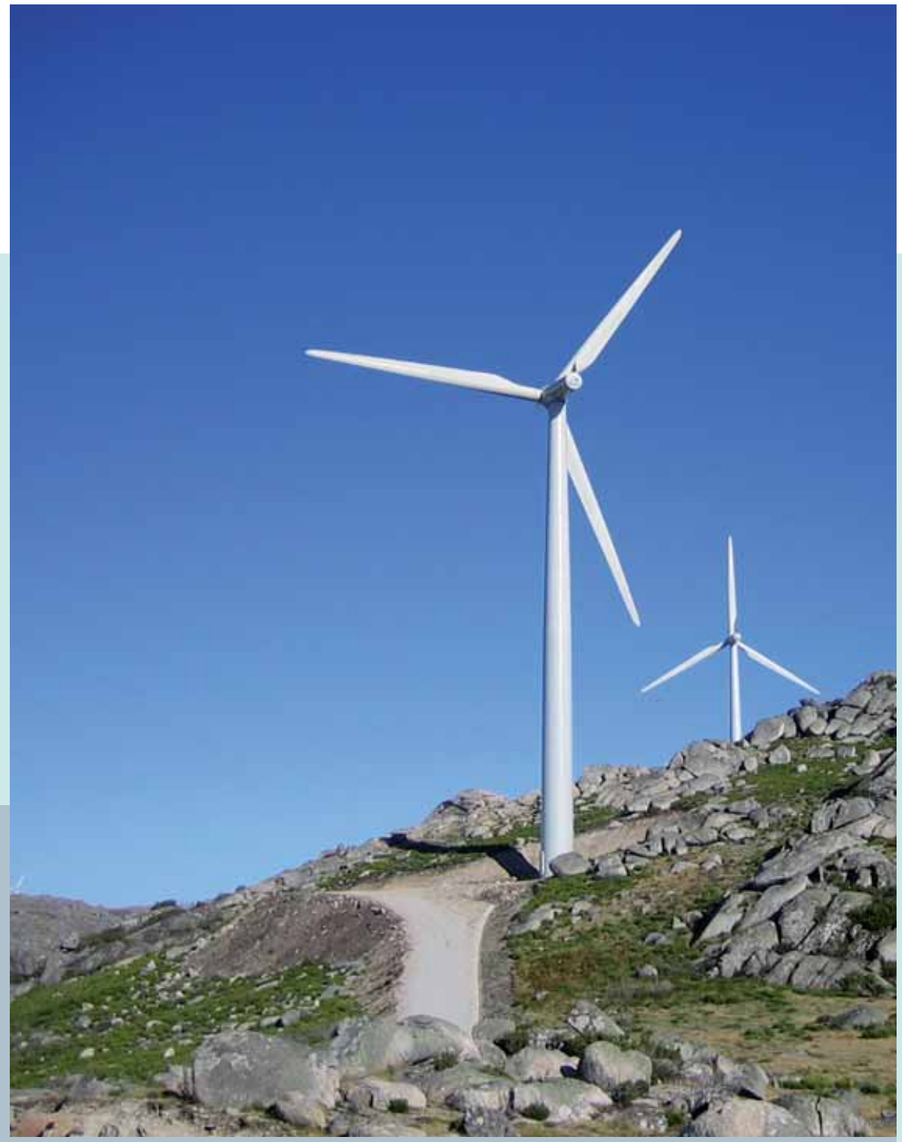
EnergieKontor

Wind power: energy of the future

It's worth thinking about.

»Energy appears to me to be the first and unique virtue of man.« Wilhelm von Humboldt

»With methods from the past, there will be no future.« Dr. Bodo Wilkens



Wind power on the increase

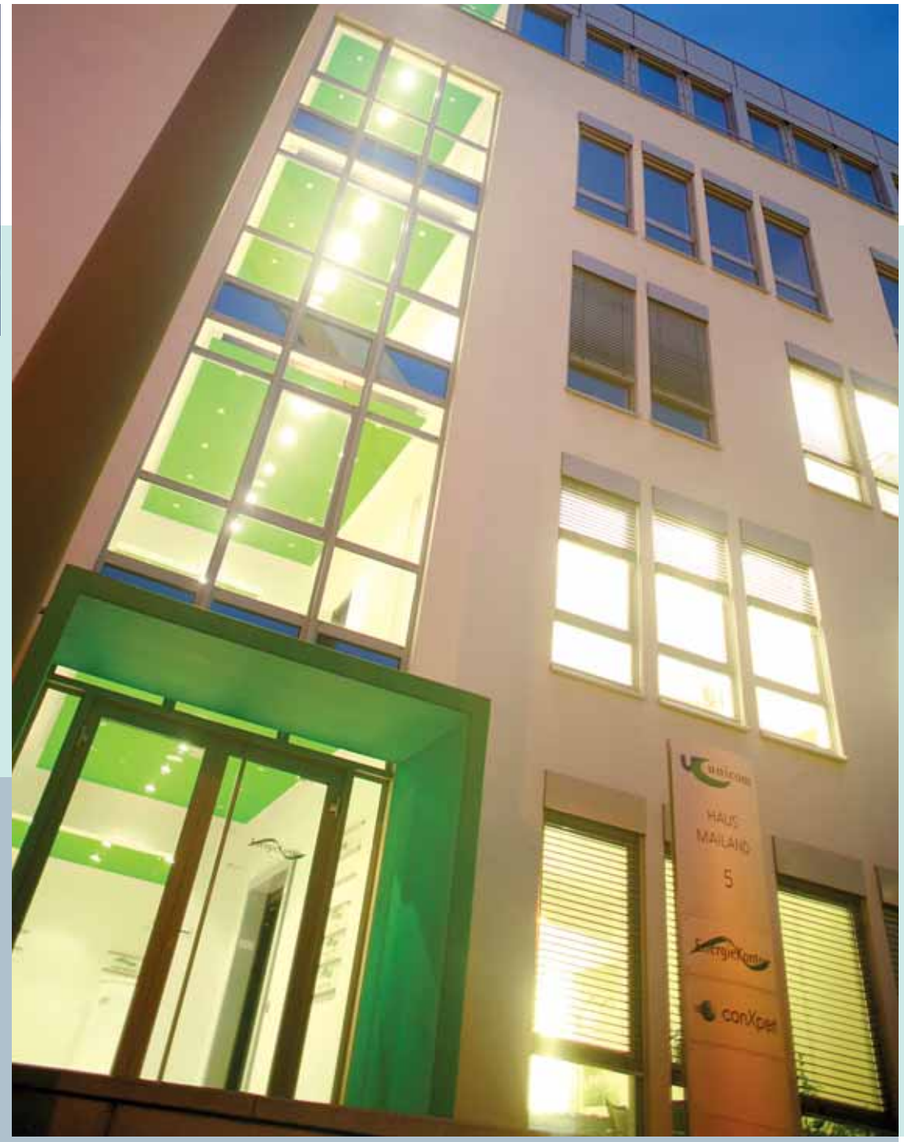
»Environmental protection is an opportunity and not a burden we have to carry.« Helmut Sihler

When will the oil run out? Even if experts cannot agree on an exact date, one thing is certain: the era of fossil fuels is coming to an end. In the long term we depend on renewable sources of energy.

This is an irrefutable fact, which has culminated in a growing ecological awareness in industry as well as in politics: whereas renewable sources of energy accounted for 4.2 percent of the total consumption of electricity in 1996, the year 2006 registered a proportion of 12 percent. And by 2020 this is to be pushed up to 30 percent. The growth of recent years has largely been due to the use of wind power.

The speed of technical development over the past 15 years has brought a 20-fold rise in efficiency and right now wind power is the most economical regenerative form there is to produce electricity. In this respect, Germany leads the world: since 1991 more than 19.460 wind power plants have been installed with a wind power capacity of 22.247 MW*. And there is more still planned for the future: away from the coastline, the offshore plants out at sea will secure future electricity supplies.

Status at 31.12.2007



Energiekontor – experienced in wind power

From the very beginning it was full speed ahead. The story of Energiekontor is a success story, the beginnings of which took root at about the same time as wind power started to be developed in Germany.

In the year 1990, fired by the vision of revolutionised electricity supplies in a world where resources would be treated with greater respect, at the same time pursuing a successful course of business, Dr. Bodo Wilkens and Günter Lammers set up the company Energiekontor. As pioneer, the self-contained company did not take long to establish itself in the new territory and continuously worked to develop its competence in the areas of planning, financing and installation.

At an early stage (1995) Energiekontor expanded into other countries, so that today the company leads the market in European holdings. Nationally as well, Energiekontor burst barriers and was the driving force behind the plans and permits for the first offshore wind farms off the German coastline.

Since 2000, Energiekontor AG has been listed at the Frankfurt securities exchange. At the moment it engages 65 people at the locations of Bremen, Bremerhaven, Krefeld, Lisbon and Leeds.

Günter Lammers company founder and member of the Supervisory Board of Energiekontor AG

»Wind power is breaking new ground with its offshore technology – and now at long last in Germany too. We are proud of the part played here by Energiekontor.«

Dr. Bodo Wilkens founder of Energiekontor AG and Chairman of the Supervisory Board

»It's not just that our vision has genuinely taken shape; it has in fact surpassed itself. Energiekontor is writing a success story, one that nobody would have dared to even dream of in the early stages.«

Knowing where the wind's blowing from

Dirk Gottschalk Board member of Energiekontor AG for Technology and Project Development

»There has been a rethink, not simply with people who are environmentally aware but with politicians as well. The years of sailing against the wind are over. There is no stopping the global success of wind power.«

Peter Szabo Board member of Energiekontor AG for Finance and Controlling

»We can look towards the future more than optimistically. We will continue to develop our position as market leader in other countries and set criteria with the first German offshore wind farm.«

Energiekontor in Facts and Figures

38.77 million Euro

have been paid out in dividends by Energiekontor AG since 1990 to wind farm investors.

655 million Euro

have been invested in wind farms by Energiekontor AG since the beginning of business .

415

windmills have since been installed by Energiekontor.

3.555.650.156 kWh

electricity has been produced by Energiekontor AG since the beginning of business.

191.608 tons

of carbon dioxide are cut down on each year, thus providing relief for the environment.

1990 – Founding year of the company

1994 – Installation of the first two wind farms

1995 – Incorporation of the first international associate companies in Portugal and Greece

1999 – Incorporation of the associate company in England. Installation of the 100th power plant

2000 – More than 200 MW installed. The company went public

2003 – Completion of regional impact assessment procedure for the Nordergründe offshore location Installation of the Portuguese wind farm Trandeiras

2004 – Production topped 400 MW. Permit granted to set up the Borkum Riffgrund West offshore wind farm

2005 – 3 more wind farms are put into operation in northern Portugal

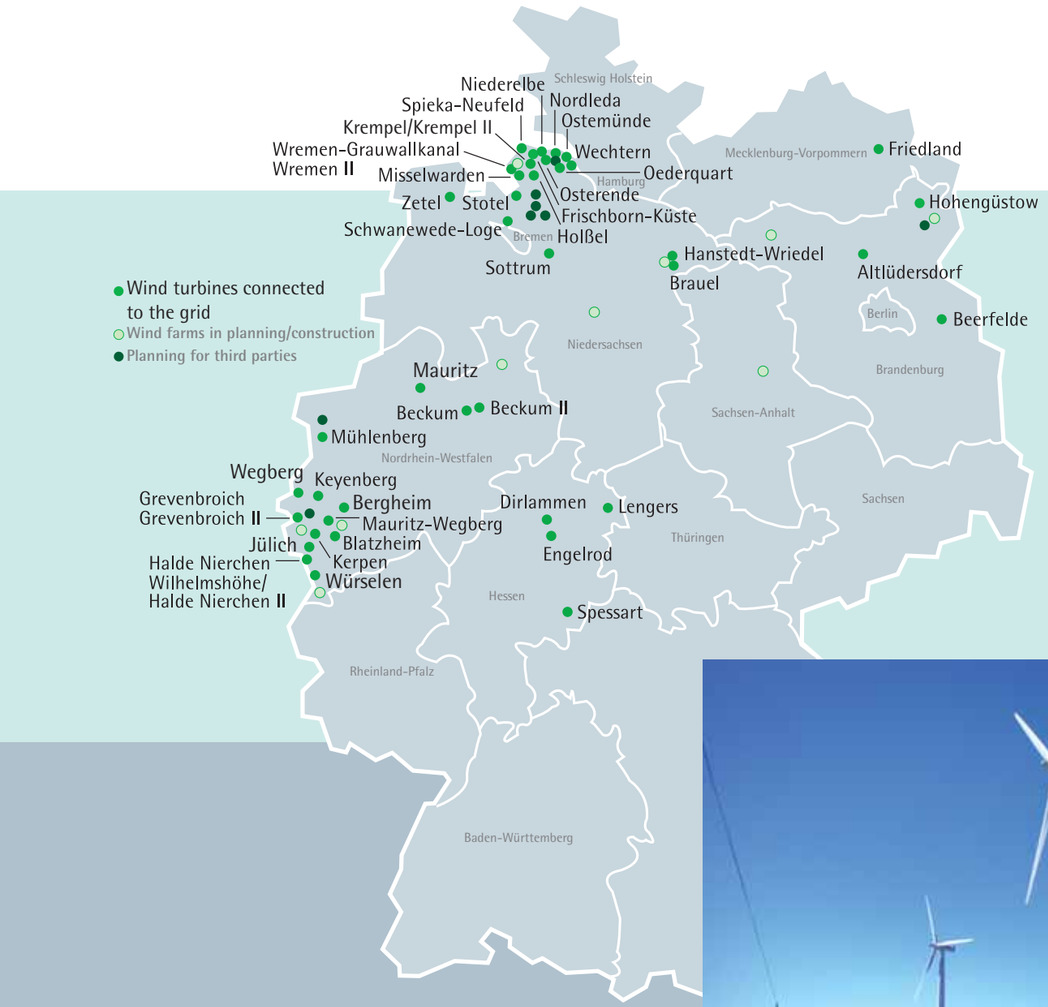
2006 – More than 350 MW acquired in England

2007 – Record time achievement with placement of the Portuguese wind farms Mafomedes and Sobrado

2008 – Production Agreement contracted with the company REpower for supplies to 18 power plants for the Nordergründe wind farm

Status at 31.12.2007

Projects carried out in Europe



Competence from experience – our operating divisions

Acquisition and Planning

The quality of a wind farm project sinks or swims, as it were, with the choice of location. Starting with the actual search and investigation, over the regulatory permit procedure through to site management and the initiation of operations, our experienced staff presides over each individual stage necessary to the installation of a plant.
Whereas our offices in other countries coordinate our international wind farms, our office in Bremen implements the inland onshore projects, as well as the offshore ones.

Sales

Successful planning also means ensuring that the project is on a firm financial footing. Energiekontor gives private investors the opportunity of investment and hence participation in the business success of the wind farms. This takes place in the form of limited partner holding shares that make up the shareholder-generated funds for our projects. We likewise make it possible to take on fullscale projects.
Within our own closed fund we have a number of products on offer that are individually compatible: the satisfaction of our investors is our top priority.

Plant Management

We not only concern ourselves with the construction, but also with wind farm maintenance and business management. Our technicians are continuously monitoring them in the interests of maintaining flawless operations. Transparency towards our investors is assured by the continuously updated information available in the Internet as well as in our circular mails. The next page gives a brief overview of the services we provide in managing the power plants.

Plant Management: the services we provide

- Monitoring wind power plant operations; initiation of maintenance and repair; procurement of quotations and subsequent contracting of maintenance agreements.
- Monitoring the condition and functionality of the infrastructure.
- Order placement, coordination and documentation of repair and maintenance work, standstill times, as well as the services provided subject to guarantee on the wind power plants and the infrastructure.
- Maintenance of proper conditions at the wind farm. This includes the control of exits and entrances, the care of the landscape and other measures required to ensure safety and orderliness in the area of the wind farm.
- Order placement for the inspection and acceptance of the plants by experts upon expiry of the period of guarantee and at intervals as stipulated by the authorities.
- Daily check of functionality by remote control.
- Surveillance of test intervals for all plant components subject to mandatory monitoring. The initiation and implementation of contractual maintenance work and testing by a technical monitoring unit.
- Monitoring and handling of insurance claims of the wind power plants, particularly the notification of occurrences and the settlement of claims with the insurance company.
- Drawing and checking invoices, e.g. invoices for power supplies. Reading of the meter for accounting purposes.
- Handling all payments. Planning and scheduling of payouts (single investors) and dividends (limited shareholders).
- Compilation and despatch of informative reports on the output of the wind power plants.
- Checking contractual commitments to attributes; where necessary, initiation and support for expert opinions and information.
- Preparation of liquidity plans and liquidity management.
- Communication with limited shareholders and individual investors and with financing banks.
- Checking of the year-end financial statement and tax returns as well as communication with the tax consultant.
- Preparation and holding of owner and shareholder meetings.

Giving the wind a helping hand – the yaw system

There is potential for improvement even with the best wind turbines. The vane of a wind turbine does not always turn into the wind as it should. This has to do with inaccuracies of measurement derived from the turbulences of air from the rotating rotor blade. As a result, the gauge fitted onto the back of the vane does not always measure the precise direction of the wind.

Consequently, potential capacities are lost. In cooperation with the engineering consultancy Dr.-Ing. D. Frey, Energiekontor AG has been able to develop and test an optimised system to adjust the direction of the wind. The wind turbine is equipped with an additional gauge and computer. This so-called azimuth optimiser measures the extent to which positioning is false, calculates the optimum corrective angle and is then able to position the plant ideally. This patented system has already been tried out at several Energiekontor wind farms, when it was possible to enhance capacities by up to seven percent.

Perspectives for the Future already to hand: repowering

Besides the installation of further projects in high-yield areas in Germany, enormous possibilities are accessed through so-called repowering: existing plants are modernized and replaced by models that are more efficient.

The advantages are obvious: the output is higher and the actual value of the site itself rises enormously. Past experience shows that precise forecasts can be calculated for the new plants, situated as they are in an infrastructure that is already prevailing.

Energiekontor has already acquired experience in repowering. At the locations of Misselwarden and Wremen, the plants have been replaced and the total capacity of the wind farm enhanced.


Foto: Siemens Wind Power

Offshore – the future of wind power

Wind power out at sea; this is the vision that our European neighbours realised years ago. And for good reason: with a steadier and high average speed of wind, the capacity here is far greater than inland. This is an enormous potential, which according to studies conducted by Greenpeace, could cover half of Germany's electricity requirements.

With its amended Renewable Energy Act (EEG), the German government is clearly intending to access these inexhaustible resources right in front of our front door. The legislation guarantees an initial remuneration of 15 cent per kilowatt-hour for electricity produced from offshore plants. The amended Energy Industry Act (EnWG) that came into force towards the end of 2006 also ensures that the transmission system operator (TSO) bears the costs and supplies the network connection – thus placing the offshore wind farm on a par with other power technologies for network integration. In terms of project development, the law has brought great relief in planning input and investment costs.

Offshore technology will play the major part in achieving the government's target of covering at least 30 percent of total electricity requirements with renewable sources of energy by the year 2020.

Offshore – ready for the off!

Since 1999 Energiekontor AG has been one of the first companies in Germany to plan offshore wind farms off the German coastline.
Several years were spent conducting extensive surveys in the areas under review to research environmental compatibility, analysing the risks for shipping and drawing up concepts for the maintenance of the offshore plants as well as for the protection and safety of their personnel – pioneer work of the very highest calibre!

It was well worth the effort. Major permits have been issued for the Nordergründe and Borkum Riffgrund West wind farms.

The production agreement has already been signed with the plant construction company REpower for the Nordergründe wind farm.

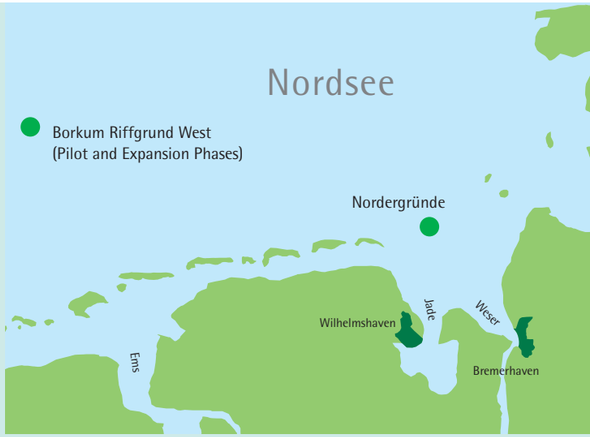
Construction and start-up of operations at the Nordergründe wind farm are scheduled for 2009/2010, so that it will be one of the first offshore projects to be carried out in Germany. Installation and operational start-up for Borkum Riffgrund West wind farm is scheduled for 2010/2011.

In all, the two projects have a nominal power capacity of up to 480 MW. The energy won is enough to supply 550,000 households with electricity – i.e. a city the size of Bremen.

Offshore – the wind farms Nordergründe and Borkum Riffgrund West

Offshore wind farm Borkum Riffgrund West

Project development:	Energiekontor AG
Location:	52 km northwest of Borkum
Depth of water:	approx. 30m
Overall area:	approx. 30 km^2
Plants:	80 (pilot phase) 85 (expansion phase)
Nominal capacity:	up to 400 MW



Offshore wind park Nordergründe

Development:	Energiekontor AG
Location:	In the 12 sea mile zone, approx. 15 km north east of Wangerooge
Depth of water:	4 to 14 m
Rotor blade diameter:	126 m
Hub height:	84 m
Total height:	147 m
Total area:	3.7 km^2
Plants:	18 REpower 5M
Nominal capacity:	90 MW
Forecast annual capacity:	approx. 350.000 MWh

EnergieKontor

Fotos: Energiekontor, Flying-Digicam, Susanne Liesen, Jens Meier, Jürgen Zilkenat
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