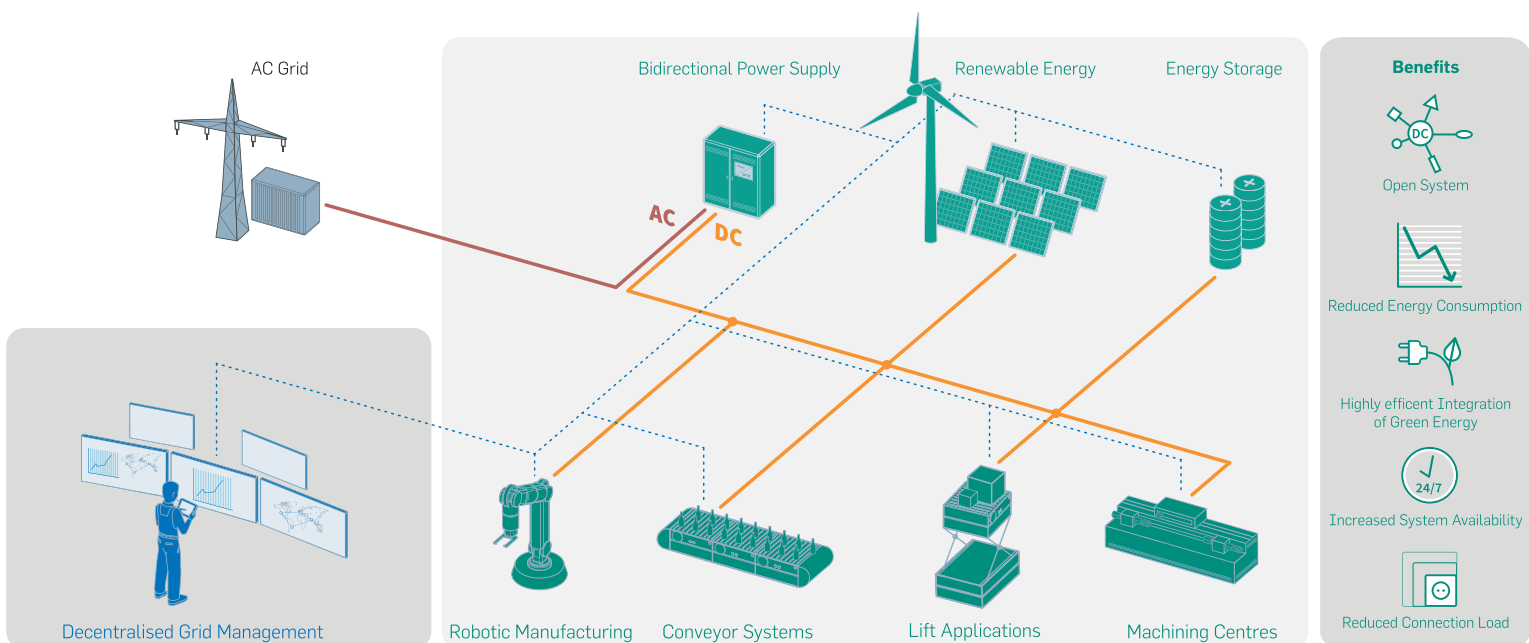


Energy Transition Automation Energy Storage
DC Supply **Direct Current**
Industry Power Supply Smart Grid

Energiewende meets Industrie 4.0

The goal of the DC-INDUSTRIE research project is to redesign the power supply of industrial plants via a smart, open DC grid and to digitalise the industrial power supply architecture. This will create the industrial energy system of the future, a DC-based smart grid for industry.



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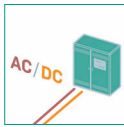
on the basis of a decision
by the German Bundestag

Published by:
Bernhard Sattler
Stefanie Wiesner
ZVEI - German Electrical and
Electronic Manufacturers' Association
Automation Division
Electric Drive Systems Section
Telephone: +49 69 6302-377
Email: antriebe@zvei.org
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www.zvei.org

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Automation Division
Lyoner Strasse 9
60528 Frankfurt am Main
Germany

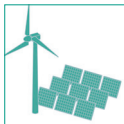
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Bidirectional Power Supply

The centralised AC/DC converters supply all load sectors with DC power. The system's overall energy efficiency is increased, no additional rectifying is required. Energy feedback into the AC grid is possible.



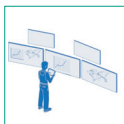
Renewable Energy

The DC grid enables easy integration of photovoltaic cells and other renewable energies. The losses in power conversion are reduced. There is no need for synchronising with a three-phases AC net anymore.



Energy Storage

Energy storage also becomes easy to integrate with the benefits of reduced conversion losses. This enables production stability in cases of AC net faults and can actively help in peak power reduction.



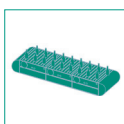
Grid Management

A new concept of decentralised grid management brings the full potential of power balancing and stability enhancement to many industrial applications.



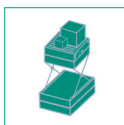
Robotic Manufacturing

The highly dynamic power demands of robotic manufacturing benefit from expanded distribution of DC-link capacity. Furthermore, the high ratio of recuperative provided energy can now be used in the system.



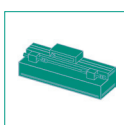
Conveyor Systems

Decentralised drive applications as found in widely-used conveyor systems benefit from reduced component complexity when supplied with DC power. The use of new DC/data hybrid cables reduces the installation effort.



Lift Applications

Typical lift applications in industrial applications produce a high amount of recuperative energy. The bidirectional power exchange with the DC grid yields savings on additional converting devices.



Machining Centres

Multi axis machining centres accelerate huge masses for time-efficient processing of parts and subassemblies. A shared DC grid increases the efficiency of dynamic energy demands and enables the usage of recuperative energy.

Consortium Partners

ABB STOTZ-KONTAKT GmbH

Bauer Gear Motor GmbH

Baumüller Nürnberg GmbH

Bosch Rexroth AG

Daimler AG

Danfoss GmbH

Eaton Industries GmbH

E-T-A Circuit Breakers Ltd.

Fraunhofer Institute for Integrated Systems and Device Technology IISB

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KHS GmbH

Lenze SE

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LTI Motion GmbH

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Further Information

<https://dc-industrie.zvei.org/>