

## Smart Energy Components - Foundation of A Decentralised Energy Supply\*

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\* Presented at the 43<sup>th</sup> IBIMA International Conference, 26-27 June 2024, Madrid, Spain

### Abstract

The energy sector is facing a significant change from a centralised to a decentralised energy supply. In order to successfully implement this change, smart control of the technologies used is essential. This paper first analyses the motivation for using these intelligent energy components and then examines the main components of smart energy and the Internet of Energy in detail. The analysis focuses on the way in which these technologies can contribute to increasing efficiency, reducing costs and increasing energy security. It also identifies obstacles to the implementation of this concept, such as maintaining grid stability, increasing energy efficiency and storing energy. Finally, the current state of development is presented and the further path to a functioning decentralised energy supply is described.

**Keywords:** Energy transition, smart energy, electricity, generation, storage system, grid stability, system stability, grid expansion, electricity, grid financing