Federal Ministry
for Economic Affairs
and Climate Action

Energiewende direkt

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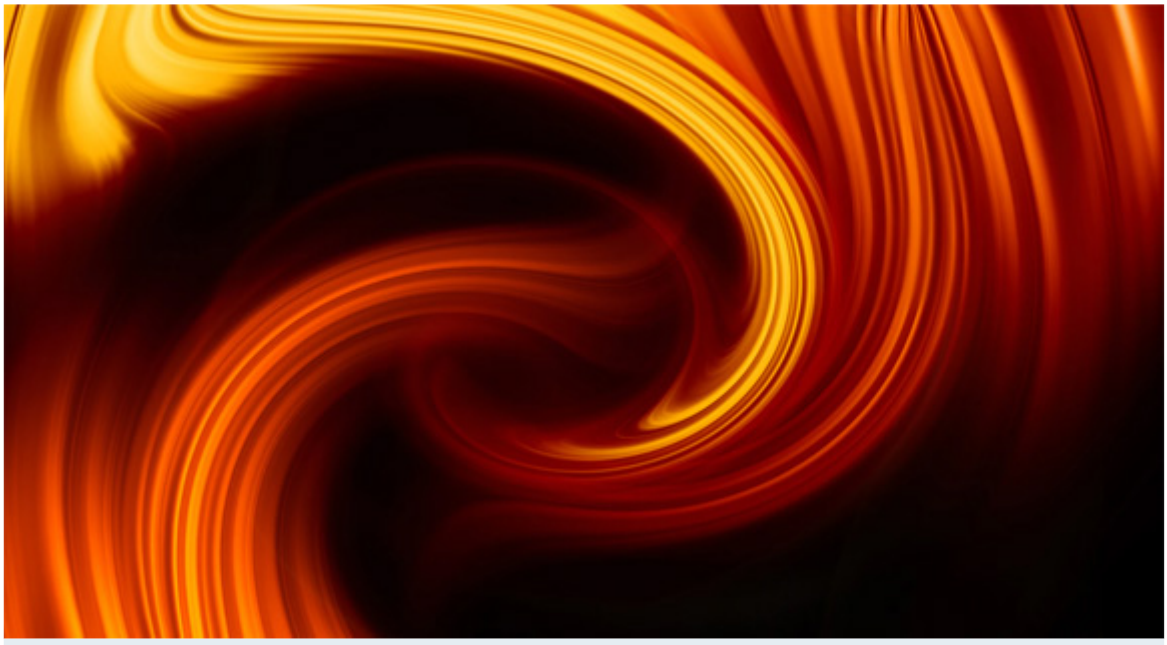
International alliance for climate change mitigation

The 2021 UN Climate Change Conference has ended with a set of compromises, but also clear pathways for mitigating climate change. Germany solicited interest in forming an international climate alliance. **Find out more**

World Energy Outlook: Time is running short

In its World Energy Outlook 2021, the International Energy Agency (IEA) looks at what impact current emissions pledges around the world will have and issues an urgent warning: the commitments made to date are not enough.



For the delegations attending the UN Climate Change Conference in Glasgow, Scotland earlier this month, difficult negotiations were in store. According to the World Energy Outlook 2021, the commitments made thus far by the 200 countries attending will be far from sufficient in order to achieve climate neutrality by 2050 and thus help to limit global warming. The annual report, which was also considered an important recommendation for action for the conference, was presented together with its main conclusions to the Federation of German Industries (BDI) on 16 November 2021, by the Executive Director of the International Energy Agency (IEA), Dr Fatih Birol, in cooperation with the Federal Ministry for Economic Affairs and Energy. The State Secretary responsible for energy policy, Andreas Feicht, also spoke at the event.

Three scenarios for making the most accurate forecasts

In order to make the best possible forecasts, the report examines different developments based upon three different scenarios. In the first scenario (Net Zero Emissions by 2050), it is assumed that the goal of climate neutrality can be achieved by 2050. This part of the report had already been published in May of this year and sets out what more is needed beyond current government commitments in order to achieve the goal of climate neutrality and keep warming below 1.5 degrees. “The Net Zero by 2050 report shows that the objective of global greenhouse gas neutrality is highly ambitious, but possible”, said State Secretary Andreas Feicht.

Climate neutral by 2050: planned measures are not enough

The new Announced Pledges Scenario (APS) looks at the national measures that countries have announced and assumes that all of the climate pledges made by governments around the world are fully implemented in a timely manner. If the all of the countries succeeded in this, carbon emissions could be reduced by up to 40 per cent worldwide. However, the average global temperature would still increase by 2.1 degrees Celsius and would thus still be too high (target: 1.5°C). The target for the world to be climate-neutral by 2050 would not be met either.

The third scenario, the Stated Policies Scenario (STEPS), bases its forecast solely on the measures and initiatives that are currently in place. It therefore predicts that if nothing were to change, emissions would remain at the same level as today. Under this scenario, global warming would rise to 2.6 degrees by 2050.

More clean energy worldwide, but also rising carbon emissions

In 2021, global coal and oil consumption again rose sharply. As a result, annual carbon emissions are heading towards their second highest level in history, despite the progress made in renewables and electric mobility. While the IEA's report describes renewable energy, electrification and other low-emission technologies as a promising and successful sector of the economy, it also makes clear that progress and growth in these areas is too slow to bring carbon emissions down sufficiently towards meeting the 2050 targets.

"The world’s hugely encouraging clean energy momentum is running up against the stubborn incumbency of fossil fuels in our energy systems”, said Dr Fatih Birol, Executive Director of the IEA.

The IEA therefore calls for worldwide climate efforts to be significantly accelerated and identifies four key areas for action to close the gap by 2050: clean electrification, curbing energy demand through

materials efficiency and behavioural change, reducing methane emissions from fossil fuel use, and boosting innovation in clean energy.

The IEA's Dr Birol also said that governments need to find solutions to the problem of high fossil fuel emissions and send "a clear and unmistakable signal that they are committed to rapidly scaling up the clean and resilient technologies of the future". He also stressed the importance of investment in this area, saying that this would have to be more than tripled over the next ten years. This is because nearly half of the savings by 2050 in the Net Zero Emissions 2050 scenario come from technologies that are at the demonstration stage today. Around 70 per cent of the additional spending required will be needed in emerging and developing countries.

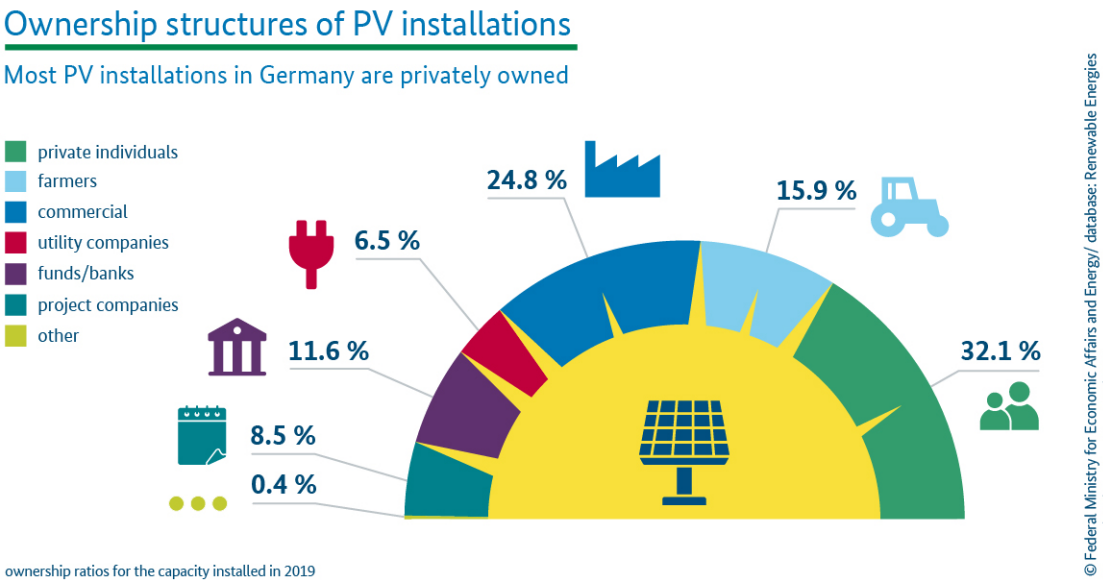
To read the Executive Summary of the WEO, please click here (German version, PDF download, 383 KB). The full report in English can be found here.

FURTHER INFORMATION

[→ More information on the IEA's World Energy Outlook 2021
[→ World Energy Outlook 2021 Executive Summary

En vogue: privately-owned PV installations

Many Germans are particularly fond of the solar electricity component within the German energy transition. Public approval rates for solar installations, their construction and enlargement are high. A study has now shown that a large portion of the installations in Germany are privately owned.



The share of renewables in our electricity generation is continuously rising. In 2020, the combined installed capacity of Germany's renewables installations was 131 gigawatts. Solar energy is particularly effective and popular with the public. According to a study conducted by the trend: research institute, the combined installed capacity of PV installations in Germany had already reached 45,800 megawatts in 2019.

The study, which was commissioned by the Renewable Energies Agency (AEE), also looked at the ownership structure of PV installations. It found that almost one third of the installed capacity (32.1%) was privately owned in 2019. This shows that German citizens are playing a decisive role in the energy transition.

Private citizens and farmers combined own almost half of the capacity installed in Germany

If you also count in solar capacity owned by farmers (15.9%), this adds up to almost half of Germany's installed solar capacity (approx. 48%). Another finding of the study was that people in commerce also like to use solar power. They owned approx. 24.8% of Germany's installed capacity in 2019. By contrast, only just above 6% of the installed capacity was owned by utilities.

An acceptance study conducted by the Renewable Energies Agency confirmed that the German public approves of solar energy. In fact, solar farms were the type of renewable energy to receive the highest approval rate at 62%. The authors of the study explain in their conclusions that those who have experienced PV installations in their daily lives are less likely to have reservations about solar energy than others. For instance, 76% of those surveyed who lived close to a solar farm approve of the construction of a solar farm in their direct neighbourhood.

FURTHER INFORMATION

- Renewable Energies Agency (AEE): "Solar power – an effective and popular source of energy"
- "Solar cells becoming ever more efficient"
- Information about renewable energy

Joining forces to meet ambitious targets

The Federation and the Länder want to better coordinate the expansion of renewables: a new Bund/Länder Cooperation Committee has been established under the 2021 Renewable Energy Sources Act. This new body has now presented its first progress report on the expansion of renewables.

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The most important objective of the 2021 Renewable Energy Sources Act is to see to it that the share of renewables in Germany's final electricity consumption rises to 65% by 2030. In order to be able to meet this target, the Federation and the Länder need to work more closely together on the expansion of renewables. A Cooperation Committee established under the Renewable Energy Sources Act has been supporting these efforts since the beginning of 2021.

In a report published by the Federation and the Länder, these find that the expansion of wind energy is picking up speed again, but not yet by anything like enough to meet the 2030 targets. Over the first nine months of this year, the number of new installations and also of approvals for new wind-powered projects has risen. But, it says in the report, the amount of land that has so far been designated for wind-powered projects in the Länder is not sufficient for Germany to attain its 2030 target for onshore wind energy. It will need quite a few more pieces of land to achieve this. The figures from 2020 also explain why much of the focus is on onshore wind energy: in 2020, 1.5 gigawatts of newly installed onshore wind energy was added to the overall tally. This is less than half the capacity set out in the 2017 Renewable Energy Sources Act and of the gross addition stipulated for 2020.

For the first time, an onshore target for wind energy to be attained by 2030 was introduced into the 2021 Renewable Energy Sources Act. This target of 71 GW of installed capacity and for annual auction volumes was made part of the legislation. In 2022, special auctions are also to be held. This will increase the volume of the auctions from 2,900 MW to a total of 4,000 MW for onshore wind energy.

You can find the report published by the Cooperation Committee and the Länder reports here. The report by the Cooperation Committee will now be used as a basis for the Federal Government's Monitoring Report on the expansion of renewables, which is to help assess the speed of the expansion.

FURTHER INFORMATION

- "Federation/Länder Cooperation Committee presents first report on the progress made on the expansion of renewables"
- Information about renewable energy
- Report by the Bund/Länder Cooperation Committee (PDF-Download, 2 MB)

What exactly is carbon leakage?

Emissions trading, carbon pricing and carbon leakage are familiar terms in the context of climate action and the EU economy. But what exactly is carbon leakage and why is it so important right now? Read on to find out.

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This is what it's all about: ringfencing Europe's climate action.

Mitigating climate change and global warming is a global task to which Europe wants to make an important contribution. By virtue of its Green Deal, Europe is seeking to become the first climate-neutral continent by 2050. For this purpose, many European countries have committed to stricter climate regulation, e.g. for their energy-intensive industries. But what if others fail to do as much?

Whilst the Paris climate agreement represents an important step towards the global coordination of efforts to mitigate climate change, it does not create a level global playing field for industry.

The European emissions trading system: carbon emissions come at a price

Europe is leading the way: The European emissions trading system (ETS) requires the energy industry, energy-intensive industries and aviation services operating within the EU to pay a price for the emissions they cause. The ETS covers almost half of all European greenhouse gas emissions, making it a key instrument for decarbonising our economy.

For each tonne of harmful greenhouse gas they emit, companies subject to the ETS must purchase ETS certificates, which they can trade with one another. This is to create economic incentives for reducing emissions and to help Europe achieve its climate targets. A company that reduces its greenhouse gas emissions will have to spend less on emission certificates. In other words, ETS is a market-based instrument that is part of our market economy.

Depending on how much effort companies have already made to curb their emissions, ETS certificates can be quite a cost factor for them. As a consequence, companies that are not subject to European emissions trading and hence do not have to purchase certificates may have a competitive advantage. When European companies decide to relocate their production and therefore also their emissions to countries that have less strict climate regimes, this is called carbon leakage. Carbon leakage is bad for the economy and for jobs in the EU. And it is bad for the climate. For this reason, the EU is trying to prevent carbon leakage. The measures taken for this purpose need to be adjusted to the higher climate ambitions enshrined in the Green Deal.

This is how the EU wants to prevent carbon leakage

Companies working in sectors that are threatened by carbon leakage receive a higher share of free ETS certificates than companies from other sectors. Prior to this, a precise impact assessment is made for each industry. The relevant industries are then designated on an official list that needs to be approved by the Member States and the European Parliament. Further to this, electricity-intensive companies in Germany receive electricity price compensation to compensate for the increased electricity costs caused by emissions trading (indirect carbon costs).

But what size of competitive disadvantage are we talking about for these companies? Let's take an example from the steel industry: the production of one tonne of steel generates some 1.7 tonnes of carbon dioxide. Multiplied by a carbon price of €50 per tonne of CO2 emitted, this results in an extra cost of €85 per tonne of steel. Assuming a steel price of €400 per tonne, this corresponds to a surcharge of more than 20%. This then raises production costs for industrial goods in the EU.

And climate action can only be successful if it is organised in a way that allows for economic prosperity, too. This is the only way to persuade emerging economies and developing countries that climate action is worth it, and it is the only way to ensure universal acceptance for climate action.

FURTHER INFORMATION

[➔ "EU climate change mitigation policies"
[➔ "The EU emissions trading system – essential for the energy transition"

Quote of the week

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“The social and economic benefits of accelerating clean energy transitions are huge, and the costs of inaction are immense”

Dr Fatih Birol, Executive Director of the International Energy Agency (IEA), commenting on the World Energy Outlook 2021

Go-ahead for green steel production

How can steel production become less emission-intensive today and what technologies can pave the way for the transformation of this venerable industry? These are questions that the project partners involved in the H2Steel Regulatory Sandbox for the Energy Transition want to find answers to. At a blast furnace in Duisburg, they will be testing the use of hydrogen in the production of pig iron over the next five years. They want to replace coal, which has traditionally been used as a reducing agent, with green hydrogen, thus lowering the level of carbon dioxide emissions from the process by up to 20%. At the same time, the H2Steel team are also working on an alternative to the traditional blast furnace, which could cut emissions by as much as 95% and more. The idea is to use hydrogen for a direct reduction process. The Federal Ministry for Economic Affairs and Climate Action is providing approx. €37 million in funding for this Regulatory Sandbox for the Energy Transition.

Federal funding for energy and resource efficiency in business updated

“Since 1 November, the new federal funding guidelines for energy and resource efficiency in business have been in force. New elements include funding for

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resource efficiency and for transformation concepts that support companies as they plan for decarbonising their business premises."

15th Energy Efficiency Award presented

At its annual energy transition congress in Berlin, German Energy Agency (DENA) awarded the international Energy Efficiency Award to five projects and one concept. Thomas Bareiß, Parliamentary State Secretary in the Federal Ministry for Economic Affairs and Energy, highlighted the high level of commitment to the energy transition that was demonstrated by the laureates: "If you smartly invest in energy efficiency and technical innovation, you will gain a competitive edge and make an important contribution to climate action." To read about the laureates' exciting ideas in detail, visit the website below. The Award was presented with support from the Federal Ministry for Economic Affairs and Climate Action and the KfW (the Federation's promotional bank)

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