



## How much are we hitting the gas?

New Gas 2030 dialogue process looks at the importance of natural gas, hydrogen and others in the energy mix of the future. [Find out more](#)

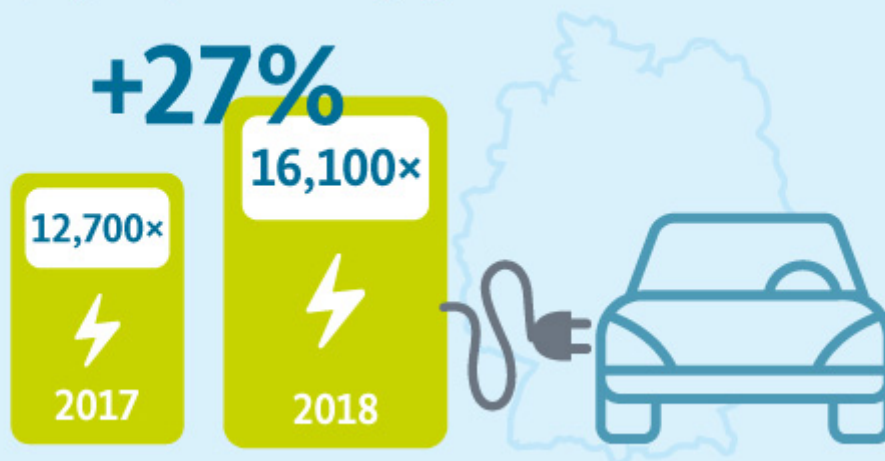


## Electric mobility: infrastructure expansion greatly accelerated

Infrastructure for electric vehicles is growing at a rapid rate. At the end of 2018, the number of public charging points registered with the German Association of Energy and Water Industries was up 27% on the year before.

### Expansion of charging infrastructure gaining traction

Around 3,400 publicly accessible charging points were built in 2018.



Infrastructure for electric cars is being developed at greater speed: over the past year, the number of public charging points in Germany has risen from around 12,700 to approx. 16,100. This marks an increase of just under 27%. These are figures from the German Association of Energy and Water Management (BDEW), which collects data about public and part-public charging points in a [charging points register](#). More than three quarters of the charging points are operated by energy companies. Germany's network agency, the Bundesnetzagentur, also records all new charging points in a Germany-wide [map of charging points](#).

## EU Commission recommendation exceeded

At the end of 2018, a total of 150,000 (plug-in) electric cars were registered with Germany's Federal Motor Transport Authority. With 16,000+ charging points in the country, this means that Germany has exceeded the European Commission's recommendation of providing at least one charging point for every ten electric cars. According to the German Association of Energy and Water Management, "Infrastructure expansion will keep pace even with the growing number of electric cars."

The Federal Motor Transport Authority is seeing an upward trend in the number of electric cars being registered. **Of the approx. 3.5 million new passenger cars registered last year, 36,000 were electric cars – an increase of 44% over the previous year.** In addition, almost 31,500 plug-in hybrids were newly licensed (+6.8%).

## Hamburg has highest number of charging points per million inhabitants

Most of the publicly accessible charging points where drivers of electric vehicles can recharge their batteries are in Bavaria (3,618), North Rhine-Westphalia (2,739) and Baden-Württemberg (2,525). This [map of Germany](#) shows the location of charging points across all of the Länder. When it comes to the number of charging points per capita in each Land, distribution figures are different again: with 461 charging points per million inhabitants, Hamburg comes in top, followed by Bavaria with 280, and Baden-Württemberg with 231. At the lower end of the scale, the Saarland offers 69 charging points per million inhabitants, and Mecklenburg-Western Pomerania 78.

The German government wants to expand the charging infrastructure available for electric vehicles even more. The Federal Ministry for Economic Affairs and Energy has set aside €176 million in funding for this task up to 2020. Key aims here are to create charging facilities for private-vehicle owners who cannot park and charge at home, and to motivate companies to set up charging facilities for company vehicles and private vehicles owned by employees. For more information on Federal Government incentives for expanding the charging infrastructure and purchasing electric vehicles, please click [here](#).

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# Identifying the need for maintenance using remote-controlled submarines

Hurricanes, waves and salt water: wind turbines at sea have to withstand a great deal. Sending down divers to look for damage is expensive. This is why the Federal Ministry for Economic Affairs and Energy is funding a research project for automatically evaluating information about the condition of installations.



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Offshore wind farms can be located up to 100 kilometres from land. At these distances, they not only become covered in seaweed and shells, but are also particularly attacked by rust. In order to protect the outer layer of the towers, various different coatings are used both underneath the water and in the splash zone above the water's surface. Although these extend the installations' service life, they cannot prevent them from ageing completely.

Operators must regularly check the wind turbines to see what condition they are in. Up to now, this has been done by divers, but their work out at sea is time-consuming and costs a lot of money. In the future, however, checks on turbines are to be conducted by drones and mini-submarines called remote operated vehicles (ROVs). Experts from companies and universities are joining together to research how ROVs can document the condition of wind turbines in order to save time and money. This includes the use of cameras and of other innovative technology. The aim is to enable the maintenance specialists to evaluate the data in real time on the mainland and to maintain or repair the installations as soon as this is needed.

## Maintenance work becomes more predictable and less expensive

As part of the IsyMoo research project, sensors are being tested that are integrated into the coatings on the turbine towers. If the sensors recognise a change in material, for example, they forward this information to a drone or an ROV. These then transmit the sensor information to the control centre

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together with images taken by thermal imaging cameras and signals generated by ultrasonic systems. The acronym IsyMoo stands for 'Intelligent integrative systems for monitoring surface protection systems on offshore wind energy structures'.

As part of the research project, the photos and data obtained are to be automatically evaluated by technology such as machine-learning. This involves using a computer programme that continuously learns and grows in knowledge based on the information that is fed in, serving to speed up the rate at which visible damage is detected. In this way, the maintenance personnel receive ever more precise information about the condition of the wind installations. This information can be used to consistently optimise maintenance cycles. As repair costs at sea are extremely high, this can serve as a vital step in reducing operating costs.

The Federal Ministry for Economic Affairs and Energy is providing €1.3 million in funding for the IsyMoo project up to the end of May 2021.

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#### FURTHER INFORMATION

[\[> Information on wind energy research](#)

[\[> Brochure by the Federal Ministry for Economic Affairs and Energy on offshore wind power](#)

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## Quote of the week



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"We need to reconcile climate protection with achieving economic success and social balance – on a sustainable basis. Only if the EU remains a competitive industrial location will our climate protection policy be emulated by other countries around the world."

**Mr Thomas Bareiß, Parliamentary State Secretary at the Federal Ministry for Economic Affairs and Energy**

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# Conference in April: register now to attend the Berlin Energy Transition Dialogue

From 9 to 10 April, high-ranking energy experts from all over the world will come together once again to discuss the energy transition at this year's Berlin Energy Transition Dialogue, to be held at the Federal Foreign Office. Last year, more than 2,000 experts from over 90 countries attended, including 40 Ministers and State Secretaries. Registration to attend the event must be made by 31 March 2019.

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