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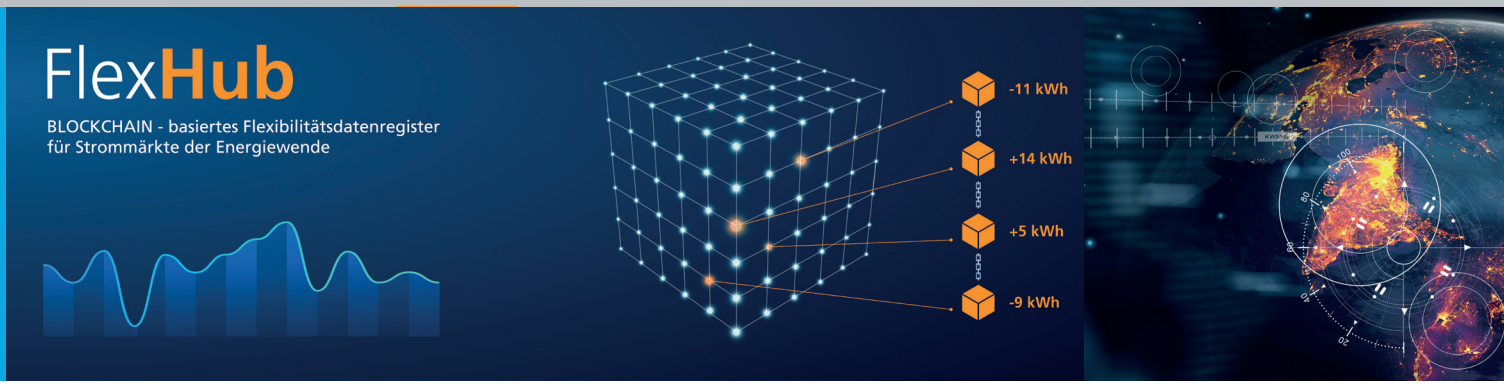

FLEXHUB – DISTRIBUTED FLEXIBILITY DATA REGISTER FOR ENERGY SYSTEM TRANSFORMATION ELECTRICITY MARKETS

The energy system transformation confronts grid operators and supply companies with the task of continuing to guarantee more secure grid operation for a large number of volatile generation plants. The biggest challenge, apart from grid expansion, is to make electricity generation and demand more flexible through intelligent control and the creation of incentives.
As part of the BMWi project FlexHub Fraunhofer FIT, FGH e.V., Fraunhofer FKIE, HAW Hamburg, Kiwigrid GmbH, Mitteldeutsche Netzgesellschaft Strom mbH and RWTH Aachen University are developing a distributed flexibility data register for the electricity markets.

The flexibility data register is implemented in such a way that all decentralised generation plants connected to the grid are connected via a secure infrastructure, whose available market and grid-related flexibilities with the relevant measurement and forecast data can be made available via a distributed system. This enables the contracting of flexibility between the market roles involved – such as aggregator, distribution grid operator, transmission grid operator, balancing group manager, metering point operator and end customers. An application for the contracted flexibilities could be congestion management through intelligent demand side management.

The aim of the project is to develop a distributed flexibility data register. Within the development the feasibility of the blockchain technology for this application will be investigated. In the course of the project, the developed flexibility data register will be integrated into a laboratory of the RWTH Aachen University and tested in a field test at the Mitteldeutsche Netzgesellschaft Strom mbH. Besides the pure development of the flexibility data register, a core objective of the research project is the investigation of the communication-related connection of the decentralized flexibility resources, including the possible integration of the smart meter infrastructure.

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