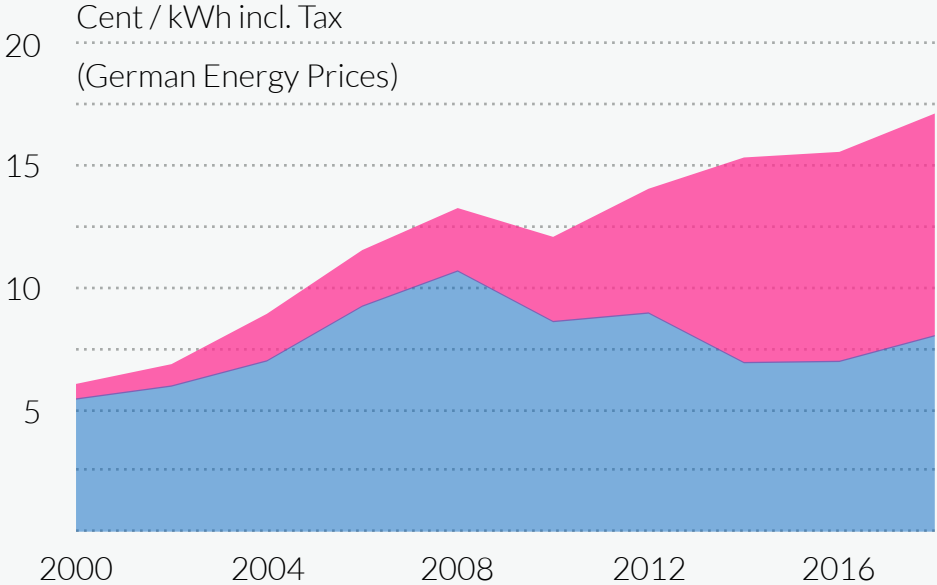


The background of the slide is a photograph of a modern industrial factory. In the foreground, there are several orange robotic arms (SCARA robots) working on a production line. The background shows a complex network of conveyor belts, structural beams, and other industrial equipment. Overlaid on the left side of the image is a network diagram consisting of a series of blue dots connected by thin lines, suggesting a digital or data network. The right side of the image features a large, stylized hexagonal graphic that frames the text.

Gerotor[®]

A Hidden Champion
for **Energy Efficiency**
in the Worldwide
Industry 4.0

Machinery is a Main Energy Consumer



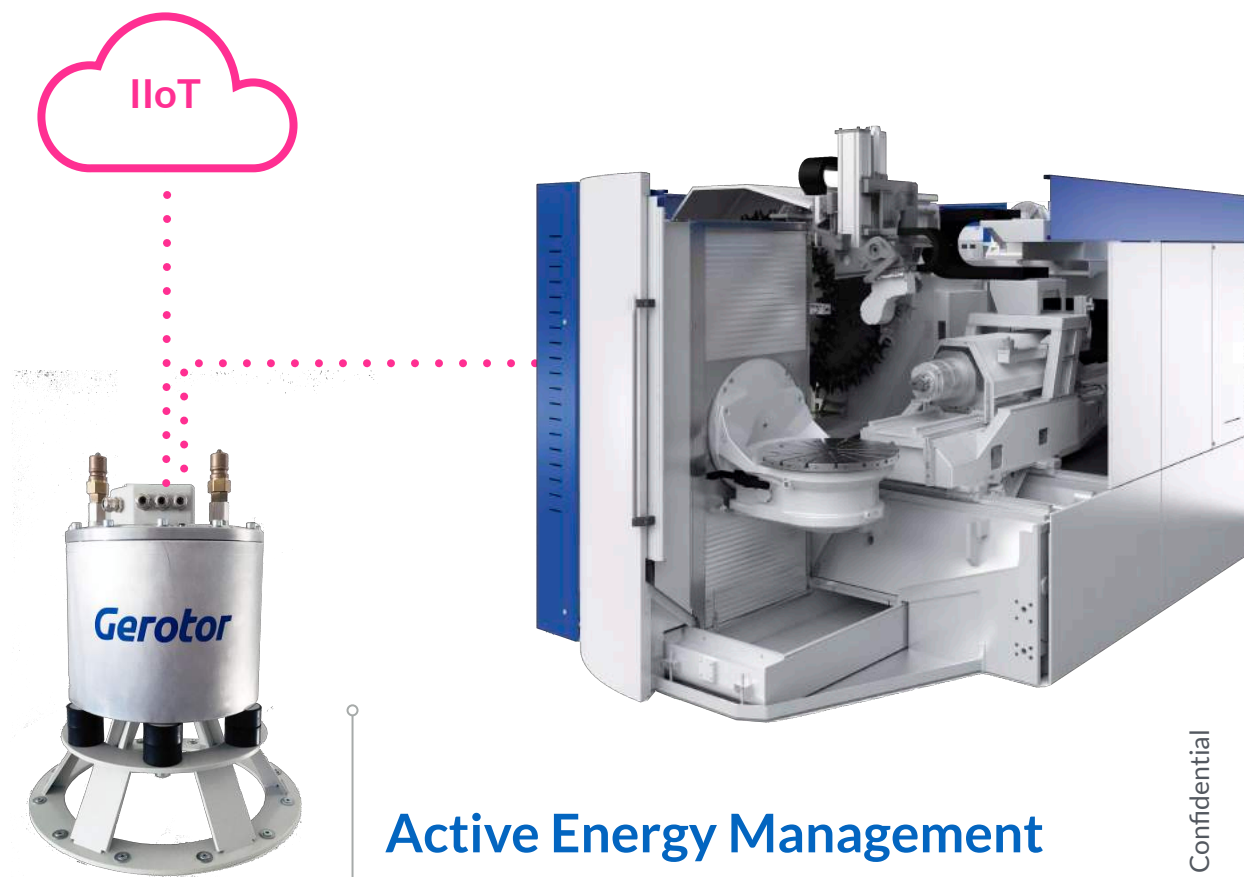
Electricity Price for Industry

at a Consumption of p.a. 160.000 kWh - 1 GWh

6.31% CAGR

Procurement EEG Surcharge & Co.

Gerotor Reduces Electricity Consumption



Active Energy Management

The Smart Way to Increase Energy Efficiency

Solution First-of-its-Kind Flywheel Storage Technology (KERS)

Gerotor[®]

Gerotor HPS

High performance

50.000 RPM / 50kW
($E \sim \omega^2$, $P \sim \omega$)

Power density

4.500 W/kg

Storage Efficiency

>95%

Reaction time

Real time operation



Compact design

Ø 220 x 200 mm, 18 kg

Cycle stability

>10.000.000

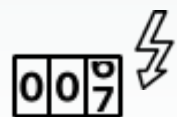
Energy capacity

135; 350; 900_{exp.} kJ
($E \sim r^2$)

Smart Data / IoE, IIoT

Measure, process, connect

Active Energy Management



Recuperation

Up to 50% reduction of energy consumption



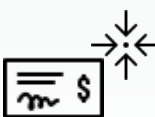
Load Management

Up to 75% reduction of connecting power



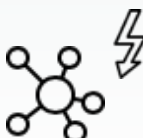
Blackout Security

Bridge up to 97% of all blackouts (UPS)



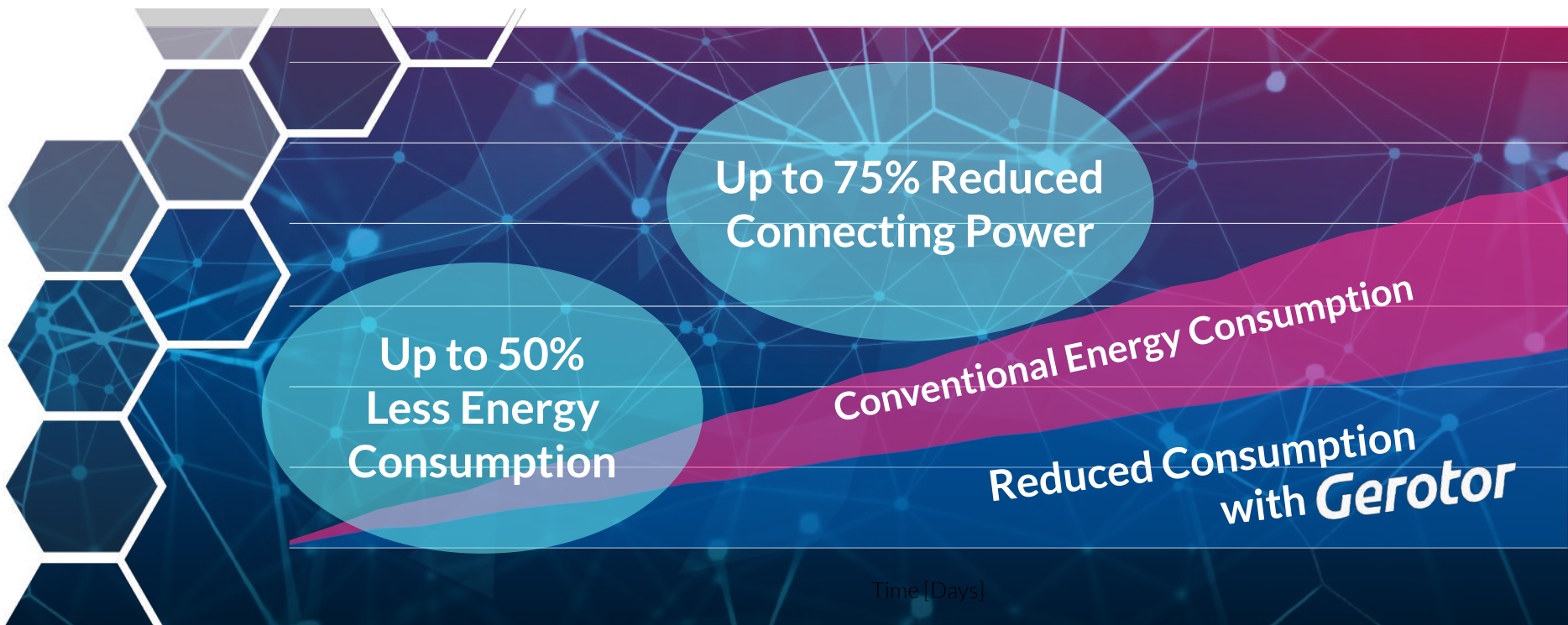
Down-Sizing

Up to 100% compensation of costs by reducing other components

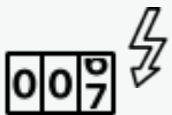


Smart Data

100% industry 4.0 e.g. Predictive Maintenance, Anomaly Detection



Why Customers Need Gerotor?



Lower Costs & Higher Efficiency

Up to 50% Reduction of Energy Consumption



More Power Availability

Up to 75% Reduction of Connecting Power



Digital Transparency

Artificial Intelligence for Smart Data & Predictive Maintenance



Environmental Sustainability

Improved Ecological Footprint, Tax savings & Subsidy Benefits

Gerotor vs. Competing Technologies

	Batteries	Supercaps	RecoveryM	Gerotor
Energy Storage	✓	✓	✗	✓
High Energy*	✓	✗	✗	✗
High Power	✗	✓	✓	✓
Cycle Stability	✗	✗	✓	✓
Long Durability	✗	✗	✓	✓
Payback Period	✗	✗	✗	✓

Ø 1 - 3 Year(s) Payback Period

*In most Industrial Applications Energy Density is not an Required Feature.

Markets Current and future Applications

Gerotor[®]



Industrial Energy Efficiency for Global Markets

Vision Leading Energy Management for Sustainable Industry 4.0

Gerotor[®]



Decarbonization

We help to reduce CO₂-emissions in industrial applications.

Efficiency

We optimize and change the energy behaviour in industrial processes.

Digitalization

We enable intelligent use of Smart Data and Smart Energy (IIoT).

That's Gerotor!

Innovation Unique in the Industrial World

Gerotor

World Premier

We are the only supplier of modern flywheel storage systems for the manufacturing industry.

Highly Economical

The HPS was designed to cost. It offers the highest power density and ensures a quick return on investment.

Gerotor GmbH as the proud Winner of the new Industrial Energy Efficiency Award
Hannover Messe 2019 - the home of Industrial Pioneers



More Power for More Business

Gerotor

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Michael Hein, Dominik Weigl (Managing Directors)

The Federal Government of Germany:

"The cheapest and most environmentally friendly kilowatt-hour is the one you don't use."

Supported by



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