



# **The *Energiewende*: Decarbonising Europe's industrial heartland**

**How Germany wants to rebuild its energy system  
while defending its competitive edge**

**The challenges. The economic impacts. The  
politics.**

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**A media study tour to Germany for journalists  
from the United States, Canada, Mexico, Australia and New Zealand**

**from 3 to 6 July 2016**

**Cologne - Saerbeck - Ibbenbueren - Duisburg - Duesseldorf - Cologne,  
Germany**



**Rotor blade manufacturing for wind turbines by Nordex in Rostock, Germany**

*Photo: Nordex*

## **The world's 4th largest economy is heading towards an entirely new energy system**

The Energiewende is dramatically transforming Germany's economy. As the world's second largest exporter and fourth largest economy remakes its energy system, new jobs and new business models are emerging, well beyond the renewables industry.

At the same time, the conventional energy sector has been bleeding jobs. Business leaders worry that the costs of the nuclear phase-out and the move into renewables could hurt manufacturers such as machinery makers, the car industry or other traditional pillars of Germany's economic success – despite record lows in wholesale electricity prices.

## **Is German industry embracing the energy transition fast enough?**

Other observers have a totally different interpretation of Germany's future prospects: They fear that the transition towards a decarbonised economy isn't happening fast enough, thereby endangering the technological lead Germany still has in many green tech industries. According to this reading, the current weakness of energy utilities like E.ON or RWE reflects their reluctance to embrace newer, cleaner business models.

As Chancellor Angela Merkel is facing elections next year, our media study tour takes a close look at how the Energiewende is reshaping the German economy. The four-day tour of North Rhine-Westphalia, Germany's coal and steel industrial heartland, will focus on questions such as:

- Can German industry keep its competitive edge – despite concerns about rising energy costs? Or is the Energiewende putting a dent in Germany's highly prized industry and driving production overseas?
- Is Germany ready to tackle the “Energiewende paradox” – the dilemma that despite record wind and solar power generation, coal-fired electricity with its heavy CO2 emissions still accounts for the largest share of the country's power mix?

In light of the coal dilemma, we will also explore the impact of the transition on cities, municipalities and business and employment at the local level.

### **Our tour: An in-depth enquiry of policy-makers, experts and practitioners**

During the workshop we will visit focal points of the energy transition in Germany, including solar farms, coal mines, factories, citizen cooperatives and energy market start-ups.

- In discussions with policy-makers, industry representatives and energy policy experts we will try to understand what is driving this process and how robust it is.
- And we will look at how ordinary citizens are shaping the Energiewende - as drivers of small-scale local investment or local politicians seizing new opportunities for their communities.

# The programme: Who? What? When?

**Sunday, 3 July 2016**

*Individual arrival of participants in Cologne, check-in possible from 15.00 at hotel "Ibis Köln am Dom", Bahnhofsvorplatz 1, 50667 Köln, T +49 (0) 221 9128580*

*Possibility to visit Cologne Cathedral*

17.00 *Welcome drinks at "Ibis Hotel Köln am Dom", Cologne, breakfast room*

18.00 *Introduction and outline of the programme*  
*Sven Egenter, Executive Director, Clean Energy Wire*

**The German energiewende: Its history, its targets, its political mechanics. An overview**

Presentation by Sascha Samadi, Research Fellow

Future Energy and Mobility Structures, Wuppertal Institut

Location: "Ibis Hotel Köln am Dom", Cologne, breakfast room

20.00 *Dinner and joint viewing of European Football Championship quarter final*  
*Location: Hof18 Restaurant, Am Hof 12-18, 50667 Köln, 1. floor*



**Offshore AC/DC converter platform at  
Baltic1 offshore wind farm in the Baltic Sea, Germany**  
Photo: 50hertz

## Monday, 4 July 2016

- 8.30 *Bus transfer to Garzweiler lignite mine*
- 9.30 **Lignite and the power system: Carbon intensive, politically divisive – and a pillar of Germany’s power supply**  
Visit of an open pit lignite (soft coal) mine in Garzweiler with Jürgen Döschner, Energy Policy Correspondent of WDR public broadcasting corporation (tbc)
- 11.00 *Bus transfer to Saerbeck*
- A triple challenge for North Rhine-Westphalia – the historic, political and economic context of a coal phase-out in Germany**  
Presentation and discussion with Hauke Hermann, Senior Expert Öko-Institut/Institute for Applied Ecology
- 14.00 *Lunch (lunch packages)*
- 14.30 **The push for renewables from below: The city of Saerbeck and its efforts to become a local leader of a renewables-based energy system**  
Welcome by Saerbeck Mayor Wilfried Roos  
Presentation of the “Integrated Scheme for Greenhouse Gas Reductions and Climate Change Adaptation” by Guido Wallraven, Head of the “Climate City” Project  
Visit of the “Gläserne Heizzentrale”: renewable energy information centre and the heart of the wood-powered local heating network, presentation by Ansgar Heilker, Supervisory Board of the Citizens Cooperative  
*Location: Alte Hauptschule "Heizzentrale", Am Kirchplatz 13, 48369 Saerbeck*
- 15.45 **From Cold War Ammunitions to Clean Energy: Visit of the “Bioenergiepark”, Saerbeck’s renewable energy park**  
Located on a former army ammunition depot, the site today hosts 7 wind mills, 2 biogas plants, a composting plant and an open space photovoltaic plant  
*Location: Bioenergiepark, Riesenbecker Straße 54, 48369 Saerbeck*
- 17.00 **From Saerbeck, North Rhine-Westphalia to Huntersville, North Carolina: New materials for a new energy world**  
Visit of Saertex Multi Com, leading manufacturer of glass fibre and carbon fibres used for rotor blades, in the car industry and for aeronautics  
Meeting with Frank Mersmann, Managing Director, and Laura Tebbe, Marketing  
*Location: Saertex GmbH & Co. KG, Brochterbecker Damm 52, 48369 Saerbeck*
- 19.30 *Dinner and overnight stay at Hotel Restaurant Stegemann*  
*Location: Westladbergen 71, 48369 Saerbeck*

## Tuesday, 5 July 2016

- 7.30 *Checkout and departure from hotel, transfer to Ibbenbüren*
- 8.00 **Germany's last coal mine: Shaping a landscape, forming a mindset**  
Visit and bus tour of the Oeynhausener and the North Shaft of the Ibbenbüren coal mine scheduled for closure in 2018  
*Location: Nordschacht, Tor 4 (Gate 4), Zechenstraße 7*
- 9.30 **Skilled workers, trade unions and the return of space to Ibbenbüren: What are the lessons of Germany's negotiated coal mine closures for labor and industry?**  
Meeting with Hubert Hüls, Bereichsleiter of RAG Anthrazit GmbH (operating company of the Ibbenbüren mine), and Friedhelm Hundertmark, Bezirksleiter IG BCE (mining and chemical industry trade union)  
*Location: Modellraum*
- 11.00 **As coal is leaving, a city is staying: What is the impact of the coal mine closure on the city of Ibbenbüren? How are local governments getting ready for the day after?**  
Presentation of the "Good Prospects" project ("*Gute Aussichten*") and meeting with Monika Umlauf and Marcella Matzke, project coordinators at "*Schnittstelle Kohlekonversion*", a coordinating body of local and regional governments and the mine operator to manage the conversion process
- 12.30 *Lunch at RAG Anthrazit GmbH*
- 13.15 **New economic life in the built legacies coal: Why a company specialising in industrial buildings is turning a coal-washing plant into its headquarters**  
Visit of Sideka Industriebau and Sideka Solartechnik GmbH  
*Location: Sideka Industriebau GmbH, Talstraße 97, 49479 Ibbenbüren*
- 14.00 *Bus transfer to Duisburg*
- 16.00 **What does the Energiewende mean for energy intensive industries?**  
Visit of the ThyssenKrupp steel mill in Duisburg and discussion with representative of ThyssenKrupp AG  
*Location: Kaiser-Wilhelm-Straße 100, 47166 Duisburg, Gate 1*  
  
*Bus transfer to Düsseldorf*
- 19.30 **Splitting up and racing ahead: Big utilities and the energiewende. The perspective of E.ON**  
Dinner meeting with representative of E.ON AG  
*Location: Ramen Bar TAKEZO, Immermannstr. 48, 40210 Düsseldorf*  
  
*Overnight stay in Düsseldorf, Motel One Düsseldorf-Hauptbahnhof, Immermannstraße 54, 40210 Düsseldorf*

## Wednesday, 6 July 2016

- 7.45      *Checkout and departure from hotel*
- 8.15      **Germany's Apollo Project: Societal consensus, political divisions? The energiewende and its implementation in North Rhine-Westphalia, the view of the government**  
Meeting with Johannes Remmel, Minister of Ministry for Climate Protection, Environment, Agriculture, Conservation and Consumer Protection of the State of North Rhine Westphalia  
*Location: Landtag NRW (state legislature), Platz des Landtags 1, 40221 Düsseldorf*
- 9.00      *Break*
- 11.00     **Renewable vs. fossil, employment vs. environment? How managed discourse, participatory dialogue and consensus-building can help to build the low-carbon society**  
Meeting with Andrea Arcais, Executive Director of KlimaDiskurs NRW e.V.  
*Location: KlimaDiskurs.NRW e.V., Höherweg 200, 40233 Düsseldorf*
- 13.00     *Lunch*
- 14.00     **Energy utilities and creative construction: Why the case of RWE in North Rhine-Westphalia is a "problem from hell"**  
Meeting with Professor Ralf Michael Marquardt, Head of the Westphalian Energy Institute at Westfälische Hochschule, University of Applied Sciences Gelsenkirchen  
*Location: KlimaDiskurs.NRW e.V., Höherweg 200, 40233 Düsseldorf*
- 16.00     *Transfer to Cologne*
- 17.00     **The energiewende and the emergence of new business models: The case of NextKraftwerke GmbH**  
Visit of NextKraftwerke, operator of virtual power plants, link and bundle medium- and small-scale power producing and power consuming units  
Meeting with Hendrik Sämisch, founder and CEO, and Jan Aengenvoort, spokesman, visit of the trading floor  
*Location: Next Kraftwerke GmbH, Lichtstraße 43G, Köln*
- 19.30     *Closing Dinner and end of the official programme*  
*Location: Restaurant Ludwig im Museum, Heinrich-Böll-Platz, 50667 Köln*
- Overnight Stay in Cologne, check-in at hotel "Ibis Köln am Dom", Bahnhofsvorplatz 1, 50667 Köln, T +49 (0) 221 9128580*

## Thursday, 7 July 2016

*Individual departure of participants*

# From A to O:

## Background info on the programme items

A

The **Wuppertal Institute** is one of the world's leading think tanks in the area of energy transformation. With over 200 employees in Wuppertal and Berlin, the institute has been a driving force in taking a holistic view of changes to the world's energy and resource systems. Alongside scientific analysis, the institute makes recommendations for policymakers, civil society and scientists. Interdisciplinary studies and research founded on practical problems are meant to help open up paths to an ecologically, economically and socially fair transformation to renewable energy sources. The Wuppertal Institute was founded in 1991 by the state government of North Rhine-Westphalia and initial clients were predominantly from the public sector. Over the years, more and more companies have turned to the institute for analysis and recommendations.

The economist **Sascha Samadi** has been affiliated with the Wuppertal Institute for almost a decade. With a focus on ecology and environmentalism, Samadi has studied the modeling of costs associated with the uptake of renewable energy forms on a global basis. His current areas of study include global energy scenarios, modeling the cost of renewable energy projects, and German and European energy and climate policy.

- The official website of the Wuppertal Institute in English and German: <http://wupperinst.org/en/the-institute/>
- Biography of Sascha Samadi: <http://wupperinst.org/c/wi/c/s/cd/764/>

B

The **Garzweiler** open-cast mine is part of the large brown-coal (also referred to as lignite or soft coal) district in western North Rhine-Westphalia, which stretches between the towns of Bedburg, Erkelenz, Grevenbroich, Jüchen and Mönchengladbach. While open-cast lignite mining in the area reaches back into the 19th century, Garzweiler's Neurath pit – the core of the operation known as Garzweiler I – was begun around 1940, with Garzweiler II starting in 2006. Although the current operating license limits extraction to 2045, Garzweiler II, in particular, has proved extremely contentious, with its scope being cut back time and time again. The mine occupies some 31 square kilometres and produces 30-40 million tonnes of lignite per year.

The journalist **Jürgen Döschner** has since 1984 worked for public broadcaster WDR, part of the national ARD network. For the past five years, Döschner has been the leading energy editor for all of ARD's radio programmes. Prior to that, he covered energy topics for WDR radio's business section, and helped set up the broadcaster's investigative unit. He studied journalism and history at the Technical University Dortmund. In 2014, Döschner won the German Solar Media Prize for personal engagement, awarded by Eurosolar, the European Association for Solar Media.

- RWE's web page on Garzweiler: <http://www.rwe.com/web/cms/de/59998/rwe-power-ag/energietraeger/braunkohle/standorte/tagebau-garzweiler/>



- ➔ Eurosolar prize announcement for Döschner: <http://www.eurosolar.de/de/index.php/solarpreise-mainmenu-114/263-deutsche-solarpreise-2014/1901-wuerdigung-juergen-doeschner>

C

The **Öko-Institut** (Institute for Applied Ecology) is one of Europe's leading research institutes and consultancies in the area of sustainability. Founded in 1977, the institute devises principles and strategies for sustainable development at global, national and local levels. The institute has a staff of 165, including around 115 researchers in Freiburg, Darmstadt and Berlin. Work is organised around issues such as chemicals management and technology assessment, energy and climate, emissions and ambient pollution control, as well as resource management and industry, nuclear engineering and facility safety, and law, policy and governance.

The environmental scientist **Hauke Herrmann** is an expert in emissions trading, electricity-market instruments for climate action and competition, and economic projections for the power plant sector. Herrmann studied environmental and resource management at the University of Technology in Cottbus and Bosphorus University in Istanbul. Key projects include a study of competitiveness issues and allocation systems in the European emissions trading system, commissioned by the EU Commission's Directorate-General for the Environment.

- ➔ The official website of the Öko Institute in English and German: <http://www.oeko.de/en/the-institute/>
- ➔ Biography of Hauke Herrmann in English and German: <http://www.oeko.de/en/the-institute/staff/division/Energy%20and%20Climate/hauke-herrmann/>

D

The 7,200 inhabitants of the North Rhine-Westphalian town of **Saerbeck** have pioneered climate protection and energy transformation for many years. Saerbeck was quick to pursue CO<sub>2</sub>-neutrality and switch its electricity supply to renewable energy. Under the official title, Energy for Saerbeck, the town today produces more electricity from wind, solar and biomass than it consumes. Visitors now flock from all over the world to see its Bioenergy Park, its heating plant with its glass facade, the energy experience trail, and educational projects – all of which would not exist without the moral and material support of the community. For its pioneering work, the town has received the German Sustainability Prize, as well as being named North Rhine-Westphalian Climate Community of the Future by the state government as far back as 2009.

Saerbeck's mayor **Wilfried Roos** has been in office since 1999. In that time, the trained economist has been a leading figure in the town's pioneering climate policy. Born in 1952, Roos joined the municipal administration in Steinfurt in 1979, switched to Lengerich in 1993, and Saerbeck in 1994. He successfully ran for mayor five years later and has since been re-elected three times. The last time, in 2015, he ran unopposed.

- ➔ The official Saerbeck website in German: [http://www.klimakommune-saerbeck.de/city\\_info/we-baccessibility/index.cfm?region\\_id=408&waid=315](http://www.klimakommune-saerbeck.de/city_info/we-baccessibility/index.cfm?region_id=408&waid=315)
- ➔ North Rhine-Westphalia information on Saerbeck's projects in English: <http://www.klimaexpo.nrw/en/join-in/projects-pioneers/vorreitergefunden/klimakommunesaerbeck/>
- ➔ Biography of Wilfried Roos from the German wind energy association in German: <http://www.bwe-seminare.de/referenten-wilfried-roos>

**E**

The **Bionenergy Park** is central to Saerbeck's ambition to switch its entire energy production to renewable sources by 2030. Situated on an old ordnance depot of the German army, the Bioenergy Park since 2011 has been home to a variety of renewable energy sources. The plan is eventually to operate seven wind turbines, two biomass installations, a composting plant, as well as photovoltaic facilities. When fully operational, the park will have a capacity of 29 MW. Various projects for storing electricity are also planned – although the park also has its own connection to the grid via a local transformer station.

- ➔ Saerbeck's web page on the Bioenergy Park in German: [http://www.klimakommune-saerbeck.de/city\\_info/webaccessibility/index.cfm?waid=317](http://www.klimakommune-saerbeck.de/city_info/webaccessibility/index.cfm?waid=317)

**F**

Family-owned company **Saertex** is the global leader in manufacturing multiaxial fabrics (non crimp fabrics) and core materials for fibre-reinforced composites, used for building wind turbines, among other things. With over 300 million euros in annual sales, the company supplies wind energy customers with reinforcement materials made from glass, carbon and aramid fibres for increasingly longer rotor blades and larger wind turbines. This boosts the turbine's efficiency, while their lightweight construction facilitates transportation to hard-to-access places like offshore wind farms. The materials help turbines withstand even the most hostile environmental conditions. The Saerbeck-based subsidiary Saertex Multicom, specialized in pipe rehabilitation for civil engineering, is run by Frank Mersmann. He has been managing director since 1999.

- ➔ The Saertex website in English: [https://www.saertex.com/en/about-saertex/mission\\_values](https://www.saertex.com/en/about-saertex/mission_values)

**G**

Germany's **coal-mining sector** has a long and proud history as one of the pillars of the country's industrialisation and economic strength. But since the 1960s, when world coal prices fell below the cost of mining in Germany, the sector has been in steady decline. State subsidies dating back half a century will end in 2018, making the closure of Germany's last remaining coal mines all but inevitable. Operator RAG last year closed the Auguste Victoria mine in Marl, North Rhine-Westphalia, and will almost certainly close the nearby mines Ibbenbüren and Prosper Haniel in two years' time. After World War II, the region boasted 150 mines.

- ➔ Information about the coal-mining sector from the Federal Ministry for Economic Affairs and Energy <http://www.bmwi.de/DE/Themen/Wirtschaft/branchenfokus,did=553980.html>

**H**

Coal-mining company **RAG** owns and operates Germany's last two coal mines and records around 1.5 billion euros in annual sales. It employs 12,000 people, of which more than three quarters work in its mining division, which is scheduled to be wound down in 2018 when state coal subsidies end. Once mining operations close, RAG, formerly known as Ruhrkohle AG, will take responsibility for the long-term liabilities of the sector, including upkeep of shafts and tunnels to stop them collapsing. This task will be financed by RAG's owner, the RAG Trust, which draws its means from a two-thirds stake in Evonik, one of Germany's big chemical companies.

- ➔ The official RAG website in German: <http://www.rag.de>

Labour union **Industriegewerkschaft Bergbau, Chemie, Energie** represents over 650,000 workers in Germany's mining, chemicals and energy sectors. Since 2009, IG BCE has been headed by Michael Vassiliadis, who has maintained the union's reputation for close co-operation with employers and pragmatic wage policies. The Hanover-based union was formed in 1997 through the merger of three smaller labour unions.

- The official IG BCE website: <https://www.igbce.de/igbce/geschichte-igbce/jahrtausendwende-zeitenwende/112776>



The municipal structural change project **Schnittstelle Kohlekonversion** ("Interface for Coal Conversion") spent several years gathering and analysing future uses for the former coal mines in and around the North Rhine-Westphalian town of Ibbenbüren. The group, comprised of officials from towns in the region and from the coal companies, has proposed many different uses by many different players. Central to its plans is the conversion of areas currently used for mining into commercial and industrial property – a process it wants to start in the near future in order to cushion the blow when the last mines in the area are closed in 2018.

- The official website for the project in German: <http://gute-aussichten.info>
- An article about the project in German from the Ibbenbüren website: <http://www.ibbenbueren.de/magazin/artikel.php?artikel=6606&type=&menuid=1537&topmenu=987>



The construction company **Sideka** specializes in lightweight steel structures for business and industrial use. It has successfully completed construction of warehouses, logistics centres and other buildings all over Germany. Customers include Deutsche Post subsidiary DHL. The company's headquarters is in Ibbenbüren. The site includes a photovoltaic plant, which generates over 1.6m KWH of electricity per year.

- The company website in German: <http://www.sideka.de/index.php/about/>



German utility **E.ON AG** is one of Europe's largest stock-market listed power generators, operating in over 30 countries and serving 33m customers. As an operator of nuclear and fossil fuel power stations, the company was hit hard by the German government's 2011 decision to accelerate the country's nuclear phase-out and its renewable-energy phase-in. E.ON this year split its conventional power-generation and energy trading units into a new company called Uniper. It now plans to focus on renewable energy production.

- The company's English-language website: <https://www.eon.com/en/about-us/profile.html>



North Rhine-Westphalia's environment minister **Johannes Remmel** has been in office since 2010. A member of the Green Party, Johannes since 1995 held a number of posts in the state parliament, including that of environment spokesman while the Greens were in opposition. Although he is seen as a centre-of-the-road Green politician, his time as state environment minister has been marked by clear positions like his steadfast op-

position to E.ON's plans to open a new coal-fired power station. Despite this, his pragmatism continually shines through. Today, industry and environmental protection must go hand in hand, he has said.

- ➔ Remmel's biography on the NRW environment ministry website: <https://www.umwelt.nrw.de/ministerium-verwaltung/minister-und-staatssekretaere/minister/>

M

The civil-society grouping **Klima-Diskurs NRW** (Climate Discourse NRW) brings together companies, interest groups, town councils, academic institutions, church congregations, labour unions and individuals. Its declared goal is to support the state of North Rhine-Westphalia in meeting its climate-protection goals through collective action. The group took its cue from the fact that the state produces one third of Germany's energy, making it a major factor in CO<sub>2</sub> emissions reduction. In 2013, North Rhine-Westphalia became the first German state to enshrine emissions-reduction targets in law. A detailed road map is meant to lead to these goals.

Communications expert **Andrea Arcais** has been at the helm of Klima-Diskurs NRW since August 2012. Having studied German literature at university and trained as a book dealer, Andrea started his own communications consultancy in the early 1990s. After several jobs in sustainability-conscious retail operations, Andrea switched to politics, advising the German government's human rights representative, before switching to his current post.

- ➔ The official website of Klimadiskurs in German: <https://www.klimadiskurs-nrw.de/ueber-uns/leitbild/>
- ➔ Arcais' biography in German: [The https://www.klimadiskurs-nrw.de/ueber-uns/geschaeftsstelle/](https://www.klimadiskurs-nrw.de/ueber-uns/geschaeftsstelle/)

N

The economist **Ralf-Michael Marquardt** is head of the Westphalian Energy Institute at Westfälische Hochschule. He is an expert on economics and law and has written widely on the effects of the Energiewende on German companies and the German economy.

- ➔ Find Marquardt's publications and a CV in English on the institute's website here: <https://www.w-hs.de/erkunden/fachbereiche/wirtschaftsrecht/personen/professoren/persoенliche-seiten/prof-dr-raif-m-marquardt/>

O

**Next Kraftwerke GmbH** operates a large-scale Virtual Power Plant (VPP). It works like a power plant operator, just without any power plants. By linking their clients' power-producing and consuming units, they have created a sizeable digital platform from which they can smartly distribute supply and demand, trading power for profit. The company started up in 2009, and now bundles around 3,000 medium- and small-scale power-producing and power-consuming units. Among other energy sources, it uses biogas, wind, and solar power generators. Next Kraftwerke has around 184 million euros in sales and trades around 9 TWh of power annually.

Next Kraftwerke's CEO and founder **Hendrik Sämisch** is an economist who developed Next together with his colleague, business engineer Jochen Schwill, from research they conducted at the Energiewirtschaftliche Institute (EWI) at the University of Cologne.

- ➔ Next Kraftwerke's website in English: <https://www.next-kraftwerke.com>

- ➔ Short bio of Hendrik Sämisch in German from the German wind energy association (BWE):  
<http://www.bwe-seminare.de/referenten-hendrik-saemisch>