

Energy Solutions:

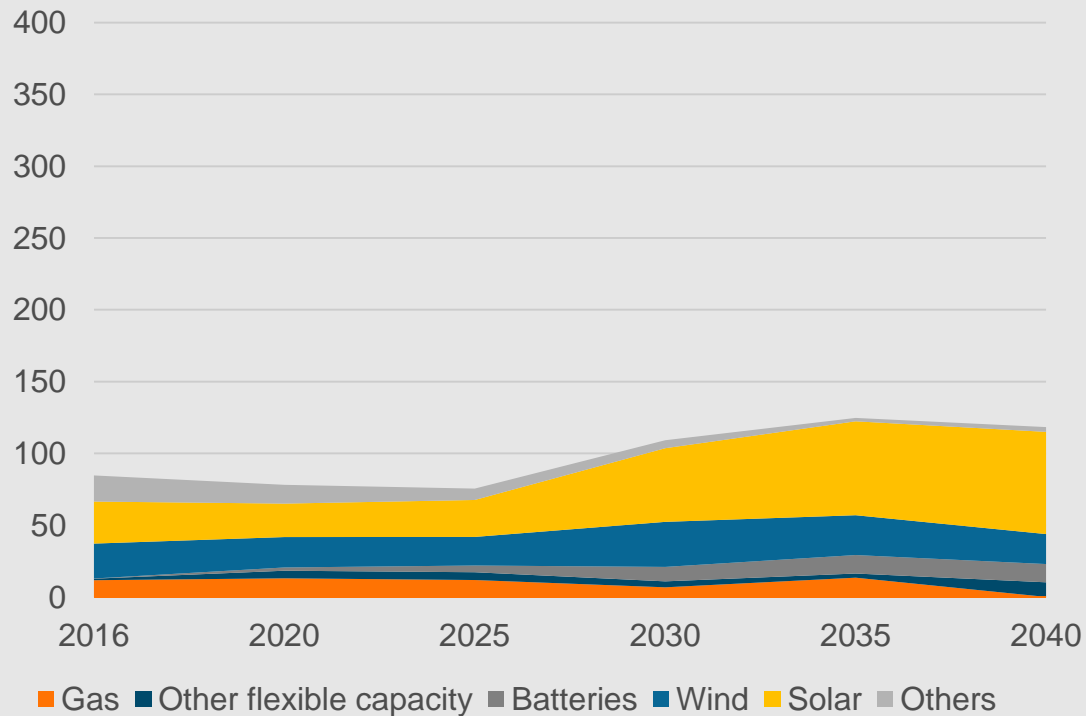
Capturing growth through global systems integration

Javier Cavada,

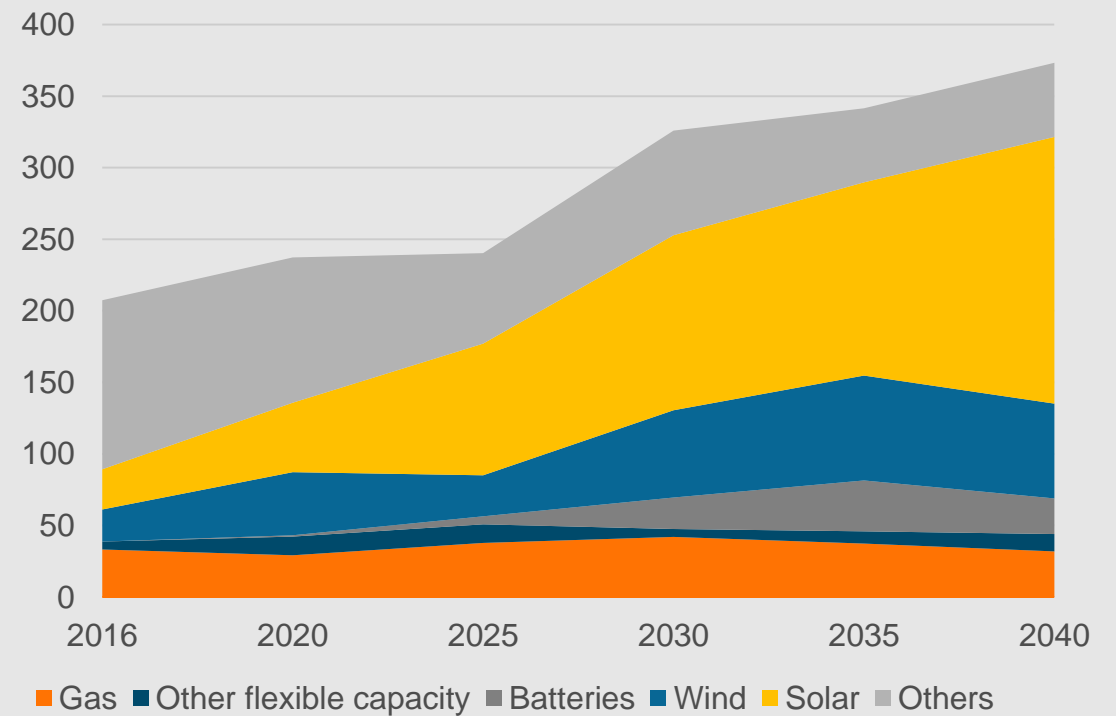
President, Energy Solutions, Executive Vice President

Renewables rapidly increasing, Non-OECD countries dominate power plant investments

OECD Gross annual capacity additions
(GW)



Non-OECD Gross annual capacity additions
(GW)

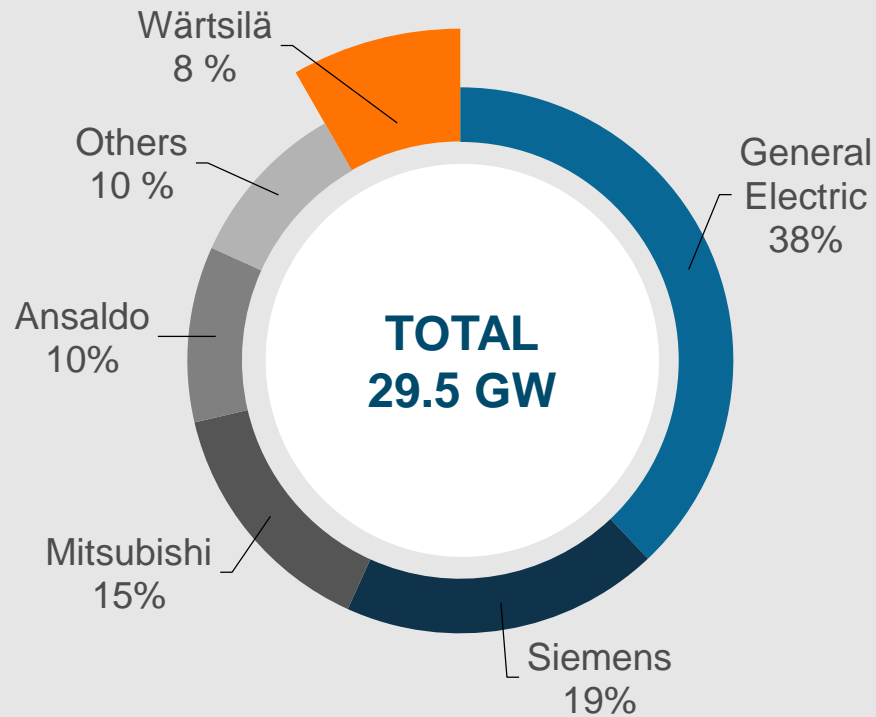


Source: Bloomberg New Energy Finance

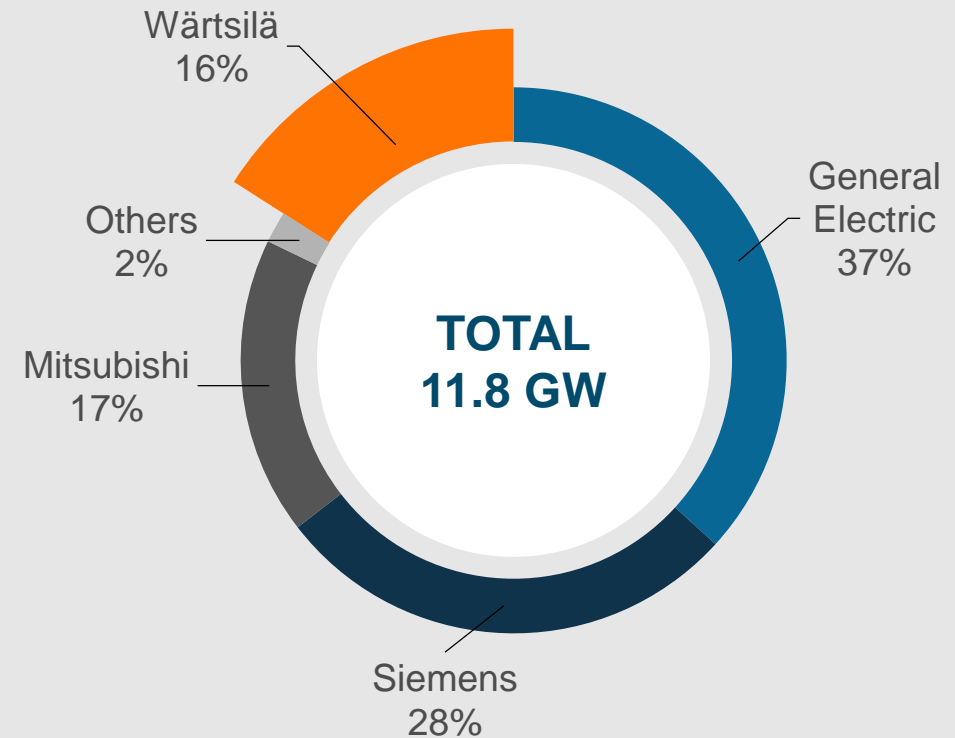
Note: Flexible capacity includes power storage, demand response and other potential resources. Others include: coal, oil, nuclear, hydro and other renewables than wind or solar

We are well positioned in the gas and liquid fuelled power generation market...

2015



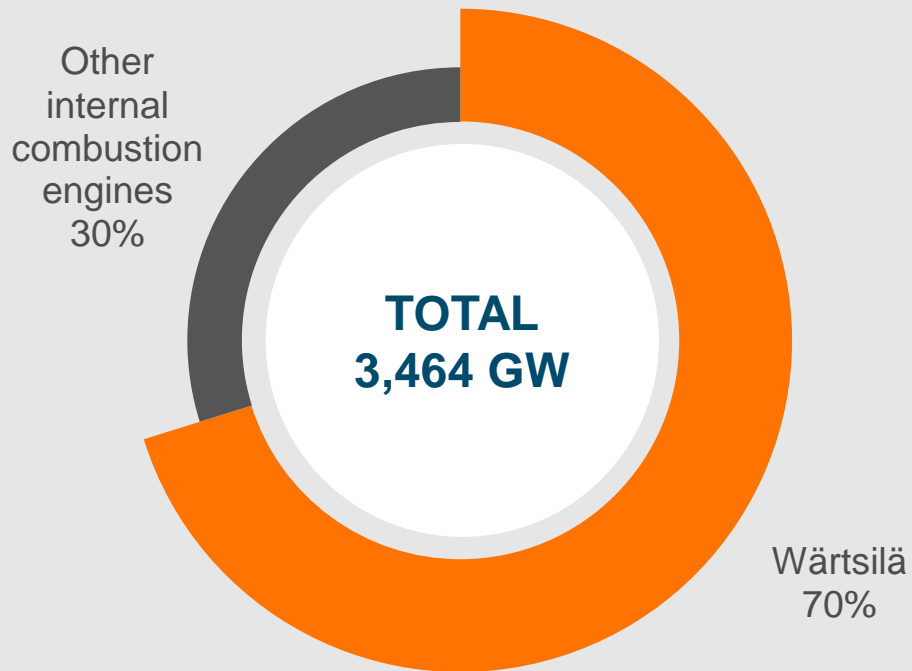
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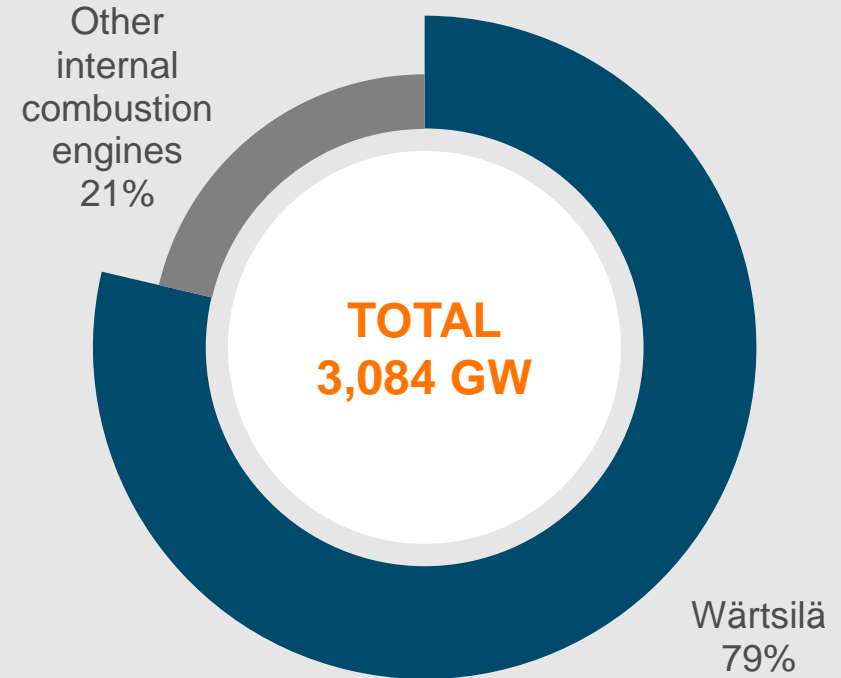
Source: McCoy Power Report, Includes GT-based gas and liquid-fuelled <500 MW power plants with prime movers above 5 MW, Includes estimated output of steam turbines for combined cycles (factor 0.5 for industrial turbines, 0.25 for aeros), Oil & Gas projects not included. Other combustion engines not included – data not available.

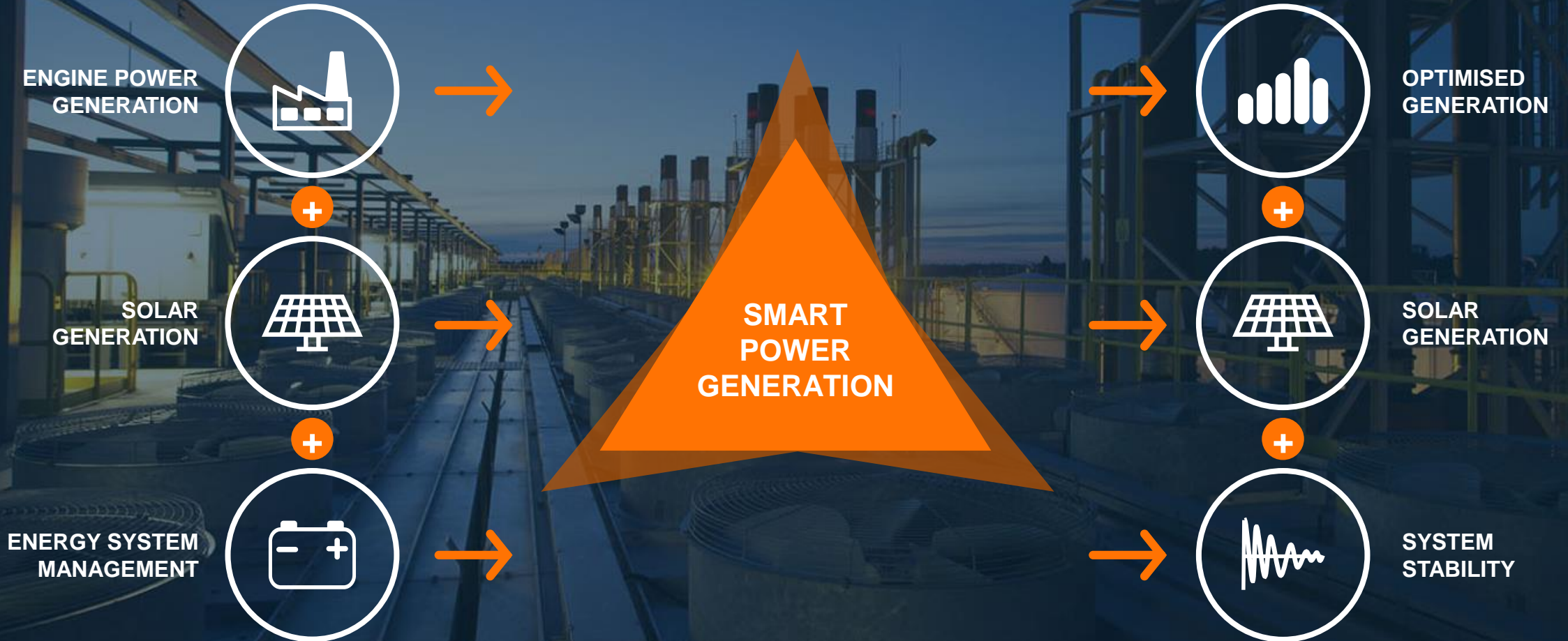
And are the market leader in engine power plants

2014



2015



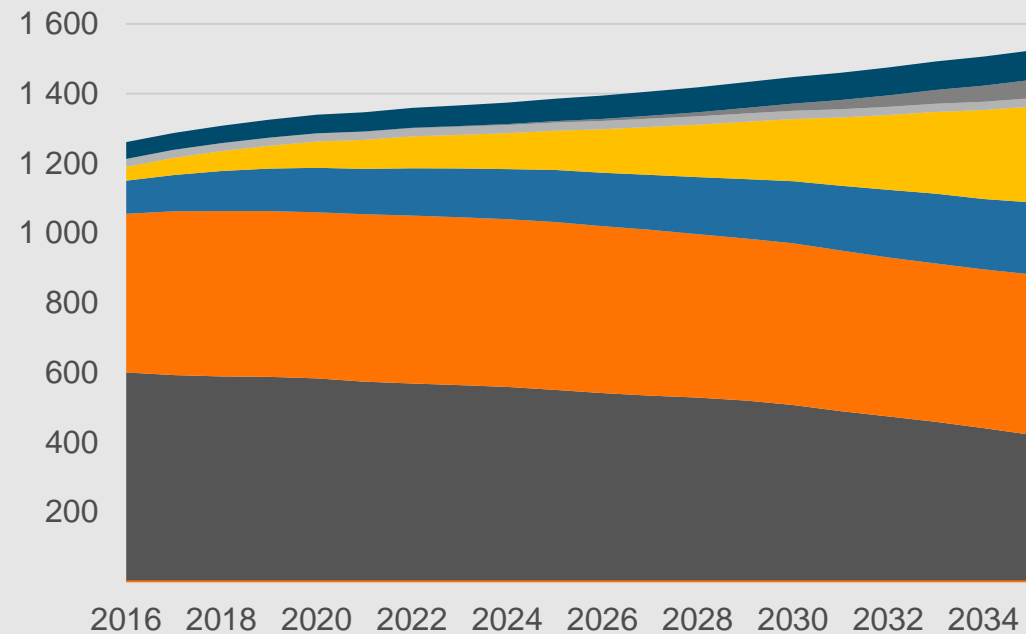


North America:
Smart Power Generation

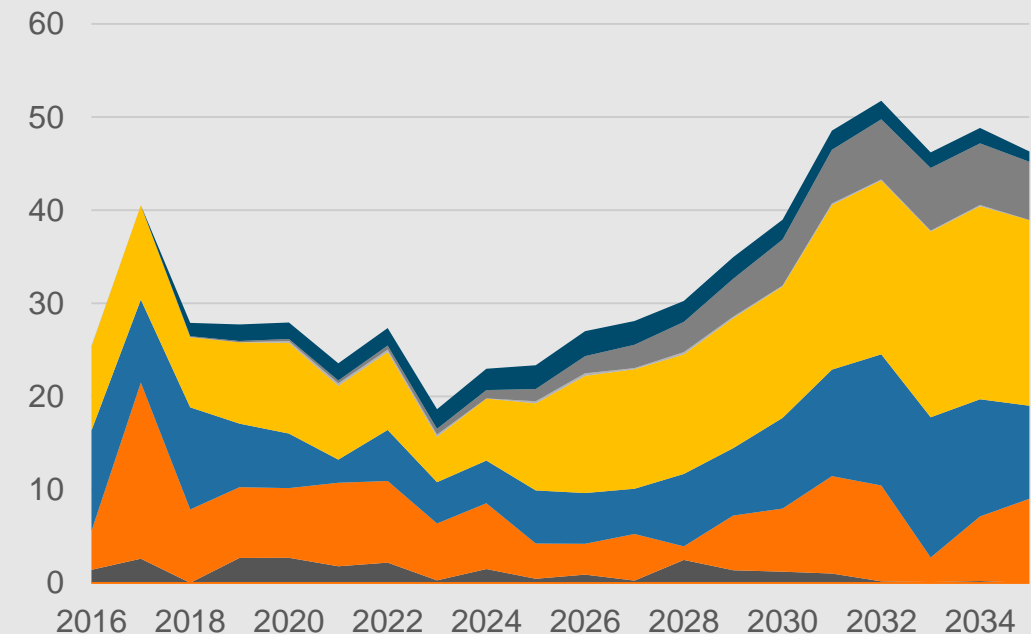


No new traditional baseload – Gas needed to support renewable integration

North America: Cumulative installed capacity (GW)



North America: Gross capacity additions (GW)



■ Traditional baseload ■ Gas ■ Wind ■ Solar ■ Other ■ Batteries ■ Other flexible capacity

Source: Bloomberg New Energy Finance, Traditional baseload = coal, oil, nuclear, hydro, Other = geothermal, biomass, other REs
Other flexible capacity = demand response and other potential sources (e.g. Gas-fired combustion engine power plants)

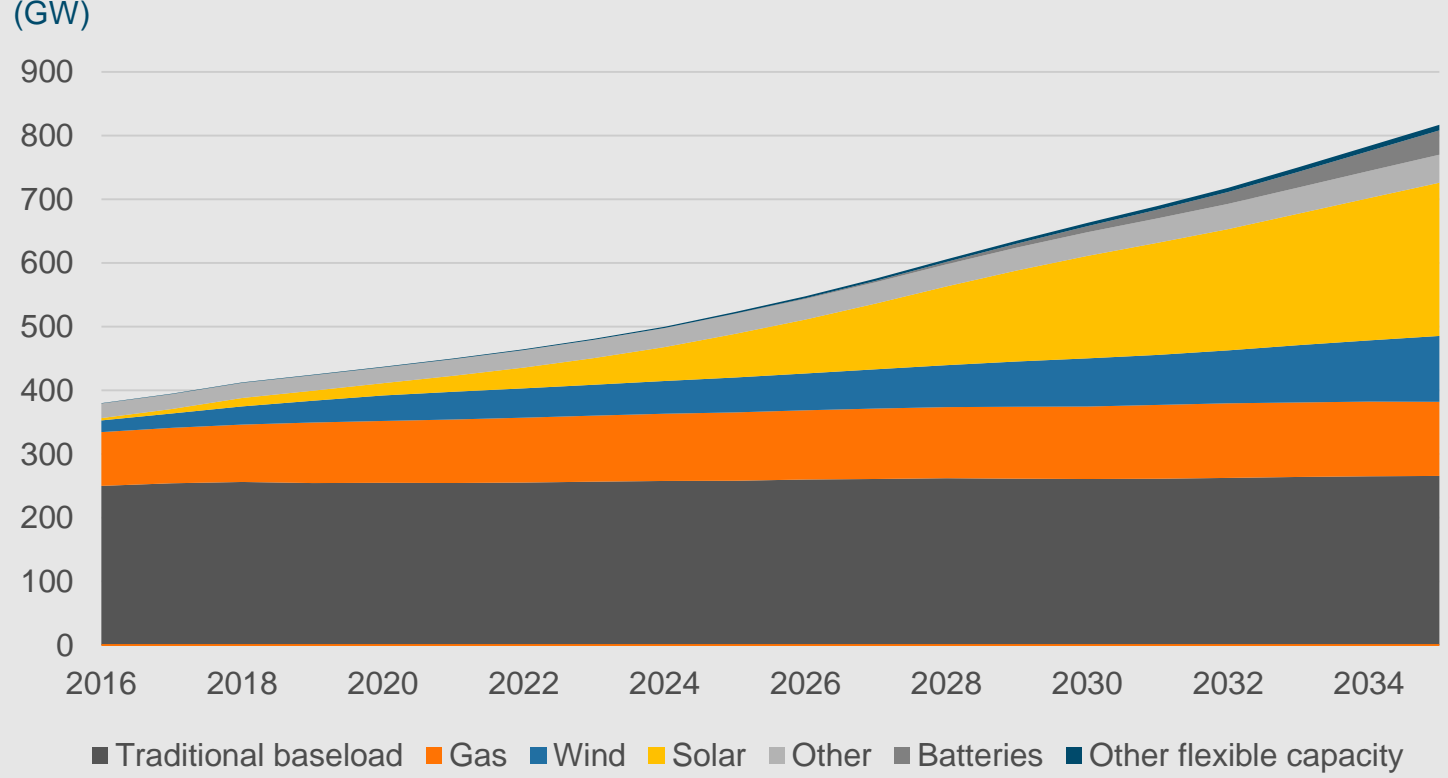
South America:

- Smart Power Generation
- LNG infrastructure
- Solar PV
- Hybrid solutions
- System integration in decentralised grids



Significant power capacity investments needed to meet demand growth

South America cumulative installed capacity (GW)



- South America’s power consumption and installed capacity is expected to more than double in the next 20 years
- An estimated \$430 billion of investment needed to meet that demand

Source: Bloomberg New Energy Finance, Traditional baseload = coal, oil, nuclear, hydro, Other = geothermal, biomass, other REs
 Other flexible capacity = demand response and other potential sources (e.g. Gas-fired combustion engine power plants)

We have won five major power plant projects in Argentina



- Regulatory changes and policy incentives supporting new power generation investments
- Wärtsilä Smart Power Generation plants will strengthen the national grid with reliable power
- Wärtsilä's dual-fuel technology will help our customers cope with the varying supply of natural gas

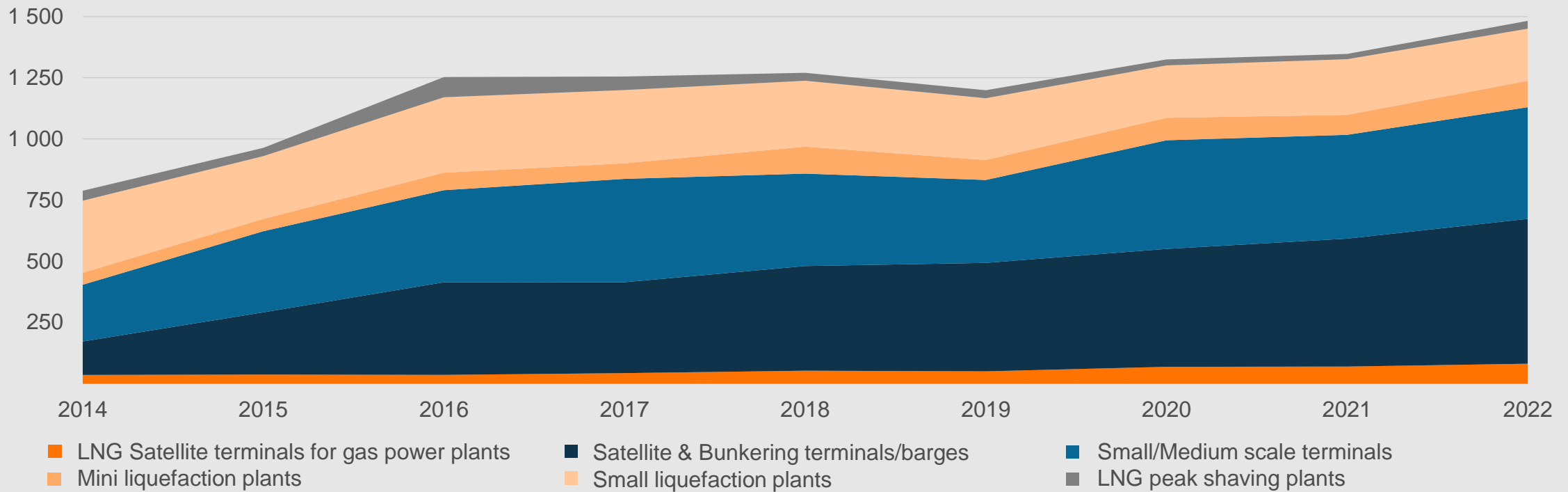


Europe:

- Smart Power Generation
- LNG infrastructure
- Hybrid solutions
- Nuclear emergency gensets

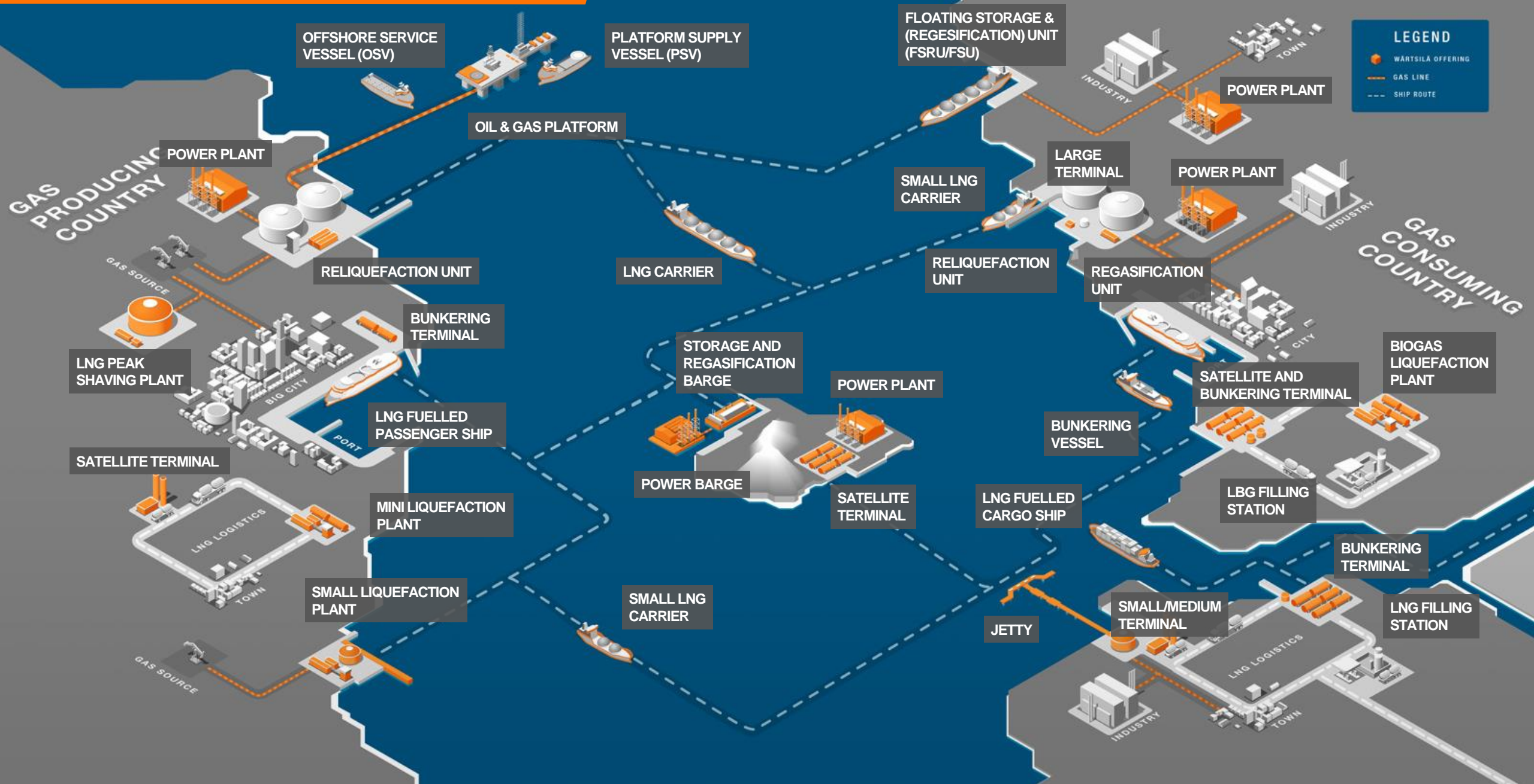
Investments in small-scale LNG projects are expected to grow

Small-scale LNG project investments per segment, excluding China (MEUR)



Sources: Visiongain, Transparency market research & Wärtsilä in-house market study

CONVENTIONAL + SMALL-SCALE VALUE CHAIN



LNG satellite terminal in Raahe, Finland

- A turnkey contract to supply a LNG receiving terminal, scheduled to be operational in April 2018
- The LNG will be supplied to Raahe by trucks from Wärtsilä's first LNG terminal installation, the Tornio Manga facility in Northern Finland
- By switching from LPG to LNG the customer will be able to decrease the emissions of its steel mill



Africa:

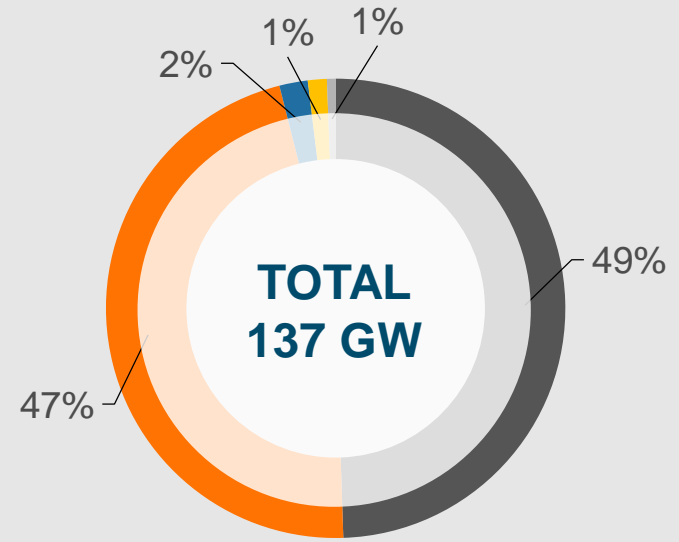
- Smart Power Generation
- Solar PV
- System integration in decentralised grids



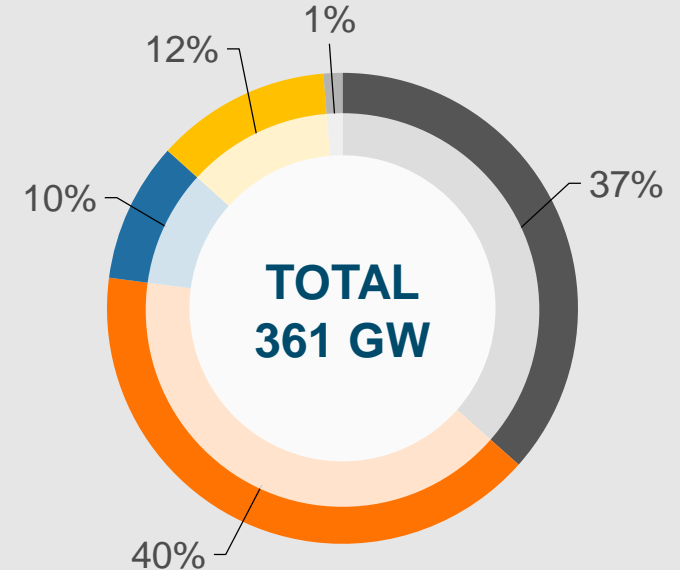
Installed capacity is expected to nearly triple by 2030

- Almost 600 million people in sub-Saharan Africa lack access to electricity
- To reach 70-80% electrification level by 2040, about \$490 billion of capital for new generating capacity, plus another \$345 billion for transmission and distribution is needed

Africa installed capacity 2015



Africa installed capacity 2030



■ Traditional baseload ■ Gas ■ Wind ■ Solar ■ Other

Source: GlobalData, McKinsey "Powering Africa", Traditional baseload = coal, oil, hydro, nuclear, Other = biomass, geothermal

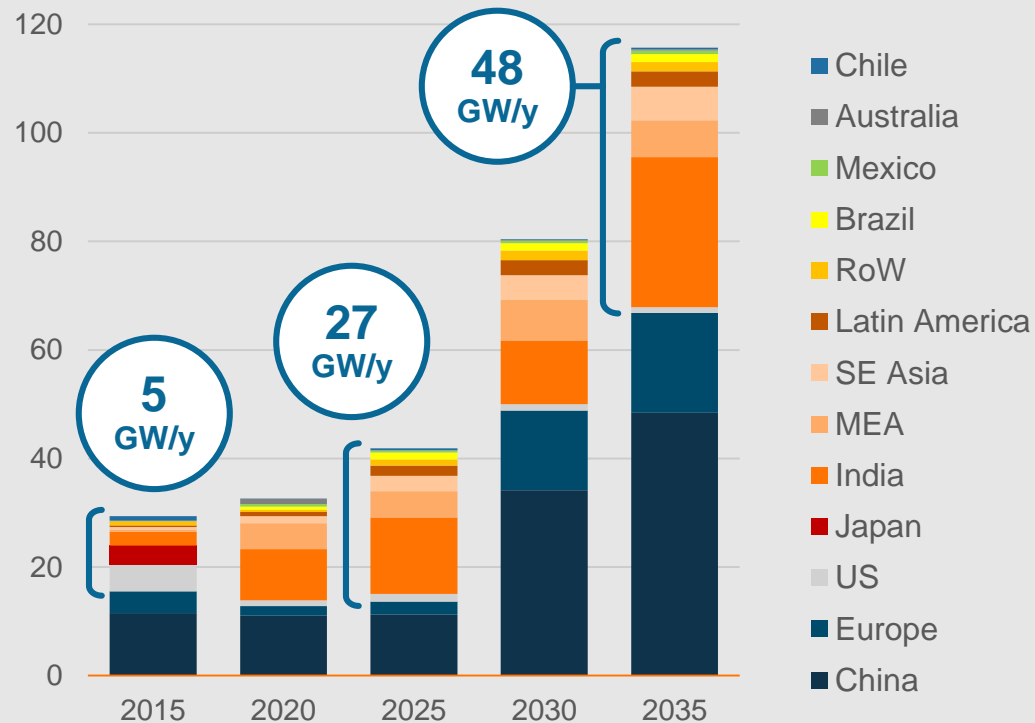


Middle East & Asia:

- Smart Power Generation
- LNG infrastructure
- Solar PV
- Hybrid solutions
- System integration in decentralised grids

Solar is shifting to emerging markets where we have a strong presence

Large scale solar PV gross capacity additions, GW

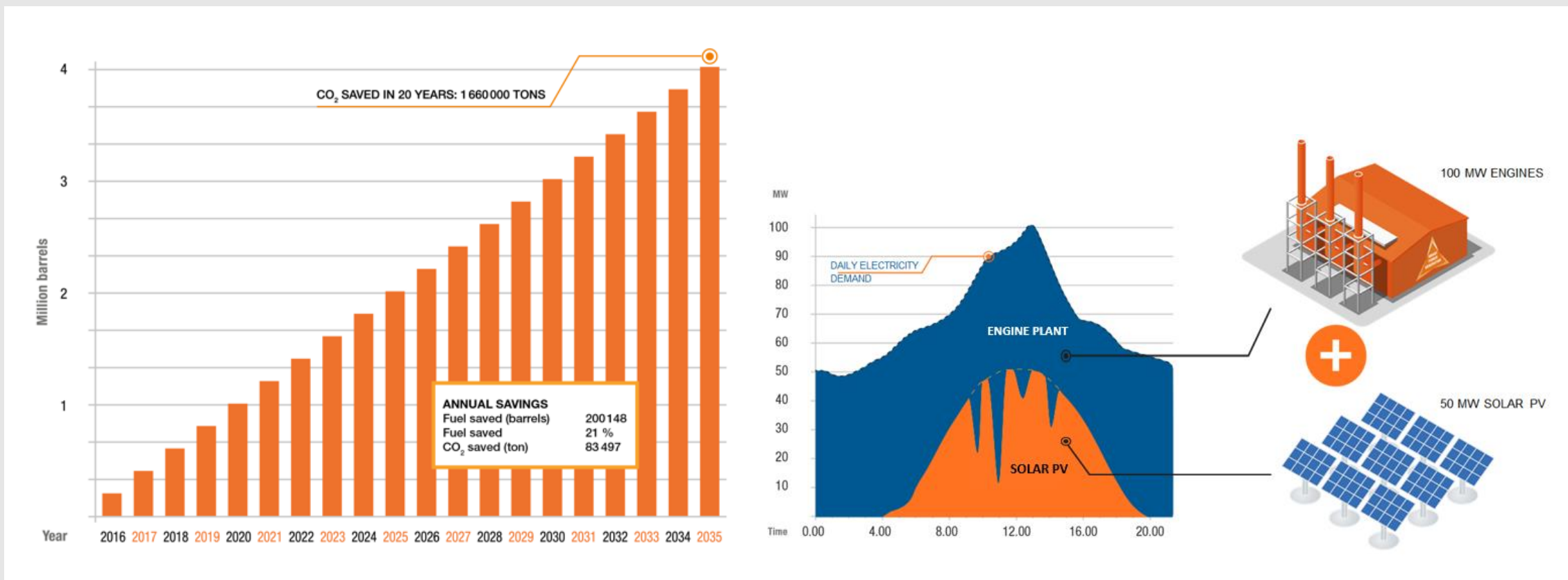


Our competitive edge

- Global turnkey capability
- Global sales network and strong customer base in areas with significant solar energy potential
- Unique solar hybrid solutions with ultra-flexible engines capable of following rapid changes in solar output
- Complete project development and financing services

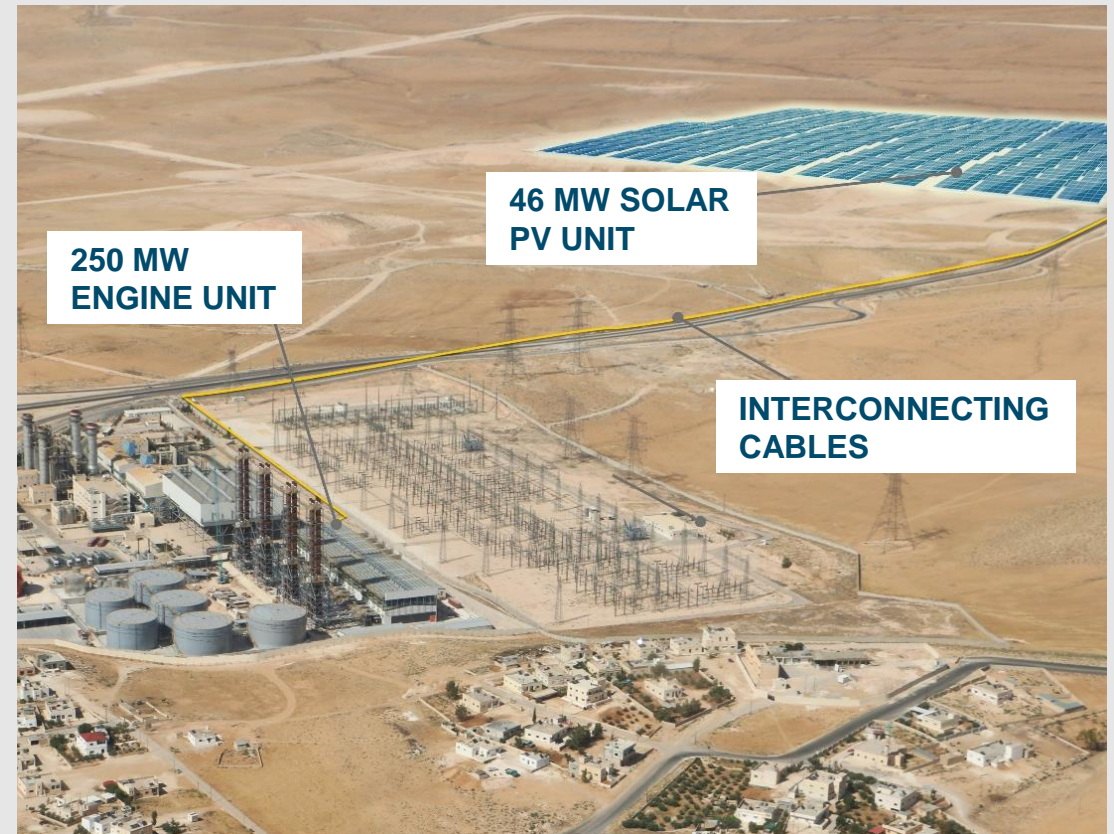
Source: Bloomberg New Energy Finance (Large scale > 1 MW plant capacity)

Our hybrid power plant solutions enable significant fuel savings



250 MW Smart Power Generation + 46 MW solar PV in Jordan

- Wärtsilä delivered the tri-fuel 250 MW smart power generation plant in 2014
- The plant has been operated in peaking mode, following the typical daily demand curve of a hot country
- The 46 MW solar PV plant will produce electricity in the daytime, saving fuel and cutting the carbon footprint of the power plant and the whole grid





ENERGY SOLUTIONS VISION

**Customers recognize us as
the best energy solution provider worldwide.**

We are fast, innovative, reliable and offer a broad range of environmentally sound solutions.

We are the most attractive brand to work with, for our customers and our people.



Speed

Fast response to customers' needs



Simplicity

Focus on value adding activities



Growth

Identify new business opportunities and develop the markets towards our technology



LNG INFRASTRUCTURE

**CAPTURING GROWTH
THROUGH GLOBAL SYSTEMS
INTEGRATION**



ENGINE POWER PLANTS

**SOLAR PV AND ENGINE-SOLAR
HYBRID POWER PLANTS**

THANK YOU



WÄRTSILÄ