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Discussion Paper

Flexible IT Platform for Synchronizing Energy Demands with Volatile Markets

by

Paul Schott, Raphael Ahrens[1], Dennis Bauer[2], Fabian Hering, Robert Keller, Jaroslav Pullmann[1], Daniel Schel[2], Jens Schimmelpfennig[3], Peter Simon[4], Thomas Weber[5], Eberhard Abele[5], Thomas Bauernhansl[2], Gilbert Fridgen, Matthias Jarke[1], Gunther Reinhart[4]

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[1] Fraunhofer FIT
[2] Fraunhofer IPA
[3] Software AG
[4] Fraunhofer IGCV
[5] PTW TU-Darmstadt

University of Augsburg, D-86135 Augsburg
Visitors: Universitätsstr. 12, 86159 Augsburg
Phone: +49 821 598-4801 (Fax: -4899)

University of Bayreuth, D-95440 Bayreuth
Visitors: Wittelsbacherring 10, 95444 Bayreuth
Phone: +49 921 55-4710 (Fax: -844710)

Paul Schott [1], Raphael Ahrens[2], Dennis Bauer[3], Fabian Hering[4], Robert Keller[1], Jaroslav Pullmann[2], Daniel Schel[3], Jens Schimmelpfennig[5], Peter Simon[6], Thomas Weber[7], Eberhard Abele[7], Thomas Bauernhansl[3], Gilbert Fridgen[1], Matthias Jarke[2], Gunther Reinhart[6]

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Abstract: Abandoning fossil and nuclear energy sources in the long run and increasing amount of renewable energies in electricity production causes a more volatile power supply. Depending on external realities, renewable energy production emphasizes the need for measures to guarantee the necessary balance of demand and supply in the electricity system at all times. Energy intensive industry processes theoretically include high Demand Response potentials suitable to tackle this increasing supply volatility. Nevertheless, most companies do not operate their production in a flexible manner due to multiple reasons: among others, the companies lack know-how, technologies and a clear business case to introduce an additional level of flexibility into their production processes, they are concerned about possible impacts on their processes by varying the electricity demand and need assistance in exploiting their flexibility. Aside from fostering knowledge in industry companies, an IT-solution that supports companies to use their processes' Demand Response potential has become necessary. Its concept must support companies in managing companies' energy-flexible production processes and monetarize those potentials at flexibility markets. This paper presents a concept, which integrates both companies and energy markets. It enables automated trading of companies' Demand Response potential on different flexibility markets.

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[1] **Corresponding Author: Paul Schott**, Fraunhofer Institute for Applied Information Technology FIT, eMail: paul.schott@fit.fraunhofer.de
[2] Fraunhofer Institute for Applied Information Technology FIT
[3] Fraunhofer Institute for Manufacturing Engineering and Automation IPA
[4] University of Bayreuth, Faculty of Law, Business, and Economics
[5] Software AG
[6] Fraunhofer Research Institution for Casting, Composite and Processing Technology IGCV
[7] The Institute of Production Management, Technology and Machine Tools