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Launch of the innovative LadeFlexBW pilot project: Smart charging of electric vehicles stabilises electricity grids

- **A collaborative project between TransnetBW, Netze BW and Intelligent Energy System Services (IE2S) is testing grid- and market-friendly charging under real-world**
- **Field test without smart meters and without changing suppliers – low-threshold and remunerated**
- **System architecture designed for scalability from the outset: from a few hundred to tens of thousands of electric vehicles**

Stuttgart. With the launch of the "LadeFlexBW" pilot project, a novel field trial is getting underway in Baden-Württemberg to explore the intelligent, market- and grid-friendly control of private electric vehicles. The aim of the project is to integrate electric cars into the electricity system as flexible, decentralised energy components under real-world conditions: automated, user-friendly and remunerated. Unlike many previous approaches, LadeFlexBW does not rely on simulations or closed test environments, but on a real-world field trial involving private electric vehicles.

"The importance of micro-flexibility for the electricity grid is growing steadily as the energy transition takes shape. LadeFlexBW is a concrete step towards testing precisely this potential under real-world conditions: market-based, voluntary and without compromising the convenience of electric vehicle users. "As a transmission system operator, we need such real-world laboratories to move as quickly as possible from pilot project to nationwide implementation," says Dr Oliver Strangfeld, member of the TransnetBW management board, with conviction.

"We are creating a revenue model that rewards users for something they do anyway: charging their electric vehicle. The key difference is that we are harnessing the flexibility behind this – for the market, for the grid and for the participants' wallets. This is the approach we now want to test in the field," adds Dr Dominique Gross, Managing Director of Intelligent Energy System Services (IE2S).

Innovation under real-world market conditions

In Germany, the roll-out of smart meters continues to lag behind the requirements for harnessing decentralised flexibility. A particular innovative aspect of LadeFlexBW is that the field test is deliberately being conducted without the use of intelligent metering systems (smart meters / iMSys). Instead, operations are carried out within the existing standard load profile (SLP) environment, as is currently the norm for the majority of private households in Germany. In doing so, LadeFlexBW demonstrates that grid- and market-friendly charging of electric vehicles is already feasible under the current regulatory and metering framework – and can thus bridge the gap until the smart meter rollout has progressed further.

At the same time, participation in LadeFlexBW is entirely independent of users' existing electricity supply contracts. There is no need to switch energy suppliers or adjust electricity tariffs. The marketing of flexibility is separate from energy supply and affects neither contractual relationships nor the billing of electricity consumption.

A new revenue model for end customers – accessible and scalable

Flexibility trading is thus a standalone, complementary revenue model for end customers – low-threshold, customer-friendly and compatible with existing market structures. The approach follows the European trend towards greater demand response – that is, the active participation of consumers in the energy market, as promoted at EU level by ACER, amongst others. LadeflexBW combines automated charging

optimisation based on real-time grid and market signals, the aggregation of vehicle flexibility via a digital pooling platform, and transparent remuneration models for participants into an integrated overall system..

The system architecture has been designed for scalability from the outset, from a few hundred to tens of thousands of electric vehicles. In this way, LadeFlexBW makes an important contribution to integrating electric mobility into the energy system quickly and economically, as well as in a practical and system-friendly manner.

Real-world laboratory for the energy transition – insights for policy, the market and the grid

The field trial is specifically aimed at private electric vehicle drivers in Baden-Württemberg. Participants charge their vehicles as usual; charging times are optimised automatically in the background. At the same time, they receive financial compensation for the flexibility they provide.

The insights gained from LadeFlexBW provide valuable impetus for the further development of energy and grid tariff systems, new digital charging and mobility services, regulatory models for the use of decentralised flexibility, and the integration of electric mobility into an increasingly renewable energy system.

Join now – use electric vehicles as energy building blocks

We are currently still looking for committed users from Baden-Württemberg who would like to take part in the LadeFlexBW pilot project with their electric vehicle.

Interested private electric vehicle owners with their own wallbox in Baden-Württemberg can find further information about the project and the process at www.ladeflexbw.de.

For further information, please contact:

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About IE2S:

IE2S is a specialist and technology consultancy operating at the intersection of the energy and mobility transitions. As an operationally independent joint venture between the transmission system operator TransnetBW and the IT and management consultancy MHP, we bring together network knowledge, digital expertise and specialist know-how from the automotive and manufacturing sectors in a unique combination. Our team of around 100 experts supports clients in addressing strategic and technical challenges – from physical and digital energy infrastructure, through energy industry and regulatory issues, to service and product development. We have created sustainable added value in more than 350 projects: environmentally effective, economically viable and socially responsible.