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Energy Storage

Sources and additional information:

<http://www.physikalischesoiree.at/archives/2869>

WU Wien, Deloitte, Wien Energie: Studie Erneuerbare Energien in Österreich 2015

Section:

The future-oriented technology of energy storage



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With the ever increasing share of renewable energies in energy supply, energy storage for electricity and heat is becoming increasingly important. Decentralized electricity storage systems are one of the essential elements that determine the successful conversion to a sustainable energy system. The rate of adoption of storage solutions for electricity produced by photovoltaics in the household sector is currently low due to the high acquisition costs in Austria.

If the storage of an energy form is not possible due to technical inadequacies, inadequate capacity, loss or standstill, the energy is converted and stored in another form of energy that is more suitable for storage.

If necessary, the energy can then be converted back. It should be noted that losses occur in the form of released heat both during storage and during energy conversion.

Electrical energy itself is difficult to store directly (this is only possible in capacitors or superconducting coils). However, it is usually more economical to convert the energy into another type of energy and, if necessary, to revert it. It should be remembered that each conversion is loss-prone and the memory can lose energy itself over time

According to a study by WU Wien, Deloitte and Wien Energie (Renewable Energies in Austria 2015), a quarter of the photovoltaic owners decided to install an electricity storage in the future. In addition, photovoltaic owners are willing to pay an average 10% surcharge for an included electricity storage. At present, the costs for an electricity storage are exclusive installation costs for a family home between 1,500 and 2,600 Euros per kWh storage capacity.

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