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The Regional and Social Impact of Energy Flexible Factories

by

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15th Global Conference on Sustainable Manufacturing

The regional and social impact of energy flexible factories

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Abstract

The change of electricity supply from conventional to renewable energy sources is a challenge for the whole society. This transition causes an increase of volatility in electricity supply and therefore threatens both, grid stability and, also, electricity price stability. Besides cost-intensive countermeasures such as grid expansions and power-to-X storage technology, the incentivized change in electricity use (energy demand flexibility) is a promising approach. Today, when it comes to production matters, energy is considered as a resource which is immediately available on demand. In contrast, future scenarios draw a picture, in which electric energy will become a resource that requires planning and control. Energy flexible factories will be an important part of our society with an important ecological and social impact. The paper presents a transdisciplinary approach to shape a sustainable electricity supply in the discourse with regional stakeholders from a technical, ecological and social background.

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