A Reporter’s Guide to the Energiewende*

*German energy transition

#climate change
#a new power market design
#renewable energy / citizens’ energy
#phasing out nuclear
#industry competitiveness
#utilities fighting for survival
#grid expansion
The energy transition is turning many parts of German society upside down. The landmark agreement at the global climate summit in Paris has further increased interest in this generational project, which provides a wealth of exciting and important stories.

Yet researching this massive undertaking in a foreign country with a tricky language is a difficult job, even for the most seasoned reporter. This is compounded by the immense complexity of the technology and economics behind energy policy. At the same time, strong fact-based and critical journalism is essential to inform the international political debate about how to decarbonise the global economy.

Which is why Clean Energy Wire CLEW has set out to support journalists in their work. Fully funded by two non-profit foundations – Stiftung Mercator and the European Climate Foundation – we enjoy full independence from any business or political interests. We share our funders’ commitment to work towards the decarbonisation of the economy in order to limit man-made climate change.

The CLEW “Reporter’s Guide to the Energiewende”, now in its third edition, gives journalists a starting point for their work by highlighting the main storylines of the energy transition, providing lists of experts and links to key readings. Our website cleanenergywire.org offers plenty more in-depth information and contacts. Our daily news digest and our Twitter feed @cleanenergywire keep readers in the loop about Energiewende debates and events. We also organise workshops for journalists, providing a first-hand view of the transformation. But most importantly, we offer support with specific questions and put you in touch with experts – so don’t hesitate to ask CLEW.

Sven Egenter and the Clean Energy Wire team
What is the Energiewende? And where did it come from?

The energy transformation, in Germany widely known as the “Energiewende” is the country’s planned transition to a low-carbon, nuclear-free economy. So far there have been two key elements to the process:

- The phase-out of nuclear power (by 2022)
- The development of renewable energies in the power sector

However, since the first introduction of feed-in tariffs for renewable energies in the 1990s, the project has started to radically reshape the energy system as a whole. As the traditional model of centralised power generation is being replaced by diverse sources of energy that fluctuate with the weather, not only the grid and the power market are effected. While so far mainly focused on electricity, the Energiewende is now also expected to transform other sectors like industry, housing, construction, heating and transport. For specific energy transition targets see pages 4–5.

Already, there are winners and losers: Big utilities’ traditional business models have been hit hard while consumers and some businesses are concerned about higher electricity costs. The coal industry first benefitted from the nuclear phase-out, but its future is now uncertain as the government steps up its efforts to cut CO$_2$ emissions. At the same time, entirely new industries have sprung up.
The overall objective of the Energiewende is to reduce Germany’s greenhouse gas emissions and phase out nuclear power, making the economy more environmentally sustainable.

On a national level, Germany aims to cut greenhouse gas emissions by 40 percent by 2020, and by up to 95 percent by 2050. The share of renewables in final energy consumption is to rise to 60 percent (from 12.6 percent in 2015) by 2050. Renewables are to cover at least 80 percent of the country’s gross power consumption by the middle of the century.

Germany’s climate targets were put on paper in 2007 and 2010 and have been upheld by all governments since. They were reaffirmed in the 2014 energy transition progress report and are subject to an annual monitoring process. The latest monitoring report was published in November 2015.

When it became clear in 2013/2014 that the CO₂ reduction goal for 2020 would likely be missed, the government opted to increase its efforts rather than adjust the targets. In 2016, the government aims to adopt a Climate Action Plan 2050 that describes the path the German economy must take to achieve the energy transition’s long-term targets.

Germany’s greenhouse gas reduction goal is more ambitious than that of the European Union, which aims to achieve a 20 percent cut by 2020 and a 40 percent cut by 2030, compared to 1990 levels. While some industry representatives say Germany should lower its objectives to European levels, others argue that the Paris Climate Agreement should see the EU enhance its targets so that they are in line with a 1.5° to 2°C warming limit.
## Quantitative targets of the energy transition

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<tr>
<td>Reduce greenhouse gas emissions</td>
<td>100%</td>
<td>72.3%</td>
<td>60%</td>
<td>45%</td>
<td>30%</td>
<td>-55%</td>
<td>-70%</td>
<td>-80%</td>
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<tr>
<td>Reduce electricity consumption</td>
<td>100%</td>
<td>85.4%</td>
<td>80%</td>
<td>80%</td>
<td>65%</td>
<td>65%</td>
<td>75%</td>
<td>80%</td>
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<tr>
<td>Reduce energy consumption</td>
<td>100%</td>
<td>91.3%</td>
<td>90%</td>
<td>80%</td>
<td>45%</td>
<td>50%</td>
<td>50%</td>
<td>60%</td>
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<tr>
<td>Reduce heat consumption in building</td>
<td>100%</td>
<td>93.6%</td>
<td>95%</td>
<td>90%</td>
<td>45%</td>
<td>50%</td>
<td>50%</td>
<td>60%</td>
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<tr>
<td>Reduce final energy consumption in transport</td>
<td>100%</td>
<td>101.7%</td>
<td>100%</td>
<td>99%</td>
<td>60%</td>
<td>60%</td>
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<tr>
<td>Increase number of e-cars</td>
<td>0.02 m</td>
<td>1 m</td>
<td>6 m</td>
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Sources: BMWi, 2015; UBA, 2016.
#Energiewende – Key Figures

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<th>Figure</th>
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<tr>
<td>€52.3bn</td>
<td>Energy-related investment in existing buildings in 2014</td>
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<tr>
<td>32.5%</td>
<td>Renewables’ share in gross power consumption in 2015 (up from 3.2% in 1991)</td>
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<tr>
<td>80%</td>
<td>Fall in share price of the two biggest utilities E.ON and RWE over past eight years</td>
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<td>3.6%</td>
<td>Renewables’ share in gross German power generation in 1990</td>
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<tr>
<td>12%</td>
<td>Fall in greenhouse gas emissions 1990-2014</td>
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<td>46.6%</td>
<td>Renewable power capacity owned by citizens (2012)</td>
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<td>902m tonnes</td>
<td>Greenhouse gas emissions in 2014 (up from 6.35 ct/kWh renewable surcharge in 2016)</td>
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<tr>
<td>25,502</td>
<td>Pure electric cars registered (01/2016)</td>
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<td>45.1m</td>
<td>Passenger cars registered in Germany (01/2016)</td>
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<td>12 minutes and 28 seconds</td>
<td>Average power outage in 2014 (Compare (2013) Denmark: 11 mins France: 68 mins UK: 54 mins Poland: 254 mins)</td>
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<td>20.6 28.7ct/kWh</td>
<td>Average household power price 2007 and 2016 – thereof 6.35 ct/kWh renewable surcharge in 2016</td>
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<td>355,400</td>
<td>People employed in the renewables sector (2014)</td>
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<td>People employed in the brown coal industry (07/2015)</td>
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<td>93%</td>
<td>Of Germans believe use and roll-out of renewables is important (2015)</td>
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<td>€22bn</td>
<td>Renewable surcharge paid by power consumers in 2015</td>
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<td>38.6%</td>
<td>Of natural gas imports to Germany came from Russia (2014)</td>
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<td>Drop in energy demand for heating 2008-2014</td>
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Emission trends for Germany since 1990

27.7% greenhouse gas reduction since 1990

Source: UBA, 2016.

*Without CO₂ from LULUCF
Development of gross electricity production 1990-2015 in terawatt-hours (TWh)

Germany’s power export balance 1990-2015 in terawatt-hours

Share of energy sources in primary energy consumption

Source: AGEB, 2015.
#Energiewende – Dates 2016

11 March: Fifth anniversary of the Fuku-shima nuclear disaster.


21 March: EnBW presents full year report 2015.

Spring 2016: Energy ministry expects legislative process for new power market law to be completed.

11 – 13 April: Berlin Energy Days conference, in BERLIN.

20 April: RWE annual shareholders’ meeting.

25 – 29 April: International Energy Trade Fair with partner country USA, in HANNOVER.

26 April: 30th anniversary of the Chernobyl nuclear disaster.

12 – 13 May: RWE and EnBW report first quarter results.

Summer 2016: German parliament and Federal Assembly to approve reform of Renewable Energy Act. Climate Action Plan 2050 to be passed by cabinet. The plan may include details of a coal exit strategy.

2 June: Frankfurter Allgemeine Zeitung Energy Security Summit, in BERLIN.

7 – 9 June: German Association of Energy and Water Industries Congress 2016 – conference on energy markets and energy policy, in BERLIN.

12 – 13 September: Handelsblatt Renewable Energy Conference, in BERLIN.

27 – 30 September: WindEnergy Hamburg, global on- and offshore wind trade fair, in HAMBURG.
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Fraunhofer ISE, Solar energy research institute and publisher of electricity production data. Also see their data and graphs at www.energy-charts.de, +49 761 4588-5147, www.ise.fraunhofer.de

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… for a list of over 200 experts and institutions with insights into the Energiewende see:

www.cleanenergywire.org/experts
#Energiewende – Reading in English

cleanenergywire.org Our website provides in-depth analysis, factsheets, news articles, a daily press digest, an expert database, and more.


The Federal Ministry for Economic Affairs and Energy (BMWi) website offers a wide range of publications in English, including the newsletter “Energiewende direkt”.

BMWi (2015) Fourth “Energy Transition” monitoring report. Overview of the progress and challenges of reforms in the fields of energy efficiency, renewable energy, power plants, electricity grids, greenhouse gas emissions and energy prices.


Schmid et al. (2016) Putting an energy system transformation into practice: The case of the German Energiewende.


Centre on Regulation in Europe (2015) The energy transition in Europe: initial lessons from Germany, the UK and France.

energytransition.de – A website/blog, funded by the Heinrich Böll Foundation, explaining what the energy transition is, how it works, and what challenges lie ahead.
Renewable energy sources have expanded rapidly since the introduction of the Renewable Energy Act in 2000, but German carbon emissions have not always fallen in step. After 2009, emissions even rose as power generation from coal-fired power stations soared to levels above 1990. But power usage and CO₂ emissions eased in 2014, leading some analysts to predict better years ahead—while others pointed out that much of the reduction was due to warm weather. However, estimates for 2015 predict a slight rise...
in emissions again and a monitoring report on the energy transition showed that Germany is still lagging behind many of its targets. Environmentalists warn that coal-fired power plants still threaten Germany’s emissions targets. With the Paris Agreement backing the cause, the call for a planned coal exit in the next 25 years is getting louder. This year, the environment ministry will present a Climate Action Plan 2050 and the economy and energy minister has backed plans for a round-table on coal.

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Reading

Agora Energiewende (2016) Eleven Principles for a Consensus on Coal


Agora Energiewende (2014) The German Energie-wende and its climate paradox


DIW (2014) Coal power endangers climate targets: Calls for urgent action


CLEW Factsheets [on cleanenergywire.org]

Germany’s greenhouse gas emissions and climate targets

Details of new Climate Action Programme

Coal in Germany

Understanding the European Union’s Emissions Trading System
For many observers, the energy transition in Germany began with Chancellor Angela Merkel’s decision to phase out nuclear power, following the accident at the nuclear plant in Fukushima, Japan. But the societal project started decades before the Merkel government re-instated plans to exit nuclear power. A long process deeply rooted in German history and society led to policies that triggered a strong increase in renewable energy sources and are now at the heart of a move to a low-carbon economy. The Energiewende – a
“The renewable energy act sparked a real grassroots citizens’ movement. Germans turned the Energiewende into their own project.”

Nina Scheer, Social Democrats MP

The full-scale transformation of society and the economy – arose out of enduring grassroots movements, evidence-based discourse, concern about climate change, and key technological advances, as well as hands-on experience garnered along the way in Germany and elsewhere.

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Reading

energytransition.de: Timeline Energiewende


CLEW Factsheets [on cleanenergywire.org]

Milestones of the German Energiewende

The history behind Germany’s nuclear phase-out
The Energiewende involves tough choices for politicians: How will Germany organise the market around the ever-increasing share of renewable energy? What happens to energy security when the sun doesn’t shine and the wind doesn’t blow? Fluctuating energy production challenges the entire power grid. The German government is trying to solve these problems with a complete overhaul of the power market and has opted to put its trust...
in the free market. These plans will have long-lasting implications. Most experts agree there will be little or no investment in fossil power plants in the future, but opinions diverge over whether this really matters.

“We don’t believe that there will be incentives for investors to build new, flexible power plants that will be needed in Germany to accompany the expansion of renewable energy.”

Frank Brachvogel, BDEW

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European Commission (2016) The economic impact of enforcement of competition policies on the functioning of EU energy markets

BMWi (2015) An electricity market for Germany’s energy transition - white paper of the Federal Ministry for Economic Affairs and Energy

BDEW (2013) Position paper: Design of a decentralised capacity market

Öko-Institut/WWF (2012) Focused capacity markets

Agora Energiewende (2015) Report on the German power system

CLEW Article / Factsheets [on cleanenergywire.org]

Germany’s new power market design

Europe’s largest electricity market set to split

German draft power market law sticks to lignite reserve

Capacity markets around the world
Hopes for the Paris Climate Summit (COP21) from 30 November to 11 December 2015 were high. Most observers – including the German government – agree that the conference exceeded all reasonable expectations. It reached an agreement that obliges all nations to participate in climate protection, keep global warming below 2°C, and pursue “efforts to limit the temperature increase to 1.5°C”.

Some industry leaders criticise the absence of a binding mechanism and say Germany shouldn’t push ahead with climate protection and an energy transition while other countries...
aren’t pursuing such ambitious targets. Yet there is huge pressure on “climate chancellor” Angela Merkel to make the most of the backing her policies received in Paris.

Just days after the conference concluded, commentators and climate activists argued the Paris Agreement vindicated demands that Germany urgently phase out coal. The environment ministry has been tasked with writing a Climate Action Plan 2050 that describes a pathway to decarbonise the different sectors of the economy by the middle of the century. The plan is due to be agreed by government in summer 2016.

“World expects Germany to lead way with Energiewende”

Jennifer Morgan, Executive Director
Greenpeace International

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Climate Action Plan 2050 (2016) Website with latest documents and process updates

European Council (2015) EU position for the UN climate change conference in Paris: Council conclusions


Greenpeace (2015) Effects of a partial coal exit (in German)

CLEW Article / Factsheets [on cleanenergywire.org]

Paris deal fuels German coal exit debate, stirs industry concerns

Germans celebrate climate deal, turn to task ahead

Paris climate deal – does Germany get what it hoped for?

The making of “Climate Chancellor” Angela Merkel

Controversial climate summit issues – positions in Germany
The question is no longer whether Germany’s future will be nuclear-free – or even when, since the government is committed to completing the phase-out by 2022. But the logistics of pulling the plug on what was until recently one of the country’s primary sources of power are proving an immense challenge. Legal hurdles, decommissioning technicalities, and above all, the questions of where to store the radioactive waste and who will pay for it...
“In 2050, when the final repository is ready I will be 98 years old, so I am not sure I will live to see it happen, but I certainly feel that it is my responsibility to organise this now.”

Barbara Hendricks, Environment Minister

all, are the main issues at hand. In 2016, Germany’s nuclear phase-out marks two important anniversaries – it will be 30 years since the fatal nuclear meltdown in Chernobyl and five years since the catastrophe in Fukushima.

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German Institute for Economic Research (2015)
German nuclear phase-out enters the next stage: electricity supply remains secure

Helmholtz Centre for Environmental Research (2015) Germany’s decision to phase out nuclear power is fundamentally sensible from an economic perspective

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BBH (2014) Financial provisions in the nuclear sector – Possible risks of the status quo und options for reform (in German)

BMWi / Warth & Klein Grant Thornton (2015) Nuclear clean-up provisions evaluation (in German)


CLEW Factsheets [on cleanenergywire.org]

The history behind Germany’s nuclear phase-out

What to do with the nuclear waste – the storage question

Nuclear clean-up costs

Securing utility payments for the nuclear clean-up

Legal disputes over the nuclear phase-out
Industrial competitiveness in times of an energy transition – few issues have been watched as closely. So far, German manufacturers have kept their competitive edge, backed by strong exports, despite concerns about rising electricity costs. Some of the most energy-thirsty companies are actually benefitting from the lowest wholesale power prices in Europe, as they are exempt from levies that fund the Energiewende. But the topic of competitiveness is likely to persist as the Energiewende progresses. Many business leaders warn the
“Perceptions [of the Energiewende] varied widely depending on the size of the business, their location or industrial sector.”

DIHK Energy Transition Barometer, 2015

costs of the nuclear phase-out and the move into renewables could drive some manufacturing abroad. They say this could take a toll on the car industry and other pillars of the economy. But other sectors hope Energiewende technologies will secure future export success.

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**Reading**


Destatis (2015) Long-term energy price trends


IHS (2014) A more competitive Energiewende: Securing Germany’s global competitiveness in a new energy world

Agora Energiewende (2014) Comparing electricity prices for industry


**CLEW Factsheets** [on cleanenergywire.org]

Industrial power prices and the Energiewende

What business thinks of the energy transition

What German households pay for power
Technology to transform the energy system – made in Germany

Germany’s energy transition anticipates a vastly more efficient and interconnected energy system in the future. It also poses huge technological challenges – and challenges for legislation and business models keep pace. German scientists say their work has already made important contributions to the global goal of decarbonisation. Batteries that can store power and help to regulate the grid within seconds with high accuracy, smart grids...
and other solutions for flexibility and integration of different power sources are key to adapting the power system to a high level of renewables. Germany has doubled research and development funds in under a decade.

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**CLEW Factsheets** [on cleanenergywire.org]

Technologies of Energiewende

Combined heat and power – an Energiewende cornerstone?

“What we will have is an electricity system that is very cheap in terms of getting fuel for free.”

Hans Schäfers, Hamburg University of Applied Sciences
Germay’s transition to a low-carbon, nuclear-free economy shakes up the country’s labour market. The Energiewende has created hundreds of thousands of jobs – from solar-panel cleaners to housing-insulation specialists and wind turbine engineers. Countless new business models have emerged, many beyond the renewables industry. Meanwhile, the conventional energy sector has been bleeding jobs, and many business leaders warn the Energiewende will cost many more jobs in other traditional pillars of Germany’s economic success,
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Where the Energiewende creates jobs

such as steel or the car industry. Changes are so rapid that researchers have trouble keeping track. How many jobs the drive to renewables and the energy transition as a whole will eventually create remains hard to gauge and hinges on many political and individual decisions in coming decades.

“Installation is extremely labour-intensive, so carpenters and craftsmen are needed for every building that’s retrofitted.”

Christian Noll, German Industry Initiative for Energy Efficiency
Germany’s ambitious transition to renewable energy has left the major utilities that have dominated the market for decades out in the cold. Their business models, based on the “old” energy world of centralised generation and large-scale investment, have been eroded. Top dogs E.ON and RWE want to master the challenges by splitting off their conventional power businesses, Vattenfall has opted to sell its brown coal operations, and state-owned EnBW is redoubling efforts to become greener. Despite these drastic steps, their future...
role in Germany’s fast-changing energy markets is far from clear. The upheaval is not yet over, as new business models and mighty competitors like Google could soon enter the fray. Experts say it remains to be seen if they can innovate their way out of the crisis.

“We have seen a kind of worst case scenario materialise for the big energy companies.”

Thorsten Lenck, Energy Brainpool
When it comes to the automobile, Germany flaunts unique gravitas. The German engineer Karl Benz invented the first automobile powered by an internal combustion engine 130 years ago. Today, sales by its carmakers Daimler-Benz, Volkswagen, BMW, Porsche, and Audi top Denmark’s annual GDP. But so far, Germany has made little headway in linking up its transport prowess to another prominent industry showcase – the transition to renewable energy. It’s clear that extending the Energiewende to transport will be crucial in the country’s quest for a low-carbon economy, but there is no consensus on how this should be done. Carmakers have lob-
“Decarbonisation isn’t happening anywhere in the sector. Measures are expensive and intervene with our daily life. Thus, it just hasn’t been pushed by either politicians or industry.”

Peter Kasten,
Institute for Applied Ecology

bied hard – and with some success – against stricter emissions limits, and they risk falling behind the global competition on battery technologies. Consumers are also slow on the uptake of electric vehicles, making it unlikely the government will reach its target of putting 1 million electric vehicles on German roads by 2020.

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CLEW Factsheets [on cleanenergywire.org]

Energiewende in transportation: Vague goals, modest strides

The role of biofuel and hydrogen in Germany’s transport Energiewende
Germany has to update its network to cope with decentralised, fluctuating supply as the country shifts to renewables.

Rapidly growing wind power capacity in the north means a bountiful supply of low-cost electricity. But too much power can be as big a problem for the stability of the grid as too little. And not everyone is in favour of building new power lines to carry electricity to the country’s industrial south. The debate raises key challenges, not only of public acceptance but of how central...
government works with regional states to make the Energiewende a success. Meanwhile, other possible solutions are floated, such as a decentralised power supply, demand-side management, power storage, or splitting the German power market.

As long as the new power lines between north and south Germany are not completed, the problem of a lopsided system will only worsen.

Andreas Jahn, Regulatory Assistance Project (RAP)

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Andreas Jahn, Regulatory Assistance Project (RAP)

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Grid development plans of the four German transmission grid operators (TSOs)

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Set-up and challenges of Germany’s power grid

Setting the power price: The merit order effect

Re-dispatch costs in the German power grid

Loop flows: Why is wind power from northern Germany putting east European grids under pressure?

Germany’s electricity grid stable amid energy transition

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Grid development plans of the four German transmission grid operators (TSOs)

Bundesnetzagentur (2014) Monitoring report 2014 (in German)
Financing the Energiewende: Germany has mobilised over 200 billion euros for renewable energy projects over the last 10 years, most of it from local and national investors. Relatively high yields, a stable cash flow and a reliable public framework have made the Energiewende a very attractive green investment opportunity. Now, institutional financiers are replacing some small-scale investors. Larger projects such as offshore wind play a more important role as banks, insurance firms and investment funds increasingly look...
Relatively high yields, a stable cash flow and a reliable public framework have made the Energiewende a very attractive green investment opportunity.

for carbon-free investment. Funding by the public banking system is also playing an increasingly important role. The Energiewende will continue to be financed by a broad mix of investors, but is part of global finance rather than a German singularity.

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It will take more than just making the power supply green to achieve climate targets. Germany must also tackle demand and consume less energy. In the past, energy use only fell significantly when the economy took a hit. Now the country wants to prove it is possible to decouple growth and emissions by dramatically increasing efficiency. The potential is huge and so far largely untapped, which is why efficiency has been dubbed the “sleeping giant” of the Energiewende. The government’s Climate Action Programme, designed to get Germany back on track for its 2020 climate goals, suggests that increasing energy...
“Germany can achieve its emission targets much faster if energy is used more efficiently.”

Robert Pörschmann, BUND

Efficiency can bring more emissions cuts – 25 to 30 million tonnes per year – than any other measure. But saving energy on a large scale – by insulating buildings, changing behaviour and introducing many new and often expensive technologies – requires everyone’s participation and has proven a hard sell so far.

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Details of new Climate Action Programme

Homes for the Energiewende

Germany’s greenhouse gas emissions and climate targets

Combined heat and power - an Energiewende cornerstone?
Since the energy transition took off in 2000, millions of Germans have become energy producers, investing in solar panels on their houses and buying shares in wind parks. Citizens’ engagement has been key to maintaining high public support for the energy transition despite rising power prices. But plans for new regulations including the transition to a more auction-based system have stoked concerns that more com-
plex rules will put citizens off. At the same time, important Energiewende projects – such as grid extension and wind parks – have run into resistance, requiring new ways to keep the public on board.

“If people participate with their own money, for example in a wind or solar power plant in their area, they will also support it.”

Manfred Fischel, Wuppertal Institute

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An example of an energy-friendly suburb, in Freiburg: www.vauban.de

CLEW Factsheets [on cleanenergywire.org]

Citizens’ participation in the Energiewende
Polls reveal citizens’ support for Energiewende
Facts and figures on the social impact of the Energiewende
What German households pay for power
Germany’s energy revolution is having a far-reaching impact on everything from the landscape to education. As some farmers earn more from their “energy harvest” than traditional crops and citizens rethink lifestyle choices to go green, the transformation doesn’t stop at architecture, tourism or urban planning. The changes and their knock-on effects don’t please everybody: there are winners and losers when a society and economy...
undergo such sweeping reconstruction. While some jump aboard, transforming their homes into small solar power stations, others gripe about the “ugliness” of wind turbines and photovoltaic panels.

“Technology and renewable energy production are changing faster than society does.”

Günther Bachmann, Sustainability Council

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CLEW Factsheets [on cleanenergywire.org]

Facts and figures on the social impact of the Energiewende
Germany’s renewable energy market is facing the most far-reaching legislative changes since green power incentives were introduced a quarter of a century ago. The controversial revamp of the renewable energy law (EEG) in 2014 aimed to cut costs related to the Energiewende, exert greater control over the expansion of renewables, and maintain exemptions that help large energy users deal with the transition. 2016 will see the next reform of the law. A shift from feed-in tariffs to a system of auctions to define renewable support is the most striking change. Some of the measures have a short track record.
“Economic logic and all experiences from other countries show: In tenders the largest bidders have an advantage.”

Lars Holstenkamp, Leuphana University

and strike at the very heart of the 1990 law. A target corridor for renewable development will be upheld, according to the Ministry for Economic Affairs and Energy, which is writing the reformed legislation.

Energy experts stress that the changes are necessary to expose the sector to more market forces and cut costs, as well as adjust renewable growth to the slow grid expansion. But renewables developers, particularly in the solar and wind sector, have reservations, saying the reforms – and the “growth corridor” in particular – make investment in renewables less secure.

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Germany’s energy transition began as a lonely expedition. Rapidly expanding green energy and switching off its nuclear power stations antagonised some neighbours, and the European Commission. Germany’s energy markets are at the geographic heart of Europe. What happens here significantly impacts markets in neighbouring countries. Germany has learned that it cannot reach its goals independently and needs to cooperate in areas such as grid extension, trade and research. And the EU’s plan for an “Energy Union” will further deepen the German energy market’s ties to its neighbours.
But while many European countries are following in Germany’s footsteps to push renewables, a European consensus does not appear within easy reach.

The Energiewende still poses major challenges in Europe, both for Germany and its neighbours.
Energy supply is inseparable from German foreign policy, as the country relies on imports to feed its energy appetite. The Ukraine crisis has brought the risks of Germany’s dependence on oil, gas and coal from Russia into focus. While some experts warn against cutting these energy ties, others argue for an accelerated shift to renewables in order to boost international security. At the same time, the implications of a low-carbon future...
for foreign and security policy are hardly limited to energy supply security. If Germany is to make its energy transition a success, it could have profound geopolitical repercussions, and its impact might be felt across the globe.

“Experts from Russia clearly see the changeover to renewable energy as a threat. A threat to their economy.”

Christian Hübner, Konrad Adenauer Stiftung
You can sign up for our daily briefing, which includes a news digest and the latest on CLEW, or for a weekly overview of our articles.

CLEW offers international journalists study tours and workshops, giving them the opportunity to visit individual projects and speak with Energiewende experts and politicians in Germany.

Stay up to date on energy policy in Germany with CLEW News and the daily News Digest on the website.

CLEW Dossiers provide in-depth background on the Energiewende and its effects on all parts of society.

CLEW Factsheets summarise key aspects of the Energiewende and provide an overview of current issues.

Get in touch with a specialist: Use CLEW’s full list of experts or refine your search for research institutes, environmental groups, government, media and business representatives, or political parties.

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