

Siemens Energy and Oil & Gas

Achim Wörner, Chief of Staff, Siemens AG
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Siemens Energy and Oil & Gas -Leading market positions along the entire energy value chain





in Oil & Gas

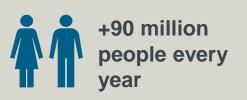
in Offshore Wind Power

in Fossil Power Generation

in Power **Transmission**

in Power **Distribution** in Automation and Drives

Market drivers



Growing population



More people living in cities

Increasing Urbanization Further electrification





Climate change

A strong portfolio in Electrification, Automation and Digitalization with a focus on Innovation





Portfolio highlights

Oil & Gas

- Compression and drives
- Power generation and distribution
- Process, automation and digital solutions

Power Generation

- Gas turbines (4-400 MW)
- Steam turbines (45 kW-1,900 MW)
- Onshore/Offshore Wind turbines (2.3-7 MW)

Power Transmission

- High voltage transmission systems (DC/AC)
- Grid access solutions
- Power transformer
- High voltage switchgear

Sinalytics - Siemens' technology platform for digital services, processing 550 gigabytes per day from more than 300,000 devices

Power Distribution

- Low and medium voltage products
- · Grid protection, automation and power quality

Spectrum Power Platform

Distribution transformer

Automation & Drives

- Electrical, automation and instrumentation packages
- Integrated engineering to remote operations
- Industrial security

Powered by Sinalytics

Innovation underpins success

Refinery with

largest IGCC1

Records in combined heat and power gen.



Integration of renewables



Digital oil & gas solution Real-time grid control



Service

1) Integrated Gasification Combined Cycle. **Unrestricted © Siemens AG 2016**

Jazan

Wind Power and Renewables is a crucial pillar of the Siemens energy portfolio – High mutual benefits with other Siemens businesses



Key figures FY 2015: €6.1bn Orders | €5.7bn Revenues | 2.8% Margin | 12,800 Employees | 5 to 8% Margin target

Wind Power and Renewables Division

Onshore





- ~15,000 turbines or 27GW installed until H1 FY16
- 37 years of experience in onshore wind
- 56% of Revenue H1 FY16

Offshore







Direct Drive Platform

- ~2,100 turbines or 7GW installed until H1 FY16
- 25 years of experience in offshore wind, clear #1 with 58% of global capacity installed
- 44% of Revenue H1 FY16

Mutual benefits within Siemens AG

- Full-fledged energy solutions for customers
 - e.g. Egypt deal together with **Power & Gas** and **Energy Management**
- Financing solutions

 e.g. participation of Siemens Financial
 Services in Gemini offshore project
- Joint R&D efforts

 e.g. new offshore grid access solutions with
 Energy Management
- Utilization of wide array of internal suppliers
 - e.g. gearboxes from **Winergy**, generators from **Process Industries and Drives**

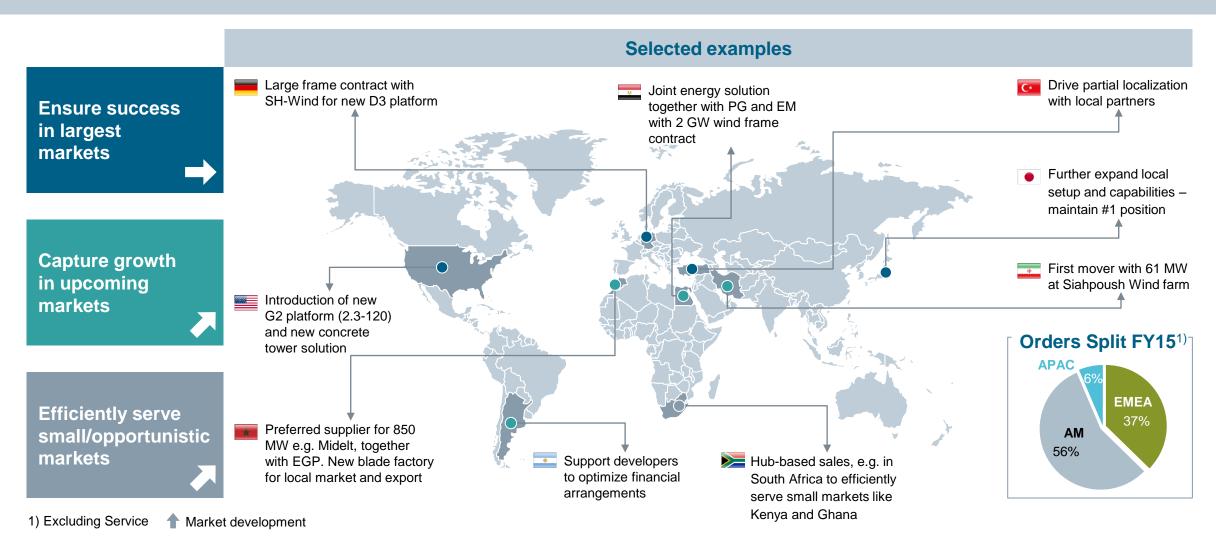
Order backlog H1 FY16: €15bn (largest ever)

Service

~34GW installed base by H1 FY16 - ~160% growth since FY11

Onshore to stay successful in traditional strongholds and to tap into new growth markets





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Complete product portfolio overhaul underway – **Main impact starting from FY18**



Development measures

ON geared platform, e.g. SWT-2.3-120

Longer blades

e.g. SWT-3.3-130

Longer blades

- New gearbox
- Upgraded bedframe

ON direct drive platform,

Upgraded Generator New cooling system

Upgrade of all critical

elements

Re-use of established supply chain

Build on proven design

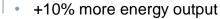
Re-use of components



+9% more energy output

Clear evidence of success

Execution according to plan Optimal rotor giving strong capacity factor to fill US customer demand



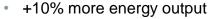




OF direct drive platform, e.a. SWT-7.0-154

- New Converter
- Upgraded transformers
- Stronger magnets





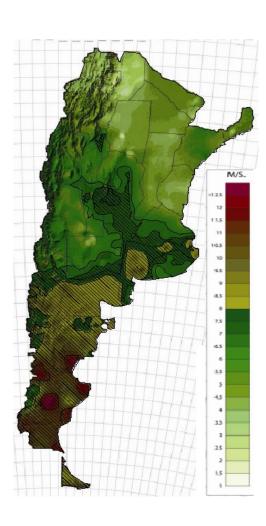
- First order for UK in Q4 FY15, largest order with 102 units in Q2 FY16
- Certificate received 8 months earlier than planned



Further developments ongoing – Communication expected still in 2016 | In FY18 ~80% of deliveries will be new developments

Argentina - Significant market potential driven by the implementation of the new renewable energy law





Favorable market conditions for wind energy resources

- ✓ Excellent wind resources with mainly Class I and II sites. Nearly 70% of Argentina's territory is covered with winds whose annual average speed, measured at 50 meters above
- It's has a potential of 2 TW of wind energy.

 More than 1GW ready to build projects
- ✓ Wind Energy is the most competitive renewable source of generation in country
- Renewable energy law with clear generation targets up to 2025 (20%) and high penalties for non compliance Aggressive target of 8% by 2017
- ✓ Stable energy demand growth with low power reserve requiring addition of new generation

Siemens ambitions

- ✓ The ambition of Siemens Wind Power is to become a market leader by 2020
- ✓ Support Wind developers to optimize financial arrangements and develop long-term strategic partnerships
- Bring new technology to maximize energy production (e.g. new wind turbines, concrete towers) and continue to lower the cost of energy.
- Consolidate as technological leader in the development of the overall Argentinean infrastructure.
- ✓ Continue our more than 100 years history of contribution to Argentina's sustainable development