the German average of 508 g/kWh. Low-CO₂ energy generation has a long tradition at EnBW, and one that we intend to continue to uphold in the future in a new and constantly changing scenario. The energy policy framework within which the EnBW Group operates is currently undergoing significant changes. Aspects like the growing focus on sustainability, the increasing scope of regulations and the decentralisation of energy generation are playing an ever more important role. This process of change has been accelerated by events in the Japanese town of Fukushima in March 2011 and the resulting political decisions regarding nuclear energy in Germany.

New strategic focal points

EnBW is determined to play a role in shaping this process of change and we have therefore continued to develop and focus our business model. The core elements in the corporate strategy are geared towards securing the position of EnBW as a low-CO₂ energy producer and establishing the company as a provider of decentral solutions.

Ensuring low-CO₂ generation

EnBW is a "low-CO₂" power generator, and we intend to step up the development of large-scale generating facilities for renewables and conventional energy both at home and abroad. The focus is on the generation of electricity from the power of wind and water as well as on increasing the flexibility of the generating portfolio by building new storage facilities and gas power plants. The

remaining nuclear power plants will continue to operate safely in line with the most stringent safety standards until the end of their stipulated operating periods.

Expansion of wind, water and gas power plants

Our excellent track-record as a low-CO₂ producer of electricity is a position we intend to maintain despite the withdrawal from nuclear power. Our main aim is therefore to expand the volume of electricity generated from renewable forms of energy, and this growth is to be chiefly driven by large-scale installations in the onshore and offshore wind segment as well as run-of-river power plants. We plan to increase the level of flexibility in the generating portfolio by building new storage facilities (in particular pumped-storage installations) and gas-fired

Strategic objectives of EnBW



➤ **"Threefold strategy for the future: decentral – municipal – sustainable."**

power plants. These are areas in which the EnBW Group can draw on a wide range of existing skills and expertise. For our future activities, we are also increasingly looking at the options for partnership solutions and public participation models. All our expansion plans for energy generation are also aimed at increasing the volume of our business outside Germany: including, for example, the growth of wind and hydro-electric power in Switzerland as well as the expansion of wind, water and gas-based energy production in Turkey.

Establishing decentral solutions

As a provider of decentral solutions, EnBW will focus on partnerships with municipalities, local people and municipal utilities - and on providing its customers with one-stop energy solutions. In the area of local activities for municipal utilities and the municipalities themselves, this concerns above all decentral solution models like the "Sustainable City" approach or the opening-up of EnBW's network operating companies to third parties.

End customers will in future be able to choose between simple commodity products like "grey" or "green" electricity, self-generation models like photovoltaics and new applications like e-mobility. As a solution provider, our expert advisory services in the fields of energy and energy efficiency will enable us to develop tailored module-based solutions to meet the specific needs of our customers.

New environmental protection strategy

Environmental protection is an integral element of our corporate strategy. On the basis of our mission and vision statements as well as our corporate philosophy, the EnBW Management Board adopted a new environmental strategy in June 2010. The core elements are the environmental principles of the EnBW Group and the strategic focal points and objectives.

These six strategic theme areas underline the role played by environmental protection in the implementation of the corporate strategy. They form the basis for the definition of

Core strategic areas and objectives in the field of environmental protection

Core strategic areas		Strategic objectives
Climate protection	Increased CO ₂ efficiency	<ul style="list-style-type: none"> ➤ Expand renewable forms of energy ➤ Develop and increase CO₂ avoidance and CO₂ reduction potentials (CO₂ footprint)
	Increased energy efficiency	<ul style="list-style-type: none"> ➤ Increase energy efficiency at EnBW and at partner and customer locations
	Improved environmental impact	<ul style="list-style-type: none"> ➤ Reduce air pollutants and resource consumption ➤ Preserve biodiversity
Ongoing development of the environmental management system		<ul style="list-style-type: none"> ➤ Continuous improvement of processes ➤ Set quantitative targets and measure target achievement ➤ Belong to the best in the competitive arena ➤ Maintain certification
Increased communication on environmental topics		<ul style="list-style-type: none"> ➤ Promoting the positive image of EnBW ➤ Promoting environmental awareness (externally and internally) ➤ Supporting the brand value of EnBW
Ensuring compliance		<ul style="list-style-type: none"> ➤ Systematic compliance with environmental regulations and early identification and implementation of new requirements ➤ Raising awareness among employees for compliance issues

specific corporate goals as well as for the goals of the individual companies. In addition, they ensure that the corporate environmental protection goals are in line with the corporate strategy.

Focus on sustainability

On January 1, 2011, EnBW created the Corporate Responsibility, Sustainability and Corporate Positioning unit. By creating a central department directly answerable to the CEO, EnBW underlines the key importance it attaches to responsible business activities and the idea of sustainability. The job of the department is to pool and continuously optimise the many existing processes for sustainable business management and to intensify the dialogue with stakeholders. The work of the department is focused on the definition of a group-wide sustainability strategy, creating a basis for effective responses to sustainability challenges along the value added chain and the development of reliable target indicators.

Ongoing compliance efforts

In response to the growing importance of compliance in the corporate environment, EnBW has expanded its group-wide compliance management system step by step and made this system an integral part of our operational business activities. The aim is to ensure that all employees act responsibly and in accordance with the law as well as to avoid potential damage to EnBW's reputation and any liability risks for EnBW and its employees.

At EnBW, the central Corporate Compliance unit coordinates group-wide activities. This unit serves as a point of contact and source of advice for all levels of the company and reports on a regular basis to the Management Board, the Supervisory Board and the Audit Committee. The unit is supported by a Compliance Committee at holding level and by decentral compliance officers at the level of the group companies. A task force has been set up within the Compliance Committee, and its remit is to identify and process compliance violations based on standardised procedures.

One of the key elements of our compliance management system is the code of conduct of the EnBW Group providing an overview of the most important legal regulations and internal guidelines. The focus is on avoiding corruption, antitrust violations and violations of confidentiality. Our code of conduct helps employees to find their bearings in their day-to-day work and sets out binding guidelines for dealings with customers, competitors, officials and public institutions. Since the code of conduct was published, ongoing communication measures and a group-wide training campaign have been central elements in the overall process. Only if they are aware of the relevant legal provisions can employees identify critical situations and respond with the necessary sensitivity.

By February 2010, practically all management personnel in the EnBW Group had attended information events, and around 1,000 employees from sensitive areas also took part in face-to-face training courses up to the end of 2010. In addition, we implemented a group-wide e-learning programme on compliance and the code of conduct to ensure that all team leaders and employees are aware of the most important topics and issues. In its regular monitoring activities, the Corporate Compliance unit collects the information it needs to monitor the efficiency of its management system and derive insights that pave the way for continuous improvements and ongoing development of the relevant methodology.

Active in the international anti-corruption network

In February 2010, EnBW joined the anti-corruption network of the World Economic Forum. The Partnering Against Corruption Initiative (PACI) is a cross-sector alliance to combat corruption in the business world and aims to develop global standards to minimise and fight corruption through company cooperation and networking.

Regular stakeholder dialogue

EnBW engages in regular dialogue with its most important stakeholders. Both at Board level and in the individual group companies, "dialogue forums" are frequently held together with civil society organisations, trade unions, universities, company federations, consumer associations and political parties as well as their foundations. The outcomes of these forums play a role in the shaping and implementation of corporate processes at EnBW.

Provisions for business partner reviews

In November 2010, the Management Board adopted provisions for the review of business partners, and these provisions are now in force. The reason for these new rules is that our shareholdings, alliances, purchasing activities, trading operations and involvement in international climate protection projects lead to the increasing development of business activities outside Germany. In order to safeguard our entrepreneurial integrity and responsibility, and to avoid damage to our reputation and financial losses wherever possible, we now subject our business partners to painstaking review with regard to corruption and violations against social and environmental standards before we sign any contracts with them.

Membership of the UN Global Compact

It was also in November 2010 that the Board decided that EnBW should join the UN Global Compact, the largest global multi-stakeholder initiative to promote the social and ecological commitment of companies around the world. The key element in this UN initiative is the recognition of a catalogue of basic values in the area of human rights, working conditions, environmental protection and corruption prevention. Our membership of the Global Compact creates a clear-cut foundation for our activities along the value added chain and underlines our voluntary commitment to issues that are of social importance.

The challenges of energy generation

Renewables

In 2010, energy from hydroelectric sources, wind power, photovoltaics and biomass accounted for just under 11% of the EnBW generating mix. In the period up to the year 2020, we intend to expand the volume of electricity generated from renewables by around 3,000 megawatts.



http://www.enbw.com/content/en/wind_power_offshore/baltic1/index.jsp

Wind energy – offshore installations

Germany's first commercial maritime wind farm officially went on stream at the beginning of May 2011 at a ceremony attended by German Chancellor Dr. Angela Merkel. EnBW Baltic 1 is situated around 16 kilometres north of the Darß peninsula in the Baltic Sea and produces emission-free electricity to supply the equivalent of 50,000 households¹.

During the course of 2010, the 21 wind turbines, each the height of a church steeple, and the transformer platform weighing around 1,000 tons were anchored down off the coast of Mecklenburg-West Pomerania one by one. Each turbine has an installed capacity of 2.3 megawatts (MW)² – adding up to a total 48.3 MW. The turbines are designed to generate up to 185 million kWh of electricity every year, avoiding around 143,000 tons of CO₂ to the good of the environment.

The electricity generated in the wind farm is stepped down from 150 kilovolts to the transmission voltage in the transformer platform and then flows to the coast via a submarine cable. A land cable transports it to the next transformer station, and from there into the German transmission grid.

Construction work on EnBW Baltic 2 around 32 kilometres north of the island of Rügen is scheduled to begin in 2012. When the wind farm is completed, 80 rotors – each with an installed capacity of 3.6 MW, adding up to a total 288 MW – will be turning away on a total area of 27 square kilometres. We estimate that annual electricity production will be in the order of 1.2 billion kWh, equivalent

to the amount of power needed to supply 340,000 households and avoiding 900,000 tons in CO₂ emissions.

This wind farm is of a totally new dimension. The wind turbines are just under one third higher and are twice as far away from the coast. A further challenge is the depth of the sea on site which varies between 23 and 44 metres compared to 16 and 19 metres in our first maritime wind farm.

Alongside the two wind farms in the Baltic, we are also planning two further farms in the North Sea – "EnBW Hohe See" and "EnBW He Dreiht". Taken together, these four major offshore projects represent the biggest wind power project anywhere in Germany.

Wind energy – onshore installations

Our experience with onshore wind energy dates back to the mid-80s. Since 2009, we have increased the size of our portfolio in this area from 28 to around 170 MW – and we intend to keep on growing in this segment. Our biggest onshore wind farm is currently in Buchholz in the state of Lower Saxony, where 18 wind power installations generate an annual output of around 78 million kWh; enough to supply electricity to 22,000 households and avoid 58,000 tons of CO₂ a year.

Our preparations when planning new wind farms are extremely painstaking: even before permits are issued, we commission studies on ground sealing, noise emission, shadow casting and other impacts of the installations. We then develop measures to reduce any negative effects on plant and animal life. Neighbouring forests are densified or partially cleared, for example, or we implement restoration measures on cultivated land in order to provide a habitat for local animal species. We have developed a special package of measures to protect the red kite: in order to keep our biggest bird of prey away from the dangerous rotors, the cultivation of agricultural land is intensified

¹ The BDEW association defines a reference household as a dwelling with three inhabitants and annual average electricity consumption of 3,500 kWh.

² One megawatt (MW) is equal to one million watts or 1,000 kilowatts (kW).



in the area surrounding the installations. As a result, this area loses its attraction as a feeding and breeding ground. Parallel to these measures and as a kind of substitute, areas further away are restored to nature so prey animals – and therefore the red kite too – can make their home there.

In addition, a monitoring process takes place during the planning phase with the aim of documenting and evaluating the behaviour of bats and birds. Breeding and feeding grounds are mapped, habits during the mating or moulting season observed and flight corridors recorded. It is also possible to switch off one or more wind turbines within specific time windows to eliminate the risk to bats and birds during flight. The Buchholz wind farm is equipped with such a bat switch-off system, which is outlined in the original permit. In Haupersweiler, the installations remain switched off for one to two days following mowing for reasons of bird protection, as the prey animals are visible from afar in the short grass.

Run-of-river power plants

EnBW and its predecessor companies have been exploiting the reliable and climate-sparing power of water for over 100 years, and the share of hydropower in the EnBW generating mix is accordingly high compared to the national average. EnBW operates a total of 67 run-of-river power plants and two of its own pumped-storage power plants. In addition, EnBW holds stakes in –

or has procurement agreements with – numerous further run-of-river and pumped-storage power plants. As a result, EnBW can draw on more than 2,700 MW of installed capacity driven by the power of water.

The run-of-river power plant in Rheinfelden supplies a growing share of this energy, and the new facility will triple annual production to around 600 million kWh. This is equivalent to the amount of electricity required by around 170,000 households and will avoid more than 350,000 tons of CO₂. In keeping with the spirit of clean and sustainable commitment, EnBW subsidiary Energiedienst AG is minimising transport distances, making use of a nearby landfill and contracting work to local suppliers wherever possible throughout the construction phase. Moreover, restoration measures have been in progress since the beginning of 2011, and a near-natural fish ladder and spawning pool have been built over a distance of just under one kilometre – at cost of around four million €. The new installation is scheduled for completion by mid-2012.

Another major expansion project at EnBW – in cooperation with EDF – is underway at the run-of river power plant in Iffezheim. The plant current produces electricity for around 155,000 households. Following the addition of a fifth turbine, it will be supplying an additional 25,000 households from the scheduled completion date at the end of 2012; this will save a further 110,000 or

➤ **"With its four large-scale offshore installations, EnBW is engaged in Germany's biggest wind energy project."**

so tons of CO₂ a year. The Iffezheim plant is also equipped with a fish pass that allows fish like salmon to swim to the spawning areas of the Upper Rhine – even while the facility continues to operate during the construction phase.

With the same environmental awareness it displays in large-scale projects, EnBW is also increasingly tapping into the potential of "small-scale" hydropower – whether through retrofit measures at existing facilities or projects like the new construction of the hydroelectric power plant in Esslingen on the Neckar river, where a power plant has now been added to the last barrage weir on the Neckar. With this project, EnBW Kraftwerke AG has installed an additional 1.25 MW of rated capacity together with its subsidiary Neckar AG, in which it holds an 82% stake. This additional output is enough to supply over 13,000 households with CO₂-free electricity.



Pumped-storage power plants

Pumped-storage power plants are still the only way to store large volumes of electricity with a high degree of efficiency and to make this electricity available "in a hurry". Moreover, pumped-storage power plants also perform a stabilising function at times when there are major fluctuations in the amount of energy fed into the networks by solar or wind power installations. As the share of renewables in the overall energy mix is growing all the time, it is essential that capacities are expanded in this area, that existing facilities are modernised and that capital is invested in new installations. EnBW is currently looking into the options for the significant expansion of storage and pumped-storage power plants in the coming years. At the longstanding Rudolf Fettweis plant in Forbach, EnBW is reviewing the possibility of adding new upper and lower reservoirs. Parallel to its plans for its power plants, EnBW is developing a compensation project to conserve nature in the surrounding areas and is to this end engaged in in-depth dialogue with approval authorities, environmental associations and independent experts. The details of the expansion plans were presented to the local population at an early stage in the process; regular information events and active PR activities ensure transparent and comprehensive communication on the development of the project and actively promote the involvement of the public in the overall process. The addition of the new upper and lower reservoirs could almost quadruple the capacity of the Rudolf Fettweis plant to around 270 MW.

In the southern part of the Black Forest, the Schluchseewerk AG company, in which EnBW holds a 47.6% direct and indirect stake, is planning to build Europe's largest pumped-storage power plant with a total installed capacity of 1,400 MW in the period up to 2019. The project in the town of Atdorf will greatly enhance the integration of renewable forms of energy in the German electricity network and therefore make a key contribution towards ensuring supply reliability.

High-level compensation measures are planned during the construction period, including the ecological upgrading of wooded areas and stream courses at the location itself. From the very outset, Schluchseewerk AG attached major importance to a policy of transparent information and communication. The company regularly informs people in the affected communities and the overall region about the project, by staging public information events, for example, or publishing a quarterly magazine. A "round table" has also been set up with the participation of all stakeholders – such as nature conservation associations and representatives of the municipalities – creating a forum for the discussion of relevant issues on equal terms under the chairmanship of an external moderator.

Solar energy

EnBW has been investing in solar energy since way back in 1984. The Leibertingen solar farm in the district of Sigmaringen is our first major investment in photovoltaics; over 17,000 thin-film modules have been installed over an area of more than seven hectares. These modules generate around 2.1 million kWh a year, enough to supply 600 households and resulting in CO₂ savings of 1,240 tons.

The EnBW solar farm in Ulm-Eggingen is considerably bigger, generating around 6.5 million kWh a year – enough to supply around 2,000 households with electricity and saving 4,000 tons of CO₂ a year. Our installation in March-Neuershausen went into operation in December 2010, and the annual yield in the order of 930,000 kWh is equivalent to the energy requirements of 270 households and a CO₂ avoidance volume of 540 tons.

Overall, EnBW operates more than 40 photovoltaic installations with a total capacity of around eleven MW. Solar parks are particularly ideal for follow-up utilisation of former landfill locations or the redevelopment of disused military sites.

Biomass and biogas

If renewable raw materials or organic waste are incinerated or fermented, the process only releases the amount of CO₂ that was absorbed during the growth phase of these materials. The combustion of solid biomass like wood or straw and the fermentation of manure, sewage sludge, organic waste and green plants to produce biogas is therefore CO₂-neutral and has a far better climate profile than fossil fuels.

The solid biomass and the biogas are utilised decentrally to generate electrical and heating energy. Moreover, biogas can be processed to create bio natural gas, the renewable alternative to natural gas, and distributed via the gas network. In this way, bio natural gas makes an importance contribution towards replacing fossil natural gas.

EnBW owns and operates two biogas processing facilities, and the installation in Burgrieden near Laupheim – the larger of the two – produces 28 million kWh a year. This facility is currently being expanded and is expected to have a total capacity of 53 million kWh a year by 2012. In Blaufelden-Emmertsbühl, EnBW produces 19 million kWh of bio natural gas annually, and this facility is part of a trendsetting network connection concept: the bio natural gas is not fed directly into the high-temperature transport network but into the nearby local distribution network. This technique, for which EnBW has applied for a patent, significantly reduces the need for distribution line construction and therefore minimises both impacts on nature as well as costs. In Emmertsbühl, for example, the length of the network connection line is now just under 800 metres instead of 4,800 metres, and this has reduced costs from around 800,000 € to roughly 120,000 €. A further advantage of this concept is that it eliminates the cost and effort needed to constantly compress the bio natural gas to the

higher pressure used in the high-pressure transport lines into which it was previously fed, and this saves around 500,000 kWh of electrical energy every year.

In both projects, we cooperate with farmers from the region who operate the biogas plants. We buy the biogas they produce and upgrade it to natural gas quality in our processing facilities before feeding into the existing supply network. Both facilities use plant mass from the region: corn in the form of whole crop silage, grain in the same form and grass cuttings. The current capacity of the facilities is sufficient to supply a notional 2,500 households with electricity.

EnBW became active in the field of electricity production from biomass when it acquired the project rights for 12 biogas plants, most of them in Lower Saxony and the eastern region of Germany. The generated electricity is fed into the public network. The occurring heat is used in the plant itself or by the agricultural operation in which it is integrated. The forecast annual electricity production of the facilities is in the order of 30 million kWh, enough to supply around 8,200 households and avoiding around 20,000 tons of CO₂.

In all our commitments in the biomass segment, we are fully aware of the potential for conflict between "fuel" and "food", and this is why we are conducting research together with scientists at Hohenheim University and KIT (Karlsruhe Institute of Technology) to find alternatives for the make-up of the biomass. We have already identified various cultivation scenarios for Baden-Württemberg based on a special plant mix that can also be converted into biogas cost effectively. The mixed strip-by-strip rotation of special crops in combination with permanent crops plays a major role in these scenarios. We are currently analysing the potential of these scenarios in a field trial in the Biberach region with the help of

the agricultural sector. At the same time, EnBW continues to look into the possibility of using an even higher volume of organic waste in the production of biogas. One such project is the joint EtaMax project with the Fraunhofer Society and other partners and focusing on the production of biogas using biogenic waste from wholesale markets. The biogas obtained from the waste is processed to form bio natural gas at the EnBW power plant location in Stuttgart-Gaisburg using an innovative membrane technology, stored under high pressure and made available for use as fuel in gas-powered Mercedes-Benz vehicles.



➤ **"Biogas is fed directly into the nearby local distribution network."**

The challenges of energy generation

Coal and gas-fired power plants

On the road to a system of power supply based on renewable forms of energy, the operation of high-availability coal and gas-fired power plants will continue to perform an important function for decades to come – as these facilities not only cover baseload demand but are also extremely efficient when it comes to providing the electricity needed to close the gap between power demand on the one hand and fluctuating power supply from renewable forms of energy on the other.

Fossil-fired power plant park

We are currently building the state-of-the-art coal-fired RDK 8 power plant unit in the 900-megawatt class in the Rheinhafen district of Karlsruhe with the aim of developing the mainstay of the EnBW business portfolio – the generation of electricity – over the long term. We are also involved in the construction of unit 9 at the Gemeinschaftskraftwerk Mannheim power plant location. Both units will ensure generation near to the point of consumption, will have high efficiency ratings and will supply environment-friendly district heat using cogeneration technology.

Work at the RDK 8 unit proceeded more or less according to plan in 2010; the only delays concerned the steam generator, and the new unit will go on stream in 2013, producing electricity with a capacity of up to 912 MW and supplying the city of Karlsruhe with district heat.

RDK 8 has an efficiency rating of 46% and specific CO₂ emissions of around 740 g/kWh. The size and efficiency of the unit will squeeze older coal-fired units with specific emissions in the range from 850 to 900 g CO₂/kWh out of the market, and this will result in significantly reduced CO₂ emissions.

In international terms, the coal-fired power plants in the EnBW portfolio already boast high efficiency ratings and extremely low emission levels for CO₂, NO_x, SO₂ and dust. Nevertheless, EnBW always strives to improve the environmental profile of its facilities even further. In 2010, for example, EnBW Kraftwerke AG optimised the boiler in coal-fired unit RDK 7 (net electrical capacity of 505 W) in Karlsruhe.

One of the requirements for the power plants of the future is ever increasing flexibility. In practice, this means existing and future plants must start up faster and be able to adapt their output within a broad range to rapidly varying generating needs and consumption demand. As gas power plants in particular meet this criterion, EnBW is developing projects of this kind in Lubmin – where the first partial permit has been issued – and Düsseldorf together with the respective municipal utilities. We have also obtained the required immission protection permit for unit 6S at the Rheinhafen location in Karlsruhe.



http://www.enbw.com/content/en/group/portrait/energy_production/power_plants/index.jsp



CO₂ capture

Carbon capture and storage (CCS) is the name of the technology that can reduce CO₂ emissions from industrial and power plant processes and therefore make a valuable contribution to climate protection. EnBW is preparing its new power plants for the use of this technology. One example of this is the new construction of the RDK 8 unit at the Rheinhafen steam power plant, where – among other things – the necessary space is being reserved for the possible integration of a CO₂ capture system.

These capture processes need a lot of energy; this energy is lost and reduces the efficiency of the plant. EnBW is therefore conducting research projects with the core aim of reducing the decrease in efficiency due to CO₂ capture.

EnBW has invested around 1.7 million € in a trial installation at the Heilbronn power plant location to explore the options for CO₂ capture using an aqueous amine solution. This installation is integrated in the flue gas cleaning system of power plant

unit 7; it is designed to capture around 300 kg of CO₂ an hour and has been in operation since March 2011.

EnBW is also stepping up the development of a process that uses limestone to capture CO₂ – the carbonate looping technique. The loss in efficiency due to CO₂ capture should be lower than, for example, in the amine wash. A carbonate looping pilot plant has already been set up at the Institute of Combustion and Power Plant Technology (IFK) at Stuttgart University and went into operation in May 2010.

We are looking into a concept that uses membranes to capture CO₂. Trials using membranes made of polymers and ceramics began in 2007 at the Rheinhafen steam power plant in Karlsruhe in cooperation with the Jülich Research Centre. The goal is to develop a module that is integrated in the flue gas path.

➤ **"Higher efficiency and lower emissions: the coal-fired RDK 8 unit sets a new benchmark."**



21st century power plant

Coal-fired power plants are the central element in energy production worldwide, and this will certainly remain the case for some time to come: because even if the generation of electricity from fossil fuels is today seen as a bridge technology in Germany, it will not be possible to reliably meet the worldwide demand for energy without using coal well into the future. This means that the sparing use of fossil fuels and the reduction in emissions harmful to the climate are more important than ever before. In this endeavour, economical and highly efficient power plants are one of the "levers" that energy suppliers worldwide can apply. EnBW is therefore involved in numerous research projects for the development and optimisation of innovative power plant technologies and materials – including joint research projects in the COORETEC¹ research initiative and the COMTES700 project².

Coal trading and supplier assessment

The EnBW power plant portfolio contains almost 4,000 MW of coal-based generating capacity, and this means we need between 4 and 5 million tons of coal every year depending on power plant deployment. As German coal meanwhile accounts for only a fraction of the coal types in our procurement portfolio, most of our coal currently comes from Colombia, Russia, South Africa, the USA and Poland.

The origin of the coal depends on the world market situation at the time, and this is why there is considerable variation in the shares of the different coal types over time. We procure part of the coal through long-term contracts in order to ensure we always have sufficient coal to meet our basic requirements.

When procuring the coal we need for our power plants, EnBW Trading GmbH subjects its business partners to a clearly defined review process. Among other things, this business partner review is designed to permit uniform assessment of the conduct of business partners in the areas of employee health and safety, compliance with environmental protection regulations and the issue of corruption.

When procuring coal from Colombia and South Africa, EnBW Trading GmbH also reviews the downstream suppliers for adherence to compliance standards as part of a comprehensive business partner review. This coal comes from a small number of mines and mining companies all owned by big, mainly exchange-listed mining corporations (BHP Billiton, Anglo American, Xstrata) with corresponding compliance standards.

¹ COORETEC is an initiative of the German Federal Ministry of Economics and Technology for the development of a power plant fired by fossil fuels with prospects for the future. Research and development are based on two approaches: first, increasing efficiency and, secondly, finding solutions for the capture, transport and storage of CO₂.

² COMTES700 stands for "Component Test Facility for a 700°C Power Plant" and was set up on the initiative of European energy companies to develop new coal electrification technologies. The requirements for new technologies are minimum emissions, maximum efficiency and low electricity production costs. The aim of COMTES700 is to develop a coal-fired steam power plant with an efficiency rating of 50% and more.

In the case of deliveries from the USA and Russia, proof of origin is currently not possible due to the structures of the local trading markets and the logistics behind these markets (several transshipment processes en route to the exporting port).

As a member of the VdKI coal importers' association, EnBW actively supports the implementation of CSR standards in the field of international coal trading.

In addition, EnBW employees regularly visit the various mines and extraction regions, and the findings of their visits are incorporated in the review process for business partners.

International climate protection projects

For a number of years now, EnBW has been involved in all phases of the Clean Development Mechanism (CDM) in developing and emerging nations. CDM is one of the so-called "flexible mechanisms" under the Kyoto Protocol and permits individual states to meet CO₂ reduction commitments in other countries where the cost of doing so is often lower. In the same way, the EU allows companies who participate in the European emissions trading system to arrange for crediting of emission credits from CDM projects in developing nations within the context of their obligations under the EU emissions trading system.

The projects in question are geared towards the development and management of the CDM cycle, the purchase of emission credits and (since 2009) also the financing, construction and operation of CDM projects within the framework of investment measures. Our project development and contract business in this area is characterised by a high level of technological and regional diversification. Our investment activities are focused on renewable forms of energy (projects in the field of hydro-power and biogas, for example). We intend to generate up to 2.2 million emission credits from these activities every year in the period up to 2015. In addition to signing numerous procurement agreements with projects in all phases of development, EnBW is currently in the process of implementing its first CDM projects in Latin America and Southeast Asia. In this way, we can make a contribution towards climate protection and sustainable development in the countries in question.



**"A global goal:
to avoid CO₂ through
international CDM
projects."**

The challenges of energy generation

Nuclear energy

The operation of our nuclear power plants enables us to produce electricity with almost zero CO₂ emissions, and these plants have avoided up to 35 million tons of CO₂ annually in recent years. By way of comparison, total CO₂ emissions in the state of Baden-Württemberg are in the order of 68 million tons a year.

Nuclear power plant safety

EnBW pursues a strategy of forward-looking modernisation management in its nuclear power plants, and this underpins safety standards of the very highest level. The technology of our facilities is systematically geared towards the scientific state of the art and the nuclear technology "rulebook". The central goal is always to ensure the safety of nuclear power plants. We pursue a targeted and holistic approach that pays equal consideration to the factors humankind, technology and organisation as well as the interplay of these factors. The aim of this approach is to drive continuous optimisation and further development in all the relevant fields.

All aspects of our nuclear power plants are permanently monitored by the German nuclear regulatory authority. In recent years, they have been additionally subjected to the new safety inspections stipulated by law and also inspected by the International Atomic Energy Agency (IAEA) within the framework of a globally standardised procedure – the so-called OSART missions. Our plants have performed extremely well in these audits. The OSART missions took place on our own initiative, and the findings are published on the EnBW website. We are the only German operator of nuclear power plants who has arranged for IAEA inspections of all its production locations within the space of just a few years.

As part of the response to the events in the Japanese town of Fukushima, a state-appointed expert commission once again conducted an in-depth review of the safety of our nuclear power plants in the spring of 2011. During this process, the expert commission of the state of Baden-Württemberg confirmed that our facilities possess safety back-up systems that extend beyond what is required by law and that are considerably more extensive than those that were in place in Fukushima. The Reactor Safety Commission of the German Environment Ministry also found that our nuclear power plants are equipped with safety back-up systems that greatly exceed the legal requirements in many areas. It also confirmed that the fundamental design of our facilities is far superior to that of the installations in Fukushima.

Our holistic approach to forward-looking modernisation management will also guide us in years to come when making decisions to upgrade the safety back-up systems for our nuclear power plants and indeed any decisions on the further development of our installations.

Research, development and applied resource conservation

EnBW supports a large number of research projects in the nuclear field. In addition to our involvement in mainly multi-year joint projects coordinated by the VGB PowerTech association and focusing on topical issues relating to the optimisation of power plant operation, we also, for example, support PhD candidates at highly reputed research institutions. Research projects that have been successfully completed in recent years

include projects in the field of waste minimisation and the final storage of nuclear waste.

One specific example linking current challenges with the challenges of the future is the development of a process to optimise the treatment of contaminated areas during the dismantling of our decommissioned nuclear power plant in Obrigheim. The decontamination process is being robot-automated, and the robot autonomously mills off the required thickness from the cement surface while capturing the resulting dust at the same time. This minimises the occurring waste volume and it is then possible to demolish a large part of the former power plant building in the conventional fashion once the robot has completed its work.

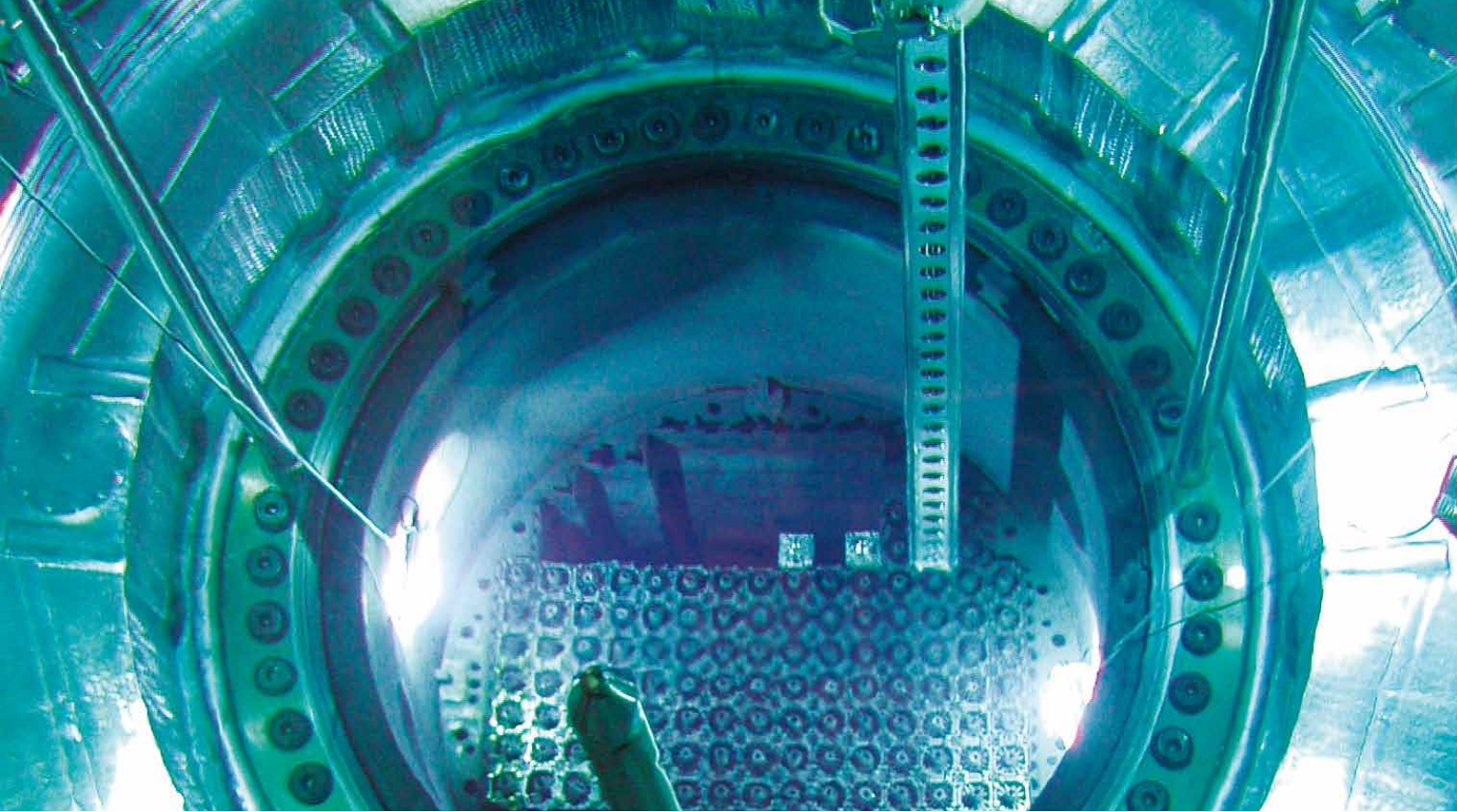
Use of uranium resources

In nuclear power plants, fuel elements containing uranium are used to produce electricity. EnBW has signed uranium supply agreements with companies who operate deposits in Canada, the USA, Australia and Kazakhstan or who supply uranium from Russia.

Uranium is extracted either in open-cast mines, underground mines or using chemical techniques depending on the geological situation and the level of uranium enrichment in the ore body in question. In their operations, the various mining companies are responsible for compliance with their own rules and with the statutory regulations. We take great care in this regard when selecting suppliers for our nuclear fuels.

Interim and final storage of nuclear waste

The construction of interim storage facilities for spent fuel elements at the nuclear power plant locations was one of the measures stipulated by the Social Democrat-Green coalition government of the time when the so-called "nuclear power consensus" was reached in 2001. EnBW has fulfilled these obligations at its locations in Philippsburg and Neckarwestheim. The



licence permits for the interim storage facilities under the German Atomic Energy Act stipulate that only fuel elements used in the nuclear power plant in question may be stored at the individual locations. In addition, the period of storage in the containers is limited to 40 years from the date of first storage of a loaded container.

Under the aforementioned nuclear power consensus, the German government entered into an obligation to provide a final depository for the spent fuel elements in a timely manner. Much time was lost, however, when exploration was halted for ten years. The current German government has now recommenced exploration activities at the salt dome in Gorleben.

Expert opinions confirm that the explorations in Gorleben to date have not given rise to any scientific doubts over the suitability of the salt dome. Even experts who are critical of nuclear power emphasise that, based on the right criteria, there are no concerns over the suitability of salt as a final storage medium. In line with the plans of the German government, a final decision is to be made on the suitability of Gorleben as a final depository by the year 2018. If the decision is in favour of Gorleben, the next steps will be the planning approval process under the German Atomic Energy Act along

with the stipulated public participation and an environmental impact assessment. The aim of the government is to start up operation of the depository in the 2030s, which would still be a long way before the end of the 40-year operating periods of the interim storage facilities in Philippsburg and Neckarwestheim.

The fact that the German government is responsible for the creation of a final depository does not change the fact that funding for the depository is based on the "polluter pays principle". The final depository project in Gorleben has cost around 1.6 billion € since 1977, of which 96.5% is paid for by the nuclear power plant operators (and therefore on a pro rata basis also by EnBW) and not by the taxpayer.

Dialogue with the public

We are fully aware of the high-level information needs of the public at large when it comes to the operation of nuclear power plants. We meet these needs with a policy of open communication and a permanent willingness to enter into dialogue. Every year, our information centres at the nuclear power plant locations welcome around 25,000 visitors who have the opportunity to form their own opinion of our facilities – and we are always willing to engage in frank and factual discussion.

"High standards, ample back-up: top official grades for safety."

The challenges of energy generation

Our networks

The increasing expansion of renewables will make major demands on the entire network infrastructure in years to come. This makes flexibilisation and the systematic development of the power supply system an absolute necessity.

Future-proof transmission grid

EnBW Transportnetze AG (TNG) is one of the four transmission network operators in Germany. EnBW Regional AG as distribution network operator handles the distribution of electricity in large parts of Baden-Württemberg via its own networks. Other EnBW companies who also operate distribution networks include EnBW Ostwürttemberg DonauRies AG, Energiedienst Netze GmbH, the Stadtwerke Düsseldorf AG municipal utility and ZEAG Energie AG. These networks offer all market participants transparent and non-discriminatory conditions for network access and network utilisation. In their capacity of network operators, the above companies are responsible for the safe and reliable transmission and distribution of electricity.

In the past, power plants were built in consumption-focused locations near to load centres. This kept the distances over which electricity had to be transported and the degree of necessary network expansion to a minimum in the various control zones. Interconnection coupling lines and partner networks were primarily designed to allow assistance between control zones in the event of disruption rather than to facilitate national and international electricity trading.

In order to meet the German and European climate protection targets, power generating facilities for renewable forms of energy are increasingly being built at the most suitable locations. This means that the highly productive wind energy installations, for example, are mainly built in the coastal regions of the North and Baltic Sea with their high wind levels and therefore far away from the load centres in southern Germany. Considerable network expansion will be a matter of urgency in the coming years in

order to transport the electricity generated from renewables to where it is most needed. This issue is outlined in detail in the "dena" network studies I and II. Further challenges for the network operators result from the increasingly supply-dependent and therefore fluctuating feed-in of electricity from renewable forms of energy. These fluctuations need to be offset, and this will require far greater flexibility in the electricity supply system in the future.

In our own control zone, we are paving the way for the achievement of the defined climate protection goals through the systematic development of the 380/220 kV transmission network. A continuous planning process ensures that the network can perform new transport functions and that the goals stipulated by the government – such as performance capability, technical safety, supply reliability, environment-friendliness and cost efficiency – can be regularly reviewed, adjusted and met.

The transport of electricity over large distances – as a result, for example, of the continued growth of electricity trading or a greater share of electricity generated a long way from the point of consumption in the increasing number of wind power installations – will require major investment in the expansion of transmission capacities. Realising this need, we began back in 2005 to convert large parts of our network from 220,000 volts to 380,000 volts in order to increase transmission capability. We have invested around 160 million € in this process to date.



<http://www.enbw-transportnetze.com/about-the-grid/the-grid-from-a-to-z/current-projects/>



Optimising existing transport network structures

The "dena" network study II published at the end of 2010 compares various options for the transmission of electrical energy within Germany. It focused not only on conventional 380-kV overhead lines with which Germany has many years of experience but also on new technologies with which there is little or no past experience. One of the things the "dena" network study II looked at was the extent to which the transmission capacity of overhead lines can be increased by line monitoring or the use of high-temperature conductor cables. One key finding of the study is that a great deal of research is still needed into the use of these kinds of new technologies and operating concepts in the German high-voltage network. EnBW Transportnetze AG is currently conducting field trials on the use of overhead line mon-

itoring and innovative high-temperature conductor cables and has been testing the performance and implementation of these technologies since May 2011.

➤ "Our policy of systematic network development is one of the preconditions for effective climate protection."

Medium-term development of the transmission infrastructure – spring 2011 status

Project	Measure	Transmission channel/Region	Scheduled start-up	Impacts ^{1,2}
380-kV line between Dellmensingen, Niederstotzingen and Goldshöfe	Creation of the second 380 kV power circuit	TNG	2013	This project increases the transmission capacity in the eastern region of Württemberg between Franconia/Bavaria and Vorarlberg/Austria
380-kV line between Höffenhart and Großgartach	Creation of the second 380 kV power circuit	TNG	2012	This project increases the transmission capacity and takes the transit strain off the network in the northern TNG region
380-kV line between Mühlhausen and Großgartach	New construction of a 380-kV line with creation of a second 380 kV power circuit	TNG	2013	This project increases the transmission capacity in central Württemberg between the Heilbronn and Stuttgart regions

¹ The extent to which the new line between the two locations impacts the transmission channel overall depends on the development of loads and feed-in volumes in the network regions in question.

² Addition of the conventional transmission capacities of several line connections does not allow any conclusions regarding the actual load capability and leads to figures that are of no operational relevance.

"We invested over 200 million € in our distribution network in 2010."

Modernising and expanding the distribution network

Ongoing investment in network operation ensures that the quality of the distribution network and therefore the reliability of the power supply system is of a constant high standard. One of areas in which this investment is made is the systematic replacement of overhead lines by buried cables in the medium and low-voltage networks. In 2010, around 200 km of medium-voltage cable was modernised or laid as a substitute for overhead lines in the network region of EnBW Regional AG alone. During the course of 2010, we invested over 200 million € in our distribution network in order to connect new residential estates up to the supply network, to modernise the networks for the future, to meet the ever increasing demand for energy and to cater to the growing volume of electricity fed in from renewable sources like photovoltaic installations.

These buried distribution networks not only have less of a visual impact on the landscapes and cityscapes but also make

the energy infrastructure more efficient and allow adaptation of transmission capacity to growing demand. At the same time, they are also less susceptible to malfunction, as adverse weather is the most common cause of disruption and interference to electricity supplies. This is an area in which buried cables have clear advantages over overhead lines, as they are protected from lightning strikes and storm damage. These advantages can only be exploited cost-effectively in the medium and low-voltage network, however. In the high and very high-voltage network, the cost of laying and operating buried cables is many times that of overhead lines.

Intelligent networks

The increasing feed-in of renewables into the low and medium-voltage networks requires major investment in network capacity so that the generated power can be taken on by the system and inadmissible voltage fluctuations and operating equipment overload can be avoided. The expansion of the networks is not always the most effective solution to the problem.

The term "smart grid" is used to describe a means of limiting cost-intensive network expansion in the future through the use of information and communication technology. EnBW has launched a "NetLab" in order to determine the potentials for this "intelligent network" at the earliest possible stage. This programme is designed to help us develop concepts for the improved integration of decentral energy generators in the existing network in years to come. This not only creates benefits for the network operator, who saves money by investing in information and communication technology instead of having to expand his conventional network; it also has advantages for the grid customer as a consumer and producer of energy, as the customer can now use his installation to generate additional revenue based on new business models – as part of a "virtual power plant", for example.

The municipality of Freiamt in the Breisgau region of southern Germany is home to an above-average number of decentral generating installations and is therefore a perfect choice as one of the locations for this EnBW pilot project. The Freiamt parameters are 10 MW of energy generation but just 1.8 MW of network load. This kind of extreme difference between load and generation is still an exception but will in future be par for the course for many rural regions.

Optimising distribution network operation

The distribution of electricity via the networks of EnBW is already safe and efficient, but researchers and technical experts are nevertheless hard at work looking at ways to improve the system. One such project concerns power transmission in adverse weather conditions with snow and ice. Conditions like this can result in heavy icing that can pull down and damage the lines between two pylons.

The network operators know the critical points with high potential ice loads, but there is no cost-efficient method of automatically detecting this type of ice formation. Together with researchers from the Karlsruhe Institute of Technology (KIT), EnBW is taking a closer look at the critical points on two overhead cable sections in the Black Forest. The researchers are feeding a high-frequency signal into the high-voltage lines to identify and localise ice loads. The network operators will then be able to operate the affected section in "thaw mode" from the control centre: to do this, they pool the flow of electricity on an overhead cable system, which then heats up and melts the ice. This means that the service team only has to drive to the location and use long rods to knock the ice off the shut-down line in extreme emergencies.

"Our NetLab project is geared towards the introduction of intelligent networks to improve the integration of decentral energy generators."



The challenges of energy generation

Research and innovation

The Research and Innovation unit develops real-world solutions that can generate value added both within the company and for the company's customers. All activities are guided by the implementation of climate protection targets and the need to ensure environment-friendly, reliable and competitive energy supply operations now and in the future.

Pilot and model projects

The new concepts developed by our strategic core Research and Innovation unit cover the entire value added chain of EnBW as well as the provision of services directly at customer locations. Most of these activities take the form of pilot and demonstration projects – and are focused in the following areas:

- Renewable forms of energy: we intend to make the use of renewables economically feasible and develop additional potentials – in areas such as wind power, in the field of new bioenergy sources and on the geothermal energy front.

- Improved network control at both the generator and consumer end (smart grid): we are working on solutions that will enable us to integrate high volumes of fluctuating energy from renewables in the network. We are also testing storage solutions. Other core areas include the development of novel mini-power plants and the improvement of geothermal heating systems in the private customer segment.

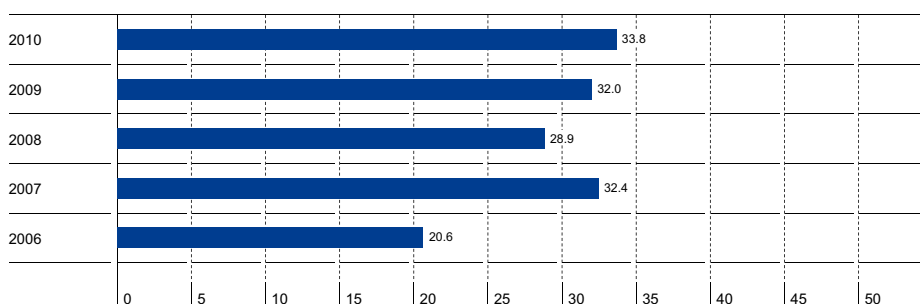
- Electromobility and hydrogen: together with partners, we are currently involved in several model and pilot projects focusing on the provision of energy including charging infrastructures for the emission-free mobility concepts of the future.

- More efficient use of conventional sources of energy and reduced emissions: in practice, this means increased power plant efficiency, the capture of CO₂ from flue gases and new application options for CO₂.

- Climate protection projects: we are developing new projects and methods in order to obtain CO₂ certificates within the framework of the Clean Development Mechanism (CDM).

Research expenditure of the EnBW Group

in million €



Employees and alliances

In the year under review, spending on research totalled 33.8 million € after 32 million in 2009. This increase is due in particular to activities in the field of electromobility. A further focal point of our work in 2010 was improving the energy efficiency of our generating operations.



The number of employees in the EnBW Group working in the fields of research, development and innovation was the same as in the previous year at 170. Around 150 of these employees work at EnBW companies and also implement research and development projects as part of their operational tasks. As in 2009, 19 employees worked in the strategic unit at the holding company. These employees are chiefly engineers, scientists and economists and are assisted by numerous students.

We are still adhering to our decision not to operate our own laboratories but instead to cooperate closely with innovative young companies, technology suppliers and the world of science. We currently cooperate with 52 universities and fund a total of ten endowment chairs covering the various aspects of energy technology. Our most important external research and innovation partners include the universities and

research institutions in Baden-Württemberg – above all in Karlsruhe, Stuttgart and Hohenheim. In the remainder of Germany, close ties also exist with universities and research institutions in Aachen, Berlin, Cottbus, Darmstadt, Dortmund, Dresden, Düsseldorf, Hamburg-Harburg, Cologne, Munich and Oldenburg.

➤ **"The development of the energy supply system of the future will shape our lives for generations to come."**

Targeted environmental protection

Corporate goals, measures and projects

Certification of the environmental management system in accordance with ISO 14001 in 2006 as the first big German energy company to do so – as well as cross-company targets and measures: the EnBW Group attaches major importance to environmental protection.

Corporate environmental protection targets – 2008 to 2010

EnBW has defined cross-company environmental protection targets for the period from 2008 to 2010. These corporate targets are focused on four core areas:

- › Climate protection, resource conservation, energy efficiency
- › Sustainable social responsibility
- › Communication and raising awareness
- › Protection of humankind and the environment

Using the corporate targets as a starting point, the group companies define appropriate measures and implement these measures; they also formulate their own sub-targets, and this means that each company exploits the available synergies to make its own individual contribution to the achievement of the adopted corporate targets on the environmental protection front. Examples of the various activities can be found in this report in the "Excerpt from the EnBW 2010 Environmental Programme".

In summary, it can be said that the overwhelming majority of corporate environment protection targets for the period from 2008 to 2010 have been met. The following graphic shows the updated status as of the end of 2010.

Climate protection, resource conservation, energy efficiency

In 2010, the specific CO₂ emissions from the electricity generating activities of EnBW were around 19% higher than in 2009 at 299 g/kWh. This was mainly due to increased share of power generation from lignite and a generally higher share of fossil sources of energy relative to the share of nuclear energy. This increase was mainly caused by the reduced utilisation of unit 1 at the Neckarwestheim nuclear power plant and the newly acquired plants in Rostock, Buschhaus, Lippendorf and Bexbach. Despite this increase, the specific CO₂ emissions from our power generation are still well below the German average.

Target: specific CO₂ emissions below the German average

Specific CO₂ emissions in g/kWh

2007	254
2008	245
2009	251
2010	299
German average in 2009	508

Target: expansion of EnBW generation of power from renewables to a share of around 20% by 2020

Share of renewable generation in own electricity generation in %

2007	9.9
2008	11.2
2009	11.0
2010	10.5

The share of power generation from renewables has increased only slightly since the reference year 2007. This is due to the fact that the investments in the expansion of renewable energy generation were not or only partly translated into productivity in 2010 (the run-of-river power plant in Rheinfelden, for example, or EnBW Baltic 1). In years to come, we expect our investment programme in the field of renewables to drive a clear increase in the share of our renewable energy generation.



The "CO₂ efficiency rating fossil" is a specific parameter for our primarily coal-fired power plants. This rating is largely dependent on the use and mode of operation of the plants in question, and these factors are in turn determined by market requirements.

The gas network is inspected over randomly chosen line sections at set intervals, with between 20 and 40% of the total network being tested in any one year. Depending on past damage rates, intervals of 2, 4 and 6 years are admissible in line with the minimum requirements laid out in the relevant regulations. When older gas networks fall in the inspection schedule, the damage rate increases. This leads to a wave-shaped curve in the damage rate over a number of years. We expect to once again see a far lower rate in 2011, as the inspection schedule includes many network zones with "new" transmission lines.

Target: continuous improvement of the climate, energy and resource efficiency of our existing plants and operating facilities

Fossil CO₂ efficiency in g/kWh

2007		828
2008		800
2009		809
2010		811

Damage rate in the gas network in damaged points per 1,000 km

2007		45
2008	31	
2009 ¹	38	
2010		47

¹ Prior-year figure for 2009 corrected.

Target: efficient use of energy by the customer

Energy saved by energy efficiency projects in million kWh (cumulative)

2007	167
2008	270
2009	488
2010	686

Target: dialogue with society, politics and science

Number of events on the topics of sustainability and climate protection

2007	7
2008	21
2009	16
2010	21

Target: to ensure that our employees identify with our environmental principles

Number of employee suggestions that positively impact the environment¹

2007	123
2008	165
2009	189
2010	85

Share of gas-driven vehicles (natural gas, liquefied gas) in total driven mileage in %

2007	6
2008	7
2009	7
2010	6

¹ Included companies: AKA, EDH, EnKK, EOG, ETG, EVG, GAS, HOL, KWG, REG, SIS, SWD, TNG.

Our energy efficiency projects in the field of industry and trade have led to a continuous increase in the amount of energy saved by the participating companies, and just under 700 million kWh have been saved since 2007. This is equivalent to avoided CO₂ emissions in the order of 290,000 tons.

Sustainable social responsibility

Compared to the reference year 2007, there was a significant increase in the number of events on the topics of sustainability and climate protection in the period from 2008 to 2010. These events included formats like the Municipal Energy Conference, the EnBW Energy and Business Club in Stuttgart and Berlin and the debate evenings staged by the Baden-Württemberg Energy & Climate Protection Foundation.

Communication and raising awareness

In past years, targeted programmes were in place to increase the number of suggestions for improvements. After these programmes came to an end, the number of suggestions with positive impacts on the environment showed a marked decline in 2010.

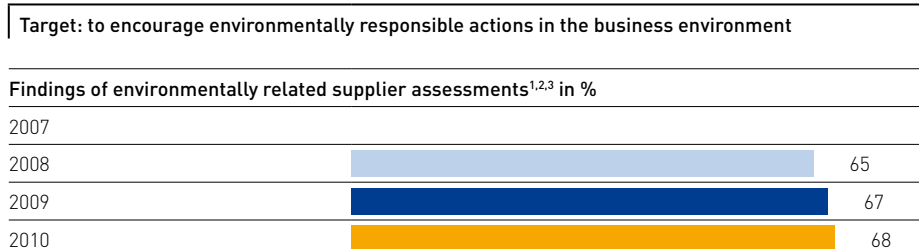
During the period from 2008 to 2010, the share of gas-powered vehicles in total fleet mileage remained more or less constant - which means we were unable to increase the percentage of these vehicles.

We have succeeded in achieving ongoing improvement in the outcomes of environmentally relevant supplier assessments since this instrument was introduced in 2008. The figure of just under 68% for 2010 confirms that the environment-related requirements and expectations of EnBW were more than fulfilled.

Protection of humankind and the environment

The average recycling rate has increased by just under 10% compared to the reference year 2007. The figure has remained more or less unchanged since 2008 at slightly below 80%, and this figure reflects the maximum that is currently feasible and possible.

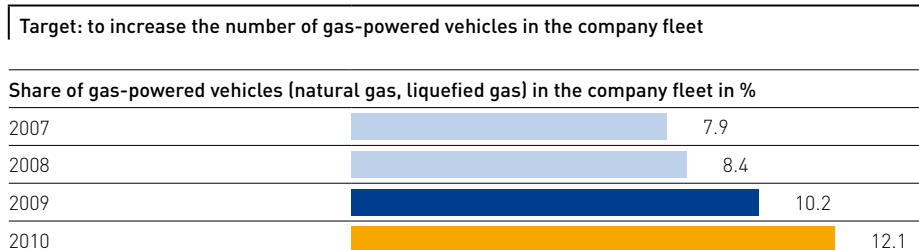
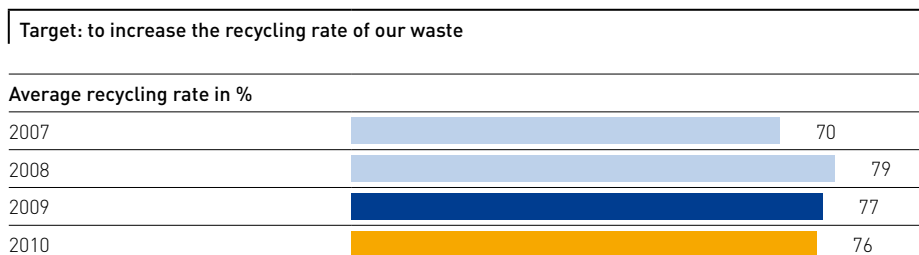
Up to the end of 2010, the share of gas-powered vehicles in the EnBW fleet was increased by just over 50% compared to the reference year 2007.



¹ Included companies: AKA, EDH, EnKK, EOG, ETG, EVG, GAS, HOL, KWG, REG, SIS, SWD, TNG.

² Environmental supplier assessments have been conducted since 2008. No data are available for 2007.

³ A figure of over 60% means that all requirements and expectations of EnBW are met.



Indicator	Corporate target defined for the period from 2011 to 2015
Renewables <ul style="list-style-type: none"> Share of renewables in generating mix 	<ul style="list-style-type: none"> Increase of around 3,000 MW by 2020
Direct CO₂ emissions <ul style="list-style-type: none"> specific CO₂ emission (group power generation) Emission from operation of gas pipelines Emission from fossil fuel heating of buildings Emission from own vehicle fleet 	<ul style="list-style-type: none"> Lower than German average 5% reduction in CO₂eq emission per km 15% reduction in CO₂ emission per m² 10% reduction in CO₂ emission per km
Electricity consumption (indirect CO₂ emission) <ul style="list-style-type: none"> Consumption of electricity and district heat in buildings Computing centre power consumption 	<ul style="list-style-type: none"> 10% reduction in CO₂ emission per m² in each case 10% improvement in average PUE value¹
Avoided CO₂ emissions: <ul style="list-style-type: none"> Energy efficiency projects at customer locations CDM/JI projects Biogas 	<ul style="list-style-type: none"> 28% increase in CO₂ avoidance Increase in CO₂ avoidance to 2,200,000 tons Fivefold increase in CO₂ avoidance
Air pollutants from coal-fired power generation: <ul style="list-style-type: none"> Specific SO₂ and NO_x emissions (group power generation) Specific SO₂ and NO_x emissions (coal-fired power generation) 	<ul style="list-style-type: none"> Lower than German average Reduction in specific SO₂ and NO_x emissions from EnBW's own coal-fired power plants²
Biodiversity: <ul style="list-style-type: none"> Biodiversity index³ of EnBW Group 	<ul style="list-style-type: none"> Increase to 0.9
Environmental management: <ul style="list-style-type: none"> Percentage of on-time completion of measures from audits 	<ul style="list-style-type: none"> Increase to 100%

Corporate environmental protection targets – 2011 to 2015

In June 2010, the EnBW Management Board adopted the "Environmental Protection Strategy" (see p. 8) outlining the specifics of the corporate strategy.

This has given the strategic objectives more concrete form by laying out individual targets and indicators, paving the way for de facto measurement. The new corporate environmental protection targets represent the systematic further development of the environmental protection strategy and the defined corporate objectives. They underline the ongoing efforts of EnBW to ensure sustainable corporate management; they demonstrate that EnBW identifies with the goals adopted by society and is determined to play a key part in achieving these goals.

¹ PUE = Power Usage Effectiveness (optimum = 1.0).

² Basis: Power plants of EnBW Kraftwerke AG in operation and already under construction in 2010.

³ Biodiversity index = indicator for the importance of the issue of biodiversity in the field of environmental management: min. = 0.2, max. = 1.0.

The CO₂ footprint of EnBW

2010 was the first year that EnBW calculated its group-wide CO₂ footprint based on the international "Greenhouse Gas Protocol" standard. Scopes 1 and 2 were incorporated in the CO₂ audit.

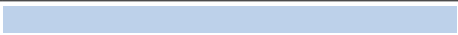



According to the "Greenhouse Gas Protocol", the documentation and reporting of Scope 3 emissions is optional; we are currently working on a process to determine Scope 3 emissions.

Numerous business activities of EnBW result in the avoidance of CO₂ emissions, such as power generation from nuclear energy and renewables, energy efficiency projects at the locations of our customers/partners, international climate protection projects (CDM/JI projects) implemented within the context of the Kyoto Protocol and the generation of electricity and heat from biogas.

Scope 1 and 2 based on the "Greenhouse Gas Protocol" with corresponding corporate activities of EnBW

Scope 1: Direct climate gas emissions from sources belonging to or directly controlled by the company	<ul style="list-style-type: none"> ➤ Fossil fuel generation (electricity + heat) ➤ Emissions from operation of gas pipelines/installations ➤ Emissions from fossil fuel heating of buildings ➤ Emissions from vehicle fleet
Scope 2: Indirect climate gas emissions resulting from the production of additionally purchased electricity, steam, district heat and cooling used in the company; network losses	<ul style="list-style-type: none"> ➤ Power loss in network lines ➤ Power consumption of electricity and gas network ➤ Power consumption of water installations ➤ Consumption of electricity and district heat in buildings ➤ Power consumption in computing centres and catering kitchens

The CO₂ footprint of EnBW for 2010

Direct CO ₂ emissions of EnBW (Scope 1) in tons		
Fossil fuel generation ^{1,2}		20,915,000
Other ³		145,500
Indirect CO ₂ emissions of EnBW (Scope 2) in tons		
Network losses in the electricity grid		1,091,000
Other ⁴		60,500




¹ Diagram not to scale.

² Own generation of electricity and heat from fossil fired power plants (comprises own and part-owned plants as well as long-term procurement agreements).

³ CO₂ emissions from the operation of gas pipelines/installations, fossil fuel heating of buildings and vehicle fleet.

⁴ CO₂ emissions resulting from electricity consumption of installations in the gas and electricity network, water supply, buildings, computing centres and catering kitchens.

Avoided CO₂ emissions in 2010 in tons

Nuclear energy ^{1,2}		31,420,500
Generation of renewables ^{1,3}		5,945,000
Other ⁴		98,500

¹ Diagram not to scale.

² Based on BDEW and VGB practice, calculated using an avoidance factor of 920 g/kWh.

³ Calculated using the avoidance factors of the "Emission Balance of Renewable Energies" (12/2009 publication of the German Federal Environment Agency).

⁴ Energy efficiency projects at customer/partner locations, CDM/JI projects, production and sale of biogas.



Certified environmental management

In 2006, EnBW was the first big German energy company to begin the group-wide certification of its environmental management system in line with ISO 14001 by an external and independent expert. Step by step and along the full value added chain, the companies with environmentally

relevant activities and installations were integrated in the environmental management system. Compliance with the internationally valid ISO requirements and the certification process itself are voluntary and underline the key importance of the issue of environmental protection in our company.

Companies certified in accordance with ISO 14001¹

EnBW Energie Baden-Württemberg AG	■	■	■	■	■
	Production	Transport & distribution	Trading	Sales	Services
EnBW Energy Solutions GmbH	■			■	■
EnBW Erneuerbare Energien GmbH	■				
EnBW Gas GmbH			■	■	
EnBW Gasnetz GmbH		■			
EnBW Kernkraft GmbH	■				
EnBW Kraftwerke AG	■				
EnBW Ostwürttemberg DonauRies AG				■	■
EnBW Regional AG		■			■
EnBW Systeme Infrastruktur Support GmbH					■
EnBW Trading GmbH			■		
EnBW Transportnetze AG		■			
EnBW Vertriebs- und Servicegesellschaft mbH				■	
Energiedienst Holding AG	■	■	■	■	■
Erdgas Südwest GmbH			■	■	■
Erdgas Südwest Netz GmbH		■			
Gasversorgung Süddeutschland GmbH			■	■	■
Gasversorgung Unterland GmbH				■	
GVS Netz GmbH		■			
Netzgesellschaft Heilbronn-Franken GmbH		■			
Netzgesellschaft Ostwürttemberg GmbH		■		■	■
Stadtwerke Düsseldorf AG	■	■	■	■	■
Technologie Service GmbH					■
TPLUS GmbH					■
ZEAG Energie AG	■			■	■

■ Certified ■ Certification planned

¹ Last revised: December 2010.

Transformers with environment-friendly insulation

High-voltage transformers contain anywhere from around 15 to 80 tons of insulating fluid. Since 2008, trials have been ongoing with a power transformer used to step down the voltage from 110 kV to 20 kV which uses vegetable oil for insulation. In other words, an environment-friendly and renewable raw material has replaced the mineral oil that would otherwise be used. The focus is currently on trial runs in critical operating statuses and questions relating to service life. The transformer has been operating without any faults for three years; what is apparent is that vegetable oil can be subjected to higher thermal loads than mineral oil. This means the transformers are more efficient and could be built in a more compact design than conventional transformers. The use of vegetable oils as environment-friendly media in transformers means EnBW can continue to operate its substations even in areas where environmental regulations are particularly strict – near water conservation areas, for example. EnBW is looking into electricity converters as a further potential field of application for these vegetable oils. These devices measure the flow of electricity at the high-voltage level.

Nature conservation, biodiversity and bird protection

We attach particular importance to the diversity of plant and animal life when building and maintaining our installations. We do everything we can to minimise the negative effects of our intervention in nature and to reinforce the positive impacts.

The aisles of the transmission network running through the Hochwald forest are a good example of this. While the surrounding forest areas are frequently home to monocultures, the aisles are characterised by a wide variety of bushes and grassed areas where widely differing animal species like insects, reptiles or mammals find new habitats. In order to additionally promote this positive aspect, we maintain our cable routes in line with ecological criteria and

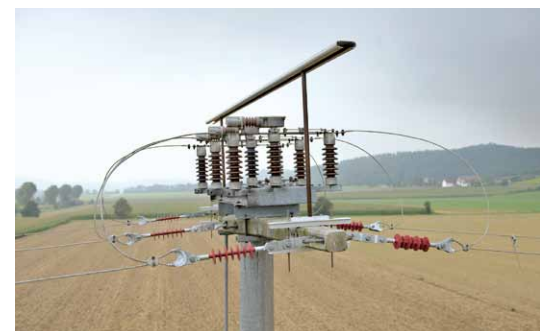
take breeding seasons and vegetation periods into account. This is an area in which we cooperate closely with the competent environmental authorities and forestry services.

EnBW also lays great store by bird protection in the overhead line network. Back at the end of 2002, we had already completed a series of bird protection measures in over 46,000 pylons in the roughly 3,000 km-long medium-voltage overhead cable network. We have been optimising these bird protection measures on an ongoing basis ever since. We have, for example, been involved for a number of years in the "Bird Protection Measures" project group for medium-voltage overhead lines organised by the FNN network technology and operation forum of the VDE electrical federation, and we have shared our wide-ranging experience in the field of bird protection in the drafting of the new VDE application rules on bird protection in medium-voltage lines. This draft was published by FNN in November 2010 and submitted for public review and comments. In 2010, over 1,500 bird protection devices like perching rods, landing deterrents and protective hoods were installed during maintenance work on the distribution network. New bird protection measures were tested within the context of a pilot trial for bird protection near Bad Waldsee-Haisterkirch, as a white stork had a fatal collision with a pylon despite the fact that the pylon had been correctly fitted with landing deterrents on the cross-beam. These landing deterrents prevent birds from attempting to perch near dangerous voltage sources.

Other bird protection activities during the year under review include ringing, the mounting of nesting boxes and nesting holes on pylons and the provision of nests. The measures taken in cooperation with local bird protection and nature conservation associations mainly focused on the little owl, the peregrine falcon and the stork. In contrast to the situation in the distribution network, there are no specific nature conservation regulations for the implemen-

tation of bird protection measures in the transmission network. Unlike lower voltage cables, the cables in the networks do not pose a threat of electric shock for birds due to the fact that the insulators are of such long design that birds can move about on the pylons and conductor cables without risk.

In order to further minimise the collision risk, we are researching the potential hazard of our very-high voltage lines with the help of experienced ornithologists and biologists.





"The future of IT is green – and CO₂ savings of up to 900 tons a year are possible."

Green IT

Sustainability is also a key topic in the IT field: in 2010 our IT innovation management team commissioned a feasibility study to determine the current potential for energy efficiency – in the use of computers, monitors, printers and the like. The study also looked at whether and to what extent various projects are realistic given the technical limitations and data protection regulations as well as the need to ensure the highest possible level of work safety.

The 14,500 or so IT workplaces in the company are already highly standardised, but we have nevertheless identified further potential for optimisation. Examples of "Green IT" measures that have already been implemented include the environment-friendly disposal or recycling of hardware and packaging material as well as the purchase of new, highly energy-efficient hardware. Moreover, preference is given to environmentally certified service providers during the procurement process. Even the waste heat is meanwhile being used to heat office premises.

The Stadtwerke Düsseldorf municipal utility plays a pioneering role within the EnBW Group when it comes to "Green IT". The company was the first in Germany to be certified for "energy-efficient IT workplaces" by the TÜV-Rheinland technical auditing organisation – and its computing centre was the second "energy-efficient computing centre" in Germany. The first audit showed a reduction of around 7% in the overall power

consumption of the computing centre. The focus is not only on improving climate protection but naturally also on cost efficiency. Experiences to date show that it should even be possible to cut energy costs by a further 20 to 40%.

In order to raise employee awareness for the issue of energy efficiency at the workplace and to act as a role model for this topic, EnBW is planning a special Intranet portal on "Green IT". If the options identified to date are exploited, it will be possible to save up to 900 tons of CO₂ a year. We are also conducting a feasibility study to determine the potential benefits of introducing an energy management system to identify additional energy efficiency potential.

Environmentally based supplier assessment

The performance capability of the group's strategically most important suppliers and those with the highest turnover is regularly evaluated using a Web-based supplier assessment system.

The central element in each assessment procedure is a standardised questionnaire covering the criteria of quality, reliability, cooperation and expertise as well as environment-related aspects. The supplier or the performance of the supplier is assessed by the recipient of the products or services in question.

The environmentally relevant part of the supplier assessment process is based on the following criteria:

- › Waste handling (waste avoidance, waste separation, waste disposal)
- › Handling of resources (sparing use of energy, operating media, materials, raw materials etc.)
- › Handling of substances that pose a threat to water like oil, petrol etc. (handling, storage and transport to be performed in a way that avoids the release of these substances)
- › Delivery and collection of dangerous goods performed in the proper fashion

Assessment is based on a 6-step system ranging from 100 points ("The supplier exceeds the stipulated requirements to a particularly high degree") to 0 points ("K.O. criterion").

Environmentally relevant aspects account for 12% of the overall assessment score and play a key role in ensuring that the supplier complies with our stipulated environment-related requirements when providing services. Our suppliers have met the requirements and expectations of EnBW since the system of environmentally based supplier assessment was introduced in 2008.

Decontamination at the Gaisburg gas plant

The gasworks in Stuttgart-Gaisburg went into operation in 1875 and supplied town gas to the city of Stuttgart and the surrounding area until the year 1970.

It is these gas production operations over the course of nearly 100 years that caused the contamination in the ground that is typical for gasworks. There were two issues that took top priority: first, the aim was to prevent the spread of the contaminants and, secondly, to remove the sources of the contamination. Following the comprehensive preliminary investigations and trial runs that were necessary in view of the high complexity of the location, we were able to begin with the first decontamination measures in 2009. The source of the contamination was permanently sealed off in the substrate using a sealant barrier, and a groundwater cleaning plant went into operation in 2010. This plant extracts 335 m³ of contaminated water every day via four wells and treats it in such a way that it can be discharged into the Neckar river. During the course of 2011, the old tar oil pits that are partially filled with residues from the production operations of the gasworks are being removed.



Focus on the customer

Combining convenience and climate protection

EnBW intends to establish a position in the market as a leading solution provider in the field of energy consulting and energy services. Key elements in this strategy include the expansion of decentral energy generation, energy efficiency and energy economy.

EnBW: well positioned

EnBW offers products and intelligent solutions in the energy field for private households, municipal utilities, municipalities, commercial firms and medium-sized and large industrial companies. These activities build on cooperation with expert partners such as the skilled trades in Baden-Württemberg. We are convinced that energy efficiency, decentral generation and an intelligent electricity network will in future become an important regional and municipal location factor. Our new regional strategy is geared towards even closer cooperation with the municipalities and municipal utilities in Baden-Württemberg in years to come.

Under the EnBW brand, EnBW Vertrieb GmbH itself markets electricity, gas, district heat, water and energy-related services to industrial, commercial and private customers, municipal utilities and municipalities. Since the beginning of 2011, EnBW has also been marketing eco-electricity from Baden-Württemberg hydropower nationwide through the new NaturEnergie+ Deutschland GmbH. EnBW is also active in the field of power sales through its holding in the Stadtwerke Düsseldorf AG municipal utility. In the southern Baden region and Switzerland, the group's electricity is marketed by sales units of Energiedienst Holding AG; and in the Czech Republic, EnBW holds a majority stake in PRE, the country's third-largest energy supplier.

The EnBW Group is also active in the field of network and energy-based services, thermal and non-thermal waste disposal and water supply through its Energy and Environmental Services business segment. EnBW Regional AG, the biggest distribution network operator in Baden-Württemberg, provides services to the municipal utilities and municipalities in the area of infrastructure, IT services and management as well as energy and network services. EnBW Energy Solutions GmbH (ESG) provides contracting services along the entire value added chain: from initial requirement analysis via planning, financing and construction all the way through to operational management, maintenance and servicing of installations at customer locations. These activities comprise energy installations, heating (and power) plants and media infrastructure systems for the supply of various practical forms of energy like heat, steam, cooling and compressed air. The contracting solutions provided by ESG help to maintain the competitiveness of the company's customers and reduce CO₂ emissions through the use of efficient generating technology.

Products and services

In order to further raise awareness levels for the sparing use of energy, EnBW and its customers have made a promise in recent years: "We will turn Baden-Württemberg into a model energy state". What we now want to do is to outline the solutions that EnBW has developed for this "model energy state": all our innovative energy services will in future be summarised under the heading "Ideas for the Model Energy State", and each of these services takes us a step closer towards achieving this goal.



We therefore systematically extended our product portfolio in 2010, with particular emphasis on the expansion of electromobility, decentral power generation, energy efficiency and energy economy – in the form of non-complex and therefore user-friendly (complete) solutions for the consumer. With our help, customers can generate their own power and use this power both intelligently and efficiently, thereby making an added contribution to climate protection.

The intelligent electricity meter

In 2008, EnBW was the first energy company in Germany to launch an "intelligent electricity meter", and this meter is a central element in our "smart home" model. Customers with intelligent electricity meters can monitor their power consumption around the clock and receive a monthly bill listing their exact consumption volumes. All the end customer needs is a DSL router to access the Internet. Via a dedicated Web portal – EnBW StromCockpit – customers can retrieve consumption data, obtain tariff information and identify energy guzzlers. EnBW's purpose-designed "electricity radar" software allows real-time analysis – for such things as the effect of standby power consumption on electricity costs. Moreover, we have developed a special app for smartphone owners that enables them to access power consumption data any time and any place.

Electromobility for all

In 2009, Stuttgart became one of the eight electromobility model regions in Germany supported by the German government. The aim is to test new mobility technologies in everyday environments. Various types of vehicles are used in these trials: in the summer of 2010, EnBW launched a fleet test with 500 e-bikes, which have been in noise-free and emission-free operation on the roads of Stuttgart and the surrounding area ever since. Our test drivers – the "electronauts" – collect data on utilisation and charging characteristics, and this data supplies valuable insights into the necessary make-up of a future charging infrastructure and provides important information on intelligent mobility solutions.

The following outcomes were recorded for the EnBW electric vehicle fleet in the period from July 2010 to July 2011:

- › The 500 e-bikes travelled a total distance of around 800,000 km
- › Most test drivers used the e-bike to commute to work
- › 40% of these "electronauts" even said their e-bike was their main means of transport
- › The "electronauts" covered a distance of around 60 kilometres on one battery charge
- › Many test drivers said they use their e-bike in combination with public transport
- › There are currently 20 charging stations in the "Model Region" throughout the Stuttgart district.

➤ **"More than just electricity: consulting and services from a single provider."**

As there is still no standardised licensing process for "electricity filling stations" in Germany, the approval process is proving more complicated than planned – both for EnBW and for the government agencies involved in the process.

EnBW has also been selling the e-bike since June 2010. Private individuals, municipalities, municipal utilities and companies can purchase various e-bike packages complete with battery charging station and therefore promote emission-free mobility.

Utilisation and transparent management of solar energy

Since 2010, people who want to install a photovoltaic facility have been able to take advantage of complete solution packages offered by EnBW and its Yello subsidiary. Customers not only receive a high-quality installation from a reputable manufacturer but also two intelligent electricity meters that forward all the key information direct to their home PC. A glance suffices to see how much electricity is being produced, consumed or fed into the network. And the package also includes an attractive electricity tariff for periods when the sun isn't shining. In the initial phase, the EnBW photovoltaic package is being offered in the Esslingen, Böblingen and Ludwigsburg regions, after which it will be extended to cover the entire state of Baden-Württemberg. Yello will initially be operating in the Cologne/Koblenz region and the plan is then to expand the sales territory in particular to the Hannover region as a first step.

Within the framework of our municipal partnership programme, we have already been supporting the creation of local and regional "people's energy cooperatives" since 2008 and therefore also the local decentral generation of energy. Together with local people, municipalities, companies and institutions "on the ground", this also enables us to play a role in our energy future and in protecting our climate. We supported the municipalities in the creation of "people's energy cooperatives" in 21 municipalities in

2010 alone. Up to the end of 2010, facilities for the generation of renewable energy with a capacity of 3,250 kilowatts-peak were installed in the projects of these cooperatives, avoiding an annual 1,570 tons of CO₂.

A further example is the "EnBW Solar BürgerAktiv" product: the municipality makes the roof surface on a public building available for the project, and committed local people set up a project team; they are supported by EnBW in all key decision-making processes and finance the photovoltaic installation by purchasing shares in the project. EnBW joins forces with the regional trades to install the facility and also takes care of insurance and operational management on request.

Transparency in the field of heat pumps

In addition, EnBW launched a new heat pump product in Baden-Württemberg in 2010, and the intelligent electricity meter is also used with this product. EnBW also feeds the updated weather data into the system, and this helps to provide reliable information on the working characteristics and power consumption of the heat pump. In combination with a special heating power tariff, this enables the consumer to make optimum use of climate-sparing energy production from the immediate environment. We also cooperate with a reputed heat pump manufacturer who intends to offer his customers complete packages in future.

Services for buildings

In addition, EnBW has expanded its portfolio of services to include building energy efficiency, which means we now act as a partner for modernisation projects and the selection of contractors as well as for decisions on the best type of heating technology, the right insulation and the most suitable energy-efficient windows. The "EnBW GebäudeCheck" (buildings) and "EnBW ThermografieCheck" (thermographs) provide house owners with fast and easy-to-understand information on the exact points at which their home is wasting valuable energy. EnBW energy consultants visit the house, inspect the roof,

windows, facade and heating system and, on request, then use the "EnBW Gebäude-Analyse" product to supply non-binding and independent advice on decisions as to which modernisation measures are worthwhile. We analyse the building data using purpose-designed software to check potential subsidy options. A written outcome report then provides the house owner with a wide range of valuable information on which to base objective decisions.

Alongside the services contained in the building analysis product, we also offer concrete planning support in the form of the "EnBW ModernisierungsPaket" for individual measures to save energy and implement alternative energy concepts.

EnBW subsidy service – all the information customers need

There are over 6,000 subsidy schemes in Germany funded by the national government, individual states, regional districts, municipalities and energy companies. A massive 1,000 of these programmes focus on modernisation of heating technology. Construction clients and home modernisers in Baden-Württemberg have access to around 250 programmes. 200 of these schemes are often single-subsidy options of the municipalities or regional districts that can be combined with federal or state programmes. Since 2010, the 2,000-plus members of the EnBW Energiegemeinschaft e.V. association – such as tradesmen, architects, engineering firms and energy consultants – have had access to the dedicated "EnBW subsidy service" tool. This service is a specially developed database that puts together a tailored and optimised subsidy package from the locally available subsidy programmes within the space of 15 minutes in a three-phase Internet-supported process, generating an important competitive edge for our partners.

Energy efficiency projects at industrial customer locations

The "EnBW Energy Efficiency Networks" are as popular as ever. A total of 18 networks have already been set up throughout Germany together with over 200 companies. Following the three-year duration of the associated projects, the companies involved record average energy savings in the order of 8%. The companies evaluated to date have succeeded in implementing more than 800 individual energy efficiency measures and reducing their annual CO₂ emissions by 39,000 tons. The creation of "EnBW EnergyWatchers", a franchise system for the creation of further networks, gave an added boost to the spread of these networks in 2010.

Hands-on trial for the "intelligent network" – MeRegio

"MeRegio" stands for "Minimum Emission Region" and is one of six research projects in Germany supported by the Federal Ministry of Economics and Technology as part of the "E-Energy Initiative". ABB, IBM, SAP, Systemplan, the Karlsruher Institut of Technology (KIT) and EnBW as consortium leader are conducting trials on the intelligent combination of energy infrastructure and information and communication technologies.

"MeRegio" is being implemented at two locations in Baden-Württemberg – in Freiamt and Göppingen. Both towns are suited to this project, albeit for different reasons: in Freiamt, there is ample space for the use of renewable sources of energy, while Göppingen is a town that consumes a lot of energy over a relatively small area. Permanent data exchange between the two towns is designed to ensure that electricity is increasingly used on an as-needed basis ("energy on demand"). This boosts energy efficiency, and the systematic use of renewables reduces aggregate CO₂ emissions. The research project has been in operation since the end of 2008 and has been in the forth and final phase since the beginning of 2011. A total of just under 1,000 households, companies

and energy generators have meanwhile been equipped with the corresponding technology and networked with the system. In addition to the freezer appliances that were part of the project from the outset, the project now also covers dishwashers, stationary battery systems and – within the framework of the "MeRegio Mobil" sister project – even electromobiles. Electric storage heaters, heat pumps and the installations of industrial and commercial customers will soon also be integrated in the project.

This networked system revolutionises the role of the electricity customer, and each customer suddenly becomes his own energy manager. The intelligent electricity meter and a central system platform where all incoming information is collected play a key part in this process. Price incentives now encourage private individuals and commercial customers to use electricity when it is available in sufficient quantities – and is therefore cheaper. In the intelligent network, consumption is adapted to supply for the first time. By the same token, however, the small, decentral generators should feed their electricity into the network exactly when it is needed – or store or locally consume this energy.



<http://www.meregio.de/en/index.php?page=index>

Sustainable City – pilot project in the Allgäu region of Germany

April 2011 saw the launch of a unique product: in line with the motto "Sustainable City", EnBW is in the process of drawing up a decentral, sustainable energy concept together with the town of Leutkirch. A potential analysis shows that this project could make the town almost self-sufficient in terms of energy generation while avoiding a considerable volume of CO₂ emissions. The scientifically supervised pilot project depends on the support and acceptance of the local people and is designed to involve as many people, firms and groups from the region as possible.

"The member companies in the EnBW Energy Efficiency Networks achieve average energy savings of 8%."



Taking responsibility

Employer and employees

The some 21,000 employees of the EnBW Group are key to the success of the company. Accordingly, our personnel strategy is geared towards the long-term positioning of EnBW as an attractive employer both internally and externally.

Award-winning employer

In line with our corporate philosophy, fairness, respect and trust are the benchmarks for cooperation within the company. At the beginning of 2011, EnBW was awarded the title of "Top German employer" for the seventh time in succession. In addition, EnBW has been entitled to use "Fair Company" seal of approval from karriere.de (Handelsblatt)



Employee headcount

Employees of the EnBW group ¹	GRI G3 ²	Dec 31,2010	Dec 31,2009	Variance in %
	LA 1, LA 2			
Electricity generation and trading		4,850	4,794	1.2
Electricity network and sales		5,535	6,420	- 13.8
Gas		704	733	- 4.0
Energy and environmental services		9,378	8,586	9.2
Holding		485	591	- 17.9
Total		20,952	21,124	- 0.8
Number of full-time equivalents		20,119	20,064	0.3

¹ Number of employees without apprentices/trainees and without inactive employees.

² The Global Reporting Initiative (GRI) is an international organisation that produces a comprehensive sustainability reporting framework that is widely used around the world. This report is based on the updated criteria, "GRI G3".

Employees by region in %	GRI G3	Dec 31,2010	Dec 31,2009	Variance in %
	LA 1			
Baden-Württemberg		73.2	70.6	3.7
Other German states		19.3	25.3	- 23.7
Outside Germany		7.5	4.1	82.9

since 2006. This title is conferred on companies who act responsibly towards career starters.

Family-friendly personnel policy

The world of work and life in general is subject to continuous change. Striking a balance between one's occupational and private life is not only important for individual employees but is also a key element in the field of strategic personnel development. In addition to providing flexi-time and part-time workplaces, EnBW has developed a wide range of services for employees to help them tackle this issue: in the case of childcare, for example, this takes the form of childcare centres, increasing the available number of nursery places at the company's operating locations or childcare services during holidays. In addition, so-called "child offices" have been created in Stuttgart, Karlsruhe, Biberach and Esslingen. These offices are available at short notice and are basically workplaces complete with sufficient space and play facilities for children.

In addition to organising advisory meetings for parents-to-be and those returning to work after parental leave, our external "pme Familienservice" service provider also helps employees with dependents in need of care by providing information on care assessments, the benefits available under the long-term care insurance system or arrangements like power of attorney, wills and preventive patient care. As in the case of childcare, the company bears the advisory expenses while the employees themselves pay for the actual services.

Back in 2007, the Hertie Foundation awarded EnBW "berufundfamilie" (career and family) certification in recognition of our efforts on this front. The certificate was renewed in mid-2010 by Federal Families Minister Dr. Kristina Schröder. The future goals of our family-friendly personnel policy include the creation of alternative development and departure options as well as raising awareness levels among management executives for work-life balance issues. The outcomes will be subjected to a renewed audit in 2013.



Employee headcount and personnel breakdown

At the end of 2010, the EnBW Group employed 20,952 people. This figure is more or less on a par with the figure on the 2009 reporting date.

23.8% of the employees in the EnBW Group hold academic degrees (previous year: 22.9%). The number of employees who have technical college diplomas or who have completed an apprenticeship is in the order of 69.9% (after 71.5%), while the remaining 6.3% possess school leaving diplomas but have no vocational qualifications (compared to 5.6% in the previous year).

The regional make-up of the EnBW workforce is similar to that in the previous year: the majority of employees work in Baden-Württemberg. Most of the 7.5% of employees who work outside Germany are based in our holdings in the Czech Republic, which accounts for 84% of this group. The secondment of EnBW employees to our holdings in Central and Eastern Europe as well as Turkey promotes knowledge transfer and an acceptance for other cultures.

At 43.7, the average age of the EnBW workforce was more or less unchanged compared to 2009. The breakdown of employees

by age was also more or less unchanged in 2010. Both the fluctuation rate and the health rate among EnBW employees remained constant at 4.2% and 95.8%, respectively.

At the end of 2010, the EnBW Group had 944 severely handicapped employees (previous year: 979), 4.5% of the total headcount. The reason for this decline compared to 2009 is the deconsolidation of GESO Beteiligungs- und Beratungs AG and its subsidiaries. As of December 31, 2010, the percentage of non-German employees in the Group had risen to 10.3% (after 6.8% in 2009), primarily due to the full consolidation of the Pražská energetika a.s. company. No data are collected on minorities for data protection reasons.

All employees in the core companies are covered by negotiated collective wage and company-level agreements – and they have the right to organise themselves and participate in trade unions and employee representative bodies. Remuneration is based exclusively on the requirements of the job in question and the skills of the employee. Gender, origin and other non-material considerations are of no relevance either for remuneration levels or for the recruitment and development of employees.

"By focusing our personnel policy on the four strategy elements managing demographic change, safeguarding expertise and development, efficient and effective HR activities and innovative and flexible working strategies, we are making an important contribution to the future-safeness of EnBW."

No discrimination incidents or claims for compensation were documented in the year under review; as a result, it was not necessary to take any measures relating to the German Anti-Discrimination Act.

Female employees and management personnel

At the end of 2010, the percentage of women in the overall workforce was 25.5% (after 25.2% in the previous year). The share of women in management positions rose to 9.9% after 8.3% in 2009 – a figure we intend to increase further. In order to foster

women in specialist and management positions, EnBW joined the Femtec partner network in 2011. Femtec is a university career centre for female MINT students (mathematics, information science, natural science and technology). The goal is to continuously improve the career entry and promotion prospects of female graduates, particularly in the field of technology and science. EnBW also intends to establish in-depth contact with talented female students and graduates through the creation of a strong network with other German companies like Siemens or Bosch.

Compared to 2009, the share of part-time employees – which also includes our employees in the partial retirement phase – fell by one percentage point to 11.3% or 2,208 employees. Women accounted for 1,412 of this figure, equivalent to 59% of the workforce and therefore almost identical to the prior year figure of 59.4 %.

Training and professionalisation

As in the previous year, around 330 young people began their apprenticeships or degree courses at 14 EnBW locations in September 2010. The traditionally high apprenticeship rate at the core companies in Baden-Württemberg was just slightly below last year's figure of 7.6% at 7.3% in the year under review. All in all, almost 1,300 apprentices and students are employed by EnBW, and we offer all successful apprenticeship and degree graduates continued employment for a period of twelve months.

Internal demographic analyses indicate an increased need for employees with completed vocational training in the medium to long term. In order to meet this need, we launched the group-wide "Excellence in Training" programme in 2010 with the aim of achieving a lasting improvement in the competitiveness of EnBW training courses.

Employees by age group in %	GRI G3	Dec 31,2010	Dec 31,2009	Variance in %
	LA 2			
25 or younger		5.8	5.6	3.6
26 – 35		17.9	17.2	4.1
36 – 45		29.0	30.9	- 6.1
46 – 55		35.5	35.9	- 1.1
Over 55		11.8	10.4	13.5

Management personnel by age group in %	GRI G3	Dec 31,2010	Dec 31,2009	Variance in %
	LA 13			
Under 35		5.1	4.3	18.6
36 – 45		39.4	42.0	- 6.2
46 – 55		39.7	40.4	- 1.7
Over 55		15.8	13.3	18.8

EnBW also believes educating the young is part of its social responsibility and a debt it owes to society. As one of the biggest employers in Baden-Württemberg, we want to give as many young people as possible from different educational backgrounds the opportunity to benefit from high-quality training.

We cooperate closely with a number of universities with the aim of establishing contact with qualified up-and-coming talents at the earliest possible stage and positioning EnBW as an attractive employer. This commitment extends to such things as providing lecturers, staging seminars and other events, funding scholarships and sponsoring endowment chairs. Our student programmes are designed to foster highly committed and motivated students and to attract them to the company as future employees. In the business year 2010, around 1,200 students spent time at the EnBW core companies to complete their placements and prepare their theses or as student workers.

With its group trainee programme, EnBW offers university graduates in technical, science or business disciplines an interesting start to their careers. Over a period of twelve months, the trainees obtain first-hand insights into EnBW's value added chain in the course of several practical phases at various companies and units within the group.

Management personnel and employees meet once a year to set out tasks, responsibilities, objectives and developmental options. For this purpose, EnBW Akademie stages a wide range of seminars, events and one-on-one training sessions on methodology, social and technical competence as well as leadership skills. The "Management Development EnBW" programme revised in 2010 systematically promotes the professionalisation of up-and-coming specialists

and management personnel. The communication and discussion platform "Executive Group in Dialogue with the Board" ensures direct communication with the EnBW Management Board and the top management in the group companies. At the beginning of 2011, we also launched the compulsory "Fit in Top Management" programme for personnel at the highest decision-making level.

Impuls – better together

The corporate "Impuls" programme, now in its third year, successfully supplements our two other instruments – the "KVP" continuous improvement process and the "WIN" idea management scheme. In 2010, EnBW employees submitted a total of 4,630 suggestions to improve and optimise work processes; 3,014 of these ideas concerned increased efficiency in the working sphere of the person submitting the idea, while the remainder related to supraordinate routines and processes within the group overall.

Continuous communication

Employees are important stakeholders and providers of stimuli for a company. We conducted our first employee survey in November 2008 and followed this up with a new survey in October 2010. The main focus of the survey was to establish the extent of the bond between our employees and EnBW or the individual EnBW company they work for and the core factors that influence this bond. The evaluated findings will be incorporated in our personnel measures for 2011.

We promote the regular change of ideas and opinions via the monthly EnBW employee newspaper, the group-wide Intranet and the "Quo vadis" format, a live event staged by the Management Board and looking at topical issues.



"We want to sustainably increase the competitiveness of EnBW's training concepts."

"In-depth screening tests determine the sea-worthiness of employees."



Active and healthy

The active promotion of employee health and preventive care for the workforce is also an important topic at EnBW: company sports groups of all kinds or special exercise training under the supervision of the occupational medicine department are just as much a part of the service as annual vaccination drives, physiotherapy services or psychosocial counselling by in-house psychologists. An online platform which can be easily accessed from any group location provides fast, comprehensive information on the full range of services and activities.

Other projects of the occupational medicine department are focused on reducing psychosocial stress, publicising existing prevention courses, optimising room acoustics at the workplace and the issue of mobile working. Particular importance is attached to the topic of psychosocial stress throughout the group. Psychological illnesses including exhaustion syndrome are meanwhile among the most common causes of early retirement in the Western world. Psychosocial counselling and seminar series like "Preventing Burn-Out" or anti-stress training courses are designed to help employees before problems become too serious. Management personnel throughout the group also have access to personal preventive healthcare services as well as courses on the topics of sensitive and sustainable employee management.

New challenges in new business areas

The growing involvement of EnBW in the field of renewables also creates new challenges for our occupational medicine specialists. If their work is connected with biogas, for example, both management personnel and other employees need to be trained and vaccinated in line with the regulations on biological substances. In 2010, however, the main focus was on offshore workplaces with their greater hazard potential. In-depth screenings had to be performed and the employees had to be examined for sea-worthiness in cooperation with the German Society for Maritime Medicine. New secu-

rity, work safety and emergency concepts were prepared together with the "Corporate Work Safety and Preventive Fire Safety" unit. A number of other issues – like the use of sea-worthy defibrillators – also had to be resolved: all questions and situations which are not yet clearly regulated by the recommendations of the accident insurance associations or legal provisions.

The construction and operation of offshore wind farms also gave rise to some complex issues for the work safety unit. One of the focal points was the preparation of the highly specialised "personal safety equipment" for offshore operations: this equipment consists of things like survival suits for sea-crossings from ships to platforms and the like, certified protective clothing to protect against the cold, life jackets and emergency vests, a special protective helmet, tinted goggles and suitable hearing protection – as well as special equipment to prevent falls.

The work safety preparations were rounded off by theoretical and practical training courses on location, including special survival training – without which no employee is allowed to complete a maritime cross-over – as well as high-altitude rescue. It should be remembered that the wind turbines in EnBW Baltic 1 are about the same height as Cologne Cathedral.

Learning safety the easy way

At the end of 2009, five e-learning modules were implemented at EnBW Systeme Infrastruktur Support GmbH as pilot projects; these modules covered the topics of fire safety, transport safety, VDU workplaces, hazardous substances and hazard assessment. During the year under review, these modules were rolled out at various EnBW subsidiaries, and the e-learning programmes have been available for almost all EnBW subsidiaries since mid-2011. Moreover, the "Clever Mobile Saving" learning module on new traffic rules and ecologically sound driving habits will be launched later in the year.

We continued to develop our activities in the field of "preventive fire safety" in a hands-on manner: a workshop was staged in July 2010 for all designated fire safety employees and fire safety officers, and evacuation exercises were organised at ten locations.

As part of the emergency responder concept, 410 EnBW employees underwent a one-day refresher course, and 115 new emergency responders were trained at our core administration locations.

Requirements for contractors

In order to ensure that our contractors and their subcontractors comply with our guidelines and ideas in the field of work safety and occupational health, we added further provisions to the "General Purchasing Terms and Conditions of the EnBW Group" at the beginning of 2011. These "Supplementary Work-Related Purchasing Conditions" are part of the agreements signed with contractors. They explicitly stipulate approval procedures and safety measures, hazard assessments, required safety equipment, the handling of dangerous substances or accident and damage reports in the event of work accidents. There are also details of special measures for people with active implants, preventive occupational health examinations to determine suitability and relevant vaccinations.

Accident figures still low

In the year under review, the number of accidents once again remained at a consistently low level: we documented 7.2 reportable work accidents – in other words, accidents resulting in more than three lost days – per thousand employees, following a figure of 7.4 in the previous year. This accident rate is encouraging compared to other companies in the sector.

As in recent years, there were no fatal work accidents among EnBW employees in 2010, but there were two fatalities of employees of a subcontractor on the construction site of RDK unit 8.

EnBW accident statistics

	GRI G3	2010	2009	2008
	LA 7			
Reportable accidents at work		111	113	106
Reportable commuting and sport accidents		71	53	53
Lost days due to reportable accidents at work		1,779	2,314	1,759
Lost days per reportable accident at work		16.0	20.5	16.0
Employees		15,430	15,172	14,604
Reportable accidents at work per 1.000 employees		7.2	7.4	7.3
Reportable accidents at work per 1.000 employees with the BG ETEM ¹		17.3	16.0	17.4

	GRI G3	2010	2009	2008
	LA 7			
Accidents at work from 1 lost day		173	159	153
Commuting and sport accidents from 1 lost day		99	81	83
Lost days due to accidents at work from 1 working day		1,907	2,412	1,859
Lost days per accident at work from 1 working day		11.0	15.2	12.2
Employees		15,430	15,172	14,604
accident at work from 1 working day per 1.000 employees		11.2	10.5	10.5
LTIF ² (accidents per 1 million working hours)		6.6	6.2	6.2

¹ German Accident Prevention and Insurance Association for Energy, Textile, Electrical and Media Products.

² Lost Time Injury Frequency: international unit for the documentation of all accidents resulting in one lost day or more.

Unleashing energy

Our commitment in the social sphere

As a company with strong roots in Baden-Württemberg, we feel a deep sense of responsibility towards our home state. We are involved in the fields of sport, art, culture, knowledge and education, and we support projects that are to the good of the community and society as a whole.

Active in all sporting disciplines

In 2010, we were able to look back on twelve years of cooperation with the Swabian Gymnastics Federation as well as a three-year partnership with the Baden Gymnastics Association. The key events in these partnerships include the annual mass-participation state and children's gymnastics festivals, the EnBW Gymnastics World Cup and the Gymnastics Gala, an entertaining sports programme for young and old in the run-up to Christmas.

The eight-day "Tour de Ländle" leisure cycling event took place for the 23rd time in the year under review, and we acted as co-organisier for the ninth time. Anywhere between 1,200 and 2,000 cyclists took to their bikes on each stage, and we also welcomed several thousand additional guests every evening at the local festivities to mark the event. All in all, we succeeded in encouraging around 25,000 people to join in the tour in 2010. It goes without saying that "Tour de Ländle" also had a social aspect: once again, representatives of the municipalities taking part in the "Tour" had the opportunity to raise donations for a social organisation of their choice in the "EnBW money per mile" campaign, raising a total of more than 70,000 € for projects in the region.

On the soccer front, we continued to support the top VfB Stuttgart and Karlsruher SC clubs – as well as the male and female junior soccer players in Baden-Württemberg by acting as the sponsor of the EnBW first division. Then there was basketball, where we also supported both the pros and the youngsters through our commitments on behalf of national league team EnBW Ludwigsburg and the BBA basketball academy in Ludwigsburg. We have been the main, strip and name sponsor for the EnBW TV Rottenburg

volleyball club since the 2008/2009 season, and our involvement in top-flight handball in the region is underlined by our long-standing partnerships with Frisch Auf! Göppingen and HBW Balingen-Weilstetten. We also support various second-division clubs.

Cooperation in the arts and culture

For many years now, we have been supporting unique cultural institutions like the ZKM Centre for Art and Media in Karlsruhe, Stuttgart Art Museum, the Baden-Baden Festspielhaus opera house or the Stuttgart Ballet Company. We are involved in the annual "Stuttgart Music Festival" of the Bach Academy as well as the "Young Euro Classics – European Summer of Music in Berlin" concert series and the theatre forum event at the Berliner Festspiele festival house. We are now also an official sponsor of the Baden-Württemberg Art Foundation, which has been promoting young creative talents for over 30 years and supporting them with scholarships, concerts, readings or exhibitions. The Foundation has supported almost 900 talented young people to date, including such well-known artists as sculptor Werner Pokorny, stage designer Rosalie or violinist Isabelle Faust.

We also promote young artists from the region directly by giving them a platform at our events or opening our premises in Karlsruhe, Stuttgart and Berlin for exhibitions like the "Ateliereinblicke" ("Studio Insights") event, an exhibition series that has taken place at our headquarters in Karlsruhe since 1995. Our longstanding cooperation with the Stuttgart State Academy of Art and Design is also designed to promote up-and-coming talents. This cooperation bears fruit in the form of regular – and often highly unconventional – exhibitions at our head office in Stuttgart city centre.



Since 1999, this has also been the venue for the exhibition organised by the highly reputed "Release Stuttgart" organisation featuring donated works of art created by both well-known and unknown artists. The proceeds from the multi-week sales exhibition are equally divided between the artists themselves and the contact point providing advice and assistance for people with drug problems. EnBW acts as host, sponsors the sales catalogue and also buys some of the exhibits.

Experienced-based learning for today's youth

For a number of years now, we have systematically used our various commitments to generate stimuli and to further the realisation that society as a whole can only achieve the all-important climate protection goals if we are responsible in our interactions with our environment and if we use energy efficiently. These goals are particularly important in the case of activities that are geared specifically towards children and young people and driven by experience-based learning. One of the things we did was to develop the "EnBW Energy Box" for childcare centres. This box contains 40 experiments that can be performed by groups of up to six people. The aim is to whet the appetite of children for science and technology topics through these experiments while the children are still

very young. We also developed the mobile "EnBW Energy Parcour" which allows young people to discover electricity for themselves and to experience it with their senses in an entertaining and playful way.

A school competition that we initiated in 2009 together with the Education Ministry and the Foundation for Cultural Youth Work is also designed to raise awareness among young people for the need for the conscious and responsible use of energy. The motto for the first round was "Mission: Reduce Consumption", followed at the end of 2010 by "Energy Reporter On The Go". EnBW also sponsors institutions that generate benefits in educational terms, such as the "experimental" science centre in Heilbronn which opened its doors in 2008.

Information and teaching support services

We have been cooperating with schools and educational institutions in Baden-Württemberg for more than 30 years now. Our information services are tailored to the teaching curricula and approved by the school authorities in question. These services are designed to appeal to further training experts, teachers, teachers in training and childcare centre personnel. The activities range from presentations and hands-on workshops to special-topic trips on energy-related objectives lasting one or more days.

**"Part of society:
EnBW is also "on the
ground" in sports,
education and the arts."**

➤ "Through our foundations, we are particularly active in the education of children and youths as well as promoting the career prospects of students. "

Since mid-2010, we have working with other sponsors in a project called the "Lake Constance Opportunity Pool". The aim of this project is to help youths make the transition from school to vocational or further job-related education. The measures in this scheme include personal career guides for school pupils with special advancement needs or tailored support up to the time a young person signs an apprenticeship agreement or moves on to a further education college. These new activities supplement existing services like school social work or the advisory services of the German Employment Agency and will initially remain in operation until July 2012. 50% of the funding comes from the EU, and the remaining capital is provided by the project partners.

"Kinder bewegen – Energien nutzen" (Children and Energy in Motion) was the title of a conference staged by the Karlsruhe Institute of Technology in Karlsruhe in February 2011. The three-day event was organised by KIT and supported by EnBW as main sponsor. The presentations and workshops on topics like nutrition, exercise, boredom at school, relaxation or stress attracted around 1,000 attendees - from doctors, therapists, parents and teachers to social educationists and association employees.

Stimuli for industry and research

EnBW was a co-founder of the "German Innovation Award" in 2009. Every year in spring, the award is presented to entrepreneurs and companies who are particularly successful in demonstrating Germany's claim to technology leadership.

Together with the Baden-Württemberg Energy Research Foundation, we support research, demonstration and development projects with particular emphasis on energy efficiency and renewables. The Foundation was set up in 1989 by the four predecessor companies of EnBW and the state of Baden-Württemberg and is funded by the energy supply companies. During the last 22 years, the Foundation has made over 37 million € available in research capital – mainly for projects in Baden-Württemberg.

Every two years, the EnBW Foundation, founded in 1972 by EnBW predecessor company Badenwerk and the then Technical University of Karlsruhe, presents the Heinrich Hertz Award in recognition of outstanding scientific or technical achievements. It also promotes the future-oriented work of students in the fields of generation, distribution and application of electrical energy.

The work of the Baden-Württemberg Energy & Climate Protection Foundation is focused in a different area: the mission of this body created in 2007 is to promote a better understanding of the interplay between the energy industry and climate protection and to secure the future of Baden-Württemberg as a research location. The Foundation aims to act as a forum for the factual, non-ideological and controversial discussion of effective measures in the field of energy utilisation and supply that make a contribution towards the achievement of climate protection goals. To this end, the Foundation stages regular debate evenings, bringing together recognised experts from the respective fields and discussing new developments and potential solutions.

In addition, the Foundation supports projects in the field of environmental protection and nature conservation (such as restoration projects and the preservation of the black Neckar poplar) and is increasingly committed in the area of child and youth education. It is in this spirit that EnBW sponsors projects like the "Neckar Junior Ranger", "Climate Kids" and the development of model concepts in schools.

The ZIES Centre for Innovative Energy Systems at Düsseldorf University of Applied Science was set up in 2004 with foundation capital from EnBW. The Centre develops concepts for sustainable energy supply and is active in the fields of training, applied research and consulting.



"Echt gut" – accepting social responsibility

We have been supporting the "Echt gut! Ehrenamt in Baden-Württemberg!" competition (Thumbs Up for Voluntary Work in Baden-Württemberg) for seven years now by sponsoring the "EnBW Ehrenamt Impuls" award. The award is presented to volunteer projects that set new standards. The Minister-President of Baden-Württemberg is the patron of the state-wide competition.

The EU-wide "School Fruit" scheme was introduced in February 2010 to ensure that children become accustomed to eating healthy and seasonal fruit and vegetables from a young age. The EU provides Baden-Württemberg with around 2 million € in funding annually for this purpose, but the same sum has to be raised by third parties – such as sponsors or local associations. EnBW supports the project at childcare centres and schools in the Ravensburg and Lake Constance districts. Since April 2010, our sponsoring committee has been providing around 55,000 portions of fruit from the Lake Constance region for a total of 186 institutions every week. We will be continuing these activities in the 2011/2012 school year.

International projects and aid programmes

The EnBW Rainforest Foundation was set up in 2004. One year later, the first project was launched in the Bach Ma National Park in Central Vietnam: together with the German Development Service (DED), EnBW aims to promote alternative sources of income for the people living near and in this last contiguous rainforest in this region of the world. Activities include the training of foresters, the introduction of sustainable forest management and gentle eco-tourism.

We started work on a reforestation project in Sabah in Borneo (Malaysia) in September 2007 together with the World Wide Fund for Nature. The project area comprises around 2,000 hectares of lowland rainforest.

In October of the same year, we launched a new program for the rural population in Yen Chau in the highlands of North Vietnam in cooperation with Hohenheim University: the goal of this programme is to conserve natural resources and to promote agricultural development by implementing tailored and sustainable soil protection measures.

Wells for Uganda

Water is the source of all life – and one of the areas in which we do business. Together with the State Water Supply Association and the Baden-Württemberg SZE Foundation for Development Cooperation, we want to build a total of 30 village wells in Uganda in the period up to 2012. The project began in 2007 and, when completed, should provide supplies of clean drinking water for around 30,000 people. We were able to hand over the 24th well to the local population at the beginning of 2011, and the last six wells are currently under construction.



"EnBW supports the EU-wide "School Fruit" scheme at childcare centres and schools."

Facts and figures – 2010

The EnBW Group by numbers

Electricity generated by EnBW

Generation by the EnBW Group ¹ by primary energy source in % ²	GRI G3	2010	2009	2008	German mix 2009 ³
	EU1				
Conventional energy		34.5	28.8	29.3	57.8
Nuclear energy		51.0	55.4	55.1	24.9
Renewables ⁴		10.5	11.0	11.2	17.3
Other		4.0	4.8	4.3	-

¹ Own generation comprises own and part-owned power plants as well as long-term procurement agreements.

² Prior-year figures adjusted.

³ Source: BDEW.

⁴ Based on the provisions of section 42 of the German Energy Industry Act (EnWG).

Specific emissions by EnBW

Specific emissions from the electricity generating activities of the EnBW Group ¹	GRI G3	Einheit	2010	2009	2008	German mix 2009 ²
CO ₂ emissions	EN 16	g/kWh	299	251	245	508
NO _x emissions	EN 20	mg/kWh	204	166	159	405
SO ₂ emissions	EN 20	mg/kWh	192	163	135	268

¹ Own generation comprises own and part-owned power plants as well as long-term procurement agreements.

² Comparison data for German electricity mix, 2009 [source: BDEW].

Electricity feed-in based on the EEG legislation on renewables

Power plant type (2008)	Electricity generation	Share of energy	Remuneration ¹ (1,000 €)	Avoided CO ₂ emissions ²
Hydroelectric power	993 GWh	20 %	75,856	845,060 t
Landfill gas, sewage gas and firedamp	67 GWh	1 %	5,126	52,268 t
Biomass	2,295 GWh	46 %	322,788	1,879,900 t
Geothermal energy	0 GWh	0 %	0	0 t
Wind energy	634 GWh	13 %	55,036	477,583 t
Solar radiation energy	993 GWh	20 %	504,348	586,869 t
Avoided network utilisation fees ³			- 19,642	
Total	4,983 GWh	100 %	943,512	3,841,679 t

Supply of "EEG electricity" based on section 14 of the "EEG" Act on renewables by EnBW Transportnetze AG: 10,121 GWh.

Total sales of "EEG electricity" to end consumers in the supply territory of EnBW Transportnetze AG: 64,538 GWh.

Power plant type (2009)	Electricity generation	Share of energy	Remuneration ¹ (1,000 €)	Avoided CO ₂ emissions ²
Hydroelectric power	905 GWh	16 %	70,810	770,463 t
Landfill gas, sewage gas and firedamp	62 GWh	1 %	4,680	48,135 t
Biomass	2,795 GWh	48 %	441,985	2,288,802 t
Geothermal energy	0 GWh	0 %	7	20 t
Wind energy	581 GWh	10 %	50,429	437,535 t
Solar radiation energy	1,413 GWh	25 %	692,029	835,318 t
Avoided network utilisation fees ³			- 24,421	
Total	5,756 GWh	100 %	1,235,520	4,380,274 t

Supply of "EEG electricity" based on section 37 of the "EEG" Act on renewables by EnBW Transportnetze AG: 10,324 GWh.

Total sales of "EEG electricity" to end consumers in the supply territory of EnBW Transportnetze AG: 60,591 GWh.

Power plant type (2010)	Electricity generation	Share of energy	Remuneration ¹ (1,000 €)	Avoided CO ₂ emissions ²
Hydroelectric power	991 GWh	15 %	79,957	842,931 t
Landfill gas, sewage gas and firedamp	52 GWh	1 %	4,009	40,901 t
Biomass	2,934 GWh	43 %	484,537	2,403,134 t
Geothermal energy	0 GWh	0 %	25	66 t
Wind energy	579 GWh	9 %	50,505	435,690 t
Solar radiation energy	2,182 GWh	32 %	986,684	1,289,439 t
Avoided network utilisation fees ³			- 29,903	
Total	6,738 GWh	100 %	1,575,814	5,012,161 t

¹ Minimum statutory remuneration without value added tax.

² Calculated using the avoidance factors (direct and indirect emissions) of the "Emission Balance of Renewable Energies" (12/2009 publication of the German Federal Environment Agency); figures for 2008 and 2009 (2009 Booklet) have been adjusted.

³ Avoided network utilisation fees in line with section 35 para. 2 of the "EEG" Act on renewables.

Input¹

Environmental ratios ²	GRI G3	Unit	2010	2009	2008
Fuels³	EN3				
Coal (1 t coal eq. = 8.14 MWh = 29,304 GJ)		GJ	190,305,735	160,002,932	150,898,819
Heating oil (1 t coal eq. = 8.14 MWh = 29,304 GJ)		GJ	1,294,967	1,164,048	1,578,931
Natural gas (1 t coal eq. = 8.14 MWh = 29,304 GJ)		GJ	25,266,415	21,998,318	28,162,153
Waste		GJ	9,297,054	8,587,948	8,853,432
Sewage sludge		GJ	287,431	468,521	225,225
Biomass		GJ	1,752,844	1,663,474	1,582,327
Liquid fuels (petrol, diesel)		l	6,462,768	6,283,525	5,167,444
Input of nuclear fuels ⁴		t uranium ⁵	84	59	76
Other input materials³	EN1				
Lime products (CaCO ₃ , CaO, Ca(OH) ₂)		t	315,459	493,571	321,370
Ammonia		t	17,203	16,525	13,646
Ammonium hydroxide		t	5,607	5,608	2,331
Soda lye		t	8,377	8,302	7,438
Hydrochloric acid		t	6,495	5,618	4,513
Odorant (THT)		t	45	49	42
Water conservation³	EN8				
Surface/River water extraction		million m ³	3,027	2,808	3,164
Well water/Groundwater extraction		million m ³	8.00	7.99	8.15
Drinking water extraction		million m ³	46.0	46.2	45.8
Avoided extraction due to reutilisation (not including cooling water)	EN10	million m ³	1.00	1.73	1.37

¹ Figures cover companies with environmentally relevant installations and activities (EDH, EEE, EnKK, EOG, ESG, ESW, ETG, EVG, GAS, GVS, HOL, KWG, ODR, REG, SIS, SWD, TNG, TPLUS and ZEAG). These companies account for just under 80% of employees in the EnBW Group.

² Absolute environmental ratios provide concrete information on material flows.

³ Own generation including contracted power plants; not included: long-term procurement contracts and short-term procurement where the primary sources of energy are unknown.

⁴ Own generation.

⁵ Uranium in reality: total heavy metal load.

⁶ Monitoring in line with the voluntary commitment on SF₆.

⁷ SF₆ emissions in line with the voluntary commitment procedure.

⁸ Own generation including contracted power plants and long-term procurement contracts; not included: short-term procurement where the primary sources of energy are unknown.

Abbreviations:

EDH	Energiedienst Holding	HOL	EnBW Energie Baden-Württemberg AG
EEE	EnBW Erneuerbare Energien GmbH	KWG	EnBW Kraftwerke AG
EnKK	EnBW Kernkraft GmbH	ODR	Ostwürttemberg DonauRies AG
EOG	EnBW Operations GmbH	REG	EnBW Regional AG
ESG	EnBW Energy Solutions GmbH	SIS	EnBW Systeme Infrastruktur Support GmbH
ESW	Erdgas Südwest GmbH	SWD	Stadtwerke Düsseldorf AG
ETG	EnBW Trading GmbH	TNG	EnBW Transportnetze AG
EVG	EnBW Vertrieb GmbH	TPLUS	TPLUS GmbH
GAS	EnBW Gas GmbH	ZEAG	ZEAG Energie AG
GVS	GasVersorgung Süddeutschland GmbH		

Output¹

Environmental ratios ²	GRI G3	Unit	2010	2009	2008
Products	2,2				
Electricity		TWh	146.9	119.7	130.5
District heat, process heat		GWh	6,755	6,376	6,586
Gas		TWh	53.6	65.8	69.8
Drinking water		million m ³	85.3	85.8	88.7
By-products³	2,2				
Coarse ash (boiler sand)		t	125,660	90,563	73,625
Fly ash		t	433,950	353,099	374,454
Gypsum		t	617,900	476,914	313,484
Slag from waste incineration		t		-	-
Other		t		-	-
Waste management³	EN22				
Total waste		t	774,515	748,141	461,822
Hazardous waste for reutilisation		t	53,967	48,012	39,864
Non-hazardous waste for reutilisation		t	687,672	666,128	384,090
Hazardous waste for disposal		t	3,922	7,071	8,456
Non-hazardous waste for disposal		t	28,954	26,930	29,411
Recycling rate		%	95.8	95.5	91.8
Water conservation³	EN21				
Evaporation		million m ³	53	66	55
Cooling water discharge (direct discharge)		million m ³	2,965	2,741	3,103
Direct discharge of waste water		million m ³	3.00	3.08	4.73
Waste water (indirect discharge, sewage system)		million m ³	2.00	1.74	0.76
Radioactive waste water volume		m ³	53,124	51,765	53,476
Activity without tritium		Bq	6.2E+08	5.1E+08	15.0E+08
Tritium		Bq	38.3E+12	52.3E+12	43.5E+12
Greenhouse gas emissions⁸	EN16				
Carbon dioxide (CO ₂)		million t	20.9	16.9	16.4
Sulphur hexafluoride (SF ₆) ^{6,7}		t	< 1	< 1	< 1
Classic air pollutants⁸	EN20				
Sulphur dioxide (SO ₂)		t	13,149	10,763	9,164
Nitrogen oxides, listed as NO ₂		t	15,055	11,643	11,536
Carbon monoxide (CO)		t	1,245	1,186	1,122
Dust		t	275	451	376
Activity emission to the atmosphere⁴	EN23				
Waste air volume		million m ³	21,108	9,070	8,464
Inert gas		Bq	3.09E+12	2.41E+12	2.35E+12
Iodine		Bq	35.4E+06	17.2E+06	28.0E+06
Aerosols		Bq	10.5E+06	7.2E+06	22.0E+06

Excerpt from the EnBW 2010 Environmental Programme

Description of measure	Company ¹	Time frame	2010 status
Climate protection, resource conservation, energy efficiency			
Sale of 1,500 building energy certificates	ODR	2009/2010	1,272 building energy certificates already sold
Sale of 2,000 building thermographs	ODR	2009/2010	3,652 building thermographs already sold
Energy costs meter for 130 municipalities	ODR	2009/2010	Energy costs meters supplied to 200 municipalities
Noise measurements at 96 gas pressure regulating stations to monitor compliance with limits; additional soundproofing where necessary	ODR	2010	Completed
Reduction of electricity consumption in the waste incineration plant. Conversion of flue gas cleaning to the Bicar process: replacement of charcoal filter 1 (substitutes 585 tons of baking powder for 3,400 tons of charcoal and is predicted to reduce the electricity consumption of the blower by 4 GWh a year)	SWD	2012	Approval for and demolition of RNR 1 in 2010; new construction of RNR 1 for Bicar process in 2011; start-up scheduled for the end of 2012
20% reduction in network losses (electricity) in the medium term; reduction of internal power consumption in the substations	SWD	2011	Conversion of the installations earmarked for 2010 results in annual savings of 400,000 kWh of electr. output and 147,600 kg of CO ₂ ; this is equivalent to a saving of approx.15%; conversion of 7 further installations in 2011 under review
Increase energy efficiency in the IT sector (green IT): 1) Green PC: energy efficiency at the IT workplace; creation of workplace groups/test users, measurements, derivation of measures 2) Energy-efficient computing centre with certificate	SWD	2010	re. 1) Analysis via workplace groups/test users performed; electricity savings of approx. 150,000 kWh solely by completely switching off PCs and monitors seems possible; measures being planned re. 2) Successful recertification of the computing centre in the year under review
Retrofit of low-pressure section of the unit 7 steam turbine assembly at the Karlsruhe power plant location; increase in electrical output by approx. 9 MW	KWG	2010	Implemented
Reduction of NO _x untreated gas concentration by converting the firing system of unit 7 at the Karlsruhe location to reduce internal consumption and consumption of auxiliary substances	KWG	2010	Implemented; reduction of internal consumption by around 1 MWe; reduction in ammonia consumption by 270 kg/h (full load)
Reduction of the steam volume needed to reheat the flue gas flow of unit 7 at the Karlsruhe location by lowering the flue gas temperature from 72°C to 65°C	KWG	2010	Implemented; achieved reductions: Steam volume: 5 -10 tons per hour, coal savings of 0.37 tons per hour, CO ₂ avoidance: 0.85 t/h
Erection of a pilot-scale trial installation for CO ₂ capture at the Heilbronn power plant location	KWG	2010	Implemented
Securing district heat supply in the long term: installation of an auxiliary steam cross-connector between heat and power plants 1 and 2 at the Altbach-Deizisau location	KWG	2010	Implemented; reduction in oil consumption of around 200 tons annually
Conversion of 10 installations to telecontrol technology to avoid journeys	GVS	2010/2011	30 facilities converted
Fuel cell technology as a pilot project (at least 1 fuel cell in pilot operation)	GVS	2010	Pilot operation implemented
Expansion of hydroelectric power, new construction of the Rheinfelden power plant	EDH	2010	All machines in operation at the end of 2010; ecological measures like the bypass and spawning stream are being implemented
Performance of a front-to-end efficiency review for all relevant plants and operating locations; training of employees in energy-saving conduct	EDH	2011/2012	Potential analyses performed at three locations; pilot measures and further surveys planned for 2011
Increased use of video conferences	ETG	2013	In progress
Reduce THT odourisation; conversion to low-sulphur/sulphur-free odourising agents	GAS, GNG	2010	Completed

Description of measure	Company ¹	Time frame	2010 status
Climate protection, resource conservation, energy efficiency			
Implementation of projects for bio natural gas processing/recovery (Emmertsbühl project)	GAS, GNG	2010	Biogas installation in Emmertsbühl in operation
Reduction of methane emissions during maintenance	GAS, GNG	2010	50% implemented, continued in 2011
Purchase and additional construction of further biomass heat (and power) plants in the industry, trade, municipal and housing management customer segments	ESG	Ongoing	Operation of 19 biomass plants throughout Germany – further installations are being planned. Cooperation with leading companies in the forestry and wood processing industry in the areas of sourcing and use of biogenic solid fuels
Replacement of inefficient technology with efficient energy generation systems on customer premises in the industry, trade, municipal and housing management sectors within the framework of energy supply contracting	ESG	Ongoing	Start-up of a unit-type heat and power plant, construction of a gas turbine heating and power plant
Reduction of CO ₂ emissions by substituting biogas for natural gas; construction of two further processing plants; the aim is to substitute 27 million kWh in 2010, 30 million kWh in 2011 and 60 million kWh in 2012	ESW	2011	The substitution target of 27 million kWh was achieved in 2010 in existing plants; the two additional processing plants are under construction/at the planning stage
Replacement of the heating plant: definition of the scope of planning and preparation of the invitation to tender; offer for and award of engineering planning contract; preliminary planning and approval planning	ZEAG	2009-2011	In progress
Reduction of 40,000 km in the mileage of the company cars in the ZK unit (finance, personnel, accounting)	ZEAG	2010	Target met
Reduced nominal power loss through the replacement of 400 transformers annually	REG	2009-2011	1,239 transformers in the REG network region have been replaced (saving: 513 kW)
Improved energy balance through increased efficiency of the water supply installation; modernisation strategy for old turbines and pump installations to increase efficiency	REG	2010	The modernisation strategy boosts the efficiency of the installations in question by 10%
Reduction in energy consumption/CO ₂ emissions by 20% by 2020 (reference year: 2010)	SIS	Ongoing up to 2020	Identification of potential measures and implementation of feasibility studies
5% energy savings annually in buildings up to 2013 (reference year: 2010)	SIS	2011-2013	Identification of potential measures and implementation of feasibility studies
Sustainable social responsibility			
Harmonisation of cross-location provisions on environmental protection	EnKK	2010	Differences in provisions identified, harmonisation concept prepared
Preparation of a biodiversity map	EnKK	2011	In progress
Substitution of R22 refrigerant	EnKK	2011	Concept in progress
Communication, raising awareness			
Training, promoting awareness and instruction of all management personnel including team leaders and coordinators	ODR	2010	Completed
Introduction of an e-learning platform for employee training courses on environmental protection issues	ETG	2011	In progress
Preparation of a technical brochure on communication of environmental aspects and activities	GVS	2010	Completed
Definition of environmental criteria for transport services	TPLUS	2010	Completed

Description of measure	Company ¹	Time frame	2010 status
Communication, raising awareness			
Website with presentation of environmental management system and environmental topics in the network field	TNG	2011	Completed, ongoing adaptation/updating since completion
Raising awareness for energy consumption issues	SIS	Ongoing	Training courses ongoing based on e-learning; there are also plans to introduce "Energy Manager" courses in the junior training area
Protection of humankind and the environment			
Removal of panels containing asbestos from substations and central roof distributors	ODR	2010/2011	Around 30% implemented, completion scheduled for 2011
Increased use of overhead cables when crossing nature conservation, bird protection and water conservation areas	ODR	2010	Ongoing, bird protection measures are standard practice in new construction projects
Increase biodiversity on land owned by SWD	SWD	2010	Expert opinion with status report on the biodiversity of all SWD properties completed; evaluation of proposed measures and implementation in 2011
Installation of water-lubricated turbine bearings at the Unterpöfingen hydroelectric power plant	KWG	2012	In progress
Reduced dust emissions and internal energy consumption: replacement of the Ricco HS assemblies on the electric filters in waste boilers 21 and 22 with SIR high-frequency controllers	GAS, GNG	2010	Completed
Implementation of the 10-year pigging programme; annual installation of 4 pigging stations out of a total of 20	GVS	Ongoing	8 pigging stations were completed in 2010 (pigging station = mobile device for maintenance and servicing of gas and water lines)
Improved fish passage options through the construction of the vertical-slot fish pass (CH) and the bypass stream at the new Rheinfelden power plant	EDH	2011	Fish pass completed, bypass stream under construction
Improved fish passage options through the optimisation of the Laufenburg fish pass(D)	EDH	2012	Start of planning
Implementation of feasibility studies on the issue of downstream fish passage at all plants, especially at the power plants on the Rhine	EDH	2012	Studies begun
Substitution of natural gas for CO ₂ -intensive liquid fuels (target: avoidance of around 250 tons of CO ₂ annually)	ESW	Ongoing	Expansion of filling station completed, filling station in operation; achieved annual CO ₂ avoidance will be determined in spring 2012 after the 2011 operating year

Description of measure	Company ¹	Time frame	2010 status
Protection of humankind and the environment			
Investigation of weather-related noise emissions from 380-kV overhead lines and development of solutions to reduce noise	TNG	2010	Completed; the survey findings were used as a basis for the development of a technical process that provably reduces the noise emissions, particularly in the case of new conductor cables
Study to identify bird strike-critical line sections in the transport network	TNG	2011	Determination of hazard potential of line sections and on-site monitoring of bird flight behaviours at representative cable route sections completed; the nature conservation associations will be included in the process in 2011; the recommend measures will be implemented following completion of the study and consultation
Creation of an ecologically sound environment on the Neckar; construction of a fish ladder	ZEAG	2010/2011	In progress
Water conservation: 1) Identification of substations in water verges and water conservation zones 2) Reduction of environmental hazard potential by replacing existing pylon stations with pylon foot stations and by replacing oil transformers in water conservation zones I and II (protection of resources) with cast resin transformers	ZEAG	2009/2010	Measures implemented
Protection of various bird species in the medium-voltage network, cooperation with the NABU nature conservation organisation	REG	2010	1.592 bird protection elements like perching rods, perching deterrents and protective hoods were fitted during maintenance work; preparation of a manual for the mounting of nesting aids together with NABU

¹ The described measures, target formulations and 2010 status statements refer exclusively to the specified company.

2010 environmental protection costs

Environmental protection costs in 1.000 € ^{1,2}	GRI G3	Investment	Ongoing expenditure
	EN 30		
Waste management		30,322	11,533
Water conservation (incl. water utilisation fee)		16,573	33,558
Noise abatement		339	457
Clean air		44,883	38,465
Nature conservation and landscaping		6,029	3,081
Soil decontamination		4	1,071
Climate protection		77,679	61,372
Research and development		2,631	37,556
Measures and initiatives to improve customer energy efficiency		632	72
Environmental management system			1,812
Other environmental protection activities		5,157	766
Total		184,249	189,743

¹ Breakdown by environmental medium based on the reporting requirements of the German Federal Statistical Office.

² Figures cover companies with environmentally relevant installations and activities (EDH, EEE, EnKK, EOG, ESG, ESW, ETG, EVG, GAS, GVS, HOL, KWG, ODR, REG, SIS, SWD, TNG, TPLUS and ZEAG). These companies account for just under 80% of employees in the EnBW Group.

Core indicators in line with the Global Reporting Initiative (GRI)

The application level of reporting by EnBW for the business year 2010 has been found to be consistent with "B GRI checked".
The GRI statement is available on the Internet site www.enbw.com.

GRI G3	Report element	Scope	Page
Part 1: Profile			
General			
1.1	Statement from the CEO about the relevance of sustainability	full	SR 2010 p. 4-5
1.2	Description of key risks and opportunities	full	SR 2010 p. 6-9 AR 2010 p. 107-117
Organisational profile			
2.1	Name of the company	full	SR 2010, title page
2.2	Products and services	full	AR 2010 p. 37-46
2.3	Organisational structure including central departments, operating locations, subsidiaries, joint ventures	full	SR 2010 p. 6 AR 2010 p. 215-224, 258-259
2.4	Location of headquarters	full	SR 2010 p. 64
2.5	Countries in which the organisation's operations are located	full	AR 2010 p. 258-259
2.6	Nature of ownership and legal form	full	AR 2010 p. 29
2.7	Types of markets served	full	AR 2010 p. 37-46
2.8	Corporate profile, scale of the reporting organisation	full	SR 2010 p. 6, 40 AR 2010 p. 123-129
2.9	Major changes in size, structure or ownership during the reporting period	full	AR 2010 p. 37-41, 81-84
2.10	Prizes and awards received	full	SR 2010 p. 40
EU1	Installed capacity	full	AR 2010 p. 38
EU2	Net energy output broken down by primary energy source	full	SR 2010 p. 50
EU3	Residential, industrial and commercial customer accounts	full	AR 2010 p. 43, 47
EU4	Length of above and underground transmission and distribution lines	full	AR 2010 p. 39
Leadership structure and management			
3.1	Reporting period	full	SR 2010, title page
3.2	Date of most recent previous report	full	SR 2010 p. 63
3.3	Reporting cycle	full	SR 2010 p. 63
3.4	Contact	full	SR 2010 p. 64
3.5	Process for defining report content	full	SR 2010, p. I, 4-5
3.6	Boundary of the report	full	SR 2010, p. I
3.7	Specific limitations on the scope or boundary of the report	full	AR 2010 p. 258-259
3.8	Limits on comparability	full	SR 2010, p. I
3.9	Measurement techniques and calculation bases	full	SR 2010 p. 31, 51, 52
3.10	Explanation of any re-statements of information	full	SR 2010 p. 50-52
3.11	Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report	full	SR 2010 p. 50-52 AR 2010 p. 123-227
3.12	Location of GRI core indicators	full	SR 2010 p. 58-62
3.13	Independent assurance for the report	full	No independent assurance
Governance, commitments and engagement			
4.1	Governance structure of the organisation	full	AR 2010 p. 14-15, 233-245
4.2	Indicate if the Chair of the highest governance body is also an executive officer	full	The Chair of the highest governance body is not CEO

GRI G3	Report element	Scope	Page
4.3	Organisations without Supervisory Board	full	EnBW has a Supervisory Board with 20 members
4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body	full	SR 2010 p. 64
4.5	Linkage between compensation for members of the highest governance body, senior managers and executives and the organisation's performance	full	AR 2010 p. 237-242
4.6	Processes in place for the highest governance body to ensure conflicts of interest are avoided	full	CGP No. 4.3
4.7	Process for determining the qualifications and expertise of the members of the highest governance body	full	AR 2010 p. 84
4.8	Internally developed statements of mission or values, codes of conduct	full	SR 2010 p. 6-9
4.9	Procedures of the highest governance body for overseeing the organisation's economic, environmental, and social performance	full	AR 2010 p. 8-13, 233-245
4.10	Processes for evaluating the highest governance body's own performance	full	AR 2010 p. 8-13, 233-245
4.11	Explanation of whether the precautionary principle is addressed by the organisation	full	AR 2010 p. 90-100
4.12	Endorsement of externally developed initiatives	full	SR 2010 p. 9
4.13	Memberships in associations and advocacy organisations	full	SR 2010 p. 48
4.14	List of stakeholder groups engaged by the organisation	full	SR 2010 p. 4, 36, 40, 46 AR 2010 p. 21-25
4.15	Basis for identification and selection of stakeholders to engage	full	SR 2010 p. 19 ¹
4.16	Approaches to stakeholder engagement	full	SR 2010 p. 5, 12, 19, 28, 43 ²
4.17	How are stakeholder interests addressed	full	SR 2010 p. 5, 12, 19, 28, 43
Part 2: Management approaches (DMA)			
Economic indicators EC			
	Economic performance	full	SR 2010 p. 6-9 AR 2010 p. 21-25
	Market presence	full	SR 2010 p. 6-9 AR 2010 p. 21-25
	Indirect economic impacts	full	SR 2010 p. 6-9 AR 2010 p. 21-25
	Availability and reliability	full	SR 2010 p. 6-9 AR 2010 p. 21-25
	EU 6: Management approach to ensure short and long-term electricity availability and reliability	full	SR 2010 p. 6-9 AR 2010 p. 21-25
	Demand-side management	full	SR 2010 p. 6-9
	EU 7: Demand-side management programs including residential, commercial, institutional and industrial programmes	full	SR 2010 p. 6-9
	System efficiency	full	SR 2010 p. 6-9
	Research and development	full	SR 2010 24-25 AR 2010 p. 86-89
	EU 8: Research and development activity and expenditure aimed at providing reliable electricity and promoting sustainable development	full	SR 2010 24-25 AR 2010 p. 86-89
	Dismantling of nuclear power plants	full	AR 2010 p. 173
	EU 9: Provisions for decommissioning of nuclear power sites	full	AR 2010 p. 173
Ecological indicators EN			
	Materials	full	SR 2010 p. 6-8, 30
	Energy	full	SR 2010 p. 6-8, 30
	Water	full	SR 2010 p. 6-8, 30
	Biodiversity	full	SR 2010 p. 6-8, 30
	Emissions, waste water and waste	full	SR 2010 p. 6-8, 30
	Products and services	full	SR 2010 p. 6-8, 30

GRI G3	Report element	Scope	Page
	Compliance with legal regulations	full	SR 2010 p. 6-8, 30
	Transport	full	SR 2010 p. 6-8, 30
	Overall	full	SR 2010 p. 6-8, 30
	Social indicators: working conditions LA		
	Employment	full	SR 2010 p. 40-45 AR 2010 p. 81-85
	EU14: Programs and processes to ensure the availability of a skilled workforce	full	SR 2010 p. 40-45 AR 2010 p. 81-85
	EU15: Percentage of employees eligible to retire in the next 5 and 10 years	full	SR 2010 p. 40-43 AR 2010 p. 81-85
	EU16: Policies and requirements regarding health and safety of employees and employees of contractors and subcontractors	full	SR 2010 p. 44-45
	Relationship between employees and employer	full	SR 2010 p. 41 AR 2010 p. 234
	Work safety	full	SR 2010 p. 44-45
	Training and development	full	SR 2010 p. 40-45 AR 2010 p. 81-85
	Diversity and equality of opportunity	full	SR 2010 p. 40-45 AR 2010 p. 82-84
	Social indicators: human rights HR		
	Investment and procurement practices	full	SR 2010 p. 40 AR 2010 p. 82-84
	Equal treatment	full	SR 2010 p. 41-42 AR 2010 p. 82
	Freedom of association and collective bargaining rights	full	SR 2010 p. 9, 41
	Child labour	full	SR 2010 p. 9, 41
	Forced and compulsory labour	full	SR 2010 p. 41-42 AR 2010 p. 82
	Safety practices	full	SR 2010 p. 44-45
	Rights of indigenous peoples	full	SR 2010 p. 9, 41
	Social indicators: society SO		
	Community	full	SR 2010 p. 6-7 AR 2010 p. 25
	EU19: Stakeholder participation in the decision-making process related to energy planning and infrastructure development	full	SR 2010 p. 6-7 AR 2010 p. 24-25
	EU20: Approach to managing the impacts of displacement	full	SR 2010 p. 9
	Corruption	full	SR 2010 p. 9
	Politics	full	SR 2010 p. 9
	Anti-competitive behaviour	full	SR 2010 p. 9
	Compliance with legal regulations	full	SR 2010 p. 9
	Contingency planning and disaster plans, countermeasures	not reported ³	
	EU21: Contingency planning measures, disaster/emergency management plan and training programmes and recovery/restoration plans	not reported ⁴	No reporting, as confidential

GRI G3	Report element	Scope	Page
	Social indicators: responsibility for products and services PR		
	Customer health and safety	full	SR 2010 p. 9
	Labelling of products and services	full	www.enbw.com
	Advertising	full	SR 2010 p. 9, 36-39
	Protection of customer data	full	SR 2010 p. 9
	Compliance with legal regulations	full	SR 2010 p. 9
	Access	full	SR 2010 p. 9, 36-39
	EU23: Programs, to improve or maintain access to electricity services and customer support services	full	SR 2010 p. 36-39
	Provision of information	full	SR 2010 p. 36-39
	EU24: Procedures to address obstacles – such as language, culture, illiteracy and handicaps – to access to and safe use of electricity and customer support services	not reported ⁵	
	Part 3: performance indicators		
	Economic performance indicators		
EC1	Direct economic value generated and distributed	full	AR 2010 p. 57-75
EC2	Financial implications for the organisation's activities due to climate change	full	SR 2010 p. 6-9 AR 2010 p. 109-117
EC3	Coverage of the organisation's defined benefit pension plan obligations	full	AR 2010 p. 144, 147, 150-151
EC7	Procedures for local hiring, and proportion of senior management in locations of significant operation from the local community	full	SR 2010 p. 40
EC8	Infrastructure investment and services for public benefit	full	SR 2010 p. 46-49
EC9	Understanding and description of type and scope of major indirect economic impacts	full	SR 2010 p. 9, 16-17
EU12	Transmission and distribution efficiency	full	AR 2010 p. 80
	Ecological performance indicators		
EN1	Materials used by type, except water (installations containing PCBs)	full	SR 2010 p. 52
EN3	Direct energy consumption broken down by primary energy source	full	SR 2010 p. 52
EN5	Energy conservation through increased efficiency	full	SR 2010 p. 30, 34
EN6	Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives	full	SR 2010 p. 36-39
EN7	Initiatives to reduce indirect energy consumption and reductions achieved	full	SR 2010 p. 30, 34, 54-55
EN8	Total water withdrawal by source	full	SR 2010 p. 52
EN10	Re-use of water	full	SR 2010 p. 52
EN12	Description of significant impacts of activities on biodiversity	full	SR 2010 p. 33
EN14	Strategies, current actions, and future plans for managing impacts on biodiversity	full	SR 2010 p. 8, 30, 56-57
EN16	Total direct and indirect greenhouse gas emissions by weight	full	SR 2010 p. 27, 31, 50
EN17	Emissions of other climate-relevant gases	full	SR 2010 p. 52
EN18 EU	Initiatives to reduce greenhouse gas emissions and achieved outcomes	full	SR 2010 p. 30, 54-55
EN20	Significant air emissions	full	SR 2010 p. 50, 53
EN21	Significant water discharge by type	full	SR 2010 p. 53
EN22	Total amount of waste by type and destination	full	SR 2010 p. 53
EN26	Significant environmental impacts of products and services	full	SR 2010 p. 50, 53
EN27	Percentage of products sold whose packaging is reclaimed by category	not reported ⁶	
EN30	Total environmental protection expenditures by type	full	SR 2010 p. 57

GRI G3	Report element	Scope	Page
Social performance indicators: working conditions			
LA1	Breakdown of total workforce by region	full	SR 2010 p. 40
LA2	Total number and rate of employee turnover broken down by region	full	AR 2010 p. 80-82
LA4	Percentage of employees represented by independent trade union organisations or covered by collective bargaining agreements	full	AR 2010 p. 81-82
LA5	Minimum notice period(s) regarding major operational changes	full	AR 2010 p. 81-85
LA7	Rates of injury, absenteeism and number of work-related fatalities	full	SR 2010 p. 45
LA8	Measures in the case of serious diseases	full	SR 2010 p. 44-45
LA11	Programmes for knowledge management	full	AR 2010 p. 82-84
LA13	Diversity of top management including board (gender/culture)	full	SR 2010 p. 42
LA14	Ratio of basic salary of men to women by employee category	full	SR 2010 p. 41
Social performance indicators: human rights			
HR1	Principles and policies on monitoring human rights	full	SR 2010 p. 9, 16-17
HR2	Screening on human rights for major suppliers and contractors, and actions taken	full	SR 2010 p. 9, 16-17
HR4	Incidents of discrimination, actions taken	full	SR 2010 p. 42
HR5	Ensuring freedom of association throughout the organisation	full	SR 2010 p. 41
HR6	Principles/Measures to prevent child labour	full	SR 2010 p. 9, 16-17
HR7	Principles/Measures to prevent forced or compulsory labour	full	SR 2010 p. 9, 16-17
Social performance indicators: society			
S01	Management of the impacts of operations on communities	full	SR 2010 p. 36-39
S03	Percentage of employees trained in organisation's anti-corruption policies and procedures	full	AR 2010 p. 235-236
S05	Public policy positions and participation in public policy development and lobbying	full	AR 2010 p. 50-56
S07	Total number of legal actions for anti-competitive behaviour, anti-trust, and monopoly practices and their outcomes	full	AR 2010 p. 95
S08	Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with laws and regulations	full	AR 2010 p. 95, 98
Social performance indicators: responsibility for products and services			
PR1	Principles concerning the health and safety of customers	full	SR 2010 p. 6-8
PR3	Principles/Procedures for product labelling	full	SR 2010 p. 50-51
PR8	Principles/Procedures for customer data protection	full	AR 2010 p. 96

¹ In internal meetings with all core companies in the group, the relevant stakeholder groups were identified, comprised into groups and invited to regular dialogue sessions. This selection process is performed every two years. Dialogue sessions are currently ongoing with six stakeholder groups as well as with the two major shareholders, company federations, trade unions, various NGOs, universities/research institutions and employees.

² Regular dialogue sessions are held with all stakeholder groups.

³ For security reasons, we do not provide any information on these issues. The internal security guidelines may be viewed if necessary.

⁴ For security reasons, we do not provide any information on these issues. The internal security guidelines may be viewed if necessary.

⁵ No reporting has taken place on this issue to date, as the necessary information has not yet been systematically documented.

Approaches for data documentation are currently being developed, and we will communicate these approaches in the reporting year 2011.

⁶ No reporting takes place on this issue in line with GRI, as this issue is currently not seen as being of relevance for the energy sector.

Abbreviations

CGP: EnBW Corporate Governance Principles

SR 2010: Sustainability Report 2010

AR 2010: Annual Report 2010



The Sustainability Report also provides information on progress with the implementation of the principles set out by the UN Global Compact, which EnBW joined in 2010.

Important notes

About this report

This Report follows up on the 2008/2009 Sustainability Report with the 2008 and 2009 Booklets. The 2010 Sustainability Report will be published in an online version only.

This Sustainability Report can also be downloaded from the internet in German. In case of doubt, the German version is the authoritative version.

Forward-looking statements

This report contains forward-looking statements based on current assumptions, plans, estimates and forecasts of the EnBW management. Forward-looking statements are only valid at the time at which they were published for the first time. Forward-looking statements are indicated by the context, but may also be identified by the use of the words "may", "will", "should", "plans", "intends", "expects", "believes", "assumes", "forecasts", "potentially" or "continued" and similar expressions.

By nature, forward-looking statements are subject to risks and uncertainties that cannot be controlled or accurately predicted by EnBW. Actual events, future results, the financial position, development or performance of EnBW and the companies in the EnBW Group may therefore diverge considerably from the forward-looking statements made in this report. Therefore it cannot be guaranteed nor can any liability be assumed that these forward-looking statements will prove complete, correct or precise or that expected and forecast results will actually occur in the future.

No updating obligation

EnBW does not enter into any obligation whatsoever to update the information and forward-looking statements contained in this report or to conform them to future events or developments.

Publishing details and contacts

Publisher

EnBW Energie Baden-Württemberg AG
Durlacher Allee 93
76131 Karlsruhe

Responsible

Dr. Christine Kolmar
Corporate Responsibility,
Sustainability and Corporate
Positioning, EnBW Berlin

Coordination and editing

Ricardo Plagemann, EnBW Karlsruhe
Matthias Riebel, EnBW Berlin
Dr. Sylvia Straetz, EnBW Stuttgart

Design and implementation

Miriam Elze, EnBW Stuttgart
Repro 2000, Leonberg

Translation

Anthony Tranter-Krstev,
Germersheim

Photographs

Tim Buchheister, title page, p. 44
Frank Ossenbrink, p. 5
Uli Deck, p. 10, 43
Oli Keinath, p. 11, 15, 21, 27
Tobias Matausch, p. 13
Andy Ridder, p. 35
Getty Images, p. 47
Wolfgang List, p. 48
EnBW archive

Editorial deadline: July 2011

Dr. Christine Kolmar

EnBW Energie Baden-Württemberg AG
Corporate Responsibility, Sustainability
and Corporate Positioning
Schiffbauerdamm 1
10117 Berlin
E-mail: c.kolmar@enbw.com

Dr. Dieter Seiferling

EnBW Baden-Württemberg AG
Corporate Environmental Protection
Durlacher Allee 93
76131 Karlsruhe
E-mail: d.seiferling@enbw.com

Shareholder hotline/

Investor relations

Phone: 0800 1020030 or
0800 AKTIEENBW
Fax: 0800 3629111
E-mail: info@investor.enbw.com
Internet: www.enbw.com

**EnBW Energie
Baden-Württemberg AG**

Durlacher Allee 93
76131 Karlsruhe
www.enbw.com