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## TenneT and BMW: Right of way for green energy thanks to intelligent charging control of electric cars

- **Joint pilot project shows the potential of intelligent charging control for electric cars in supporting grid stability**
- **Digital integration makes electromobility an important component of the energy transition**

A joint pilot project of the transmission system operator TenneT and the BMW Group has now shown how the charging strategy for electric vehicles can be intelligently adapted to the capacity utilisation in the power grid and the availability of renewable energy. The pilot project could represent the basis for a realisation of this solution at a larger scale.

The rise in renewable energy and electromobility poses a challenge to the security of supply: The key is to coordinate power generation and power consumption and, at the same time, ensure the stability of the power grid. "If we digitally integrate electric cars into the power grid, the charging processes can be coordinated with both the mobility needs of the drivers and the demands of grid stability. In this way, intelligent charging control can contribute to avoiding congestion in the power grid while giving the right of way to green energy," says TenneT Managing Director Tim Meyerjürgens. "We are opening up new ways of flexibly controlling the highly weather-dependent renewable electricity production. This lowers the burden on the power grid, allowing intelligent charging control of electric cars to supplement grid expansion measures and become one of the components of the energy transition."

Within the framework of the pilot project, the BMW Group used intelligent charging control and interconnected electronics in the pilot vehicles to register and process signals from TenneT concerning the threat of grid overloads, temporarily interrupting the charging of selected BMW i3s. The freed-up power could be used by TenneT to balance out grid congestion, thereby avoiding the use of conventional fossil power stations.

Nowadays, due to the increasing decentralised infeed of renewable energy sources, congestion is becoming ever more common in the power grid. To prevent such congestion, TenneT intervenes in the production of conventional power stations (redispatch) and renewables (wind power curtailment), thus ensuring that electricity transport remains within the transmission capacity of the grid. The associated costs across Germany in 2018 amounted to approximately 1.4 billion euros, of which about 500 million euros can be attributed to interventions in conventional production. These costs are ultimately borne by electricity consumers through grid charges. As the energy transition progresses, new types of flexibility such as electromobility should take on the duties of conventional power stations. TenneT is therefore using the pilot project with the BMW Group as well as other pilot projects to test which decentralised types of flexibility can be used in the future to stabilise the grid, in the interests of finding tomorrow's solutions today.

### TenneT

TenneT is one of the leading transmission system operators in Europe. With approximately 23,000 km of high-voltage and extra-high voltage lines in the Netherlands and Germany, we offer reliable and safe power supply to 41 million end users. With a workforce of roughly 4,500, we earn revenue of EUR 4.2 billion. At the same time, we are one of the largest investors in national and cross-border transmission grids on land and at sea, bringing together the north-western European energy markets and facilitating the energy transition. As a responsible, committed and networked company, we always act with the needs of society in mind. **Taking power further**

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