

## Capital Market Day 2020

Generation Section Jochen Eickholt, Member of the Executive Board of Siemens Energy



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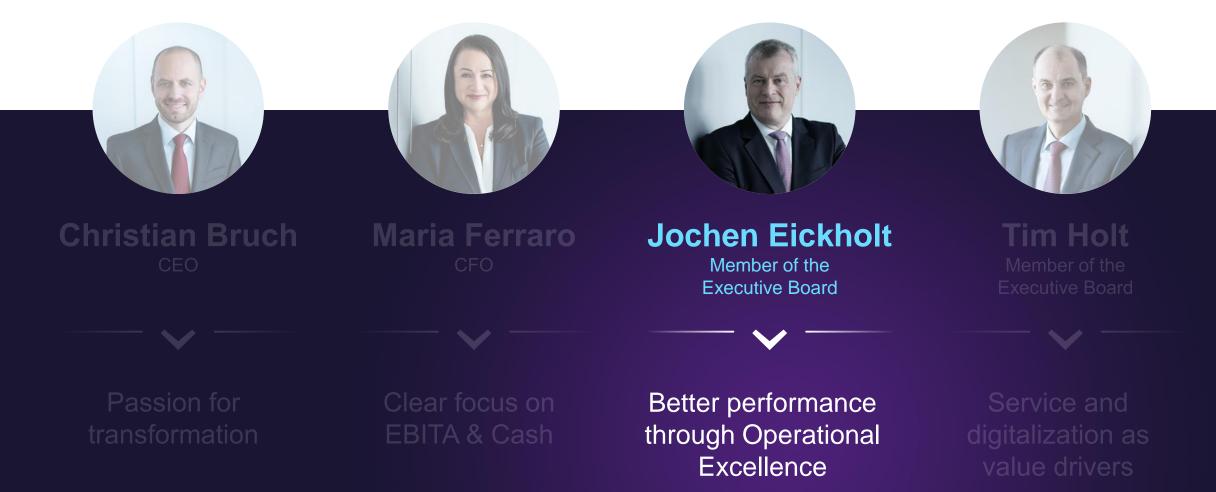
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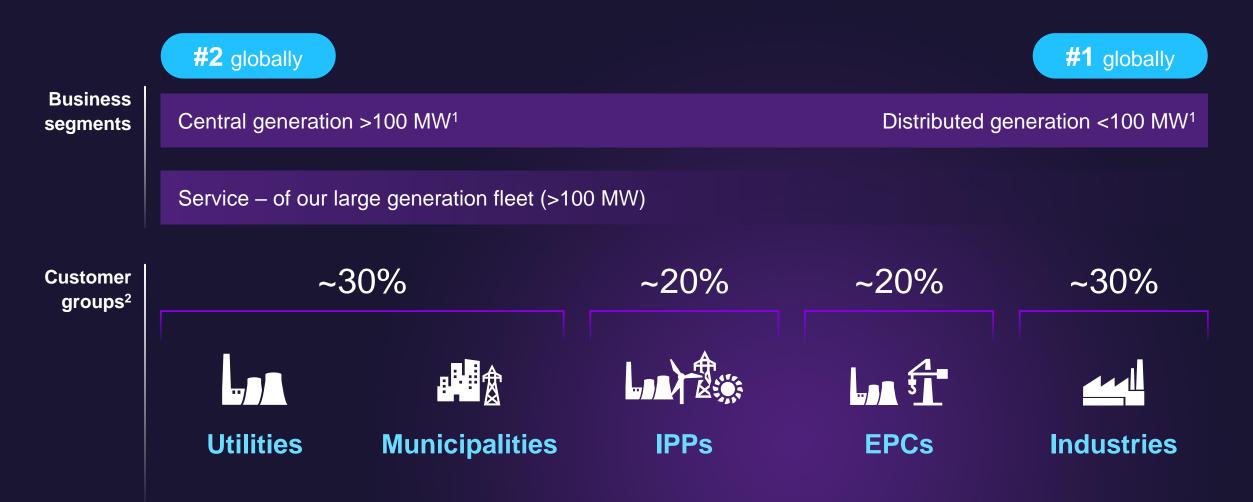
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## **Our Management Team** What we stand for



# We are uniquely positioned across central and distributed generation



**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

#### Ε Ε 5.3 3.1 13.0 m 10.5 m CO<sub>2</sub> savings Powering **3.3 m** Power output of up to Power output of up to Capability to burn H<sub>2</sub> >400 equivalent to 593 MW 62 MW of up to **50%** people turbines sold 1 m cars<sup>1</sup>

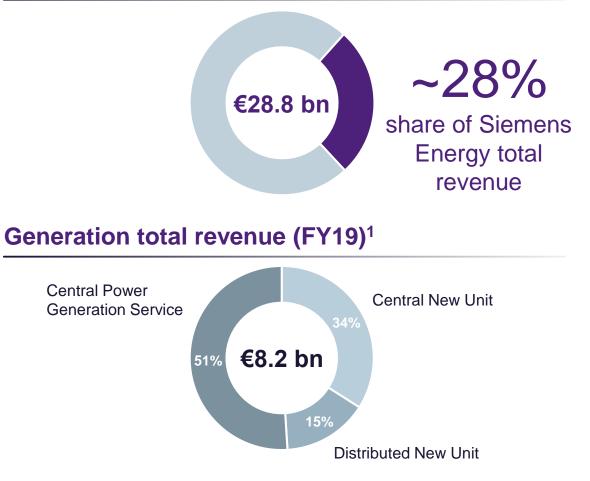
SGT-800 industrial gas turbine

1 Compared to coal-fired power plants: 3.7 Mt CO<sub>2</sub> savings per year; equal to 1 m mid-range cars clocking up 17,500 km a year 2020-09-01

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# Siemens Energy Generation by numbers

#### Siemens Energy total revenue (FY19)



**1** Total revenue splits calculated before intra-group consolidation and reconciliation effects 2020-09-01

#### Key figures (FY19)

€33 bn

Order backlog

## €8.6 bn

Orders

€8.2 bn

Total revenue

~27 k

Employees

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Positioning



Service



Energy transition



Siemens Energy Generation Monetizing our powerful market position and service business

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

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

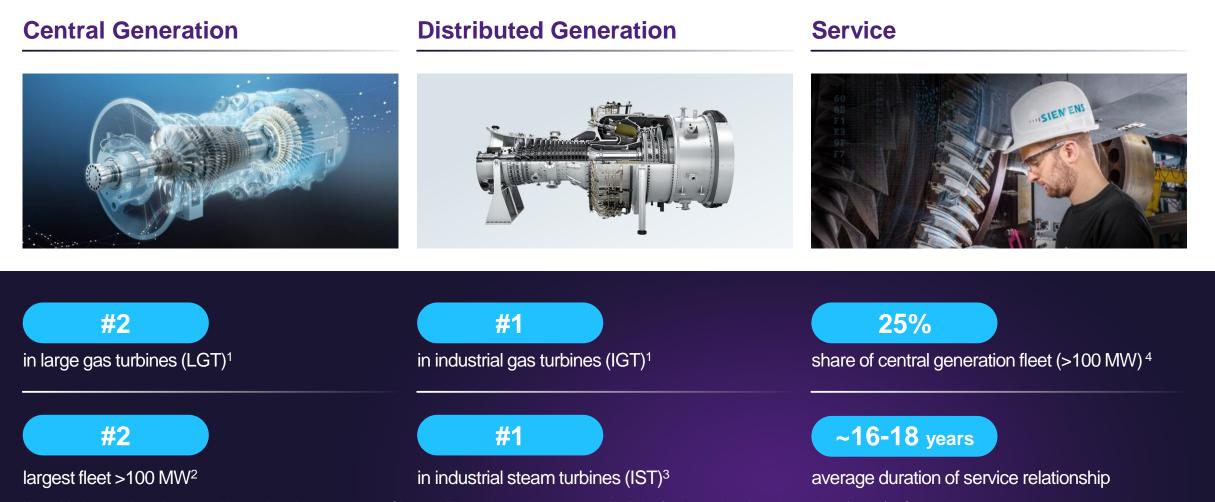
Driving the energy transition by **distributed** offering and innovations in **decarbonized** energy systems and **digital** 

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





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) CN

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# With our broad offering we effectively address local needs



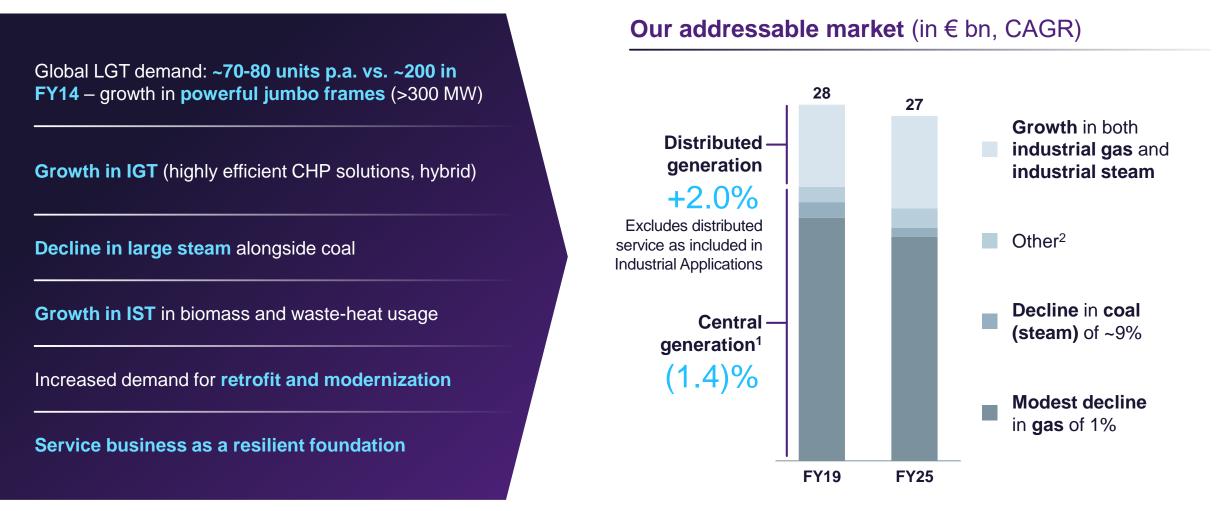
|  | Europe   | Middle East <sup>1</sup>                            | Americas  | China                                 | APAC  |
|--|--|---|---|---------------------------------------|---|
| Generation<br>share of<br>fleet <sup>2</sup> | ~20%   | ~30%  | ~30%  | ~15%                                  | ~25%  |
| Local needs                                  | Decarbonization  | Power to society                                    | Coal to gas and gas to power  | Coal to gas                           | Nuclear<br>to gas                                     |
| Generation<br>offering/value<br>proposition  | <b>Germany Marl<br/>Project</b><br>High CHP efficiency | <b>Egypt</b><br><b>Roadmap</b><br>Joint development | <b>US Lincoln<br/>County</b><br>HL <sup>3</sup> intro and partnership | <b>UGTC</b><br>Technology partnership | Korea HL<br>Market Intro<br>Highly efficient solution |
|  |  |   | and the   | 战略伙伴关系框架协议                            |   |

**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 2020-09-01

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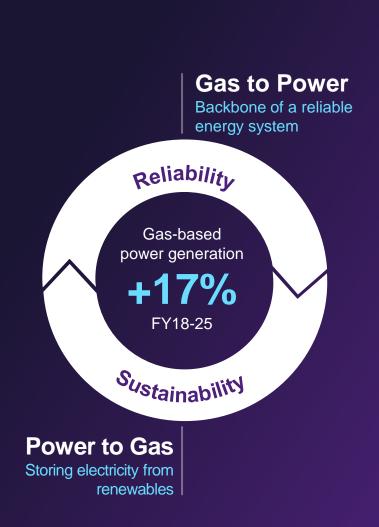
## The generation market is transforming Growth in distributed, decline in central





**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  $\in$  | **2** Nuclear, oil 2020-09-01

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**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

2020-09-01

# Gas will remain a key technology and decarbonization enabler

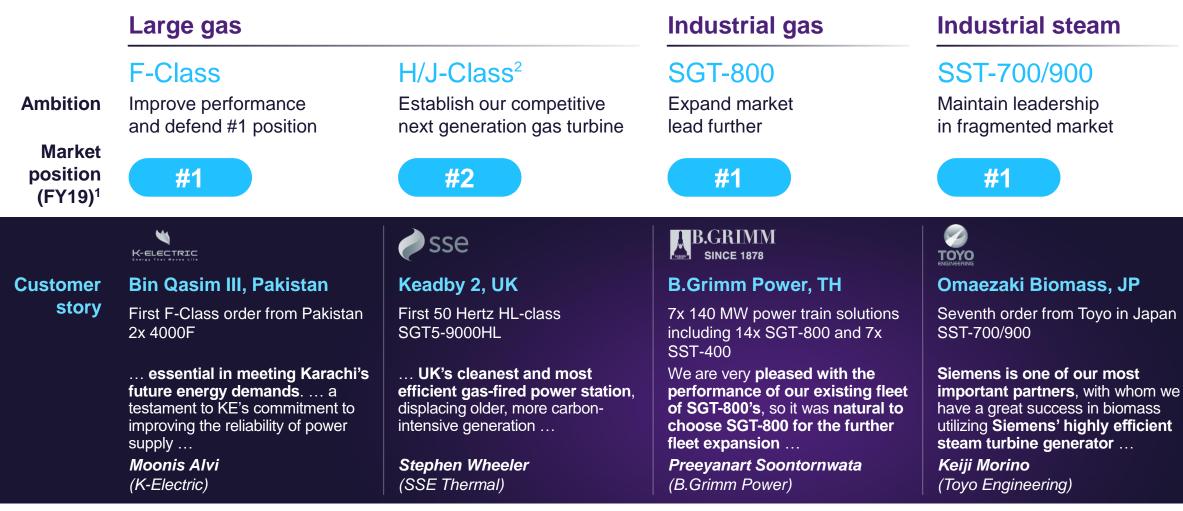
#### **Our tailored offerings**

- New gas power plants Highly efficient and reliable, CCPP and CHP applications
- Coal to gas Increase efficiency up to 25 pp<sup>1</sup>, reduce CO<sub>2</sub> emissions
- Shift to hydrogen H<sub>2</sub> co-firing
- **Brownfield engine exchange –** Reduce CO<sub>2</sub> emissions
- Hybrid solutions Low to zero carbon emissions, integration of renewables, H<sub>2</sub> as energy storage

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## **Efficiency, performance, emissions** We have a leading technology platform



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

#### France CCPP

#### Brazil

Gas to Power

Germany CHP



Support national goals of sustainable economic growth



Ensure security of supply and growing consumer needs for electricity



Provide financing models in project development



Support district heating of up to 150,000 households

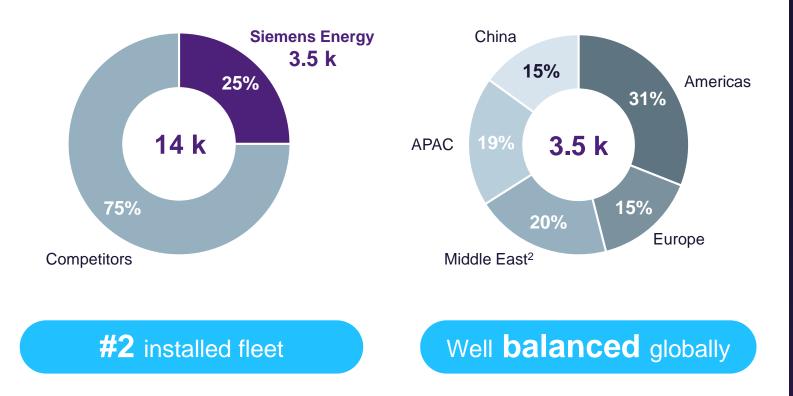
#### Project de-risking – reduced scope, capabilities, more selectivity

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# A large and attractive service business

Share of global fleet (>100 MW)<sup>1</sup>

SE fleet by region (>100 MW)<sup>1</sup>



## ~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)

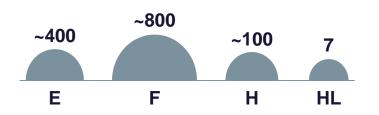
1 SE fleet (including technology ownership) vs. total fleet >100 MW | 2 Including Africa 2020-09-01

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# Leveraging our powerful service business

#### **Grow installed fleet**

Gas turbines installed/under installation



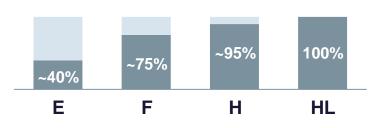
 $+ \sim 6\%$  installed fleet growth until FY25

#### Drive utilization via upgrades

- Displacement of older frames
- Flexibility and performance
- H<sub>2</sub> 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

## Extending our lead in distributed generation



# Key success factorsGainingFocused go-to-<br/>market approachIndustrFocused go-to-<br/>market approach#1 gMarket approach#2 gSuperior products<br/>(e.g. SGT-800)Industr

## Pricing and delivery excellence

#### **Gaining market share**

#### Industrial gas turbines

## **#1** globally

Market share gain of 4pp (FY18-19) to almost 30%<sup>1</sup>

#### Industrial steam turbines

**#1** globally

~30% market share<sup>2</sup> – well ahead of competition

#### Industrial power plant at Marl Chemical Park, Germany



- Turnkey construction of two 90 MW power plant units
- Up to 1 m tons of annual CO<sub>2</sub> 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 €

# Capturing growth by decarbonizing energy systems



#### **Efficiency increase**

Customer drivers Emissions regulations, cost reductions, reliability

#### SEAB SARD

#### Examples



Santo Domingo floating power plant Hybrid power plant solution (SCC-800 2x1) with integrated battery energy storage<sup>1</sup>

Clean and green electrical energy solution

Readiness for transformation to 100% H<sub>2</sub>

#### Deep decarbonization

Up to 100%  $H_2$  for carbon-free energy production from stored excess renewable energy



Emission reduction, flexibility, grid

stability, storage integration

**Fuel switch and** 

hybridization



Leipziger



HYFLEXPOWER

Decarbonizing a paper factory by modernizing an existing CHP plant

## World's first industrial-scale power-to-X-to-power demonstrator

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**Note:** CHP = Combined Heat and Power | **1** Provision of 145 MW flexible generation 2020-09-01

# Unlocking value with our pioneering digital offerings



Intelligent gas turbine controller Fleet management suite



- Gas turbine efficiency increase
- Reduction of NO<sub>X</sub> emission



ENDE ANDINA

- 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 autonomous powerplant Digital twin and VR



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



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

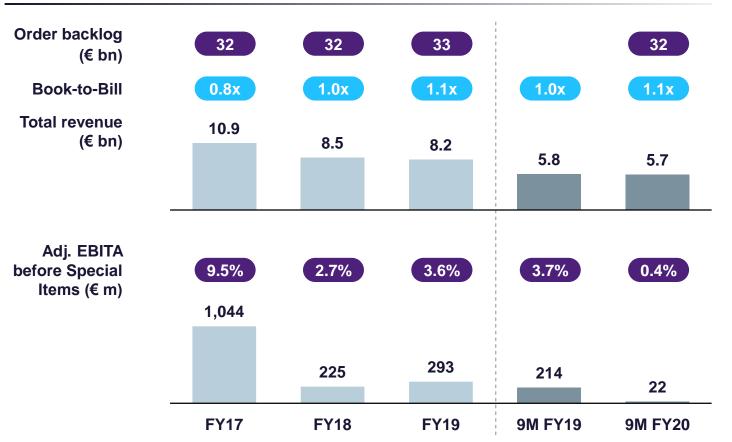
Additional business from new markets, new business models and higher value-add

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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 NCCsNew, leaner setup

COVID-19 impact on FY20 YTDPartial catch-up in FY21

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## Full focus on value generation No excuses

### **Profitability**



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

Footprint

- Eliminate overcapacities and complexity
- Optimized manufacturing to improve utilization

#### **Project excellence**

- Be selective (de-risking)
- Reduce NCCs
- Drive technology partnerships (e.g. GT/P-2-X<sup>1</sup>)

#### **Portfolio**

 Review options to exit coal

 Focus on highmargin, 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

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## Conclusion We are ...



The clear leader in distributed generation #1 in IGT and IST with growing market shares



Highly competitive in central generation 25% market share and successful launch of HL-class



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Monetizing our strong position in gas Gas to remain a key technology

A service powerhouse 51% of our revenue

The partner of choice for decarbonization From  $H_2$  co-firing hybrid to deep decarbonization offering

On a clear path to value generation Selectivity, rightsizing of operations and harvest service

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