



A question of security

With the waging of war on Ukraine, speeding up the energy transition has also become a question of national and European security. Germany wants to become independent of energy imports from Russia as quickly as possible and is strengthening its security of supply. [Find out more](#)



Solar power from the roof of a truck

Cars, vans and trucks with integrated solar cells can make transport more climate-friendly. A team of scientists has now developed an electric truck powered by solar energy from its own roof.



Trending: solar modules for vehicles

Vehicle-integrated photovoltaics (VIPV) is a field of study investigating how best to build solar modules into different types of vehicles. The search for the best installation solution reaches well beyond mechanical and electrical details: a major role is also played by design, particularly when it comes to cars.

VIPV is already in use on many caravans, campervans and boats. The electricity generated is used to support the battery powering auxiliary equipment.

The team of scientists of the “Lade-PV” (“PV charging”) project is studying the field of electrically powered commercial vehicles and has developed an eTruck with fully integrated PV. The 18-tonne truck produced by the researchers represents a genuine milestone: The necessary PV modules for the generation of solar power are integrated into the box body. This means that the entire surface of the vehicle’s roof can be used. The truck is equipped with a high-voltage PV system, and the solar power generated is fed into its traction battery. It covers roughly five to ten per cent of the vehicle’s energy needs.

In the project, the Fraunhofer Institute for Solar Energy Systems ISE, the Fraunhofer Institute for Transportation and Infrastructure Systems IVI and industrial partners have developed both the PV modules and the power electronics in order to integrate them into commercial vehicles. The Federal Ministry for Economic Affairs and Climate Action is providing some €2.6 million to assist the project.

FURTHER INFORMATION

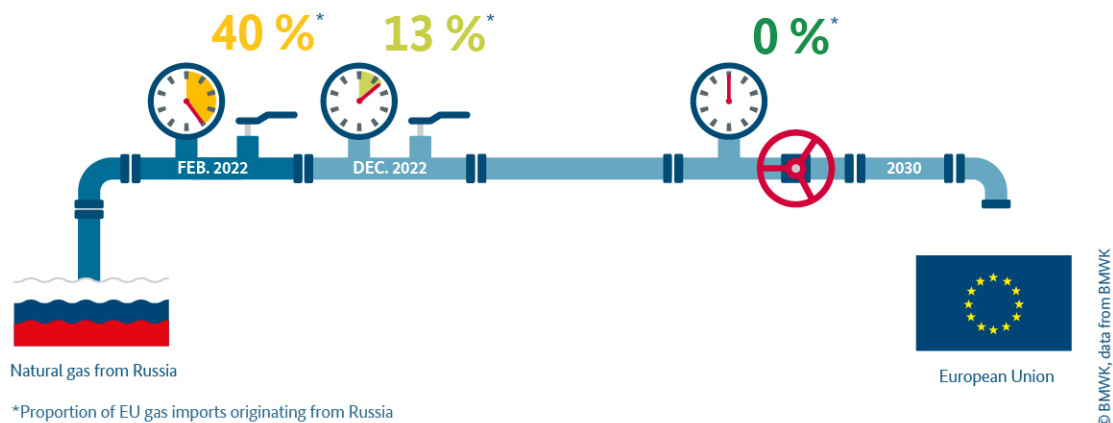
[I→ Press release by Fraunhofer ISE “Electric Truck with Fully Integrated Photovoltaics Picks Up Speed”](#)

How can we get away from gas?

40 per cent of the natural gas consumed in the EU comes from Russia. The figure for Germany is as high as 55 per cent. Plans for measures to move away from Russian gas already exist both at European and at German level. Ein overview:

The EU wants to become independent of Russian gas

EU plans: gas imports from Russia to be cut by two-thirds by the end of 2022



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The EU plans to reduce its imports of Russian gas by two-thirds by the end of 2022. To this end, it has put together the “REPowerEU” plan, and intends not least to step up the import of liquefied natural gas (LNG) from countries like Qatar, the United States, Egypt and from West Africa. The gas supply is to be diversified, and the introduction of gas from renewable sources for heating and power generation is to be accelerated. Initial estimates suggest that the European Community could be able to fully phase out Russian gas by 2030 at the latest. This will entail an enormous effort, because more than 40 per cent of the natural gas consumed in the EU comes from Russia.

As early as this summer, says Minister Habeck, Germany may no longer be reliant on Russian coal; in the coming winter, the same is to be true of Putin’s oil. However, in contrast to coal and oil, where Germany can cut its dependence on Russia far more quickly, it is not easy for Germany to take its “foot off Russian gas”. This is because Germany in particular is especially dependent on Russian natural gas: 55 per cent of the natural gas consumed in Germany comes from Russia; imports also originate from countries like Norway and the Netherlands. The fossil fuel is used primarily as a source of heat: roughly half of the German housing stock is heated by gas. In the case of new buildings, in contrast, the figure is below 27 per cent.

Minister Habeck has repeatedly warned against an immediate embargo on Russian energy imports, which could result in supply shortages in the coming winter as well as economic disruption and high inflation. The Minister says that, whilst [security of supply](#) is ensured for this winter, Germany has to be in a position to survive such an embargo over the long term. “We must not give Putin’s Russia the satisfaction of our having to take back measures because we can’t cope with the effects of our own choices,” says Habeck.

LNG imports serve as a bridge along the road to green hydrogen

Until Germany is able to manage entirely without Russian gas, imports of LNG (liquefied natural gas) are to safeguard part of the supply in the short and medium term. Germany will need special LNG terminals for this, including the necessary infrastructure connecting them to the grid, and this has yet to be built. It is to be designed in such a way that, going forward, it can be converted to transport “green” hydrogen and hydrogen derivatives.

Germany is building LNG terminals and purchasing LNG for storage

The KfW, Gasunie (a long-distance gas grid operator, a 100 per cent subsidiary of the Dutch state-owned enterprise Gasunie) and the energy utility RWE have signed an agreement to work together to build an LNG terminal in Brunsbüttel, Schleswig-Holstein. Last week, Minister Habeck agreed on a long-term energy partnership with Qatar during a visit to the emirate, and this will also involve deliveries of LNG.

Stocking up on gas, and a Gas Storage Act

Going forward, a new act on the mandatory storage of gas is also to ensure that the gas storage facilities are always adequately stocked. The European Commission has also announced a legislative proposal for April in which the underground gas storage facilities throughout the EU are always to be at least 90 per cent full by 1 October of each year.

In order to ensure the supply of gas, the Federal Government is also using long-term options to obtain additional capacity on the market and to stabilise the stocks.

“All of these are extremely great challenges which we need to tackle in real-life conditions,” said Robert Habeck following a second meeting about Ukraine and sanctions with the business community, and added “We are all working together to achieve them.”

FURTHER INFORMATION

[\[→ Press release by the Federal Ministry for Economic Affairs and Climate Action: “KfW, Gasunie and RWE sign MoU to build an LNG terminal at Brunsbüttel”](#)

IPCC Report: we are running short of time

Roughly every seven years, the Intergovernmental Panel on Climate Change publishes a comprehensive report on the impact of the climate crisis. The second part of the current report appeared at the end of February and calls urgently for swift and resolute action.



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There isn't much time left in order to ensure that climate action and climate adaptation can give everyone a liveable and sustainable future. This is the conclusion of the Intergovernmental Panel on Climate Change in the [second part of its current report](#), which was published at the end of February 2022. The report assesses the impact of the climate crisis. It focuses on ecosystems and biodiversity around the world, as well as the repercussions for people and society.

Some consequences already irreversible

The alarming conclusion is that time is running out for measures to mitigate the climate crisis. Anthropogenic climate change is already leading to more and more serious consequences, some of which are irreversible, and which many sensitive ecosystems and societies are unable to cope with. Climate change-related risks are exacerbated by other human influences like pollution and habitat degradation. Economic and social developmental patterns and policy instruments have contributed to the vulnerability of ecosystems and societies to the climate crisis.

Call for drastic emission cuts

The authors say that increased adaptation measures, coupled with better protection of ecosystems, can reduce the risks of the climate crisis. However, immediate cross-sectoral and deep-reaching changes are needed, and these must go hand-in-hand with swift and drastic emission reductions, in order to strengthen the climatic development and attain the sustainability goals.

The IPCC report is compiled roughly every seven years by the Intergovernmental Panel on Climate Change (IPCC). The IPCC is part of the United Nations. The [first part of the current report](#) appeared in August 2021, addressing the science underlying climate change. The third part is to be published in early April. It will cover the political, economic and technological possibilities to curb climate change.

In total, the second part of the report makes reference to the findings of more than 34,000 studies. 270 authors from 67 countries, including 15 from Germany, are working on this.

FURTHER INFORMATION

[\[> Further information about all the IPCC reports:](#)

What is serial retrofitting?

Costs down, comfort up, all the tradespeople under one roof, and the work gets done more quickly. Not possible? Yes, it can be done: with an innovative idea for the retrofitting of buildings which can even make distinguished old beams great at saving energy.



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This is what it's all about: Prefabricated elements can make it possible to improve the energy performance of buildings – quickly and cheaply.

Germany's building stock causes a whopping 40 per cent of the country's greenhouse gas emissions, and experts say that our buildings need to be fully modernised by 2045. This includes not only state-of-the-art insulation, but also a wide range of technical solutions like heat pumps, ventilation and photovoltaic modules. So far, however, the modernisation rates have been too low. In many cases, it's

not a question of a lack of intent: rather, the sticking point is the shortage of skilled workers or construction materials, and problems with on-site logistics.

Serial retrofitting – an innovative approach to renovation – can offer help with this. Roof and façade elements which have been prefabricated off-site and prefabricated technology which is already integrated into the elements of the building can make it possible to improve the energy performance of buildings in a rapid and sophisticated way. This cuts retrofitting costs and the time needed on-site.

A pilot project with federal funding run by the Hamelin-based company ecoworks GmbH, the first German firm to specialise in serial, carbon-neutral modernisation of buildings, shows that this innovative idea can work. Whereas 95 per cent of the products are made on-site in conventional modernisation work, ecoworks moves 80 per cent to the factory.

Quote of the week



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“We need to overcome our dependence on Russian imports of fossil fuels. The expansion of renewable energy is a matter of national and European security.”

Minister Habeck on German energy policy with in the light of the war against Ukraine

What the press say

In “What the press say”: flying over the Alps with solar fuel, cutting costs at home by saving energy, and what to do with old solar modules



[agrarheute.com](#), 16.03.2022: “End of funding under the Renewable Energy Sources Act: What should you do with old solar modules?”

The agrarheute news website has interviewed experts to find out what can be done with old solar installations, and when it makes sense to sell them.

[spektrum.com](#), 14.03.2022: “Do-it-yourself energy transition”

The magazine “Spektrum der Wissenschaft” offers the top tips for energy saving and how to do your own energy transition at home.

[spiegel.de](#), 02.03.2022: “Swiss airline to fly using solar fuel from 2023”

A Swiss airline is aiming high with solar kerosene from next year, says an online report by the “Der Spiegel” magazine.

Greenhouse gas emissions increased by 4.5 per cent in 2022

Following a significant decline in 2020, GHG emissions figures for Germany have recently risen again. In 2021, around 762 million tonnes of CO₂ equivalents were released – around 33 million tonnes or 4.5 per cent more than in 2020. Overall,

this means that emissions in Germany have fallen by 38.7 per cent since 1990. The increase last year was particularly marked in the energy sector, which counted an increase of 27 million tonnes of CO2 equivalents. The figures are based on current calculations by the Federal Environment Agency (UBA). The Federal Ministry for Economic Affairs and Climate Action has announced an extensive immediate action programme to support climate change mitigation.

Congress on energy efficiency research for industry and commerce

From 17 to 18 May 2022, a congress on energy efficiency research for industry and commerce will be held at Tagungswerk Berlin to show how new innovations and trends emerge as a result of research projects on energy efficiency. The event will include lectures, discussions, workshops and networking opportunities with representatives from government, research and business. Parts of the event will be broadcast online and participation is free of charge.

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