Energy efficiency remains the "first fuel"
Well positioned in attractive markets

**ABB today**

<table>
<thead>
<tr>
<th>What (Offering)</th>
<th>Power &amp; Automation</th>
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<tbody>
<tr>
<td></td>
<td>Power ~ 40% of revenue</td>
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<table>
<thead>
<tr>
<th>For whom (Customers)</th>
<th>Utilities</th>
<th>Industry</th>
<th>Transport &amp; Infrastructure</th>
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<tbody>
<tr>
<td></td>
<td>~35% of revenue</td>
<td>~45% of revenue</td>
<td>~20% of revenue</td>
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<tr>
<th>Where (Geographies)</th>
<th>globally</th>
<th>AMEA(^1) 37%</th>
<th>Americas 29%</th>
<th>Europe 34%</th>
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<td></td>
<td></td>
<td>37% Americas 29%</td>
<td>34% Europe</td>
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<tr>
<th></th>
<th>$40 bn revenue</th>
<th>~100 countries</th>
<th>~140,000 employees</th>
<th>Single “A” credit rating</th>
<th>HQ Zurich</th>
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\(^1\) Asia, Middle East, Africa
Well positioned in attractive markets
Power & automation demand drivers

Significant market opportunities – today: ~ $600 bn, 2020: ~ $750 bn

Utilities
- Renewables
- Grid automation
- Smart upgrades
- Emerging markets
- New consumption points

~$200 bn

Industry
- Productivity
- Energy efficiency
- Automation penetration
- Power quality and reliability
- Emerging markets
- US re-industrialization

~$250 bn

Transport & Infrastructure
- Urbanization
- Energy efficiency
- Electric transport
- Power quality and reliability

~$150 bn

Significant market opportunities – today: ~ $600 bn, 2020: ~ $750 bn
Energy and resource efficiency – an essential part of our business

Energy and resource efficiency are integrated into our technology and what we offer customers.

ABB is world’s

- Largest supplier of high-efficiency power grids to integrate renewable energy
- Largest manufacturer of energy efficient industrial motors and drives
- Largest provider of generators to wind industry
- Second largest solar inverter company, following Power-One acquisition
- Leading supplier of electric vehicle charging infrastructure
ABB’s vision: Power and productivity for a better world

Strong external endorsement

Recognition for ABB’s efforts in energy efficiency and renewable energy technologies

Underlines our relentless drive for innovation to create new offerings and value for our customers

Reflects ABB’s pioneering heritage in technology innovation

Strengthens our reputation in the Gulf region and in key market segments
Energy efficiency - the first fuel
Large annual savings from continual efficiency efforts

If no energy efficiency improvement after 1974, this much more energy would be consumed annually today.

Source: IEA Example describes total annual energy consumption in 11 OECD countries, and the annual impact of their efficiency efforts since 1974.
Energy consumption is decoupling from GDP growth

Electricity consumption is still increasing worldwide

Energy used for $1 of GDP

-24%

1990 2011

Electricity consumption per person

5x

2x

1990 2011
Middle East and India China

Electricity consumption per person

Share of electricity in industrial energy consumption

25%

19%

1990 Global 2011

Sources: Enervdata, http://www.enervdata.net

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Incentives are strong drivers for energy management and efficiency

Regulation also strong driver for energy efficiency
Energy efficiency in industry
1,000 Mtoe potential in power generation, cement and steel

Savings potential in power generation, steel and cement
1,000 Mtoe

>$400 bn
(at $60 per barrel of oil)

Sources:
- The state of global energy efficiency, Enerdata
- Key World Energy Statistics 2013, IEA
Energy efficiency in industry
250 Mtoe potential in steel with today’s best practice

Cost of energy can be 20-40 percent of operating costs in iron and steel making – energy efficiency is well established

ABB is a leading provider of electrical equipment and control systems to optimize melting, shaping and finishing of metals

In addition to energy cost savings, many of these solutions help customers boost productivity and quality

Sources:
- The state of global energy efficiency, Enerdata
- Key World Energy Statistics 2013, IEA
Energy efficiency in industry
Large opportunities and good progress

Industry accounts for about one third of the world’s final energy demand

Industry’s total energy use continues to grow

ABB’s range of equipment, automation systems and power solutions cut cost for energy-intensive industries

The installed base of ABB’s variable speed drives saved more than 445 terawatt-hours (TWh) of electricity in 2014, equal to the annual consumption of about 110 million European households

Two-thirds are consumed by six process industries:
- Iron & steel
- Other metals
- Minerals
- Oil & gas
- Chemical & petrochemicals
- Pulp and paper
Energy efficiency in industry
Saving energy and cost at water utility

ABB drives solve capacity problem and save $150,000 per year in energy costs for water utility in the UK
Energy efficiency in industry
Saving energy and cost at wastewater plant

ABB motors and drives replaced old equipment:
- 65% energy saved
- 8 months pay-back
- Cost savings of £10,000 per year
Energy efficiency in utilities
Boost transmission capacity and increase efficiency

SVC – Static Var Compensation – reinforces the grid, increases transmission capacity and power quality, and enables more efficient operation of the system
Energy efficiency in utilities
HVDC – efficient bulk transmission over long distances

Distinct advantages

- Efficient bulk power transmission over long distances
- Transmission technology of choice for large scale renewable integration
- Higher transmission capacity/lower capital costs
- Smaller transmission corridor
- Interconnection of networks on different frequencies
- Grid interconnections to balance loads and facilitate power trading
- Instant and precise power flow control

Stronger, smarter, more flexible grids
Energy efficiency in utilities
Example: Connecting Norwegian and German power grids

- **NordLink** - $900 million HVDC order to connect Norwegian and German power grids
- Europe’s longest HVDC power grid interconnection
- Enable transmission of 1,400 megawatts (MW) of renewable energy
- ABB has been awarded about 100 HVDC projects since it pioneered the technology 60 years ago
Energy efficiency in utilities

ABB – an expert partner in solar power

Solar power is entering a new phase.

Technology advances and lower costs mean it has growing potential everywhere.

ABB offers the industry’s most comprehensive portfolio of products, systems, solutions and services.

ABB has expertise and experience in solar power gained over decades.
Energy efficiency in transportation and infrastructure
Efficient and clean electric propulsion at sea and land

Onboard DC grid & electric propulsion saves up to 27% of fuel consumption

80% of trade transported by sea. Annual growth of 12% for electric propulsion

International freight transport to quadruple by 2050
(Source: OECD 2015)

ABB is a world leader in charging of electric vehicles

ABB’s regenerative brakes regain 70% of energy
Innovation is key to ABB’s competitive advantage
Leadership built on consistent R&D investment

- More than $1.5 billion invested annually in R&D
- 8,500 scientists and engineers
- Collaboration with 70 universities
Innovation is key to ABB’s competitive advantage
Next level automation and power transmission from ABB

YuMi – world’s first collaborative dual arms robot

Productivity increase of up to 30% realistic with ‘internet of things, services and people’ by ABB

World record 525 kV voltage extruded HVDC cable

New cable doubles power flow and cuts losses
Environment
Key figures 2014

- 51% of revenues related to energy efficiency and renewable energy
- 200+ energy efficiency projects under way
- 445 TWh energy saved by ABB drives
- 5.2 million m³ of water saved through reuse and recycling
- 1.6% improvement in energy intensity of our operations
- 1.95 million tons of greenhouse gas emissions
CEO statements on sustainability
“A value creator, embedded in the business”

“When we speak of taking business to the next level, sustainability is an integrated part of that journey.”

“Embedding sustainability considerations into our daily business helps us in different ways to create value and to manage risk.”

Ulrich Spiesshofer, CEO in 2014
Sustainability Performance Report
More information available at ABB Investor Relations

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Power and productivity for a better world™