



Full of energy for Europe

For six months, Germany held the Presidency of the Council of the EU, and its ambitious energy policy was able to give a boost to clean growth and innovation. [Find out more](#)



Green hydrogen from Chile using technology 'Made in Germany'

A pilot project in sunny and windy Chile aims to show whether and how green hydrogen can be produced sustainably there and marketed globally. Innovative technologies and processes 'Made in Germany' will come into play.



Chile stretches 4,300 kilometres along the Andes and the Pacific coast, with plenty of sunny desert areas and lots and lots of wind in between. Given these conditions, the South American country has a lot of potential to generate hydrogen from wind, hydropower and the sun, and hopes soon to emerge as a major exporter of [green hydrogen \(in German only\)](#). Hydrogen is regarded as a key priority for the realisation of the energy transition, particularly in some industrial and transport sectors where it is difficult to cut emissions. Germany could be a market for climate-neutral Chilean hydrogen.

The 'Haru Oni' power-to-X project is the first international green hydrogen project to receive funding from the stimulus package by the Economic Affairs Ministry as part of the National Hydrogen Strategy. In early December, Economic Affairs Minister Peter Altmaier presented Siemens Energy with an approval notice worth €8.23 million for this project, and said: 'German companies are at the very forefront of global hydrogen technologies. The 'Haru Oni' project is a good example of this. The project demonstrates that it is possible to sustainably produce green hydrogen and its derivatives with the help of the latest technologies 'Made in Germany', for instance in Chile.

Siemens Energy is developing the world's first integrated commercial installation for the production of climate-neutral fuel near the Patagonian city of Punta Arenas in the south of Chile. The synthetic fuel (eFuel) is to be made from hydrogen produced using wind power and the CO₂ captured from the air. Background: as Germany's ramps up hydrogen production for the market, it is counting not only on a strong domestic market, but also on pilot projects conducted by German firms in partner countries where green hydrogen and its derivatives can be produced efficiently and at a low cost. The Chilean project could also help Germany to build up reliable import capacities and to position German firms on this forward-looking market.

The 'Haru Oni' PtW project translates innovative technologies and processes fresh from the lab right into application. In the pilot phase, some 130,000 litres of eFuel will be generated in 2022. The capacity is then to be raised to around 55 million litres of eFuel a year by 2024, and around 550 million litres by 2026. The objective is to implement these technologies on an industrial scale. In addition to Siemens, further international partners will be involved in the project, including the German firm Porsche AG as a client for the synthetic fuel.

The Chilean project is the first hydrogen-related project under the [National Hydrogen Strategy](#) to receive funding from the Stimulus and Future Package. The package earmarks a total of €9 billion for the implementation of the National Hydrogen Strategy, including €2 billion for international projects in selected partner countries. Chile and Germany have been linked by a bilateral [energy partnership](#) since 2019. Energy partnerships facilitate an energy-policy dialogue at governmental level and provide impetus for energy-policy innovation and for economic cooperation on the path towards a global energy transition.

FURTHER INFORMATION

[\[→ Press release by the Federal Ministry for Economic Affairs and Energy: 'Haru Oni PtW project: Minister Altmaier hands over first approval notice for international green hydrogen project'](#)

[→ [Video from the Federal Ministry for Economic Affairs and Energy: 'Press conference marking the handing over of an approval notice for funding for a green-hydrogen installation in Chile'](#) (in German only)

[→ [Further information about the energy partnership between Germany and Chile](#)

[→ [Publication by the Federal Ministry for Economic Affairs and Energy 'The National Hydrogen Strategy'](#)

[→ [Federal Ministry for Economic Affairs and Energy dossier: Hydrogen: a key element for the energy transition](#) (in German only)

Alliance for a cross-border energy transition at sea

Germany chaired the North Seas Energy Cooperation for a year. In this group, nine countries and the European Commission work together to develop offshore wind energy and the grid infrastructure at sea. Here's an initial review.



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What a gigantic task Europe has taken on: our continent is to become climate-neutral by 2050. An important key to achieving this can be found far out at sea. In the offshore sector alone, according to data from the European Commission, 300 gigawatts of installed capacity (wind power) and investment of €800 billion is needed to achieve this ambitious goal. This could help offshore wind to become one of the most important sources of renewable energy with a view to climate neutrality and a driving force for the recovery of the European economy following the COVID-19 pandemic. However, this will be difficult to achieve without cross-border European cooperation, as the potential European contribution of offshore wind energy by 2050 is more than ten times today's installed capacity of 23 GW. Annual installation rates of currently 3 gigawatts per year will have to scale up considerably in the coming years.

Nine countries, one goal: more offshore wind energy in the North Sea

It is already the case that more and more wind power generated offshore is reaching the shores of the North Sea. Nine European countries wishing to use it, and the European Commission, are therefore working together in the North Seas Energy Cooperation (NSEC) to develop offshore wind energy and the grid infrastructure at sea. Over the last twelve months, Germany chaired this energy cooperation forum. The focus is on the expansion of offshore wind energy and offshore grid infrastructure in the region. A particularly important role is played by joint and 'hybrid' projects (offshore wind projects in which the powerlines are interconnected or are connected to the coastlines of several Member States). They thus embrace the generation, transport and cross-border trade of electricity. Hybrid projects can make cost-efficient use of more remote areas and areas located in border regions of the Exclusive Economic Zones for the expansion of offshore wind power. For example, existing wind farms from several countries are to be linked up so that a powerline is created between two or more countries – as happened recently between Denmark and Germany. This joint grid can be used to bring offshore wind power on shore, and also for cross-border electricity trading ([as reported](#)).

At the online ministerial meeting between the energy ministers of the North Seas countries and Kadri Simson, the EU Commissioner for energy policy, Germany made a positive initial assessment of its period as chair, and handed the baton on to Belgium. The meeting focused mainly on the implementation of the EU's Offshore Renewable Energy Strategy and Commission initiatives envisaged for 2021.

A special focus under the German chair was placed on the advancement of joint and hybrid offshore wind projects like that between Denmark and Germany, and an appropriate European policy framework to improve cooperation on the use of offshore wind energy. Here, Germany and its partners succeeded in making key substantive progress and drawing attention to these issues.

EU Offshore Strategy takes up many issues from the NSEC declaration

In a [joint declaration](#) in July 2020, the North Seas countries called on the European Commission to present an EU Enabling Framework for joint and hybrid projects. The framework is to provide EU guidelines for the Member States implementing such cross-border projects, e.g. on an appropriate distribution of costs and benefits, appropriate electricity market rules, and improved and efficient EU funding. The work and ideas from the NSEC fed into the Council conclusions fostering European cooperation in offshore and other renewable energies, which were agreed during the [German Presidency of the Council of the EU](#). The European Commission's Offshore Strategy, published on 19 November 2020, also takes up many elements which were already contained in the joint declaration by the North Seas Energy Ministers, and particularly proposals on how an EU Enabling Framework for cross-border offshore renewable energy projects can tackle impediments to cross-border offshore renewable projects. The Commission's strategy forms the basis for further discussions and specific guidelines, measures and legislative initiatives to be proposed in the coming years and discussed and negotiated with the Member States.

Belgium taking over NSEC chair in 2021

Belgium, which is taking over the chair of the NSEC in 2021, intends to continue work on the dossier. A further three-year extension to the NSEC cooperation is to be adopted under the Belgian chair. This will involve a renewed exploration of the possibilities for cooperation with the United Kingdom,

which plays an important role in terms of offshore wind projects in the North Sea, following its departure from the EU.

The aim is that, soon, the German-Danish example of offshore interconnection will not be the only 'hybrid' interconnector. Other projects in the North and Baltic Sea are already being planned, e.g. the [Danish energy hubs](#) (Danish project in the North Sea and Baltic Sea) and the North Sea Wind Power Hub (between the Netherlands, Germany and Denmark).

FURTHER INFORMATION

[\[→ Press release by the Federal Ministry for Economic Affairs and Energy: 'Federal Minister Altmaier chairs video conference of EU energy ministers and hands over chair of North Seas Energy Cooperation to Belgium'\]](#)

[\[→ Article by the Federal Ministry for Economic Affairs and Energy: The North Seas Energy Cooperation\]](#)

[\[→ Article by the Federal Ministry for Economic Affairs and Energy: The winds of change are blowing over the North Sea\]](#)

[\[→ Article by the Federal Ministry for Economic Affairs and Energy: What exactly is the North Seas Energy Cooperation?\]](#)

What actually are carbon contracts for difference?

Carbon contracts for difference can help to make energy-intensive sectors more climate-friendly. Who promises what to whom in a carbon contract for difference? Come this way to find out more!



This is what it's all about: sectors and companies receive grants towards operating and investment costs for the use of low-carbon technologies. These take account of their additional carbon-avoidance costs.

Like every good contract, a carbon contract for difference is about making and keeping a mutual promise. If all goes well, both sides benefit. In this case, the benefits are on a grand scale: for our climate and the future of our industrial firms. Sounds as though we're exaggerating? Germany's manufacturing industry employs around seven million people, and roughly 15% of them work in energy-intensive sectors. The latter are responsible for a fifth of the country's greenhouse-gas emissions. In the time up to 2050, the sector is to be made entirely greenhouse-gas-neutral. For this reason, the Federal Government has drafted both the Hydrogen Strategy and the '[Steel Action Concept](#)' for an internationally competitive and climate-neutral steel industry. After all, for energy-intensive sectors like steel and chemicals, the path to climate-friendly production is particularly challenging. They need a reliable basis on which to plan and a clear policy framework. Carbon contracts for difference can help here.

Origins in the financial sector

Contracts for difference hail from the financial world. They help to hedge against volatile prices, e.g. for shares or commodities. The seller and the buyer agree on a strike price for a certain product at a certain time. If the agreed price is below the market price at that time, the buyer has to pay the seller the difference between the agreed price and the market price. If the market price is higher than the strike price, the opposite happens: the seller has to pay the difference to the buyer. So this instrument is a good way of alleviating the risks of investing.

The mechanism can be used not only to hedge against uncertain price movements, but also to make new technologies competitive. Carbon contracts for difference (CCfDs) can for example be used to support greenhouse-gas-neutral manufacturing processes. These tend to be more expensive than the use of conventional technology, but are urgently needed in order to decarbonise the industrial sector.

How CCfDs work in practice

So what does this actually mean? Here's a highly simplified example of two energy-intensive industrial companies: Company A uses conventional technology, has production costs of €10 for a product, and must additionally spend €5 on emission allowances for the carbon emissions generated in the production process. So the total production costs for the product are €15. As long as the carbon price is relatively low, the production using conventional technology in Company A is cheaper than in Company B, which uses a more expensive, greenhouse-gas-neutral technology and has production costs of €16. The carbon avoidance costs for Company B amount to €6. The state and Company B can now conclude a CCfD which offsets the difference between the market price for emission allowances and the carbon avoidance costs. In our example, this difference is one euro (six euros carbon avoidance costs minus five euros for the emission allowances). If the market price for emission allowances is lower than the carbon avoidance costs, the state pays the difference to Company B. If it is higher, Company B must pay the difference. In the case of energy-intensive industry, however, the avoidance costs are often far higher than the costs of emission allowances. In this case, CCfDs ensure that climate-friendly technologies can compete with conventional technologies. The advantage of a CCfD is that it takes account of a company's actual avoidance costs and its possibilities to pass them

on on the market. If, over time, changes arise in the price of emission allowances, for example, or in the field of EU measures to prevent carbon leakage, the difference payments can be adjusted flexibly.

A reliable basis for investment and incentives for carbon reduction targets

The Hydrogen Strategy adopted by the Federal Government in June 2020 envisages that CCfDs can be used by energy-intensive industrial companies in a pilot scheme. CCfDs give the companies a reliable basis on which to invest, coupled with incentives actually to attain the promised carbon reduction targets. They are therefore an important instrument to help climate-friendly industrial processes to reach market maturity and to break through on to the market. They can create stable demand for hydrogen and would thus have a positive impact on the supply side.

FURTHER INFORMATION

[\[→ Brochure by the Federal Ministry for Economic Affairs and Energy: 'The National Hydrogen Strategy'](#)

[\[→ Publication by the Federal Ministry for Economic Affairs and Energy: 'Combatting climate change and boosting the economy'. Proposal for an alliance of society, business and government to promote climate neutrality and prosperity](#)

[\[→ Brochure from the Federal Ministry for Economic Affairs and Energy: 'For a strong steel industry in Germany and Europe'](#)

Quote of the week



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'By setting itself ambitious expansion targets up to 2040, Germany is building further on its pioneering role in the field of offshore wind energy. The price of green electricity from offshore wind energy keeps falling, making offshore wind a key pillar in the German and European energy transition.'

Peter Altmaier, Federal Minister for Economic Affairs and Energy, on the increase in the expansion target for offshore wind energy

What the press say

This time in 'What the press say': What course the heads of state and government want to set five years after the Paris Climate Agreement, and why the roll-out of green electricity is going to pick up speed



[zeit.de, 14.12.2020: 'Grand coalition agrees on speedier roll-out of green electricity'](#)

The online edition of Die Zeit reports on the grand coalition's plans for a more rapid expansion of green electricity. Municipalities are to be compensated for the construction of wind turbines, and old wind turbines are not to be dismantled. In this way, the coalition aims to attain higher climate targets (in German only).

[sueddeutsche.de, 12.12.2020: 'Change in course for climate change mitigation'](#)

Five years after the conclusion of the Paris Agreement, the heads of state and government met online to take stock and discuss new targets. Sueddeutsche.de summarises the results of the meeting (in German only).

Results of the first auction to reduce coal-fired power generation

The Federal Network Energy has announced the successful bids in the first auction round under the Act to Phase Out Coal-Fired Electricity Generation. As planned, more than four gigawatts of coal-fired power plant capacity is to be taken off the grid before the end of this year. Auctions for decommissioning will

take place from 2020 to 2026. In return, operators of coal-fired power plants receive compensation. The provisions governing the compensation to be received by operators of coal-fired power plants using hard coal have already been approved by the European Commission.

Offshore Wind Energy Act in force (in German only)

The revised version of the Offshore Wind Energy Act entered into force on 10 December 2020. It raises the expansion target for offshore wind energy from the present level of 15 gigawatts to 20 gigawatts by 2030. The target for 2040 is 40 gigawatts. Furthermore, offshore wind turbines can now be erected more quickly and better coordinated with the expansion of the power grid.

New call for bids for funding for carbon capture and utilisation in the basic materials industry (in German only)

The Federal Ministry for Economic Affairs and Energy has launched a new call for bids for funding, addressed to the basic materials industry. Innovative processes are to enable the capture and use of carbon dioxide and thus cut industrial CO₂ emissions. This will not least require the further development of carbon capture and utilisation (CCU) technologies. In Germany, the industrial sector accounts for roughly 20% of carbon emissions, and around 30% of these emissions are process-related. It is true that German industrial companies already cut their carbon emissions by around 30% between 1990 and 2018, but much still remains to be done: In order to further reduce these greenhouse gas emissions, it is important to step up the efforts to cut carbon emissions in particularly energy-intensive industrial sectors like the cement, chemicals or steel industry. The optimisation of carbon capture methods and the development of efficient processes for the use of CO₂ are important ways to reduce process emissions which cannot be avoided or which are very difficult to avoid.

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