



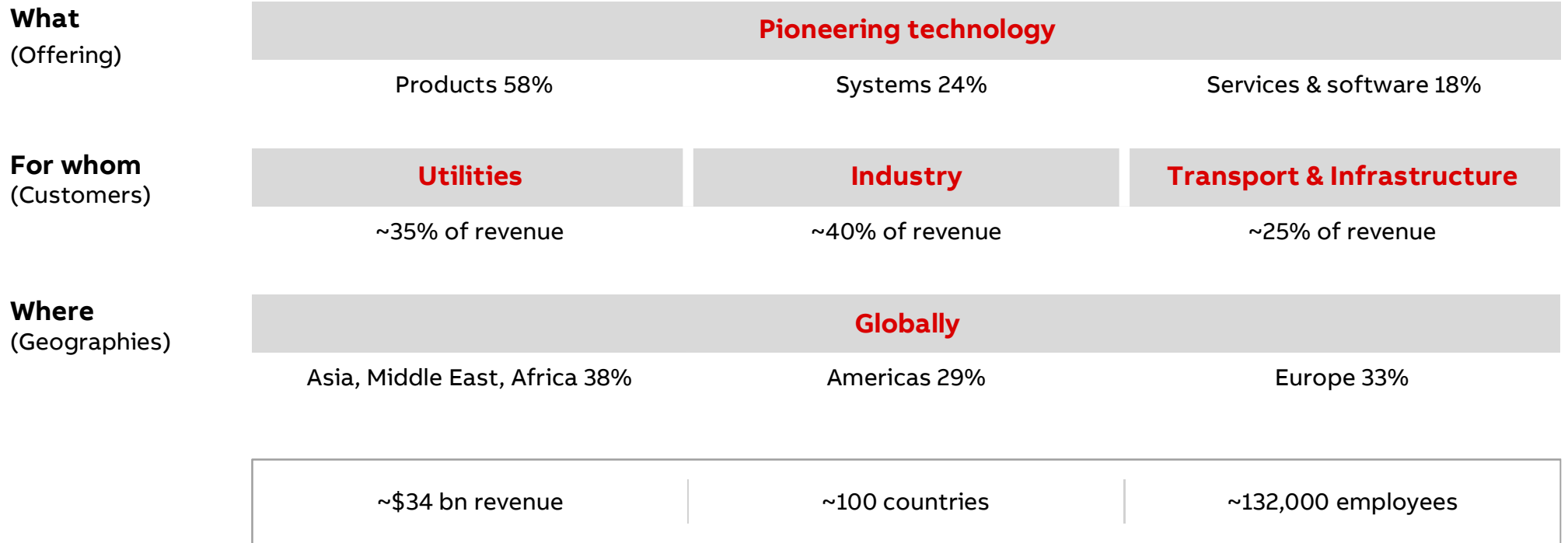
RENEWABLE ENERGY EXPO, DELHI, SEPT 2017

Grid Energy Storage

ABB: The pioneering technology leader

S. Ganesan, Powergrids, ABB India

ABB: the pioneering technology leader



EssPro™ Grid

Overview of system components

System components

Power Converters



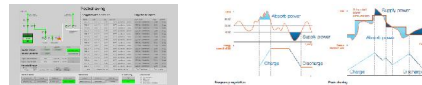
Range of leading-edge power converters to suit a wide range of applications and system sizes

Batteries



Optimal battery technology for every application

Control systems and algorithms



Integrated EssPro EPIC control system enables manual and automatic operation of all system components in various control modes

Protection equipment



State-of-the-art protection systems for AC and DC equipment

Transformers and switchgear



Full range of transformers for local standards

LV, MV and HV switchgear ensures safe and reliable grid connection

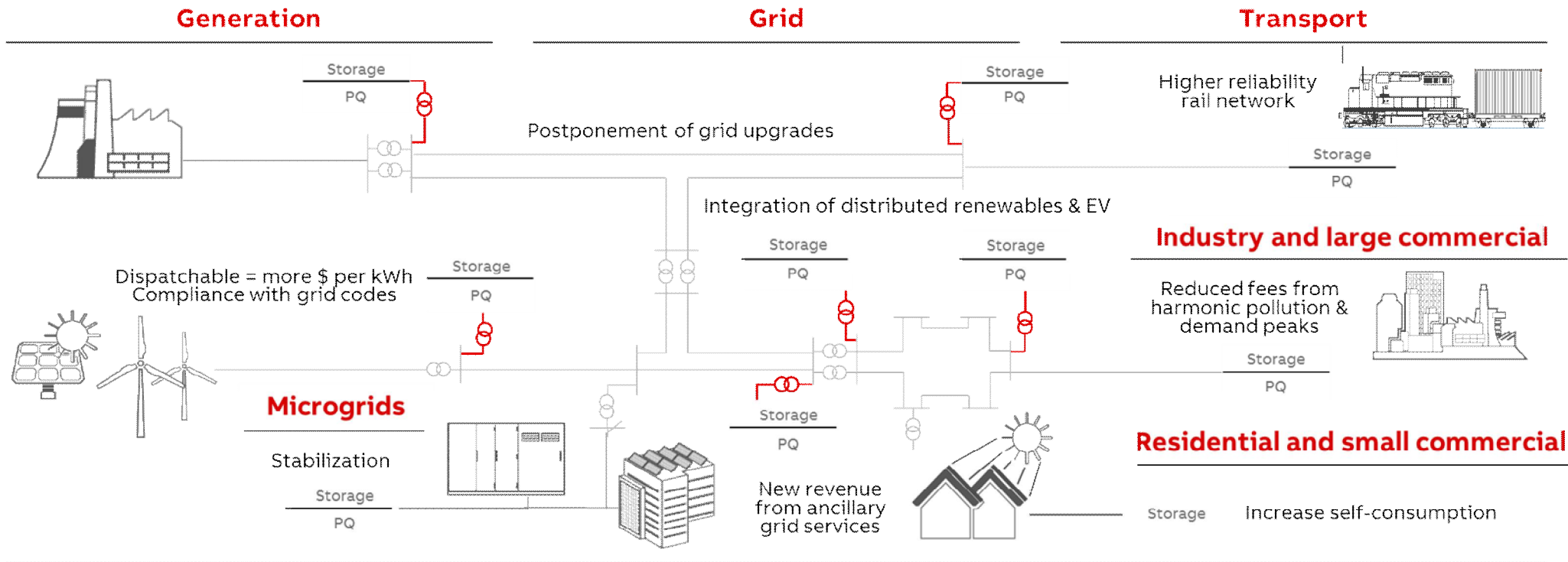
Modular and scalable



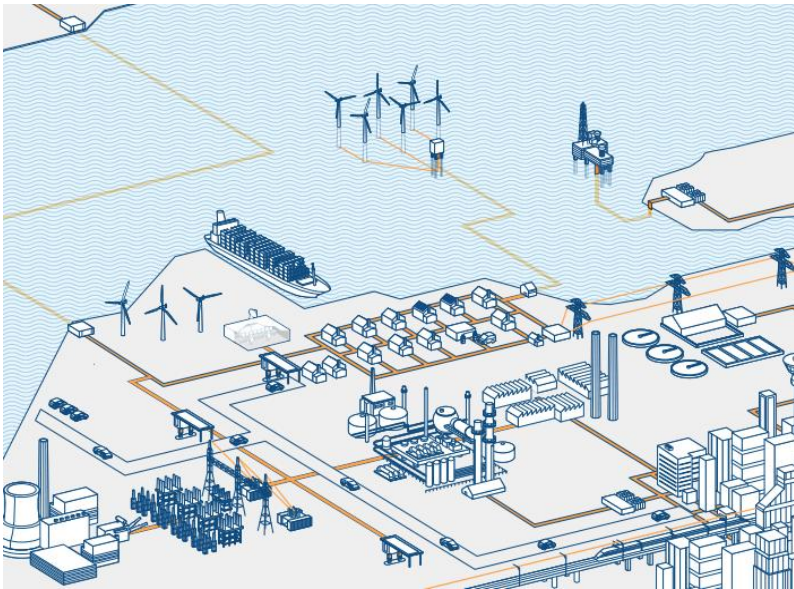
Scalable and flexible systems facilitate easy and safe operation

Power systems of the future

Power quality & storage solutions increasingly needed



Long term drivers for storage



- § Wind and solar power
- § Natural gas and oil prices
- § T&D bottlenecks and T&D upgrades
- § Power quality issues
- § Ancillary services
- § Renewables penetration
- § Tools for stability
- § Interconnections
- § Flexible generation
- § Demand-side management
- § Energy storage



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