Capital Market Day 2020

Generation Section

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Executive Board of Siemens Energy



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Our Management Team
What we stand for



Christian Bruch
CEO

Passion for transformation



Maria Ferraro
CFO

Clear focus on EBITA & Cash



Jochen Eickholt
Member of the Executive Board

Better performance through Operational Excellence



Tim Holt
Member of the Executive Board

Service and digitalization as value drivers

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We are uniquely positioned across central and distributed generation

#2 globally

#1 globally

Business segments

Central generation >100 MW[1]

Distributed generation <100 MW[1]

Service – of our large generation fleet (>100 MW)

Customer groups[2]

~30% | ~20% | ~20% | ~30%



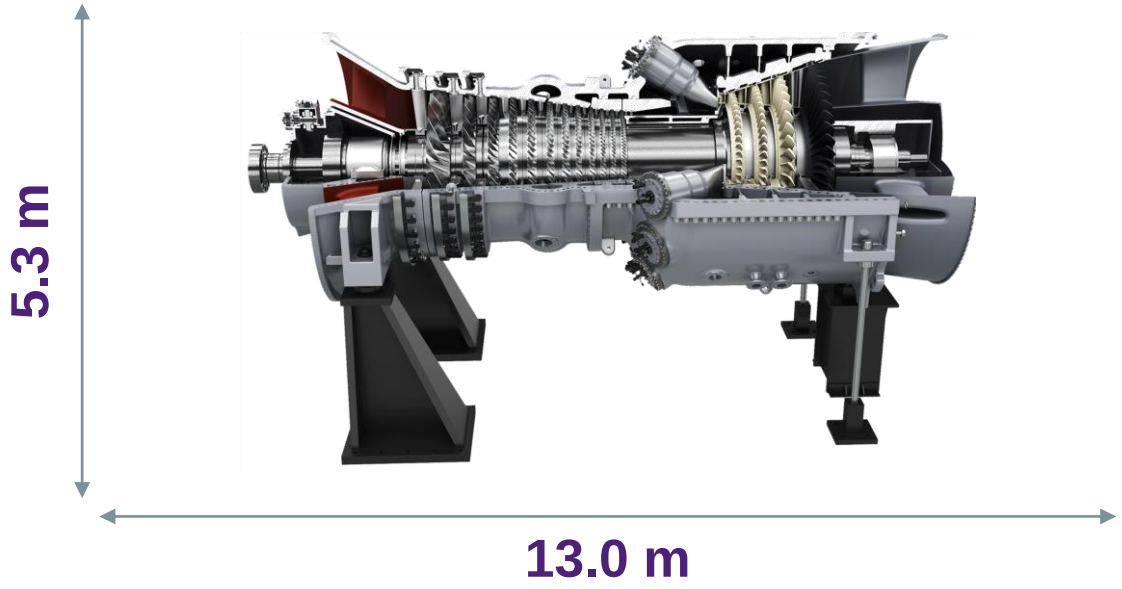
Utilities | **Municipalities** | **IPPs** | **EPCs** | **Industries**

Note: Market position related to addressed market according to Siemens Energy internal assessment for FY19; IPP = Independent Power Producer; EPC = Engineering, Procurement, Construction | **1** Gas Turbines; Steam – Central: >250 MW, Steam – Distributed: <250 MW | **2** Split based on order intake with third parties for new units, FY19

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Snapshot
Our SGT5-9000HL and SGT-800

SGT5-9000HL heavy-duty gas turbine

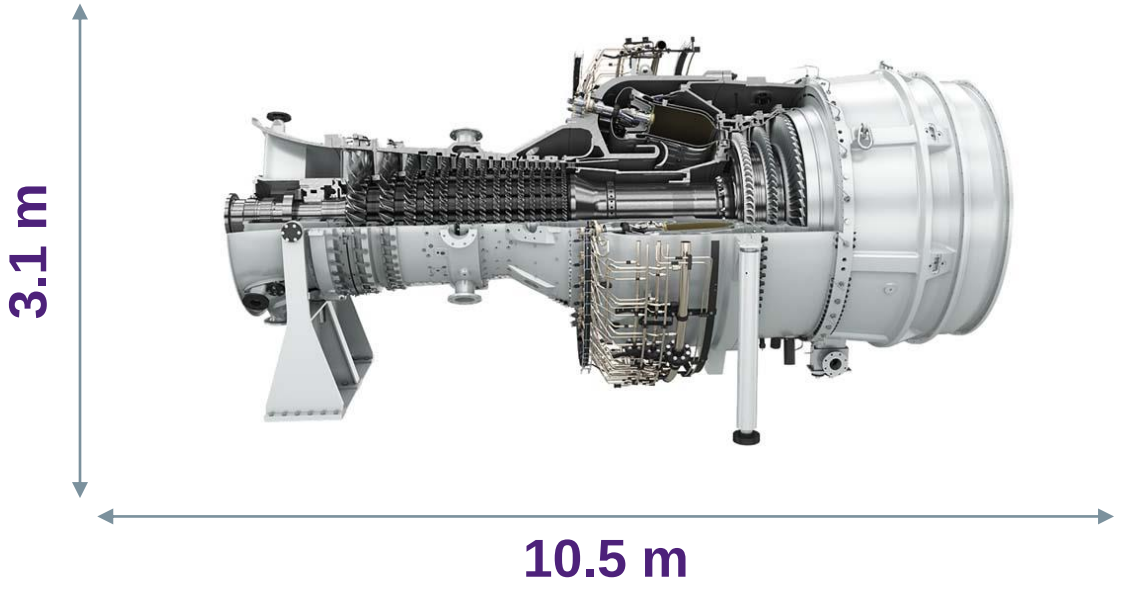


Power output of up to **593 MW**

Powering **3.3 m people**

CO_2 savings equivalent to **1 m cars**[1]

SGT-800 industrial gas turbine



Power output of up to **62 MW**

>400 turbines sold

Capability to burn H_2 of up to **50%**

1 Compared to coal-fired power plants: 3.7 Mt CO_2 savings per year; equal to 1 m mid-range cars clocking up 17,500 km a year

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Siemens Energy Generation by numbers

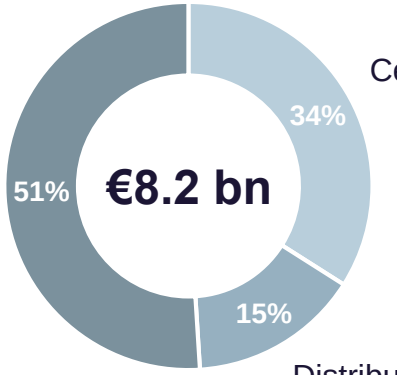
Siemens Energy total revenue (FY19)



~28%

share of Siemens Energy total revenue

Generation total revenue (FY19)[1]



Key figures (FY19)

€33 bn
Order backlog

€8.6 bn
Orders

€8.2 bn
Total revenue

~27 k
Employees

1 Total revenue splits calculated before intra-group consolidation and reconciliation effects

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Siemens Energy Generation
Monetizing our powerful market position and service business

Positioning

A **market leader** with strong global presence, high customer intimacy and highly competitive portfolio

Service

Resilient service business with strong backlog, attractive profitability and a growing fleet

Energy transition

Driving the energy transition by **distributed** offering and innovations in **decarbonized** energy systems and **digital**

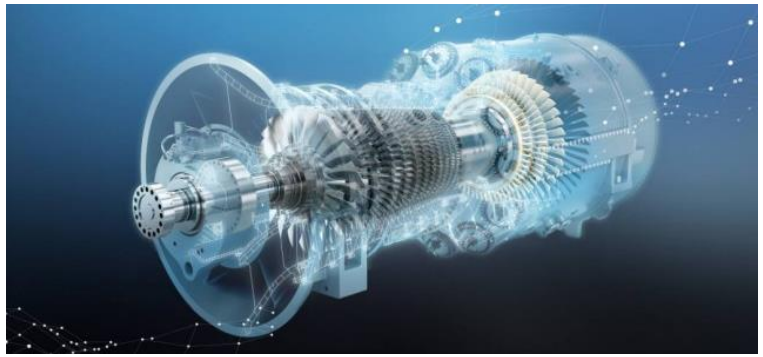
Value

Value generation by **cost-out programs, footprint consolidation, portfolio streamlining and focus on service and distributed**

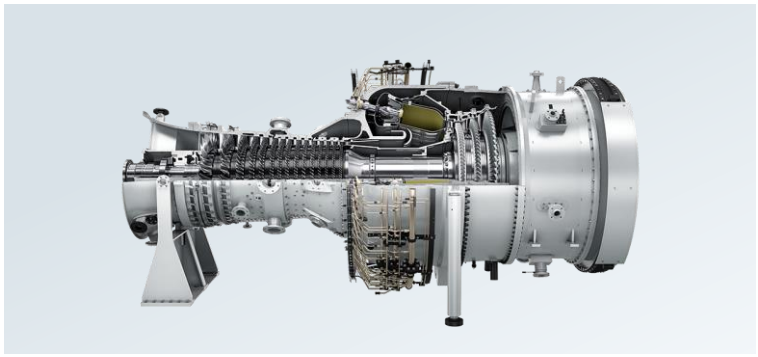
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We are leading across our offer spectrum

Central Generation



Distributed Generation



Service



#2
in large gas turbines (LGT)[1]

#1
in industrial gas turbines (IGT)[1]

25%
share of central generation fleet (>100 MW) [4]

#2
largest fleet >100 MW[2]

#1
in industrial steam turbines (IST)[3]

~16-18 years
average duration of service relationship

Note: Market position related to addressed market according to Siemens Energy internal assessment for FY19 | **1** By market share in number of units | **2** Gas and steam, in number of units | **3** By market share in terms of order intake in € | **4** Considering total global fleet of installed large gas and steam turbines (Siemens Energy internal assessment, based on several industry sources, including fleet data and other market sources; estimated share includes turbines using SE technology)

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With our broad offering we effectively address local needs

	Europe	Middle East[1]	Americas	China	APAC
Generation share of fleet[2]	~20%	~30%	~30%	~15%	~25%
Local needs	**Decarbonization**	**Power to society**	**Coal to gas and gas to power**	**Coal to gas**	**Nuclear to gas**
Generation offering/value proposition	**Germany Marl Project** High CHP efficiency	**Egypt Roadmap** Joint development	**US Lincoln County** HL[3] intro and partnership	**UGTC** Technology partnership	**Korea HL Market Intro** Highly efficient solution








Note: CHP = Combined Heat and Power; UGTC = China United Heavy-duty Gas Turbine Company
1 Including Africa | **2** Siemens Energy Generation fleet (including technology ownership) vs. total fleet >100 MW | **3** HL-class turbine

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The generation market is transforming
Growth in distributed, decline in central

Global LGT demand: **~70-80 units p.a. vs. ~200 in FY14** – growth in **powerful jumbo frames** (>300 MW)

Growth in IGT (highly efficient CHP solutions, hybrid)

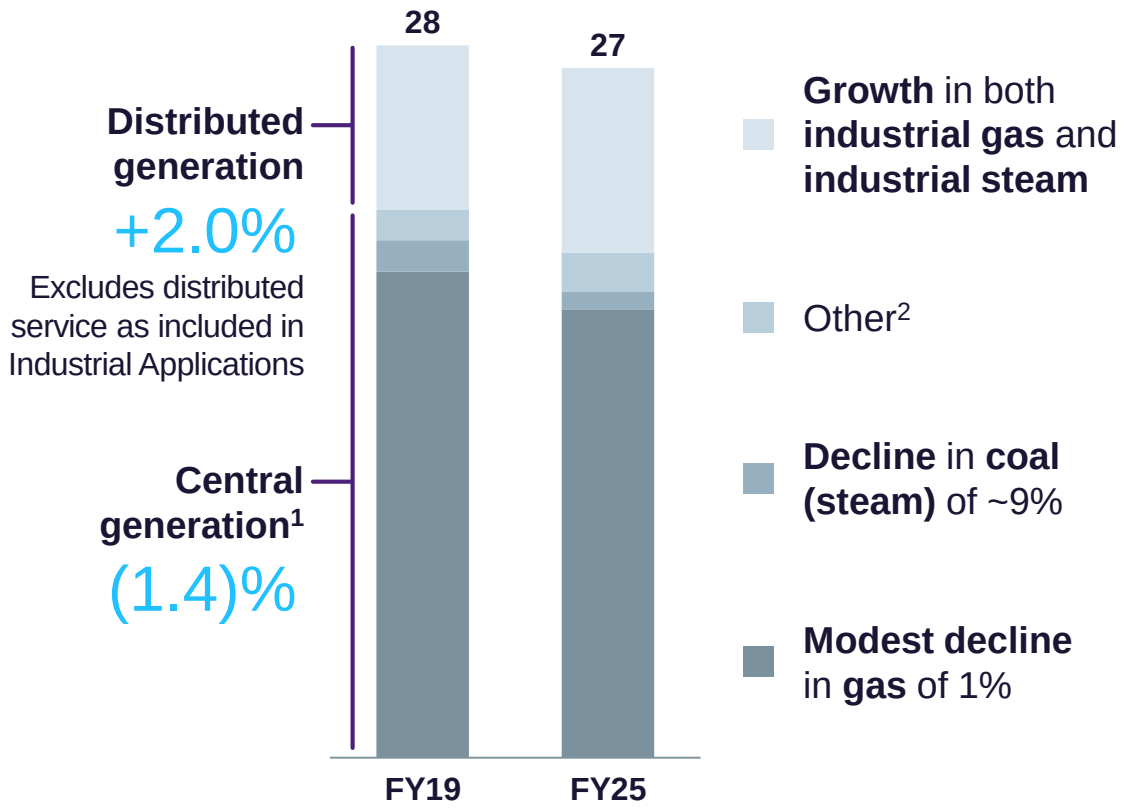
Decline in large steam alongside coal

Growth in IST in biomass and waste-heat usage

Increased demand for **retrofit and modernization**

Service business as a resilient foundation

Our addressable market (in € bn, CAGR)



Source: SE Common Market Model (CMM Q2/20) | **Note:** CHP = Combined Heat and Power | **1** Combined view New Unit and Service; decline in gas of 1% is related to LGT market, decline in coal of 9% is related to LST for coal applications. Percentages for market segment sizes based in € | **2** Nuclear, oil

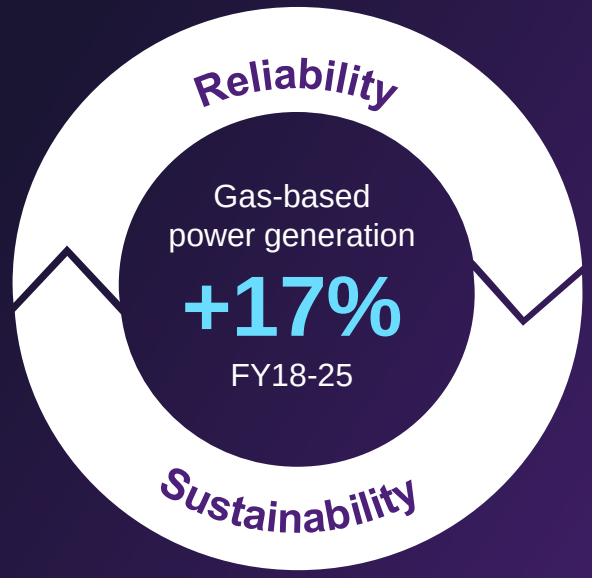
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Gas will remain a key technology and decarbonization enabler

Our tailored offerings

- **New gas power plants –** Highly efficient and reliable, CCPP and CHP applications
- **Coal to gas –** Increase efficiency up to 25 pp[1], reduce CO_2 emissions
- **Shift to hydrogen –** H_2 co-firing
- **Brownfield engine exchange –** Reduce CO_2 emissions
- **Hybrid solutions –** Low to zero carbon emissions, integration of renewables, H_2 as energy storage

Gas to Power
Backbone of a reliable energy system



Power to Gas
Storing electricity from renewables

Source: IEA World Energy Outlook 2019, SDS Scenario (TWh)
Note: CCPP = Combined Cycle Power Plant; CHP = Combined Heat and Power | **1** Converting old steam plant into highly efficient CCPP

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Efficiency, performance, emissions
We have a leading technology platform

	Large gas		Industrial gas	Industrial steam
	F-Class	H/J-Class[2]	SGT-800	SST-700/900
Ambition	Improve performance and defend #1 position	Establish our competitive next generation gas turbine	Expand market lead further	Maintain leadership in fragmented market
Market position (FY19)[1]	#1	#2	#1	#1
Customer story	**Bin Qasim III, Pakistan** First F-Class order from Pakistan 2x 4000F … **essential in meeting Karachi's future energy demands**. … a testament to KE's commitment to improving the reliability of power supply … ***Moonis Alvi*** *(K-Electric)*	**Keadby 2, UK** First 50 Hertz HL-class SGT5-9000HL … **UK's cleanest and most efficient gas-fired power station**, displacing older, more carbon-intensive generation … ***Stephen Wheeler*** *(SSE Thermal)*	**B.Grimm Power, TH** 7x 140 MW power train solutions including 14x SGT-800 and 7x SST-400 We are very **pleased with the performance of our existing fleet of SGT-800's**, so it was **natural to choose SGT-800 for the further fleet expansion** … ***Preeyanart Soontornwata*** *(B.Grimm Power)*	**Omaezaki Biomass, JP** Seventh order from Toyo in Japan SST-700/900 **Siemens is one of our most important partners**, with whom we have a great success in biomass utilizing **Siemens' highly efficient steam turbine generator** … ***Keiji Morino*** *(Toyo Engineering)*

1 Large gas turbines and industrial gas turbines by market share in number of units; industrial steam by market share in terms of order intake in €
2 New HL-class entered market in 2018

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We have unique capabilities to realize the world's most crucial projects

Egypt
Megaproject



Support national goals of sustainable economic growth

France
CCPP



Ensure security of supply and growing consumer needs for electricity

Brazil
Gas to Power



Provide financing models in project development

Germany
CHP



Support district heating of up to 150,000 households

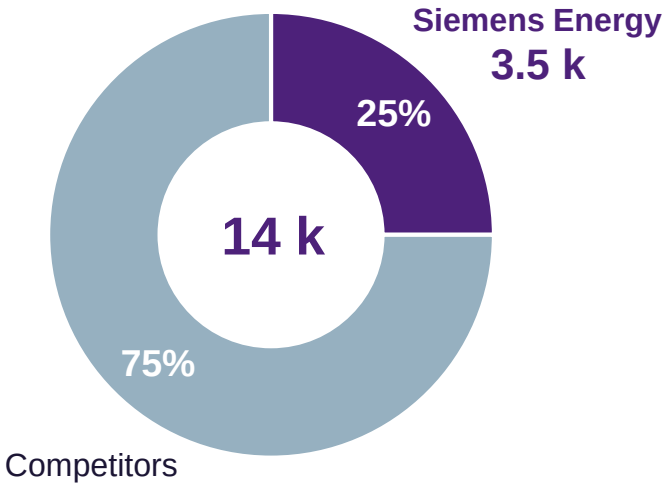
Project de-risking – reduced scope, capabilities, more selectivity

Note: CCPP = Combined Cycle Power Plant; CHP = Combined Heat and Power

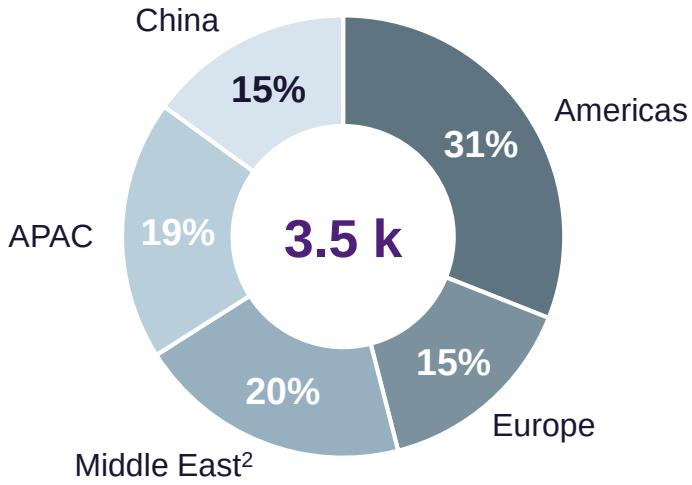
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A large and attractive service business

Share of global fleet (>100 MW)[1]



SE fleet by region (>100 MW)[1]



#2 installed fleet

Well **balanced** globally

~16-18 years average duration of service relationship

~4% p.a. growth of service order backlog (FY17 to FY19)

>90% of service order backlog is based on long-term service agreements

Majority of revenue **gas related** (vs. coal)

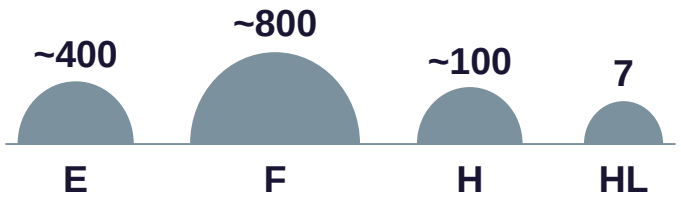
1 SE fleet (including technology ownership) vs. total fleet >100 MW | **2** Including Africa

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Leveraging our powerful service business

Grow installed fleet

Gas turbines installed/under installation



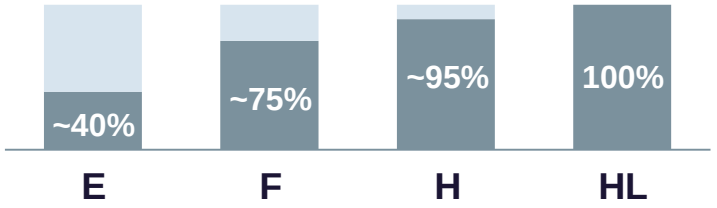
+ ~6% installed fleet growth until FY25

Drive utilization via upgrades

- Displacement of older frames
- Flexibility and performance
- H_2 co-firing

Optimize LTPs

% of projects sold with LTP or O&M



~66% projects with >12 years LTP or O&M

Strengthen LTPs

- Additive Manufacturing
- Extension of service intervals

Generate new business

- **Brownfield engine exchange**
- **Coal to gas repowering**
- **Tailor made** service offerings
- **Decarbonization roadmaps**
- **Digital** offerings

Note: LTP = Long-Term Service Program; O&M = Operation and Maintenance Contract

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Extending our lead in distributed generation

Key success factors

- Focused go-to-market approach
- Superior products (e.g. SGT-800)
- Pricing and delivery excellence

Gaining market share

Industrial gas turbines

#1 globally

Market share gain of 4pp (FY18-19) to almost 30%[1]

Industrial steam turbines

#1 globally

~30% market share[2] – well ahead of competition

Industrial power plant at Marl Chemical Park, Germany

EVONIK Leading Beyond Chemistry

- Turnkey construction of two 90 MW power plant units
- Up to 1 m tons of annual CO_2 savings

… we're ending our coal-based production of electricity, process steam and district heat in Marl after more than 80 years.

Thomas Wessel, Evonik

Note: Market position related to addressed market according to Siemens Energy internal assessment for FY19
1 By market share in number of units | **2** By market share in €

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Capturing growth by decarbonizing energy systems

	Efficiency increase	Fuel switch and hybridization	Deep decarbonization
Customer drivers	Emissions regulations, cost reductions, reliability	Emission reduction, flexibility, grid stability, storage integration	Up to 100% H_2 for carbon-free energy production from stored excess renewable energy
Examples			
	Santo Domingo floating power plant Hybrid power plant solution (SCC-800 2x1) with integrated battery energy storage[1]	**Stadtwerke Leipzig – Coal to gas switch** 2x SGT-800 Gas turbines, 2x SGen-100A SIESTART battery storage	**HYFLEXPOWER** Decarbonizing a paper factory by modernizing an existing CHP plant
	Clean and green electrical energy solution	**Readiness for transformation to 100% H_2**	**World's first industrial-scale power-to-X-to-power demonstrator**

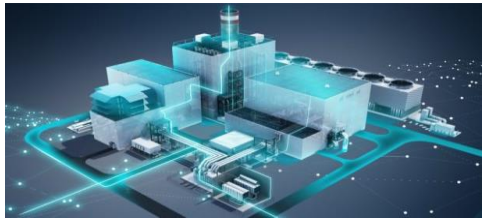
Note: CHP = Combined Heat and Power | **1** Provision of 145 MW flexible generation

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Unlocking value with our pioneering digital offerings

Building on a portfolio addressing key customer needs

Intelligent gas turbine controller



- Gas turbine efficiency increase
- Reduction of NO_X emission

Fleet management suite



- Addressing growing $1.3 bn virtual power plant market
- Up to 4% increase in fleet efficiency

Combining digital with our strengths to re-think value

From remote to auto-nomous powerplant



- Moving from remote to managed service models
- Control powerplants with fewer or no people on-site

Digital twin and VR



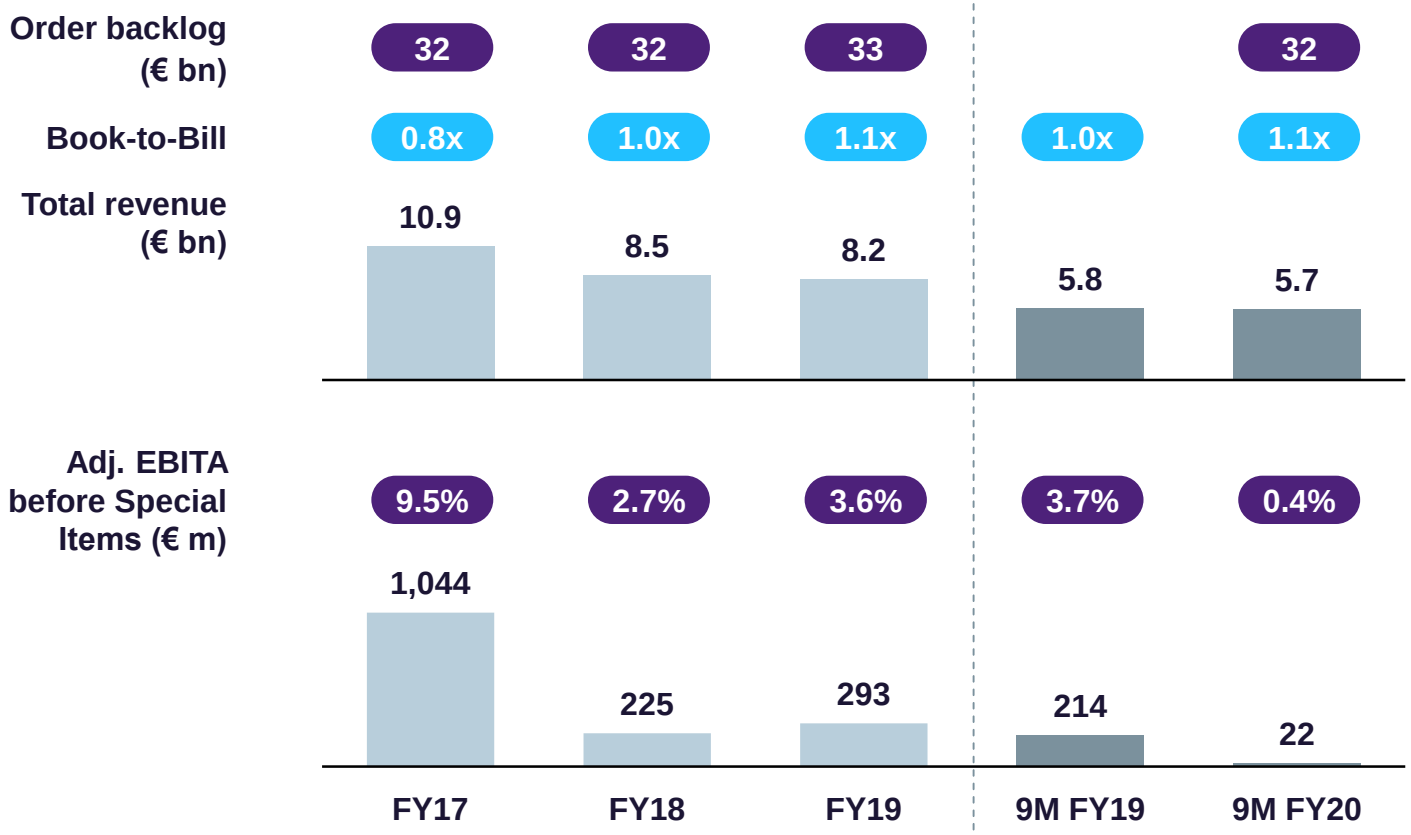
- Accurate integrated data collection for outage optimization
- Improving turbine design, planning and processes

Additional business from new markets, new business models and higher value-add

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Decline in LGT market has hit performance
Rightsizing underway

Siemens Energy Generation



Note: Order backlog shown as of fiscal year end. Order backlog defined as order backlog of prior reporting period plus value of orders of current reporting period less revenue recognized in current reporting period and adjusted for direct order value adjustments

~60% LGT market decline (FY14-18) led to under-absorption and price pressure

› **Restructuring programs in place**

High one-time R&D to accelerate HL-class development

› **Successful HL launch**

Complex organization led to high SG&A and NCCs

› **New, leaner setup**

COVID-19 impact on FY20 YTD

› **Partial catch-up in FY21**

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Full focus on value generation
No excuses

Profitability

Growth
- Extend **#1 position** in IGT and IST
- Grow **service**
- Customer intimacy: **Partner of choice** for **decarbonization**

Footprint
- **Eliminate over-capacities** and **complexity**
- **Optimized manufacturing** to improve utilization

Project excellence
- **Be selective** (de-risking)
- **Reduce NCCs**
- **Drive technology partnerships** (e.g. GT/P-2-X[1])

Portfolio
- **Review options to exit coal**
- **Focus on high-margin, high-volume**

Cost optimization
- **Focus R&D** on core revenue carriers
- **Rightsize** support organization
- **Execute cost-out programs**

New management and organizational structure (since April ’20) – from functional setup to product end-to-end responsibility

1 GT/P-2-X = Gas Turbine/Power-to-X

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Conclusion

We are ...

1. **The clear leader in distributed generation**
   #1 in IGT and IST with growing market shares
2. **Highly competitive in central generation**
   25% market share and successful launch of HL-class
3. **Monetizing our strong position in gas**
   Gas to remain a key technology
4. **A service powerhouse**
   51% of our revenue
5. **The partner of choice for decarbonization**
   From H_2 co-firing hybrid to deep decarbonization offering
6. **On a clear path to value generation**
   Selectivity, rightsizing of operations and harvest service

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