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EU to give a fresh boost to European energy transition



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As part of the 'Smart Energy Showcases – Digital Agenda for the Energy Transition' (SINTEG) programme, five model regions are showing how digital networking can be used to transform the energy sector.



The 'Clean Energy for All Europeans' proposal will provide the EU with a new legislative framework for energy up until 2030. Last week, the European Member States agreed on a compromise on the first part of the legislative package in the Council of the European Union. This compromise covers the updated Renewable Energy Directive, the updated Energy Efficiency Directive, and the new Governance Regulation.

The EU's revised Renewable Energy Directive

The revised Renewable Energy Directive will provide the EU with a new framework for the funding of renewable energy. The share of renewable energy in final energy consumption within the EU is to increase to at least 32 per cent by 2030. The Directive sets out a number of measures designed to reach this goal in the electricity, heat and transport sectors.

For example, the Member States will need to increase the share of renewable energy they use for heating and cooling by 1.3 percentage points from 2021 onwards. In the transport sector, the share of renewable fuels is to increase by 14 per cent by 2030 – this is to be achieved by using new technologies such as electric mobility and power to X (using electricity to generate synthetic fuels). The updated Directive will also restrict the share of first-generation biofuels – biofuels that are produced from food crops.

The EU's revised Energy Efficiency Directive

The revised Energy Efficiency Directive seeks to reduce primary energy consumption within the EU by 32.5 per cent by 2030 compared with a reference scenario. The key instrument for the implementation of the Directive – the energy savings obligation scheme – has been strengthened, with real savings of 0.8 per cent per year having been agreed for the first time. Up until now, the Member States had to adopt measures to achieve 1.5 per cent energy savings each year; however there were a large number of exemptions by which countries could reduce this target.

New Regulation on the Governance of the Energy Union

Under the new Regulation on the Governance of the Energy Union (click [here](#) to learn more), the Member States will need to adopt Integrated National Energy and Climate Plans – similar to Germany's Energy Concept – by 2030, and also develop long-term strategies covering the period up until 2050. The new Regulation will help make the plans presented by the Member States comparable and encourages consultation of the plans not only at the national level but also with neighbouring countries. This will help better coordinate national energy and climate change mitigation policies. The NECP drafts need to be submitted to the Commission by the end of December 2018, the final versions by the end of December 2019.

The Governance Regulation sets out corrective action that will ensure that the Member States will meet the EU's renewable energy and energy efficiency targets to be achieved by 2030. It also includes clear rules in the event that the Member States' efforts are insufficient to meet the EU's 2030 renewable energy target. If there is a gap at EU level, the countries that have fallen short of their national targets will need to adopt additional measures. The Regulation also introduces a new European funding mechanism that will help ensure that the targets are met. Similar rules will be

introduced for meeting the energy efficiency target. The Commission will review the progress the EU is making towards reaching the target in three reference years and, if necessary, take corrective action.

Agreement reached in Brussels is an important milestone

The agreement reached between the Member States, the European Parliament and the European Commission on the first part of the “Clean Energy for All Europeans” legislative package is an important political achievement showing that the European Union is able to act and it is an important milestone on the road towards transforming the energy supply and protect the climate in Europe. The agreement will help protect investments made in the period up until 2030. The agreement that has been reached in Brussels is a compromise that helps bring together the interests of different parties and concludes several years of tough, intensive negotiations between the Member States in the Council, the European Parliament and the European Commission. Both the European Parliament and the Council of Ministers need to give formal consent to the legislative acts before these can enter into force.

FURTHER INFORMATION

[\[→ European energy policy\]](#)

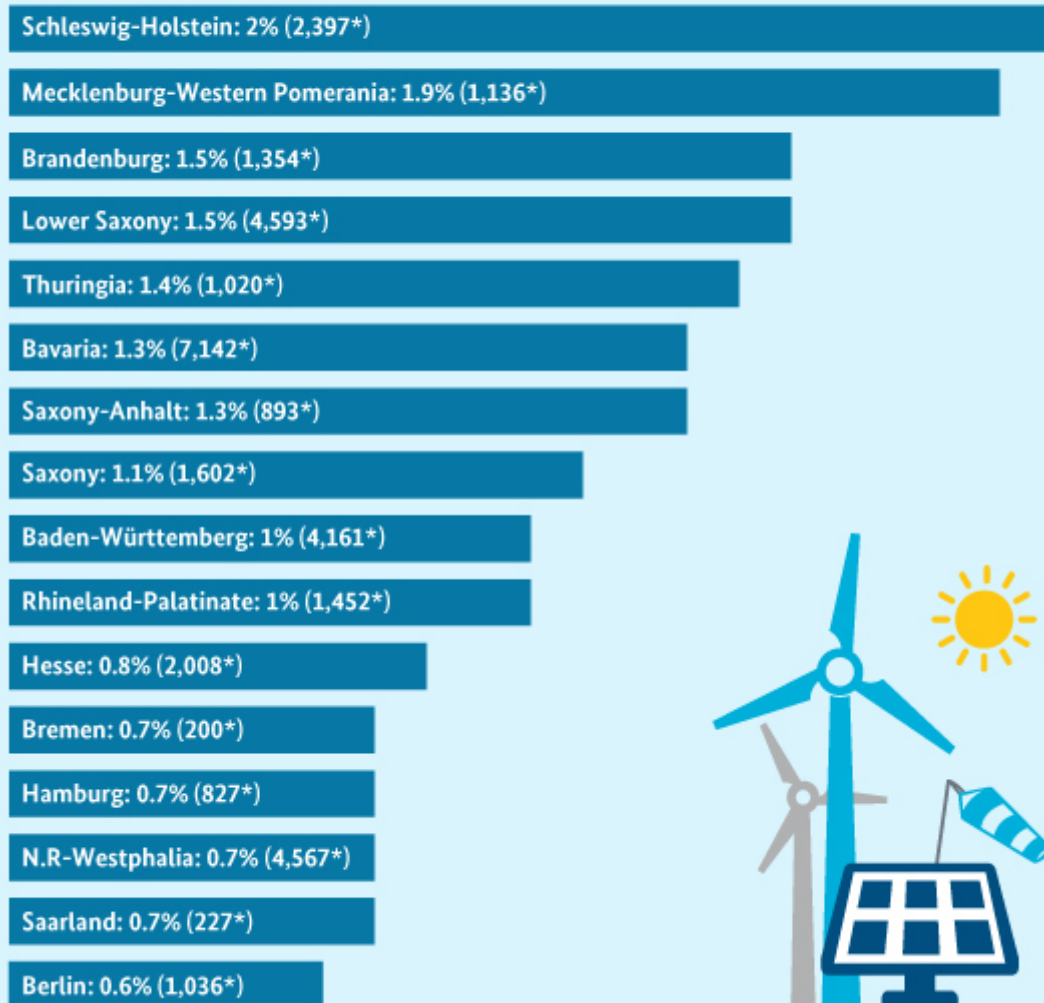
[\[→ Press Release of the Council on the Governance Regulation\]](#)

The energy transition across the German Länder

Different approaches – one goal: all German Länder are working towards transforming their energy supply – irrespective of the parties they are governed by. However, different environments mean different strategies. A new report sheds light on the current state of play.

Which German Land has the highest share of renewable energy companies?

Bavaria has the highest total number of renewable energy companies; however Schleswig-Holstein has the highest share of renewable energy companies relative to the total number of companies based there.



The percentage figure refers to the share of renewable energy companies relative to the total number of companies in a particular German Land. * Actual number of renewable energy companies at the beginning of 2018
Total number of renewable energy companies in Germany at the beginning of 2018: 34,638

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The energy transition not only helps protect our climate and environment, it also serves as an engine for innovation and for a lasting modernisation of our country. The number of companies working in the renewable energy sector has increased over the last few years, climbing from just under 20,000 in 2009 to more than 34,600 today. Some 7,142 of these companies are based in Bavaria. However,

proportionally, the largest number of renewable energy companies are based in Schleswig-Holstein (with 2 per cent) and Mecklenburg-Western Pomerania (with 1.9 per cent).

All 16 German Länder are driving forward the energy transition. The Renewable Energies Agency (AEE) publishes a regular status report entitled “Bundesländer mit neuer Energie” (German Länder using renewable energy) that describes what approaches each individual Land is taking to transform its energy supply.

Many roads lead to the energy transition

Each German Land is different. First of all, there is geography – which plays a key role for the generation of renewable energy. Solar irradiation is higher in the south of Germany, which means that solar installations erected in this part of the country generate more electricity than in the north. In the north of the country, a Land like Lower Saxony benefits from coastal winds. Bavaria is home to many rivers and inclines – which means that most of Germany’s hydropower is generated there. However, geography isn’t everything. Solar installations can also be profitable in the north of the country, as can be wind farms in the south. The 2018 status report shows that all German Länder are generating and using solar, wind and bio energy and that they are also using solar thermal energy to generate heat.

The report provides detailed information on Germany’s energy landscape including Länder profiles, figures, graphs, interviews and best practice examples. It also highlights what some German Länder are doing particularly well – achievements that are often little known in the other Länder. Baden Württemberg, for example, is often seen as a Land where a lot of solar energy is being generated, but, at a closer look, the Land is not only the second-largest user of photovoltaic and solar thermal energy – second only to Bavaria – but also a pioneer in the area of power to gas. Power-to-gas installations convert electrical power to methane, which can be used, for example, for low-carbon road transport. Lower Saxony is known as a Land where wind power is abundant – and it is also the German leader in the generation of electricity from biomass. However, it is not Lower Saxony but Bremen that generates the most wind power per square meter. Bavaria is the German Land that has the largest number of citizens’ energy undertakings. The solar battery storage unit with the largest capacity is based in Mecklenburg-Western Pomerania. And (not counting the city states), Saarland has the highest share of electrified railway lines in its overall railway system among all the German Länder, not counting the city states.

FURTHER INFORMATION

[\[→ Status report on the use of renewable energy in the German Länder entitled “Bundesländer mit neuer Energie” \(German only\)](#)

How much renewable energy is being fed into the grid right now?

The Bundesnetzagentur publishes data about the electricity market virtually in real time on its SMARD online platform. The SMARD platform provides

information about the amount of electricity that is being fed into the grid, consumed or exported as well as on wholesale prices and back-up capacity, and has made it into the final round of the Digital Leader Awards.



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SMARD provides real-time or at least ‘near real-time’ information about the electricity market. The data provided can be used as needed to create graphs, for example to look at how the renewables generation curve approaches the electricity consumption curve on a sunny, windy day and the impact this is having on wholesale prices, electricity exports and back-up capacity. All data on renewables generation, consumption, market and systems stability can be accessed as and combined into graphs for different time periods starting January 2015.

There were three times in the first half of 2018 when renewables were able to cover all of Germany’s electricity demand

The online platform is an easy-to-use repository of information for anyone taking an interest in the energy transition. Under ‘German electricity market’, users of SMARD can see how much electricity is being exchanged with a particular neighbouring country and at what price, and how much electricity the larger power plants are feeding into the grid right at that moment. The ‘Electricity market explained’ section provides information about the most important energy-related terms and concepts in a way that requires no prior knowledge of energy. And under ‘Electricity market topics’, users can find information, for example, on the new records for renewable energy that have been set. When was Germany last able to cover all of its electricity demand from renewable energy? The answer: it was on 1 and 21 May 2018. A closer look at the interactive visuals shows that renewables were able to cover all of Germany’s electricity demand for two hours – starting at 13:15 hrs – on 1 May (as can be seen [here](#)), and for one and a half hours – from 13:15 hrs to 14:45 hrs – on 21 May (as can be seen [here](#)). On both of these days, the share of solar energy was particularly high. The first time renewables were able to cover all of Germany’s electricity demand in 2018 was right at the beginning of the year – for one hour and 45 minutes, before dawn (as can be seen [here](#)) – on a day when lots of wind energy was generated.

Visualising how the electricity market works

By setting up the SMARD platform, the Federal Ministry for Economic Affairs and Energy and Bundesnetzagentur wanted to make electricity market data more transparent and easier to understand. The platform aggregates the most important electricity market data that persons interested in this data would otherwise have to collect from a wide range of different sources. All of the major market mechanisms can be visualised. The SMARD platform was chosen as one of the three best projects in the "Digitize Society" category at the Digital Leader Awards. The Digital Leader Award honours projects that help roll out digital technology in businesses, public sector authorities and society as a whole. In the "Digitize Society" category, the jury honours projects that have the potential to benefit the general public. On the SMARD platform, citizens can trace the progress of the energy transition virtually in real time. This fact combined with the user-friendliness of the platform convinced the jury to select SMARD as one of the three best projects in the "Digitize Society" category.

FURTHER INFORMATION

[\[→ SMARD platform: information about electricity market data](#)

[\[→ Electricity market of the future](#)

Monitoring report: increased use of renewables, but a lot remains to be done

Today, one in three kilowatt-hours comes from renewable energy. However, as shown by the new monitoring report, a lot remains to be done in order to make a success of the energy transition.



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Around one and a half years ago, the Federal Government presented the 2017 version of the Renewable Energy Sources Act, thereby spurring competition in the renewable energy sector. It is now becoming clear that determining funding rates based on competitive auctions is indeed helping to expand renewable energy in a more cost-effective manner. In addition to this, 31.6 per cent of gross electricity demand was met by renewables in 2016.

And the Federal Government's sixth monitoring report provides for more good news on the energy transition: it shows that Germany's electricity supply is secure. Energy demand can be covered around the clock, and a secure supply of electricity is guaranteed. This makes Germany one of the global leaders on the energy transition. Germany was also able to put a hold on rising electricity prices: in 2016, prices for residential customers remained generally stable compared with the previous year.

However, in the same year, energy consumption increased by 1.4 per cent – which was mainly due to relatively low temperatures and strong economic growth. Greenhouse gas emissions also saw a slight increase. The Federal Government is currently looking at additional measures that could be taken in addition to its 2020 Climate Action Plan and that would help protect the climate.

The energy transition is a project of historic proportions. In order to make a success of it, grid capacity needs to be better dovetailed with the amounts of electricity that are being generated and fed into the grid. According to the new monitoring report that was presented by the Federal Cabinet last week, this means that the grid needs to be expanded more quickly and that existing grids need to be updated.

The Monitoring Report – an annual update of the facts relating to the energy transition

The Federal Government has launched a monitoring process entitled “Energy of the Future” in order to continuously monitor the development of the energy transition and to provide a fact-based overview of the status of the implementation of the energy transition. This means that the government scrutinizes measures that it has taken in the past and looks at what additional measures might be needed. The Federal Ministry for Economic Affairs and Energy is the lead ministry for this monitoring process, and is also responsible for presenting a monitoring report each year. This is also part of the government's reporting duties set out the Energy Industry Act and the Renewable Energy Sources Act.

The monitoring report aggregates all of the information available and presents it in an easy-to-understand and transparent manner. This means that the general public will be informed at all times about which measures are being implemented as part of the energy transition, how effective these are and whether the government is able to meet its goals or whether additional measures need to be taken.

FURTHER INFORMATION

[\[➔ Sixth monitoring report on the energy transition \(at the moment only available in German\)\]](#)

[\[➔ The monitoring process for the energy transition\]](#)

Quote of the week



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“By reaching an agreement on the Renewable Energy and Energy Efficiency Directive, Europe and Germany are paving the way for the next ten years of the energy transition. In addition to this, the Regulation on the Governance of the Energy Union provides the EU for the first time with a sophisticated planning and monitoring tool for the energy sector. This clearly shows that Europe is taking its responsibility to protect the climate seriously and is able to take action.”

Federal Minister Peter Altmaier on the agreement that was reached on the “Clean Energy for All Europeans” legislative package

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