



Bernhard Jucker and Claudio Facchin, Capital Markets Day, London, September 9, 2014

ABB – Next Level

Big shift in power – attractive opportunities

Agenda

Profitably growing ABB's power business

Shifting the center of gravity in Power Systems

Changing world in the power landscape – grid complexity is increasing

New developments are accelerating the change

Changes in the power market

Increased renewables

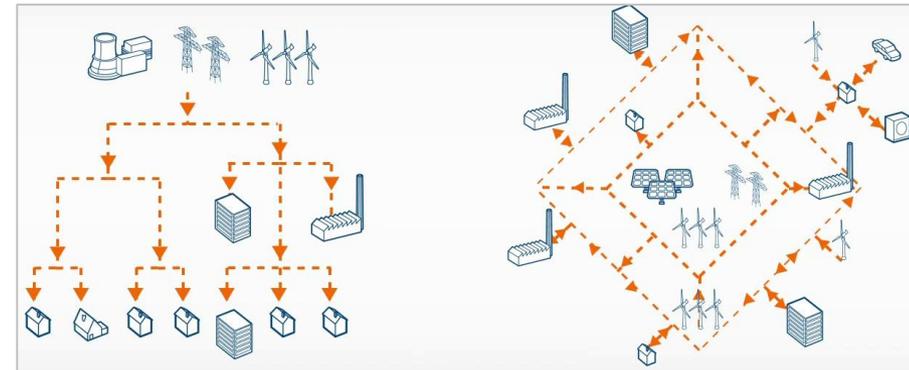
- More distributed power
- Greater grid instability
- Cost approaching grid parity

Longer distances at higher power

New demands (e.g., data centers)

More consumption points (e.g., e-vehicles)

Regulatory intervention, increasing social awareness



Traditional grid

New grid

Implications

Managing multi-directional power flow

Increasing need for power quality and reliability

Need for more interconnected grids

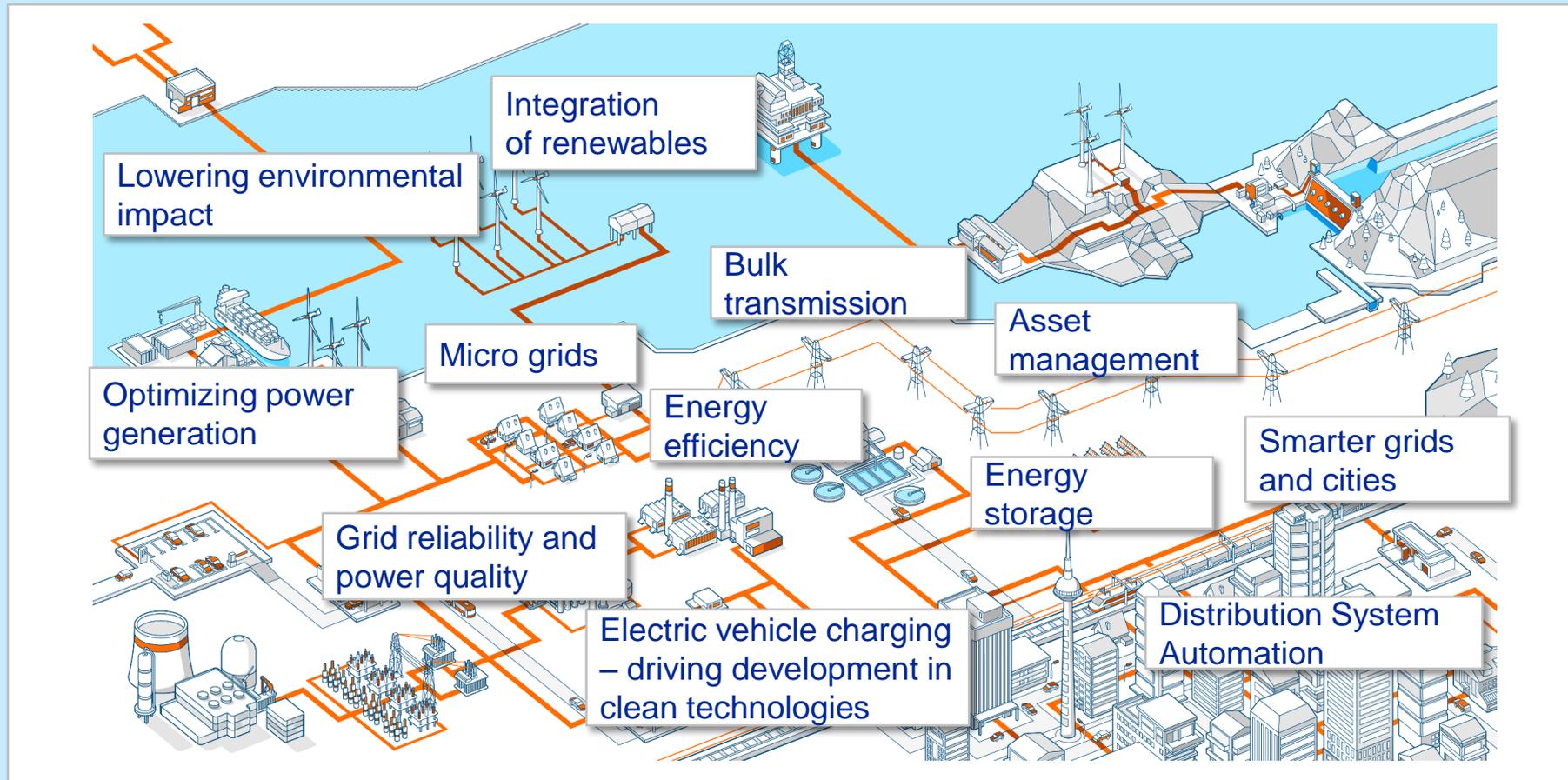
Energy storage needs

New private investors

Uncertainty in utility spend

Well positioned in a changing world

Growth opportunities to deliver value to our customers



Solutions for a changing grid – Ultra High Voltage (UHV)

Addressing emerging needs with innovation

UHV: more power, longer distances, lower losses

Renewables are a key growth driver

Significant opportunities in China and India

AC¹ and DC² applications

- Bulk transmission
- Subsea links
- Connecting asynchronous grids
- Energy trading

Advanced control systems

1100 kV UHVDC³ transformer



1100 kV DC components



1200 kV UHVAC⁴ transformer



1100 kV AC GIS⁵



Integrating power & automation technologies to deliver customer value

Solutions for a changing grid – digital substations

Automating the grid

A fundamental change in substation architecture

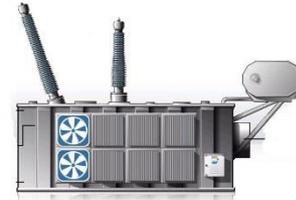
Products with integrated sensors, communication, control, and protection

New functions: overloading, monitoring, and diagnostics

Smaller footprint

Electronics as long-term service opportunity

Smart transformer



Circuit breaker with fiber optic sensor



MV¹ digital switchgear



HV² digital switchgear



Power & automation solutions to enable a digital grid

Solutions for a changing grid – industry needs

Smart electrification packages for light industries



Packaging



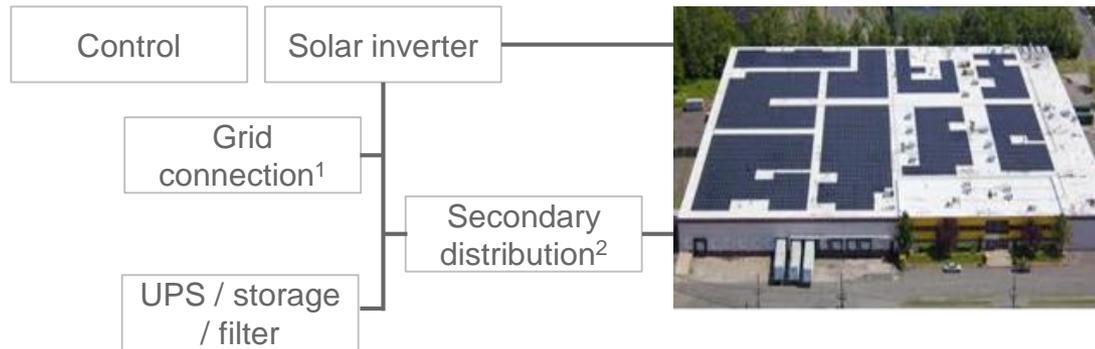
Pharma



Semi-conductors



Food & beverage



The need

Power security, e.g., US hurricane zones
Grid access, e.g., emerging markets

ABB's packaged solution

Renewable energy supply	Control and protection
Grid connection	Monitoring and service package
Storage	Low-voltage distribution
Power quality / UPS ³	

ABB's advantage

Local presence everywhere, multiple channels to market
Combined total power & automation offering

Power & automation combined for greater customer value

Solutions for a changing grid – transportation and infrastructure

Demand for electricity in transportation is increasing rapidly

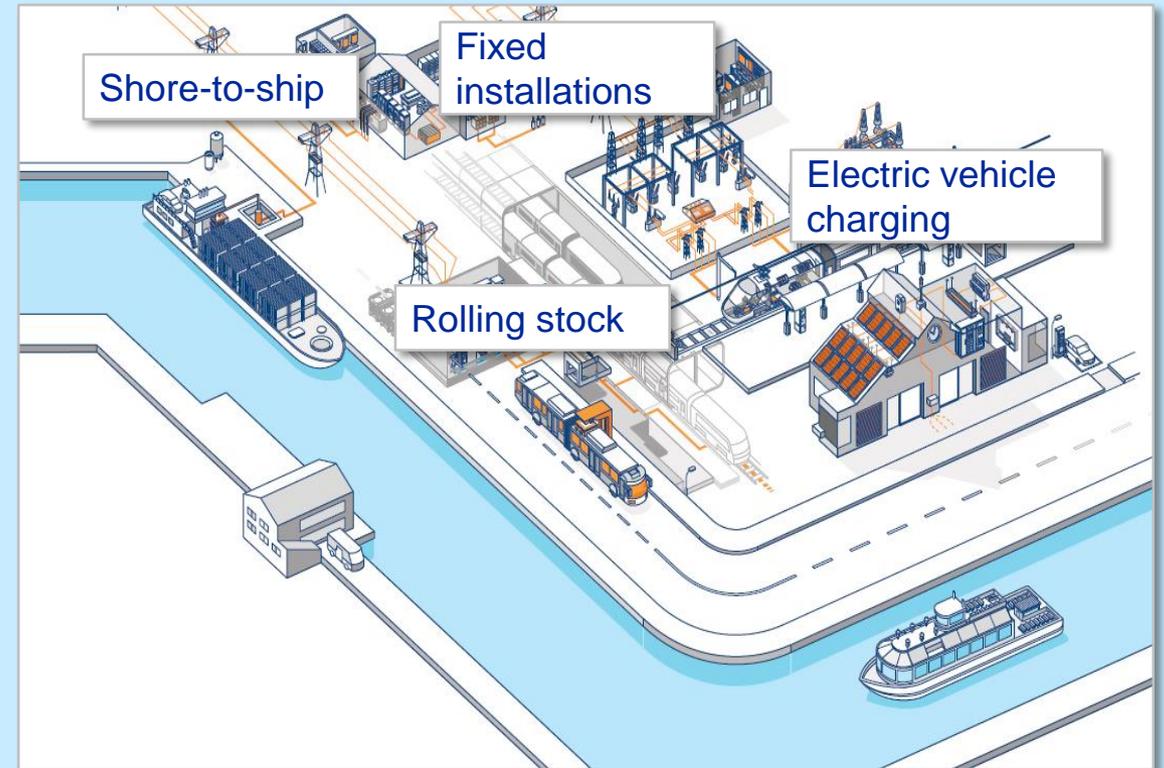
Opportunities for traditional and new applications

Automation and power equipment for fixed rail installations and rolling stock

Electrical vehicle charging

Shore-to-ship power supply

Automation and control systems – software and services

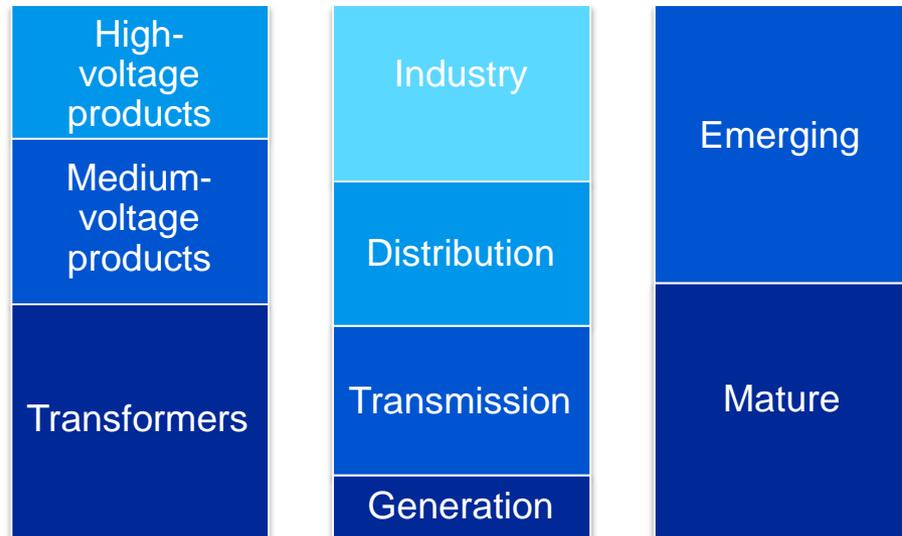


We provide the offering to meet these growing challenges

Power Products well positioned in a changing world

Proven competitiveness, broadest offering, and geographic scope

Balanced business¹



Key differentiators

- Most comprehensive product and service offering
- Penetration: diversified end market exposure
~80% visibility on market opportunities
- Innovation: steady pipeline of innovation, e.g.,
 - Digital switchgear
 - New range of high-voltage GIS
 - Environmentally-friendly insulation gas
 - Ultra high-voltage AC and DC products
- Expansion: globally-dispersed footprint close to customers

A leading position: technology and financial performance

Agenda

Profitably growing ABB's power business

Shifting the center of gravity in Power Systems

Power Systems

Well positioned to address customer and market opportunities



Power automation



IT/OT integration and asset management



Grid integration and transmission



Consulting and Service

Well positioned

New customer challenges play to our strengths

A leader in transmission technologies, distributed control systems, and power grid automation

Technology pioneer (e.g., grid automation, FACTS¹, HVDC)

Vast installed base

Leading engineering and service capabilities

Market coverage and global footprint

Growth opportunities

Renewables and distributed generation

Power quality for industry and infrastructure

Power grid automation

Longer transmission distances

New grids in emerging markets

Aging grids in developed markets

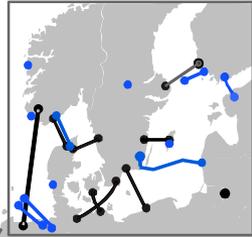
Servicing the large installed base

Attractive opportunities in grid – we continue at the forefront

Power Systems: #1 in HVDC

Delivered more than half of the world's projects

- 60 HVDC Classic projects since 1954
- 20 HVDC upgrades since 1990
- 20 HVDC Light projects since 1997



A leading player in high-growth segments
 Long-term leadership result of continuous innovation
 Unique end-to-end in-house offering for HVDC
 Growing refurbishment and upgrade opportunities

Continuous innovation in HVDC Classic

	1954	Today
Voltage (kV)	50	1,100
Capacity (MW)	10	10,000
Distance (km)	90	3,000

Continuous innovation in HVDC Light

	1999	Today
Voltage (kV)	80	525
Capacity (MW)	50	1,200
Distance (km)	70	1,500

We are well positioned in high-growth segments – technology, capabilities, execution

Power Systems: “step change” Process overview

Status of critical projects

Milestones achieved

- Offshore wind: Dolwin 1 energization initiated, Dolwin 2 platform being commissioned in Norway
- Solar EPC: 7 of 10 projects closed – on track to close 90% by end 2014

Offshore wind: resources and expertise enhanced

Much better grip and understand risks, actions in place

Other actions

Improving risk return

- Selectivity: offshore wind contracts
- Strengthening contract management
- Review of large projects completed

Lowering cost

- Capacity rationalization
- Cost out measures on target
- Standardizing engineering solutions

Driving sustainable change

Adapting the business model

- De-risk EPC, change business model
- Remain turnkey provider with right risk-return profile
- New model: system integrator

Growing the profitable base business

- Using market visibility and channels
- Consulting and services
- Capitalize on our strong presence in emerging and mature markets

Future business with lower risk and sustainably higher returns

Power Systems

Shifting the center of gravity: better risk-return profile

Consolidate EPC and build partnerships to strengthen project execution and market coverage

Drive growth and expand system integration with new business models including partnerships / alliances

Accelerate penetration of installed base with service offering combined with software capabilities and consulting

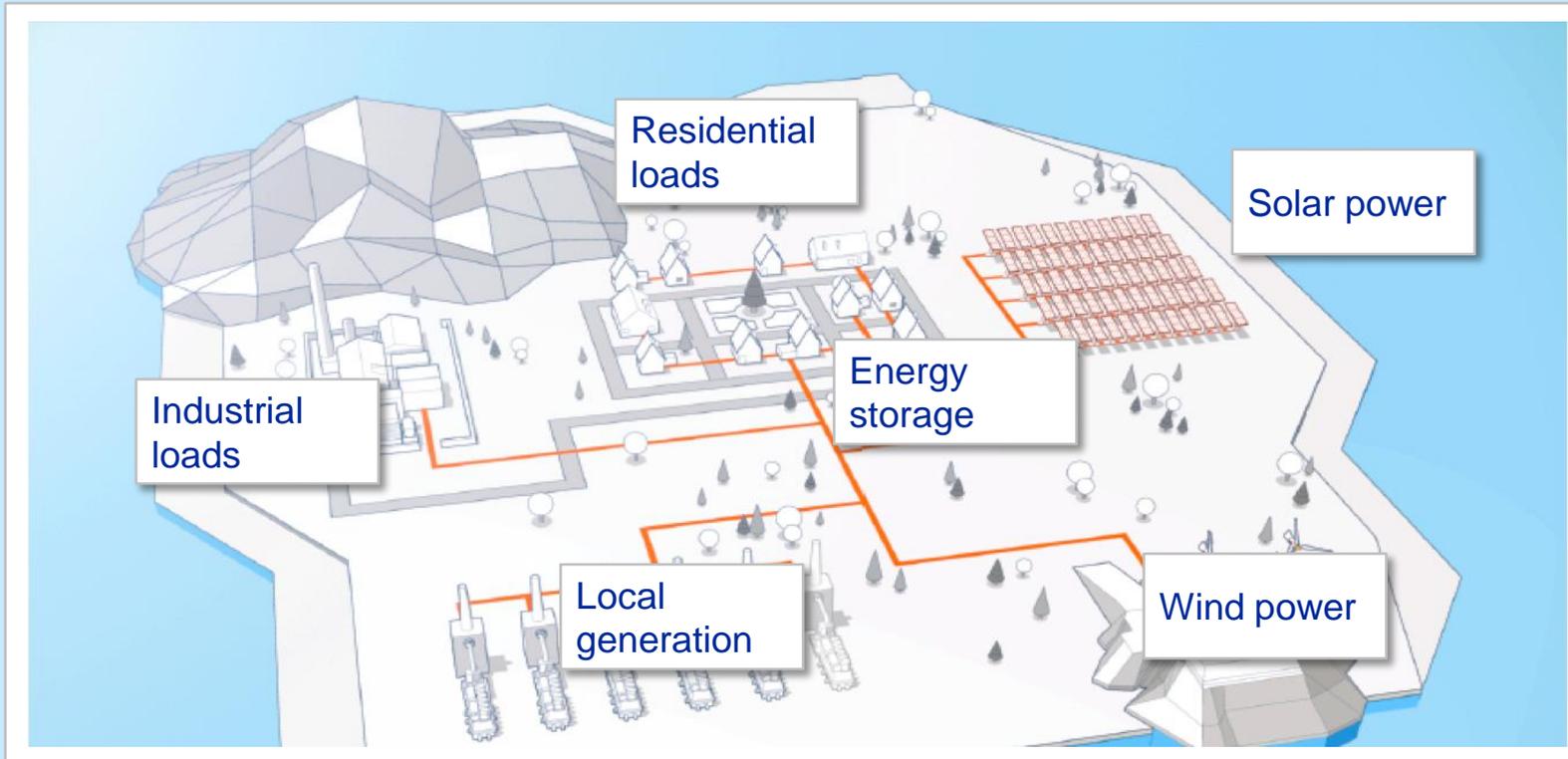
Shift in business mix in % of divisional revenues, illustrative



Better growth, less risk, greater predictability in results

Power Systems

Shifting the center of gravity: high-growth opportunity micro-grids



Micro-grids

For independent, reliable and affordable access to distributed power

Increased penetration of renewable resources lowering environmental impact

Combine energy storage and power technologies with smarter automation

Use our system integration capability – help integrate renewables

Power Systems

Shifting the center of gravity: consulting, service, and software

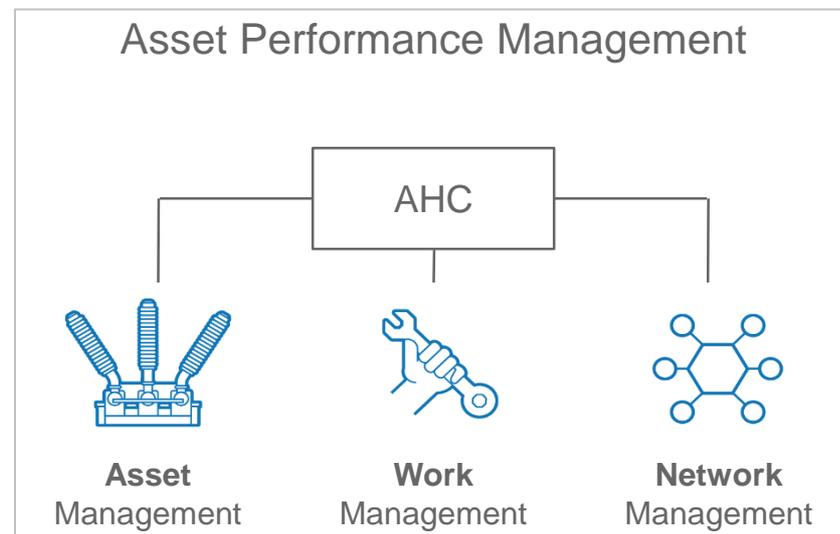
Tap ABB's deep grid and plant expertise for consulting services across the power value chain

Build on sector's largest installed base to grow service revenues towards 25% of total by 2020

Examples of service opportunities

- Power plant optimization and energy efficiency
- HVDC upgrades / modernization and power quality
- Asset Health Center (AHC)

ABB is a leader in utility asset management software solutions



Enhancing our growth and return profile by driving consulting, service, and software

Power Systems

Shifting the center of gravity for profitable and sustainable growth

Technology

Increased R&D focus

525 kV HVDC cable – more than doubles DC transmission capacity

Full 1100 kV HVDC system

Hybrid HVDC breaker – 100 year puzzle

New generation HVDC Light

New generation SVC Light

Position

Broadest presence – unmatched view of opportunities

Leading capabilities – in technology, engineering, system integration

Supply base – competitive, flexible, reliable

Largest installed base – a great service opportunity

Offering

Across the power value chain: electrification, automation, control

Breadth of offering – products, systems, services, software

Turnkey solution capability

Risk-return profile

New business model for de-risked EPC, project selectivity, accelerated growth in attractive base business

A technology leader well positioned to capture high-growth opportunities with reliable returns

Power and productivity
for a better world™

