



Changing partners | Why an industrial enterprise in Berlin is getting software rather than electricity from EnBW lately.



Standpoint | What energy expert Patrick Graichen and member of the Group's Management Board Hans-Josef Zimmer have to say.



Transformations | How the move to northern Germany has changed the life of EnBW's associates.

Moving ahead



A corporation is more than just a company and its employees. Thousands of people care for it every day. On the inside and on the outside. With joy and concern. Only with these stakeholders can a company move ahead and be successful. This magazine talks about the stakeholders of EnBW – and what the energy turnaround, the German Energiewende, means for them.



“Dialogue is a foundation of our success.”



Frank Mastiaux
Chairman of the
Management Board of EnBW AG

EnBW is changing more profoundly than ever before. We are abandoning old activities while at the same time tapping new areas of growth. These include renewable energies, modern networks and smart services.

In these times of change we must always know where we stand. Therefore dialogue is a foundation of our success. For this reason we seek communication – for example with customers, employees, associations and groups that are interested in energy policy. For not only EnBW is in transformation – the entire world of energy is regrouping. Companies want to use electricity, gas and water more efficiently and demand new technological solutions. Private customers no longer feel they are mere “buyers” of electricity but compare providers, demand affordable, sustainably generated electricity and more and more frequently become producers themselves. Self-confidence is also growing in cities and municipalities. Local authorities want to have a say regarding their energy supply. To this end they seek out competent partners who work with them as equals. Conversely, the rich imagination and commitment of its employees are an important requirement for the success of EnBW.

This magazine talks about the people associated with our corporation and their view of us – which may be critical, full of praise, demanding and judging, but is always constructive.

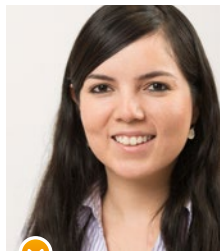
I hope you enjoy reading it!

Yours

A handwritten signature in blue ink that reads "Frank Mastiaux". The signature is fluid and cursive.

Frank Mastiaux

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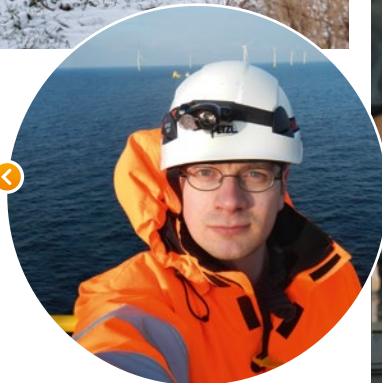


EnBW impetus | This magazine features major stories about people and organisations associated with our corporation. But there are also a number of smaller articles in the margin of the pages covering significant projects and ideas with which EnBW is getting fit for the future. You can recognise them by the stamp next to the signature.



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Partner of EnBW:
Marcus Schreitter
of Bausch+Lomb

Changing partners with ...



Partner of the companies:
Mathias Schmidt of EnBW's
sales office in Berlin

Power corporations used to earn their living selling electricity. But times change. In future, they will mostly have to help their customers save energy. For this reason EnBW and Bausch+Lomb have realigned their relationship.





Talking shop: Schmidt (l.) and Schreitter (r.) in the Bausch+Lomb factory

... future prospects

Just recently Marcus Schreitter discovered an irregularity in energy consumption. He explains how that happened sitting at his computer. The program produces a chart that shows unusual amplitudes in the power consumption of the air compressors. "This indicates an error," points out the head of Electrical Engineering of the Berlin-based pharmaceutical manufacturer Bausch+Lomb. An on-site check confirmed the suspicion. The compressor was fixed and consumption decreased.

Only a year ago the defect would hardly have been noticed. For only recently has Bausch+Lomb started employing software from EnBW that analyses the consumption of electricity, gas and water on its Berlin factory grounds. In this manner the company can use energy more efficiently at many places, help protect the environment and save money.

Bausch+Lomb takes energy efficiency very seriously. The corporation is a leading manufacturer of technology-oriented products for the eye. Every day thousands of little bottles and tubes filled with ointments and drops leave the factory in Berlin-Spandau. Hygiene regulations are strict. Staff members working in Production must wear white disposable garments, and caps are mandatory even for bald employees. Suction facilities ensure that even minute dirt particles are funnelled outside. "This room here is 20

times cleaner than an OR,” says Schreitter, pointing to a glass wall behind which a colleague checks the filling machine.

Production processes with this degree of sophistication require lots of energy. “Generating cooling water consumes the most electricity,” says Schreitter. It is needed after every production cycle to sterilise the metal bowls in which the ointments and drops are prepared. Once the containers are empty, they are heated to 120 degrees and immediately cooled down again with water. Round the clock. This is an expensive procedure. Therefore any idea on how to save energy is welcome.

Bausch+Lomb is putting its confidence in EnBW. The energy supplier has been expanding its consulting business for several years. “The service sector is booming,” says Mathias Schmidt of the EnBW sales office in Berlin. He is convinced that this is the direction in which value creation in the energy industry is going to move. A study commissioned by the Federal Agency for Energy Efficiency confirms this prediction. It reveals that the market for energy services has grown by up to ten percentage points per year in the past and will continue to grow considerably. By contrast, the sale of energy alone – and the industry experts concur on this – is going to become less significant in the coming years.


You do not need to be a customer to have EnBW consult you. The partnership with Bausch+Lomb is proof of this, too. For years the corporation received its electricity from EnBW. Last year the Purchasing Department called for Europe-wide tenders for the new supply contract. It was awarded to the company submitting the cheapest bid – which was a competitor.

The fact that Bausch+Lomb changed its electricity partner did not damage its relationship with EnBW. On the contrary. The partners had long since got closer in the future segment of energy services. When it comes to EnBW, Schreitter is perfectly unambiguous. The service? “Good.” The contact persons? “Able.” The mutual trust? “Exemplary.”

Bausch+Lomb would now be able to invest the money saved by purchasing cheaper electricity to pay for energy efficiency measures at its Berlin site. Schreitter finds ideas for this in the network meeting on energy efficiency, for instance, which EnBW initiated. “We discussed things with other companies there, too,” he says. It was at one of these meetings that the head of Electrical Engineering heard for the first time about EnEffCo, the EnBW software that analyses and controls energy consumption.

The purpose of EnEffCo is to coordinate the operation of the numerous power-consuming devices in the company with each other. The program finds out how much energy each individual production step consumes depending on its operational utilisation – regardless of whether it is used for cooling, heating or lighting (see right hand column).

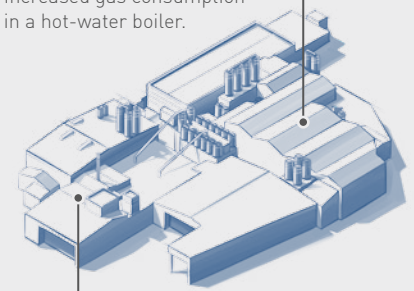
Schreitter is already tracking down the next energy thief. The software has noticed that one of the hot-water boilers consumes too much gas. Schreitter only does not know which one yet. But he is sure he will soon find the culprit.

 For info about EnBW's energy services: www.enbw.com/energieeffizienz



Fitness programme

Energy efficiency check:
Increased gas consumption in a hot-water boiler.



Energy efficiency check:
Irregular electricity of the air compressors.

Saving energy is a science in and of itself at the industrial enterprise. After all, the amount of electricity a machine consumes depends not only on its design but also on its degree of utilisation. But how can utilisation be improved? EnEffCo supplies valuable hints.

The software offered by EnBW records, monitors and evaluates the energy use throughout the company. This makes it possible to determine, for instance, whether a production machine is used inefficiently, which in itself makes it a power guzzler.

EnBW markets the software jointly with the consulting firm Ökotec, in which it holds a slightly less than 25 per cent share.

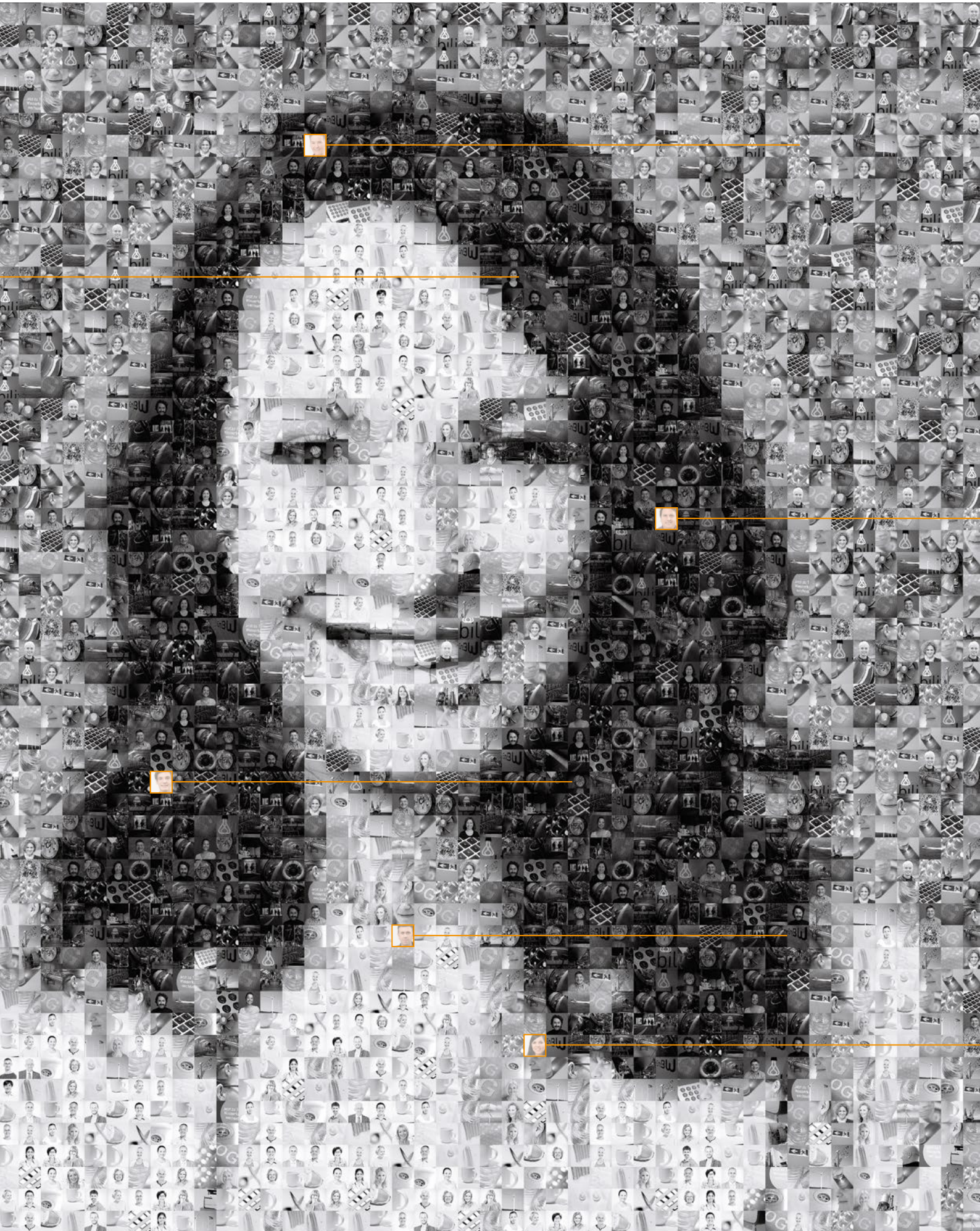
EnEffCo is already in use at over 20 companies – and the number of customers keeps growing. A major delicatessen company is planning on having its new refrigeration centre plant monitored by EnEffCo. And in April 2015 a large German corporation is going to launch the program at over 200 of its sites.

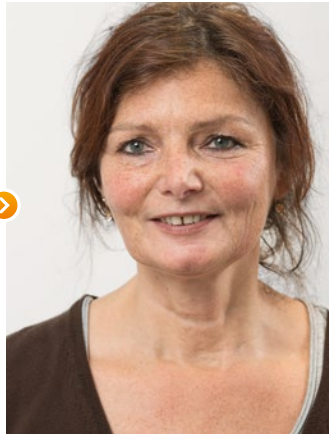
Still room for improvement!

The German Energiewende will be successful only with their cooperation. After all, the private consumers are a significant customer segment of EnBW. But how satisfied are they with the performance of their corporation?

The general mood.



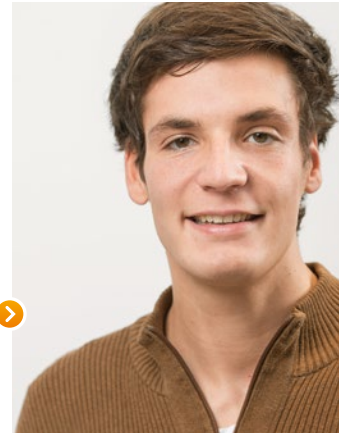




Brigitte Strecker, 54, site engineer

“ True, since the liberalisation of the energy market I have been able to select my own electric energy provider. But I am certain: I’m going to remain an EnBW customer. Prices are acceptable and I don’t feel like running into problems because I have got involved with an unknown provider found on the Internet.”

“ When I was on holiday at the North Sea and saw the many wind turbines, I realised for the first time what a huge project the German Energie-wende is. I believe EnBW is right to go along with it. As a customer, I expect clean energy from my electric energy provider.”



Christian Bubeck, 20, Student



Olaya de la Rosa, 27, project manager

“ Saving energy requires detailed information. Why can a change in consumption be assessed only on an annual rather than a monthly basis? In that case I’d know right away how much electricity I save when I’m on holiday or when I use electric devices less often.”



Ingrid Müller, 72, retired

“ The nuclear phase-out and the expansion of renewable energies were overdue. EnBW is implementing the German Energiewende in an exemplary way, and I endorse that. But I do have problems with my electricity bill. It reads like a patient information leaflet.”

“ EnBW must offer us private customers more smart technology. I want to be able to operate my heater and electric devices via my smartphone when I'm away from home. I would like to have the meter read electronically. This has been technologically feasible for a long time.”



Robert Gehring, 40, media manager



Hasani Ekrem, 45, bank clerk

“ I am pleased that EnBW is going to be solidly rooted in my region in the future, despite the change in the energy market. When I have questions about my electricity bill, I don't have to engage in endless struggles on the phone but simply go to the EnBW Shop.”

“Many consumers endorse the German Energiewende.”

Interview with Ingmar Streese



Source: vzbv/Gerd Baumbach

Ingmar Streese
Head of the Consumer Policy
Business Division of the
Federation of German Con-
sumer Organisations (vzbv)

Is EnBW doing enough to implement the Energiewende?

Yes, it has done so for about two years. However, it would have been better to start much earlier with the expansion of renewable energies. Even so, hesitating brought one advantage: as a result, private individuals were the first to become actively involved. We estimate that here in Germany, half of all facilities for renewable energies are owned by citizens or energy cooperatives. Therefore the Energiewende is carried by a major part of the population – an advantage that must not be underestimated.

This is also due to generous government subsidies. Is there less interest today?

Despite the cut in subsidies, we can still detect an interest among consumers in producing energy from renewable sources themselves. Especially when the electricity is not only fed into the grid but when they use it for themselves. This is an interesting field of activity for EnBW. A solar plant, for example, must be regularly serviced. These kinds of services can only be offered by experienced service providers.

Energy should be generated sustainably while still remaining affordable. Are private customers inevitably in for a disappointment?

No, we know that the majority of consumers endorse the German Energiewende. They are prepared to accept higher prices, under the condition that the costs are distributed fairly. Some providers – including EnBW – have cut their prices. We regard this favourably. Even so, we believe that there is still room for further price reductions.

EnBW provides smart technology so energy can be used more efficiently at home. How big are the benefits for the consumers?

I'm not going to argue that there is no potential for smart technologies in the household. But I do wonder whether it has really been such a boon for private customers to run the washing machine at night or to operate their oven via smartphone. Especially since this technology is still expensive – all the more so when data is to remain reliably protected. However, using smart technology should already be worthwhile for companies. Not only large, but also small and medium-sized companies can profit from it.

What are the benefits of the expansion of power grids for the consumers?

Private customers profit from a powerful grid infrastructure. It is the precondition for the German Energiewende to be successful, for transporting the offshore electricity into the southern German states. So the intelligent expansion of the grids is indispensable to ensure supply reliability. Yet the grid operator should always check the extent of the expansion that

is required. His expenses are one of the factors that determine the price of electricity.

Thank you very much for talking to us.



Where are the crowds who like wind energy?

An Internet platform of EnBW allows private individuals to make money on the expansion of renewable energies.

Last year they had the opportunity to become shareholders in the 17 wind farms already operating on the mainland as part of a pilot test, thus profiting from the economic success of the facilities. Modelled after the crowdfunding concept, citizens were able to subscribe their investment amount on the EnBW website. People could check the total amount already subscribed in real time. Minimum investment per person was EUR 1,000 and could be as high as EUR 10,000 – with a term of seven years and 2.5 per cent interest.

The total loan amount of EUR 2 million was gathered within a few days. Now further projects are in planning.

 For more information please go to www.enbw.com/buergerbeteiligung

Stand

Point

Agora Energiewende: The think tank is to help the Energiewende along with scientific expertise. Partners are the Mercator Foundation and the European Climate Foundation.



Patrick Graichen says that he is following the course EnBW is taking with great interest. Even though the director of the Agora Energiewende think tank in Berlin does not always agree with EnBW's Member of the Board Hans-Josef Zimmer. They summed up their expert opinions in the following interview.

The questions were asked by journalist Heimo Fischer

EnBW is restructuring its business model. Is the corporation showing enough courage in the way it goes about it?

Patrick Graichen: EnBW is carrying out the transformation as radically as no other German energy corporation. I am impressed that your company, Mr Zimmer, wants to reduce the earnings contribution of its gas and coal power plants by 80 per cent by 2020 – instead focusing on renewable energies such as wind and solar power. You have thus set a clear course. This is courageous. Especially since you cannot know today whether you are actually going to achieve this goal.

Hans-Josef Zimmer: I am convinced that we will accomplish it. The world of energy is changing. We are adapting to that. We are considerably expanding renewable energies and continue to operate some of our conventional plants so we can continue to offer supply reliability in the future. At the same time we must safely decommission our nuclear power plants over the next few decades and invest in new business segments.

Wind and sun only supply electricity when the weather permits. Is there a chance of a bottleneck situation?

Graichen: The last nuclear power plant is to be taken off the grid in 2022. After that it might be difficult to meet the electricity demand on winter days with little sun and no wind. For this reason we also need conventional power plants as an emergency aid in the future. They must be called upon when not enough solar and wind energy is available. Obviously, the operator must be compensated appropriately for this.

Zimmer: An important issue. Today we have the situation that we only get reimbursed for part of our expenses for using these power plants. The further expansion of renewable energies is not going to fundamentally change the situation. Even if we had three times as much wind and solar energy capacity, we would have to keep conventional power plants as a safe reserve that is always available.

Graichen: The share of renewable energies in electricity consumption is to grow to 80 per cent in Germany by 2050. It is important that we only employ affordable energy sources. Wind farms in the sea tend to be among the more expensive facilities. Therefore it would make sense to slightly slow down their expansion. You learned the hard way in the construction of your first EnBW wind farm.

Do you regret having carried out this expansion, Mr Zimmer?

Zimmer: On the contrary. We now have five licences for wind farms in the North Sea and the Baltic Sea. Our EnBW Baltic 1 project was the first commercial offshore wind farm in Germany. The EnBW Baltic 2 wind farm, which is currently under construction, will be considerably larger. These are ambitious projects where we as operators learn a great deal – but the approval authorities, too. For example, they checked the safety of the foundations very thoroughly. This took more time and money than we expected. But the standardisation of foundations and turbines will save us considerable amounts of time and money in the future. What is more, offshore wind farms can certainly make a contribution



Hans-Josef Zimmer Initially the engineer worked in nuclear technology before he was in charge of the entire EnBW power plant unit. Today he is the Group's CTO.



Patrick Graichen The economist and political scientist was responsible for climate and energy policy at the Federal Ministry for the Environment. His main areas of focus include the economy of the electricity market. Today he is the director of the Agora Energiewende think tank.



Always in the picture: Patrick Graichen (l.) and Hans-Josef Zimmer (r.) during their interview on the premises of Agora Energiewende.

to the basic supply. EnBW Baltic 1 generates electric energy on 340 days a year. Further development of this technology will improve supply reliability.

Another important element of the German Energiewende is the decentralised generation of energy. What do corporations have to accomplish in this regard?

Graichen: Energy suppliers must become the partners of their customers. They must accept their excess and supply them when insufficient solar power is generated on their roofs. And they also must offer more energy services in the future.

Zimmer: Service is a top priority for us. We estimate that about 75 per cent of all opportunities for greater efficiency in the household have yet to be taken advantage of. Solar plants on the roof, energy storage devices in the basement – combined with the smart home, in other words, intelligent home automation. This harbours lots of potential. We must help our customers utilise it.

Graichen: It is necessary for energy corporations to become involved in this segment. Otherwise the IT companies will. We already saw in 2013 that Google acquired the US company Nest, which manufactures smoke detectors and thermostats that are connected to the Internet, for over three million dollars. The energy companies must serve this large and expanding market, otherwise new competitors are going to beat them to it.

The world of energy has changed surprisingly fast. How solidly can the future change be predicted?

Zimmer: No one can predict the future with certainty. We know that our industry deals with interesting and profound issues that have an impact on people's everyday life. How do I heat my home in the future? How do I control energy consumption? How will intelligent systems determine life inside my own four walls? We must also remain attentive, though, and advance as



far as we can see ahead for the time being. After all, upheavals may come suddenly, for instance in the segment of storage technology, and take place very quickly.

Graichen: A breakthrough in, say, storage technology might revolutionise the energy sector, even though right now it doesn't look like it. On the other hand, I believe that we already have many solutions for a successful German Energiewende. We have two new energy sources in wind and the sun whose generation costs of about eight cents per kilowatt hour are only slightly above those for fossil power plants.

Zimmer: If we want to use these advantages we need a firm legal framework. We can only build wind and solar farms if the investors get a good return on their investment. By no means must the expansion of renewable energies come to a standstill as a result of poor legislation. We want continuous expansion – but not excessive supply, either, in a competitive environment.

Thank you very much for talking to us.



The blog on the German Energiewende:
www.dialog-energie-zukunft.de



Thriving on debate

EnBW communicates with many social groups. These include think tanks and non-governmental organisations (NGOs) that deal with energy. In this manner the corporation gathers information about the state of the public debate and contributes its own arguments. Events the corporation organises for the public have a similar purpose. In communities, for example, that are affected by the extension of a power line, representatives of the EnBW subsidiary are available to answer questions. When the Group tests new technologies, it invites local citizens to information events. The same has long been true for municipalities in the proximity of nuclear power plants.

EnBW also engages in a dialogue with suppliers of hard coal. Some are suspected of tolerating bad working conditions and violations of human rights. Suppliers in question are called upon to comment on the charges levelled against them. During visits in the producing country, EnBW gathers information on site about mining conditions and promotes its own standards. Moreover, the Group contractually obliges its suppliers to comply with human rights.

Growth through energy

Heilbronn is a strong business location. To make sure it is going to remain that way, Mayor Harry Mergel wants to ensure modern energy supply – and closer ties with EnBW's subsidiary ZEAG.



Keeping the target in mind:
Mayor Harry Mergel in
the Large Council Hall of
the city of Heilbronn.



“Energy supply remains the foundation of any business activity.”

Heilbronn's mayor Harry Mergel



50

photovoltaic power plants are operated by the Community Energy Cooperative Heilbronn



60%

savings in annual carbon emissions (2012 to 2002) is achieved by the municipal properties



70

global market leaders can be found in the Heilbronn-Franconia region

Approaching Heilbronn coming from the north, you feel the power this region radiates. The Audi factory halls are sparkling, signs point the way towards major companies such as Unilever, Intersport and the Schwarz Group (Lidl). The economic strength is a trademark of the area. Nowhere else in Germany are there as many leading global brands as in the Heilbronn-Franconia region.

To maintain his city's strength, Heilbronn's mayor Harry Mergel mobilises all significant resources. The availability of electricity and gas is particularly important to him. He is convinced: "Energy supply remains the foundation of any business activity." Energy should be available to anyone settling down in Heilbronn, and it should be affordable and, above all, clean-generated if possible. Today ecological efficiency is also an important factor for choosing a location in a significant business region.

Satisfying this standard is difficult for municipalities to achieve on their own. The pressing issues of the energy sector are simply too complicated. Laws and technical foundations change too quickly. "The market environment is getting more complex and difficult," says Mergel. Therefore Heilbronn relies on help from experts. These can be found at the city's gas supply company HVG and EnBW's subsidiary ZEAG.

After the partners had already merged their customer centres, collaboration really took off last year. Heilbronn granted the concession for the municipal power grid to a joint venture in which HVG, whose

major shareholder is the city, holds the majority. The remaining shares are held by ZEAG, which however continues to handle the operation of the grid. Mayor Mergel believes this is the perfect division of labour. "Now the city can design its energy supply more autonomously while at the same time benefiting from the expertise of an experienced partner."

This makes Heilbronn a model for other municipalities. After all, more and more local authorities want to have greater active influence on their energy supply. This gives many citizens a sense of security, and what is more, in this way the municipality can tap a new source of income. The example of Heilbronn shows that the large energy corporation and local authorities can certainly collaborate as partners and in a future-oriented way. EnBW has only one requirement. "The form of collaboration must make sense for all partners," says Steffen Ringwald, head of EnBW's Municipal Relations Department.

Mayor Mergel now wants to make Heilbronn a city of the German Energiewende with the assistance of his partners. This is to be demonstrated at the German Federal Garden Show (Bundesgartenschau, BUGA) in 2019, for which an entirely new city district is being built near the Neckar river. "It will have the character of a model in terms of energy," says Mergel. This includes the installation of heat exchangers, for instance. They make sure that the heat energy that is available in the Neckar and adjoining lakes heats or cools residential spaces. The buildings are to be constructed as passive houses.

ZEAG might play an important role in the construction of Heilbronn's BUGA district – not only with respect to its supply with electricity. Like its parent company EnBW, ZEAG can plan complete building projects. Commissioned by municipalities, it already handles approval procedures today,

coordinates procedures with authorities and develops heat and electricity supply concepts. But it does even more than that. "Our service portfolio also includes laying fibre glass connections for Internet and television," says ZEAG's Chairman of the Board Eckard Veil. Services in these types of areas can take a great burden off of local authorities.

This is also true for the use of solar power. The city of Heilbronn and ZEAG are building a community energy cooperative with more than 150 citizens which to date owns 50 photovoltaic power plants for the generation of electricity from solar power. It is operated by ZEAG. The company is thus employing its expertise in yet another community energy project. There are also plans for a new association which is to offer projects and services concerning renewable energies.

Meanwhile the city's partner HVG is driving the expansion of renewable energies for heat supply – for example with thermal solar plants which, in contradistinction to photovoltaics, do not use the sun's light but its heat. This even includes the use of biogas in combined heat and power plants.

As far as Mayor Mergel is concerned, there is no question that Heilbronn is going to remain a city in which energy will play a significant role. After all, this is part of its history, he says, pointing suggestively towards the market square outside of the city hall window. There is a monument representing Robert Mayer. The Heilbronn physician and physicist formulated the first law of thermodynamics in 1842. Physicists also call it the – law of energy conservation.



More information:
www.enbw.com/kommunen and
www.zeag-energie.de



Smart light

LED lamp

Economic lamp with a long product life.

Public Wi-Fi

Logging onto the public Internet is possible.

Environmental sensors

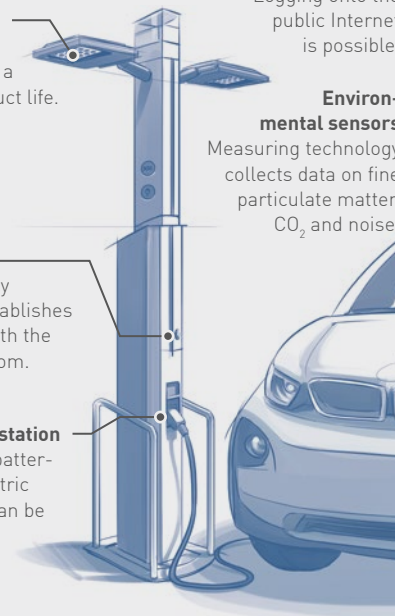
Measuring technology collects data on fine particulate matter, CO₂ and noise.

Fast aid

Emergency button establishes contact with the control room.

Charging station

Here the batteries of electric vehicles can be charged.



Street lighting can make an important contribution towards a city's efficient energy consumption. A glance at the innovation campus of EnBW in Karlsruhe shows the existing possibilities. There developers are working on intelligent street lights under the general heading of Sm!ght (smart.city.light). The main focus is on a multifunctional tower with an economic LED lamp. It can be equipped with motion detectors and offers measuring technology for pollution and noise levels. Moreover, invisible inside the tower, there is room for a Wi-Fi router that provides public access to the Internet. It can also be retrofitted into already existing light towers. Further extras are an emergency button and a charging connection for electric vehicles. The multifunctional tower of EnBW is to be launched on the market later this year.

Personal turnaround

Until recently most of them were still living in Baden-Württemberg. Yet the German Energiewende rang in a major change in their life. They moved to northern Germany for EnBW so they could help establish the renewable energy sector in Hamburg, Kiel and Rügen. None of them regrets the decision.



"I had to make a change in my life"

Maria Schley (34): "After joining EnBW in 2007, I quickly realised that I must make a change in my life. My job was building coal power stations – but there is no future in that. For three years I have dealt with wind turbines in the renewable energy sector. I can apply what I learned during my mechanical engineering studies there, too."



2011

2015



2012

2015

"Northern Germany? That surprised me!"

Marco Klaiber (27): "I worked at EnBW's coal power station in Heilbronn as part of my co-operative studies. When I was getting close to finishing my training and was offered to help build the wind farm EnBW Baltic 2 in the Baltic Sea, it took me by surprise. But then I accepted. Initially I moved to Kiel, where a transformer platform was being built at a dockyard. Today I live in Rügen, from where I don't have very far to go to the wind farm."



The EnBW employees shown here took the initiative not only professionally but also photographically, presenting themselves in their new work environment via selfie.



"I was looking for a challenge"

André Lutz (39): "Three years ago my son did not go to school yet, I was flexible and was looking for a challenge in my job. So I applied for a job at the EnBW office in Hamburg. This is where I deal with internal cable systems for wind farms. Even though I'm a native of Lower Franconia, I can see myself staying up north."

2012

2015

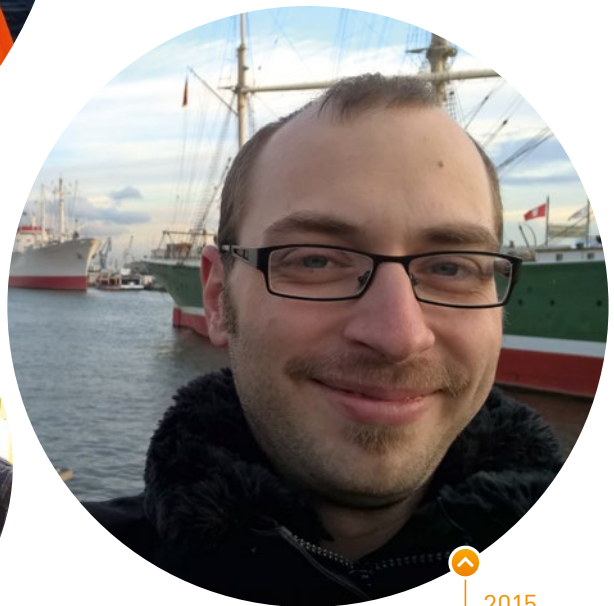


"I like to look beyond my own nose"

Grégory Flieller (30): "I enjoy trying new things – in my work, too. That's why I find it interesting to work for a German company as a Frenchman. Initially I helped build coal and gas power plants for EnBW. Now I am dealing with the transformer platform at the EnBW Baltic 2 wind farm. This has a lot to do with ship-building. A new field – just the right thing for me."

2013

2015



2010

2015



"I wanted to venture doing something new once more"

Herrmann Ludwig (57): "I am a fossil at EnBW. Thirty-six years ago I started out as an electrician and would work at the transformer station, always in the Hohenlohe region. But before I retire, I wanted to venture doing something new once more. So when I was offered to move to northern Germany, I seized the opportunity. In the construction of the wind farm I am in charge of the transformer platform."



"Change is part of life"

Andreas Götz (34): "I wanted a career change in 2012 and do something new. The offer to move from Stuttgart to Hamburg for EnBW came at just the right time. The move with my family of five was an adventure, but I learned early on to adapt to changes. My father worked abroad a lot. So as a child I lived in Bangladesh and went to boarding school in Singapore. After school I went to Germany to go to college."

2012

2015

Trans formations

At age 42 EnBW's electrical engineering master technician Matthias Schwach decides to move from Stuttgart to the Baltic Sea. He wants to help build the first German wind farm in the sea. Four years later he is certain: he and his family have taken the best decision of their life.



Working at sea:
Schwach before getting
to work at the wind farm

The view from the open window reveals how much Matthias Schwach's life has changed. The air smells of pine trees, deciduous trees and the coast. Wild geese rest on the fields and deer come to graze in the twilight. His workplace is five minutes by car from this idyllic scene. Right at the small harbour from where the fishing boats leave for the Baltic Sea. Four years later he is still convinced: "Coming here was absolutely the right decision."

Nearly 1,000 kilometres away from his Swabian home, Schwach and his family have started a new life. Since 2010 they have no longer lived in their townhouse in Leinfelden but on the coast of West Pomerania. EnBW runs the operation of its wind farm in the Baltic Sea from the small town of Barhöft. The 46-year-old electrical engineer is responsible for the facilities being properly monitored and serviced.

As the years went by, he felt more and more like starting from scratch again at a new place.

Schwach understood early on that the future belongs to the renewable energies. Even back when EnBW started planning its first offshore wind farm in the late 1990s, he pricked up his ears. Twenty-one wind turbines plus a transformer platform, 16 kilometres from the coast. He found that fascinating. This was something in which he wanted to get involved. Not that he had been dissatisfied in Stuttgart. He had been driving to his workplace, EnBW's gas plant in Gaisburg, for years.



Life by the sea:
a dream winter
beach near Barhöft

Schwach likes to show visitors in Barhöft the jetties next to the EnBW building. First comes the island of Bock, next to it Hiddensee, and Rügen is gleaming in the distance. EnBW's ship is at the front wharf. The 20-metre catamaran takes him and his mechanics to the wind farm when work needs to be done there. The passage lasts an hour and a half. Even when the sea is rough, the men wearing the colourful overalls and life jacket leap from the boat to the wind turbines under the captain's expert eye. "Coming from the south, you first have to find out if you can handle that," says Schwach. Training is required to work here. Schwach has learned how to rescue injured people from the facility and how to abseil from a height of 85 metres in an emergency. No doubt it is a different kind of work than at the Gaisburg gas plant.

Five years ago Schwach found the online job announcement on his desk there. An electrician was wanted for the new wind farm EnBW Baltic 1. "Why not?" his wife Birgit replied. Prior to the interview with the Department of Human Resources, many questions flashed through his mind. For example, whether, being over 40, he was too old for the change and would only remain an observer of the expansion of renewable energies, this regrouping process of the sector in which EnBW was at the forefront. Needless worries. The call from the personnel manager came the very next day: "We'd like to. How about you?"

That EnBW was going to decide so quickly about the renewable energies and the change in their life would therefore come so quickly was not something they had expected, says Birgit Schwach in retrospect. She is sitting in the bright living room of their elegant bungalow. It has an open fitted kitchen, orange coloured upholstered

chairs and a green sofa. The West Pomeranian lagoon landscape is outside the window. Four years ago, she says, she also wanted a change, even though it also pained her to leave her 82-year-old mother alone back home.

Suddenly the opportunity arose and the family had to take a very quick decision.

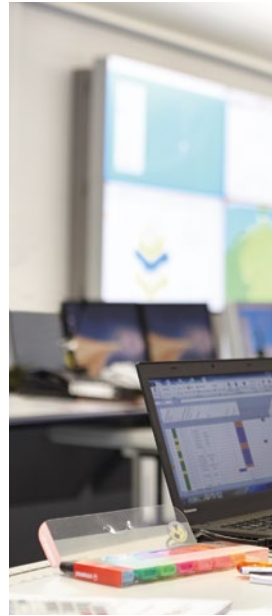
At first Birgit Schwach considered staying in Stuttgart until their daughter Dorina had finished school. But then everything worked out well. Her employer, Landesbank Baden-Württemberg, was downsizing at the time. After many years in the Depot Department the right time for accepting severance pay seemed to have arrived. Their daughter was about to go to upper school and felt like switching schools. To be sure, the school building in Stralsund still had its slight charm of rubber and plastic, but the daughter didn't mind. She was certain: this should be her new school. She finished school with flying colours, and today she is studying veterinarian medicine in Leipzig.

In the early days her mother worked as a volunteer at the Red Cross in Stralsund. She is fond of the old Hanseatic city with its marketplace, the colourful roofs and turrets. "It reminds me of Tübingen."

Birgit Schwach has had her own job since the summer. EnBW has commissioned her to take groups of visitors out to sea on the excursion boat to explain to them the wind turbines of EnBW Baltic 1. After all, the EnBW project



Swabian naval power: The EnBW mechanics are heading towards the wind turbines on the MS Achiever.



is the first commercial offshore wind farm in Germany, which makes it something special. Did she have trouble adjusting up in the north? No! The 44-year-old says jokingly that she had experienced the first and only culture shock of her life much earlier, when she had moved from her hometown in the Swabian Alps to Stuttgart.

Her siblings had not even really understood this step back then. “But both my husband and I, we have always done things others don’t understand,” she says. And now even to the faraway Baltic Sea? At first there was much head-shaking among her relatives, but only until they visited for the first time. “They like it so much that now they visit regularly,” says Matthias Schwach. And every time they are excited about the area all over again. It’s really so nice here, she says in her Swabian accent. Therefore he and his wife have expanded their home. When their neighbour sold his three-room house, they seized the opportunity. When friends or relatives are not living there, they rent out the 75 square metres to tourists.

Leaving the place is something they can no longer imagine. One of the reasons is that renewable energies are a growth segment at EnBW and Matthias Schwach feels he is needed. He and his team monitor not only EnBW Baltic 1 from the control room in Barhöft, but are also commissioning the new, much larger wind farm EnBW Baltic 2, which is to be connected to the grid later this year. On 365 days a year they check on more than 20 monitors and four giant screens how much electricity is generated and where, the maintenance jobs to be done, when they must

send mechanics out to sea the next time and whether a door of a wind turbine has not been locked.

Barhöft is something like the centre of EnBW’s universe of renewable energy. “We also monitor all biogas and photovoltaic power plants from up here,” says Schwach. Even more work will have to be done in the next few years, he adds. Restructuring, downsizing – all that employees are so afraid of is a foreign concept at EnBW in West Pomerania. They don’t even have enough workers.

No culture shock. The incomers have quickly taken root on the Baltic coast.

Swach says there are open positions in the control room. And once EnBW Baltic 2 is up and running, there will even be a need for additional staff. Mechanics with offshore experience, he explains, are sought after in the entire industry, they hardly need worry about their professional future. EnBW Baltic 2 is being built 32 kilometres off the island of Rügen, twice as far out in the sea as EnBW Baltic 1. Getting there and returning on the same day is impossible. If you work there as a mechanic, you will probably live on a hotel boat out there – two weeks of shift work and two weeks off. “This would even be feasible if you lived in southern Germany,” says Schwach. In case someone should not be able to handle living in this area.



Working in front of the screen:
Matthias Schwach monitors the wind farm from the control room in Barhöft.

“By now I pay the same price for fish as the natives.”

Matthias Schwach



He thinks that the belief that it is difficult to establish contact with northern Germans is a prejudice. “It depends on yourself.” People here stopped treating him like an incomer a long time ago. “By now I even pay the same price for fish as the natives,” says Schwach with a smile.

Walking the dogs is also an opportunity to make new acquaintances, he adds. The family has four Cavalier King Charles Spaniels. The floppy-eared dogs with the trusting look in their eyes are their hobby. They brought two of the animals from Stuttgart, and now they have four of them. There are enough run areas for the dogs around. Up here in West Pomerania no one complains when they are not on a leash and frolic about in the meadows.

So the move to Barhöft has been one success story? Oh well. As much as they love the region and its people – they do have one major criticism: the pretzels back in Swabia taste better, on that the couple agree. But there is a solution for this, too. The two have learned how to bake their own.

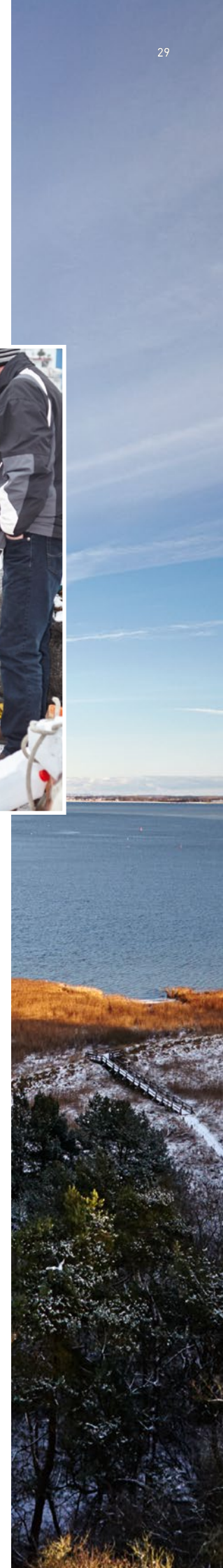


Temporary developers

A company’s employees are its most important asset. That is why EnBW constantly uses the experience and creativity of its staff to develop new business models. There are several Group programmes that give employees the opportunity to work in a development team on the side for a limited time. Together with professionals they advance product ideas over several months which they have suggested. The first tangible results have already been obtained. A crowdfunding platform (see page 15) plus smart street lighting (see page 23) were developed in this manner, for instance.



More about the Schwachs’ work environment:
www.enbw.com/baltic1 and www.enbw.com/baltic2





Personal commitment: Thirty-seven-year-old Gauthier watches the training only on occasion. His office is right next to the rehearsal room where the Dance Company prepares for its performances.



Eric Gauthier

Maestro of change

Eric Gauthier has kept reinventing himself for decades with passion and charm. However, the dancer, choreographer and musician is also aware that a new beginning is only successful if you put all your energy into it.

Often greatness is hidden at simple places. Take this rehearsal room in Stuttgart, for instance. It smells like school sport. Tango music and the shouts of the ballet master can be heard. Young men and women in sports outfits are dancing on toe tips, perform pirouettes and a moment later remain in a majestic pose.

Watching the members of the Gauthier Dance Company train you quickly realise how diverse a single choreography can be. "You can express anything in life with dance," says Eric Gauthier, who built the Stuttgart-based company eight years ago. He personally surely knows best that life means, above all, change.

The 37-year-old Canadian who has elected to make Stuttgart his home is a ballet star, dancer, choreographer and also has his own band on the side. Changing roles as destiny. Only few people live their passion for change as rigorously as Eric Gauthier. "My favourite animal is the chameleon," he says. When he was still doing classical ballet, he did not love the tragic roles, such as Romeo. His favourite was Mercu-

tio. The colourful daredevil – cheeky, lively, with a penchant for crude fun.

Gauthier already had an enterprising spirit when he was nine years old. After he saw the musical *Cats* in his hometown of Montreal he decided to become a dancer. Before long he was accepted into the renowned National Ballet School in Toronto. He lived in a boarding school and saw his parents only once a month. As a Franco-Canadian, he spoke hardly any English at first. "I was often lonely and homesick," he says. His life changed profoundly for the first time.

He learned how hard it can be to live your dream. He struggled through this period and was successful. When his director in Toronto switched to the Stuttgart State Ballet, he asked Gauthier whether he wanted to join him. Stuttgart is a legendary place among ballet dancers. They talk with profound respect of the choreographer John Cranko and the dancer Egon Madsen, who contributed to the "Stuttgart ballet miracle" in the 1960s. Gauthier accepted the call – once again turning his life upside down.

“You can express anything with dance.”



Always relaxed: Eric Gauthier sometimes still practises at the barre.

During the first years he lived only for the ballet. The Stuttgart audience loved him and the subtle humour he magically put into his movements. After the performances he used to hang out with his colleagues. One night they ended up in a gay bar. Suddenly there was a woman next to him. He liked her. They started talking. Today the couple has two children.

When ballet dancers pass 30, they start thinking about their future. Their joints begin to hurt a bit and sometimes they have back pain. “The body doesn’t do what you want it to forever,” says Gauthier. So it was a good thing when Werner Schretzmeier, the creative mind of Theaterhaus Stuttgart, suggested that he found his own dance company in 2007. Gauthier said yes. Yet another new beginning.

He started out with six dancers, and today he has 16. Every year they perform two new shows. The Gauthier Dance Company has an enormous range – including dance as punk art, as a combination pack with the rapper Cro and as a trip through infinity. His dancers are stars and go on tours. Gauthier’s group performs specially rehearsed pieces in front of the Chancellor, the German President and foreign heads of state. They are always original and invariably somewhat unconventional.

As the head of his own dance company, Gauthier must also act as a manager and deal with 22 employees and financial matters. Art costs money. Fortunately, he has sponsors – EnBW is one of them.

There are no worries about a lack of talented young people. Gauthier receives about 800 applications a year. Only the best are invited to an audition. He makes sure it is an international team. After all, people dance differently

Eric Gauthier was born in Montreal, Canada, in 1977. He spent the first few years of his life in the country’s French-speaking part. At age nine he took his first ballet lessons and later attended several schools specialising in the training of ballet dancers. When the director of the National Ballet of Canada went to Germany in 1996, he took him along. Gauthier became the star of the State Ballet in Stuttgart and founded his own dance company in 2007.

in every culture. “It is this mix that gives the performances their special flavour.”

Dancers who start working with Gauthier must be prepared to participate in social projects. These productions are called “Gauthier Dance Mobil”. The pieces are conceived in such a way that they require minimum space. They are performed for free in hospitals, retirement homes and in front of adolescents with behavioural problems. “Wherever you have people who otherwise have no opportunity to see these types of performances.”

The question is when the next major turnaround is going to happen in his life. He has rejected calls to big companies all over Europe. “I am happy here,” says Gauthier. That is why the next change can wait a while.

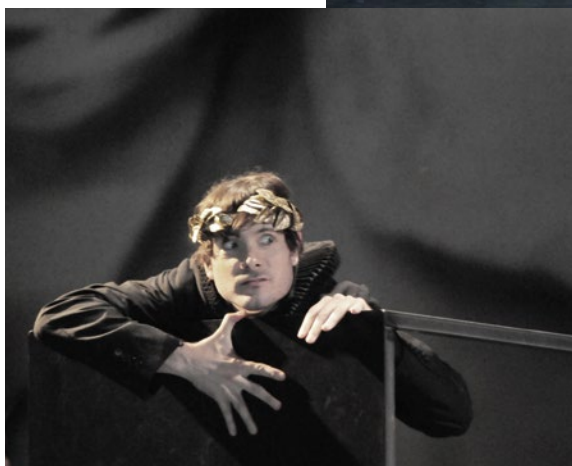


Information and performance dates of the Gauthier Dance Company at: www.theaterhaus.de/gauthierdance/

Diversity: Eric Gauthier together with band on stage (1st photo from left) as a young ballet dancer (2nd photo from left) and with Isabelle Pollet-Villard in a performance by the Dance Company (bottom)



Changing time periods: Gauthier in the choreography of Double You (right) and as Emperor Nero (bottom)



“My favourite animal is the chameleon,” he says.

Highlights 2014

January

terrane**ts** bw starts construction of the North Black Forest Pipeline

The company terrane**ts** bw started construction of the new gas pipeline for Baden-Württemberg. The "North Black Forest Pipeline" will initially transport natural gas from Au am Rhein towards Ettlingen from the end of 2014 and then further into the metropolitan area of Pforzheim/Stuttgart by the end of 2015. This natural gas pipeline will thus make an important contribution to supply reliability in Baden-Württemberg.

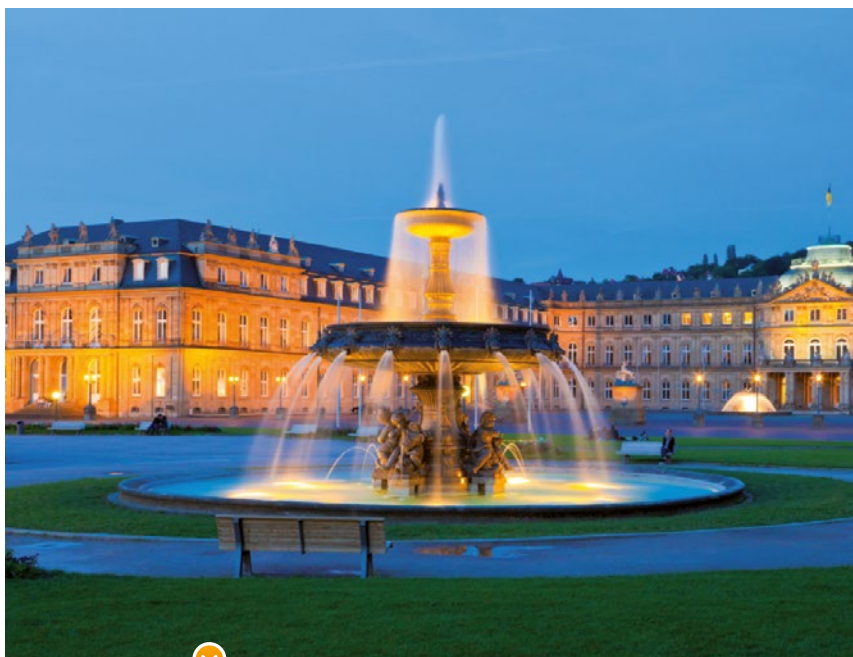
February



EnBW and Borusan issue the largest contract in the history of the Turkish wind energy market

In Istanbul, EnBW and Borusan gave the green light for the further development of five wind farm projects by the German-Turkish joint venture Borusan EnBW Enerji. In addition, a contract was signed with Vestas – one of the world's foremost manufacturers of wind turbines – for a wind farm portfolio totalling 207 MW, which will be realised as part of further development work undertaken in various projects. The joint award of the wind farm portfolio marks the biggest onshore contract issued by EnBW to date and also the largest in the history of the Turkish wind energy market.

March



Stuttgart votes for a cooperation model with EnBW

The Municipal Council of the City of Stuttgart agreed by a large majority to the cooperation model presented by Netze BW and Stadtwerke Stuttgart. The model envisages the gradual development of a fully fledged, independent network operator, in which Stadtwerke Stuttgart will have a 74.9% and Netze BW a 25.1% share. For the transitional period up to the beginning of 2019, an operating company will also be founded in which Netze BW will have a majority shareholding. The partners were successful in competition with a number of other consortia who had bid in the process.

New hybrid bond issued

EnBW has utilised the favourable market conditions to successfully issue a hybrid bond with a total volume of €1 billion. The subordinated bond has a term to maturity of approximately 62 years and includes the option for EnBW to make early repayment of the bond. Based on its terms and conditions, the bond will be partially recognised as equity by the rating agencies. This supports the good credit standing of EnBW.

April



High-speed Internet will be delivered much faster with NetCom BW

EnBW is pooling its telecommunications activities in order to concentrate even more on bringing high-speed Internet to all remaining areas of the country. A symbolic groundbreaking ceremony signalled the launch of NetCom BW, which will invest around €30 million in this programme over the next three years. NetCom BW possesses the second-largest fibre-optic network in Baden-Württemberg, which is primarily used for controlling the electricity network.



“Energy Report” ensures transparency in electricity consumption

In a pilot project, 100,000 customers of EnBW received a so-called “Energy Report” for the first time. This details the customer’s current consumption data and also shows reference data as a comparison. At the same time, customers also receive tailor-made energy tips in areas relevant to them. This is the first service of its kind provided by an energy company in Germany.

May



EnBW starts operating the largest solar park in Baden-Württemberg

In Königsbronn in the Heidenheim district, EnBW has started operating the largest solar park in Baden-Württemberg together with its partners. The solar park has an output of around 10 MWp. Therefore, it can cover the annual, aggregate electricity requirements of around 3,000 households – this corresponds to the total energy consumption of the district of Königsbronn – and it avoids emissions of around 6,972 tonnes of CO₂ per year.

EnBW issues a bond with a term to maturity of twelve years

EnBW has once again utilised the favourable market conditions to issue a bond with a volume of €500 million and a term to maturity of twelve years. The transaction supports the implementation of the EnBW 2020 strategy. With a total investment volume of around €15 billion up to 2020, EnBW aims to play an active role in structuring the German Energiewende. EnBW had already successfully issued a hybrid bond in March with a total volume of €1 billion. There was also great interest shown by investors in the newly issued bond.

June

Electromobility meets renewable energies

The research project “iZEUS – intelligent Zero Emission Urban System” has been successfully concluded. An interdisciplinary team from the fields of industry and science had been developing integrated smart grid and smart traffic concepts for around two and a half years. The concept developed by the iZEUS project goes far beyond any previous research projects. It is designed to deliver the optimised integration of renewable energy sources, as well as a stable, decentralised energy and charging management system. The project is being funded by the Federal Ministry of Economics and Technology (BMWi).

July

EnBW continues to expand its comprehensive range of services

After successfully winning the contracts for two invitations to tender, EnBW is further expanding its comprehensive range of services. The “Operations” business unit has won the two largest tenders to date for energy-related payment and settlement services in Germany. EnBW has thus become the market leader for the issuing of grid charges in Germany.



EnBW purchases the shares held by Eni in a joint venture in the gas sector

EnBW will purchase the 50% share of EnBW Eni Verwaltungsgesellschaft mbH, Karlsruhe, held by the Eni Group, Rome, and thus indirectly 50% of GasVersorgung Süddeutschland GmbH, Stuttgart (GVS) and 50% of terranets bw GmbH, Stuttgart. EnBW and Eni founded the joint venture in 2002. By significantly expanding its position on the gas sales and gas transport markets, EnBW is continuing to rigorously implement its existing gas strategy and striving for further growth.

EnBW sells a stake in its onshore wind farms to regional companies

Eleven municipal utilities in Baden-Württemberg and a regional energy service provider have agreed to a cooperation model with EnBW. In total, the companies will acquire a 20% share of our onshore wind farms, which are distributed across 17 locations in Germany. These wind power plants are already in operation and have a total output of 156 MW.

August

First wind power plant for EnBW Baltic 2 erected in the Baltic Sea

EnBW has reached an important milestone in the realisation of its second offshore wind farm: The first wind power plant has now been erected and towers above the German Baltic Sea with a hub height of around 80 metres.

September

Borusan EnBW Enerji awarded the largest onshore contract in Turkey

The German-Turkish joint venture "Borusan EnBW Enerji", in which partners Borusan and EnBW each hold a 50% stake, has formally commissioned its second onshore wind farm in Balabanli, near to Istanbul.



300th specialist conference of the EnBW Energy Efficiency Network

"Knowledge grows when it is shared." This has been the experience gained by the around 270 companies from across Germany who have been participating in the "EnBW Energy Efficiency Network" since 2006. These companies have been able to realise savings of around 300 million kWh per year with the help of EnBW. Furthermore, the 300th specialist conference of the EnBW Energy Efficiency Network proved to be the perfect occasion for the presentation of the first "EnBW Energy Efficiency Innovation Prize".

October



EnBW officially starts operating RDK 8

An open day was held at the new power plant unit at the Rheinhafen-Dampfkraftwerk Karlsruhe – otherwise known as RDK 8 – to officially mark the start of operations. RDK 8 is one of the most efficient and environmentally friendly coal power stations in the world and sets new standards thanks to a variety of technical innovations. Overall, this new power plant has a gross electrical output of 912 MW and can deliver 220 MW of district heating. Therefore, RDK 8 will make a significant contribution to the security of the electricity supply in the region and become an important supplier of district heating to the city of Karlsruhe.

Reduction in the size of the EnBW Board of Management

The EnBW Board of Management has been reduced in size from five to four departments. This change was already agreed last year between the Supervisory Board and the Board of Management. Against a background of persistent economic challenges in the energy sector and as part of the organisational restructuring of the company, the area of sales, marketing, trading and distribution grids will now no longer function as an independent department within the Board of Management

November

Königsbronn solar park taken over by local authorities

The city of Marbach and the municipal utilities of Weinheim and Esslingen are acquiring one-third each of the shares of the solar park in Königsbronn in the district of Heidenheim. "EnBW designed and built the solar park for municipal partners," Thomas Kusterer, CTO of EnBW, pointed out. Based on the principle of customer proximity, the collaboration with municipal utilities and local authorities is an important element of EnBW's strategy towards its active involvement in shaping the German Energiewende.

15 years of art for drug relief

The fundraising exhibition "release and art – donations of the year" is celebrating its 15-year anniversary. Most of the works are specially produced for the charity exhibition and shown on the premises of EnBW. Half of the proceeds go to the drug relief organisation release e. V., which funds the major part of its charity work in this way. The other half goes to the artists.

December

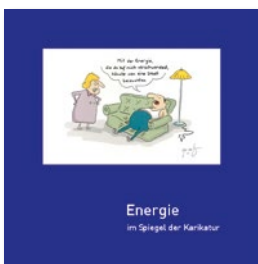
EnBW purchases Albatros offshore wind farm project

EnBW has acquired the Albatros offshore wind farm project from the consortium OW EVS, a joint venture of the Austrian STRABAG and the Norderland Group. The offshore wind farm project with a permit for 79 wind turbines in the performance class 5–7 MW is located in the German North Sea, 105 km off the coast. With the wind farms Albatros (about 400 MW), Hohe See (about 500 MW) and He Dreihit (about 700 MW) EnBW now has accumulated a total approved offshore capacity of over 1,600 MW in the German North Sea.

Punch line



© Mario Lars



Energy and art

EnBW has organised art exhibitions – which also show caricatures – for years at its sites in Stuttgart and Karlsruhe. The above picture was part of the exhibition entitled “Energy as reflected in caricatures”, which will be shown again during the EnBW Annual General Meeting on 29 April 2015.



Art and art sponsoring at EnBW:
www.enbw.com/kunst

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gemeinsam Energie neu denken

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as the URLs in this magazine are only
available in German.

Clocked out?



We have only clocked out with respect to the work on this magazine. Otherwise we keep being active, tapping promising business segments. Because we make the German Energiewende safe. And since we can accomplish that only together with our partners, dialogue continues to be the basis of our success in the future, too. We will keep you informed about the progress we have made. Just like before.

No sooner said than done!

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