



How Germany intends to develop new sites for PV

With more PV on roof-tops and environmentally compatible expansion of PV in open spaces, Germany aims to move much closer to GHG-neutral electricity generation. [Find out more](#)



Solar power for your holiday flight

Kerosene made from sunlight could make flying more environmentally friendly in future. Teams of scientists are developing the world's first industrial-scale production plant for this.



“Going forward, solar fuels will be the most environmentally friendly solution for long-haul traffic. Another benefit is the fact that no new infrastructure needs to be built for this. The existing distribution networks, refineries and engines can continue to be used for the solar fuels,” says Patrick Hilger, mechanical engineer and managing director of Synhelion Germany. Synhelion is working in the SolarFuels research association with the German Aerospace Center (DLR) and the Jülich Solar Institute of the University of Applied Sciences in Aachen. The scientists have an ambitious goal: they are developing the world’s first industrial scale facility for fuel produced by solar energy. Project director Hilger hopes that their operations in Jülich, North Rhine-Westphalia, can come on stream in 2023.

Sunlight supplies the energy for the manufacturing process

The researchers are using a regenerative energy source to produce the solar fuel: the Sun. When it is shining, its radiation is captured by hundreds of adjustable mirrors which reflect it on to the upper end of a solar tower. This tower hosts a receiver, and the concentrated solar radiation heats water vapour up to roughly 1,200C. The heat is important for the thermochemical process to produce the synthetic fuel. The process developed by Synhelion produces synthesis gas which can then be turned into synthetic diesel and kerosene.

Global air traffic causes two to three per cent of global carbon emissions

There is a great need for climate-friendly kerosene all around the world, because airplanes are responsible for roughly two to three per cent of global carbon emissions. This means that environmentally friendly fuels can play a big part in achieving the ambitious climate targets. The solar fuel facility in Jülich is a first step in this direction, and others are to follow. Synhelion plans to use its process to produce, or let others produce, up to half of Europe’s kerosene needs by 2040.

Federal Ministry for Economic Affairs and Climate Action providing approx. €3.9 million in funding for SolarFuels

The building of the facility in Jülich is an important milestone in the development of comprehensive expertise in solar-chemical installations. The Federal Ministry for Economic Affairs and Climate Action is therefore providing a total of €3.9 million for the SolarFuels research project until 2025.

What actually is the Federation-Länder cooperation committee?

The Onshore Wind Act announced by Minister Habeck for 2022 is to result in sufficient sites for wind energy in Germany. This issue is currently the subject of intensive discussions in the Federation-Länder cooperation committee.



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“We will use the Onshore Wind Power Act to reserve two per cent of Germany’s land territory for wind energy,” announced Minister Habeck in his press conference on Germany’s current climate action status in mid-January. In order to achieve this, the Federal Government intends to work closely together with the Länder and municipalities. Amongst other things, the coalition agreement proposes a strengthening of the Federation-Länder cooperation committee. But what actually is this body?

Who talks to whom on the cooperation committee?

It is the job of the committee to monitor the expansion targets of the Länder for renewable energy and their implementation status, with a particular focus on onshore wind. The body comprises the Federal Ministry for Economic Affairs and Climate Action, all 16 Länder, the federal ministries for the environment, agriculture, transport, finance and building, and the Federal Chancellery. The members of the committee at state secretary level convene at least twice a year to discuss the status of the renewables rollout. Their work is based on the reports from the Länder and comprehensive monitoring of the progress.

The Onshore Wind Act is to stipulate that each of the Länder must provide two per cent of its area for wind turbines. Existing barriers to the expansion of offshore wind are to be cleared away. In addition to freeing up more sites in order to meet the two per cent target, the act also aims in particular to speed up and simplify planning and approval procedures. Here, the expansion of wind energy and the protection of endangered species must go hand in hand. The planned revision of the Renewable

Energy Sources Act also aims to reduce the distances between wind turbines and weather radar stations as well as omnidirectional radio beacons for air traffic. The latest meeting of the Federation and the Länder in the cooperation committee was on 16 February, when there was an intensive debate about the implementation of the two per cent target and possible options for the breakdown of the target between the Länder. The meeting was chaired by the new chairman and state secretary in the Federal Ministry for Economic Affairs and Climate Action, Patrick Graichen.

FURTHER INFORMATION

[↪ Dossier on renewable energy](#)

The energy transition toolbox

For four years, the ‘Smart Energy’ showcases developed solutions across Germany for the energy system of the future. The evaluation of the results is to be completed in May 2022.



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In five model regions (also dubbed “showcases”) all around Germany, solutions were tested for the energy transition which can serve as blueprints for other regions and other energy transition projects. The showcase regions were to pool knowledge, experience, undertake joint activities, address the technical, economic and regulatory challenges posed by the energy transition over the coming decades and try out the model solutions in practice.

Evaluation of SINTEG findings to be completed in May 2022

The focus was primarily on secure and efficient network operation where there are high proportions of renewable energy, efficient and flexible use of electricity (on the market and the network side), the

appropriate interplay of all stakeholders in the smart energy grid, the rational use of the existing grid structure, and the reduction of the need to expand the distribution grids.

The comprehensive evaluation of the results of the funding programme, which finished in 2021, is to be completed and published in May 2022.

In future, given the increasing ambition of the climate targets and the progress on the energy transition, it will become more and more important to identify the right options amongst a host of different solutions and instruments. This is only possible if the process involves not only energy experts, but also the general public.

The more modern the energy system, the more possibilities to take part

The SINTEG programme also investigated how this can work. The findings show the conditions in which people are willing to play an active part in the energy transition. The more digital and flexible the energy system, the more varied their opportunities to contribute. For example, trials were carried out to see how households can design their electricity consumption flexibly, e.g. using flexible electricity tariffs or by marketing their flexible electricity consumption on special platforms.

The Federal Ministry for Economic Affairs and Climate Action provided around €200 million in funding for the five SINTEG showcases. This meant that, together with the investment from the participating companies, more than half a billion euros was invested in the digitalisation of the energy sector.

FURTHER INFORMATION

[\[→ Article by the Federal Ministry for Economic Affairs and Climate Action: Smart Energy Showcases](#)
[\[→ Digital Agenda for the Energy Transition \(SINTEG\) funding programme](#)

Patrick Graichen is #NeuHier

Since mid-December 2021, Dr Patrick Graichen has been State Secretary in the Federal Ministry for Economic Affairs and Climate Action. What are his priority issues? Read the interview (in German only) to find out.



New to the Federal Ministry for Economic Affairs and Climate Action, but not new to the subject matter: For many years, Patrick Graichen was executive and managing director of the Agora Energiewende think tank. His focus as State Secretary in the Federal Ministry for Economic Affairs and Climate Action is on climate action and the energy transition.

In a brief interview, he explains why Germany is well equipped for the transformation of its economy, why Berlin and the Rhine make an ideal couple, and the lasting effects of a childhood in the countryside.

You can find the interview (in German) with Patrick Graichen [here](#).

Quote of the week



“Climate action has now become the prerequisite for competitiveness, innovation and prosperity.”

Federal Minister Robert Habeck during his visit to North Rhine-Westphalia on his tour of Germany

What the press say

This time in ‘What the press say’: how solar cells might be fully recycled in future, and how Africa can become Europe’s leading supplier of hydrogen.



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[Frankfurter Rundschau, 13.02.2022: “Solar cells: recycling is possible”](#)

The Frankfurter Rundschau reports on a method developed by teams of German researchers to fully recycle solar cells.

[heise online, 15.02.2022: “European Commission believes Africa can be future hydrogen supplier for Europe”](#)

heise online explains why Commission Vice-President Frans Timmermans believes that Africa offers the greatest potential to act as a renewables-based hydrogen supplier.

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