SMA SOLAR TECHNOLOGY AG Roadshow London / Zurich / Frankfurt



Pierre-Pascal Urbon, CEO/CSO January 30 - February 1, 2018



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1. Review 2017





SMA is the World Market Leader for PV Inverters and a Leading Player in Storage and O&M





Investment Highlights

Unique positioned in the solar market / Best brand

- World market leader with 65 GW installed base
- Complete portfolio to serve all PV segments
- 20 subsidiaries with strong service capabilities and access to all channels
- Award-winning 20 GW production to achieve scale

Leverage PV expertise to enter into high margin business

- Strong partnerships to create a new ecosystem
- Know-how & products to benefit from strong growth in the field of battery storage
- With ennexOS¹, SMA has set the basis to manage the complexity of integrated solutions
- Infrastructure to expand into data-driven business models and services



Key Financials 2017e²

 Sales
 EBITDA

 € 890 m
 € 95 m

EPS Net Cash € 0.86 € 450 m

Equity Ratio Market Cap³ 50% € 1.3 bn





2. Megatrends





Megatrends are Transforming the Electricity Ecosystem





Decarbonization

is leading to an expansion of PV capacity, which in turn fosters decentralization and the demand for storage systems

Sector convergence

is providing new means of flexibility – Managing the resulting complexity is creating demand for new energy solutions

The structural transformation of the energy system

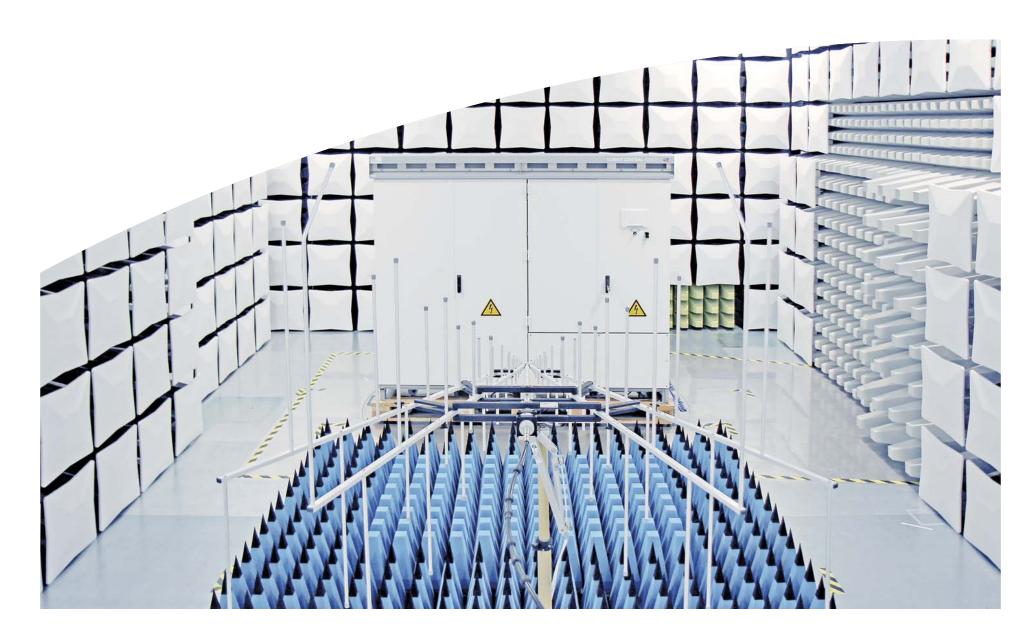
will require solutions to control and manage the increasingly decentralized grid enabled by digitalization

Disruption in the electricity industry creates new roles to be played by traditional OEMs¹ along the entire value chain

> SMA will leverage its existing experience to expand into digital solutions.

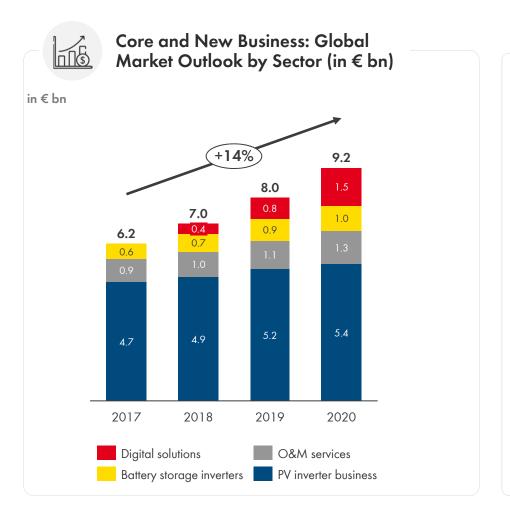
3. Market and Competition





The Disruption in the Energy Sector will Open up New Value Pools for Technology Driven Companies such as SMA







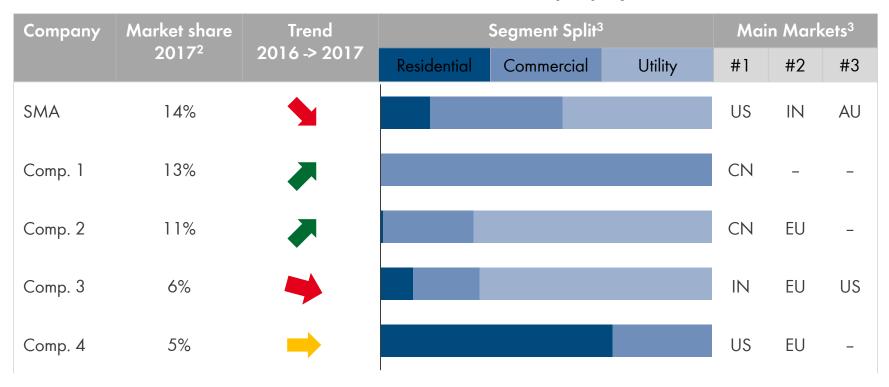
Market Summary

- The megatrends decarbonization, technical cost decrease, sector convergence and digitalization will lead to a higher share of renewable energy and its growth.
- > The need for digital solutions and battery storage will create new value pools.
- > PV-inverters will serve as the backbone for smart grids solutions connecting the components and collecting data.
- > The traditional PV market is expected to grow in volume and value until 2020. EMEA and APAC as well as Utility and Commercial are key growth markets.
- > O&M services gain importance with continuously declining equipment prices and are key for sustainable PV investments
- > SMA has a clear understanding how to approach digital solutions and battery storage and builds upon world market leader position and strong financials.

SMA is the World Market Leader for PV Inverters and the Best Known Inverter Brand¹



The traditional PV inverter market is rather concentrated (Top 5 players c. 50 %)



- Market share gains of Chinese competitors is very much driven by strong growth in China. Top players shipped only c. \$280m into international markets in 2017.⁴
- > Large conglomerates are too inflexible to adapt to fast changing markets. Inverter specialists⁵ have a much higher risk exposure and limited economies of scale.

^{1.} IHS PV Inverter Customer Insight Survey 2016

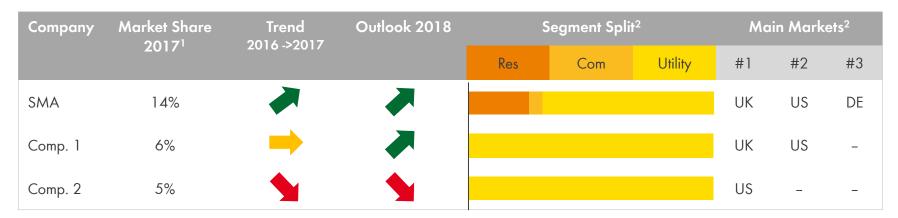
^{2.} Based on Revenue, SMA estimate

^{3.} Based on MW, IHS and SMA estimate

SMA is a Leading Global Player for Storage Inverters and O&M



Storage inverter market is very young and therefore fragmented



SMA strives to become #1 for O&M Services

| | Assets under management ³ | Trend 2016 ->201 <i>7</i> | Offering Full Service | Preventive Maintenance | Main Markets ³ | | |
|---------|--------------------------------------|------------------------------|--------------------------|---------------------------|---------------------------|----|----|
| | managemeni | 2010 -> 2017 | | | #1 | #2 | #3 |
| Comp. 1 | 6.4 GW | | X ⁴ | X ⁴ | US | CA | AU |
| Comp. 1 | 4.4 GW | | Χ | Χ | US | - | - |
| SMA #5 | 2.6 GW | | Χ | Χ | US | EU | CA |

> SMA strives to gain market share in the storage inverter and O&M markets due to its unique competencies and global infrastructure.

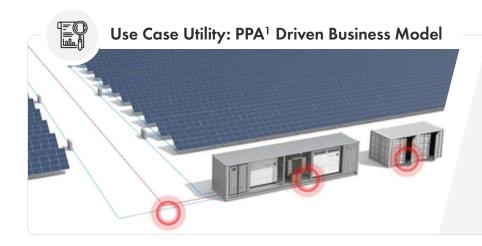
4. Strengthening Core Business





SMA has Excellent Competencies to Handle the Complexity of Centralized Utility-Scale Power Plants





Segment Focus Centralized Plant Layout:

- Turnkey solution incl. PV inverter, DC-combiner, MV-system, storage plant communication and grid control
- Services (eg. Comissioning, grid studies

Regional Focus:

• Worldwide (w/o China), incl. UL and JET-certification



Success Factors



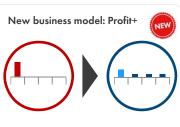
Medium Voltage Turnkey Solution, up to 6MW

- Increase power size to 6MW
- Allow high DC/ACratios (up to 200%) to reduce specific cost
- Reduce 50 % installation costs with pre-tested MV Power Station (40" container)
- Provide advanced grid stability functions (eg. active & reactive power, frequency control)

Repowering Market Potential (in GW)

2014 2016 2018 2020

 Repowering demand is increasing as the globally installed base grows older (CAGR >+40% until 2020).



Shift 30% CAPEX to OPEX

- Backing our quality promise with contractual commitment
- Introduce bundled offers (equipment and services) to reduce inverter-life-time-cost by up to 20% (Profit+)

> SMA Utility provides its customers up to 99.998% uptime.

1. PPA: Power purchase agreement

SMA Offers the Best Technical Solution for Utility-Scale Power Plants with Complex System Design





Segment Focus:

- 3phs inverters for power sizes of up to 150kW
- Two product lines to serve solution and value markets
- MV² system for multi MW PV power plants

Regional Focus:

• Worldwide, incl. UL and JET certification



Strategic Success Factors

Improve Cost Competitiveness

- Two inverter platform for all global markets
- Increase power size to 150 kW
- Higher integration to enhance power: weight-ratio, optimized installation and O&M







SUNNY HIGHPOWER PEAK1 (2018)

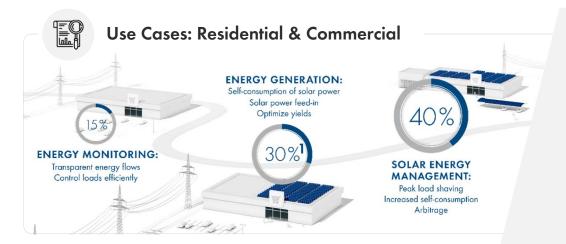


SUNNY HIGHPOWER Next Generation (2019)

> The new products will help SMA to serve complex ground-mounted PV plants.

SMA Helps to use as Much Solar Power as Possible at the Point of Production to Reduce Electricity Costs



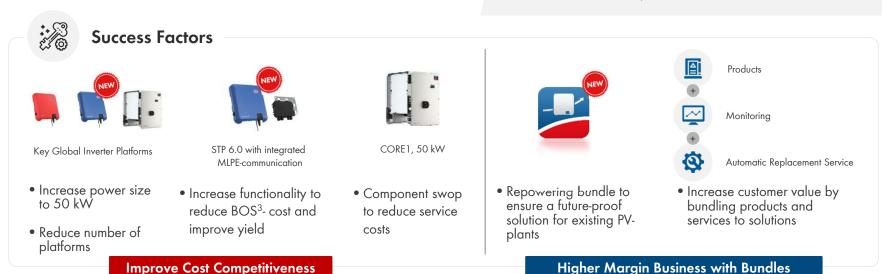


Segment Focus:

- Dual brands (SMA/Zeversolar) to serve solution and value markets
- Residential 1phs and 3phs inverters (PV plants from 1kW to12kW)
- Commercial 3phs inverters (PV plants from 10kW-1MW)
- Optimizers for all power classes (TS4-R; selected deployment)²

Regional Focus:

• All markets, incl. JET and UL certification

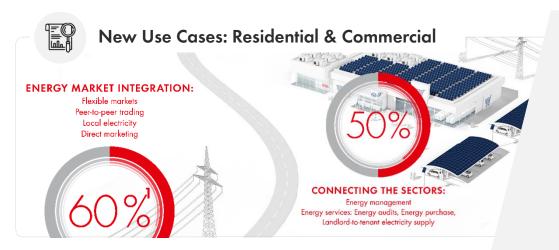


¹ Energy cost savings

^{2.} Only modules that require optimization are equipped with the SMA optimizer solution (Power+).

SMA's Integrated Solutions will help to Optimize the Energy Costs Across Sectors





Segment Focus:

- Storage system technology for all battery types and power classes
- Energy Management Platform
- Complete offering from power generation to energy trading

Regional Focus:

• Europe, USA, Japan, Australia



Improve Margin With Storage – and Energy Management Solutions

> SMA has the know-how to create integrated solutions for commercial applications.

1. Energy cost savings

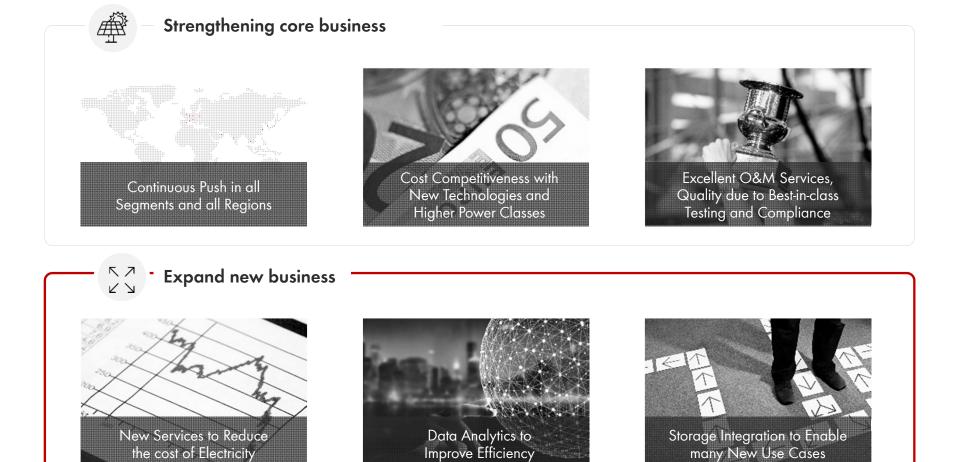
5. Expand into New Business





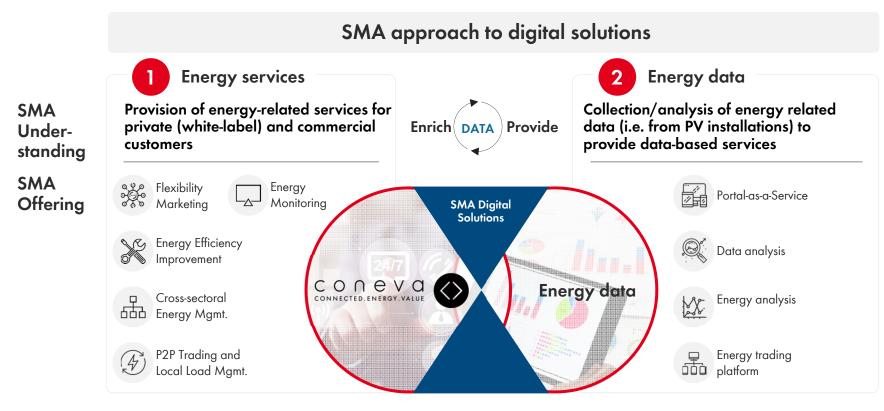
Smart Technologies Change the Energy Sector Quickly -Connectivity and Integrated Solutions Become the new Standard





SMA is the First Mover of its kind in the Digital Energy Solutions Business





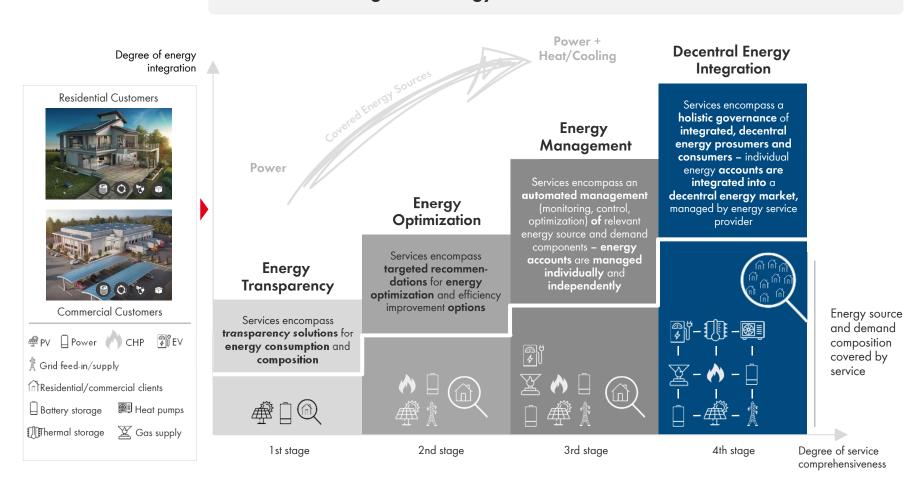
SMA USP¹

- Available technology platform across sectors
- Access to 300,000 PV systems provides data from >1.5 m devices, allowing to create a worldwide database and data services as well as for integrating energy service solutions
- > SMA has in-depth energy economical know-how and unparalleled access to energy data to create new business models.

SMA Envisions a Transformation to a Holistic Service Offering in a Decentral, Integrated Energy World

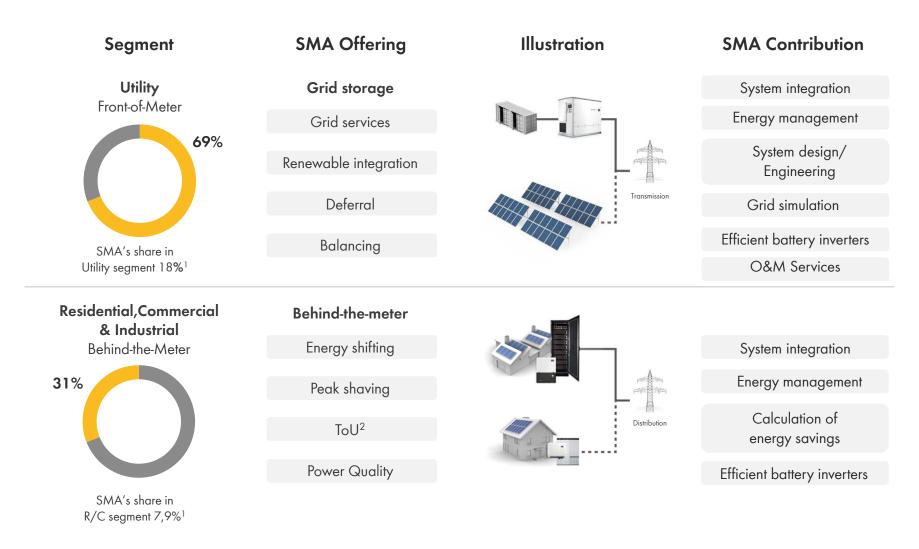


Stages of Energy Service Transformation



SMA Provides Storage Solutions for all Battery Types and All Applications

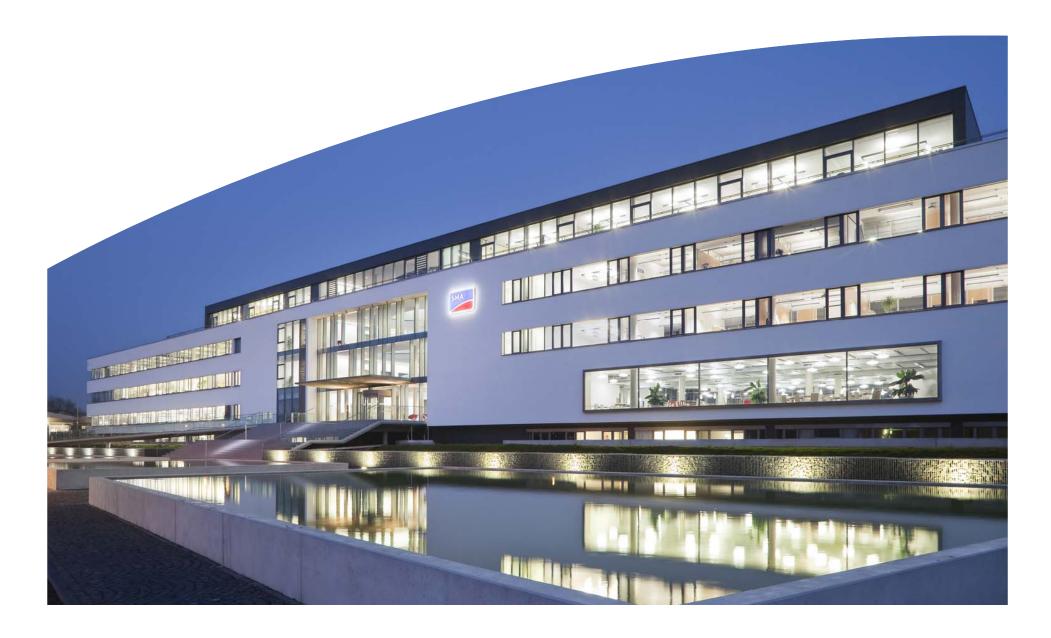




> The Storage segment will grow significantly in future years.

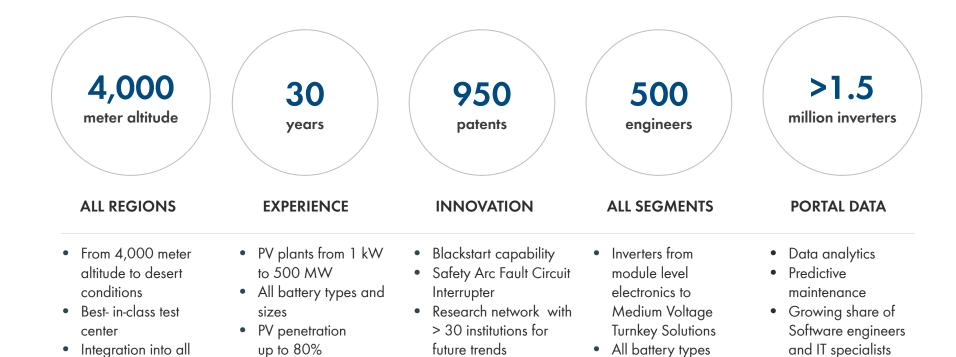
6. Technology, Operations, Sales and Service





Unmatched Track Record of R&D Excellence





Sector coupling

• Research future trends

Smart grid technology

and sizes

Energy Services

> SMA has an installed base of 65 GW.

Reliability

• More than 5 million

inverters sold

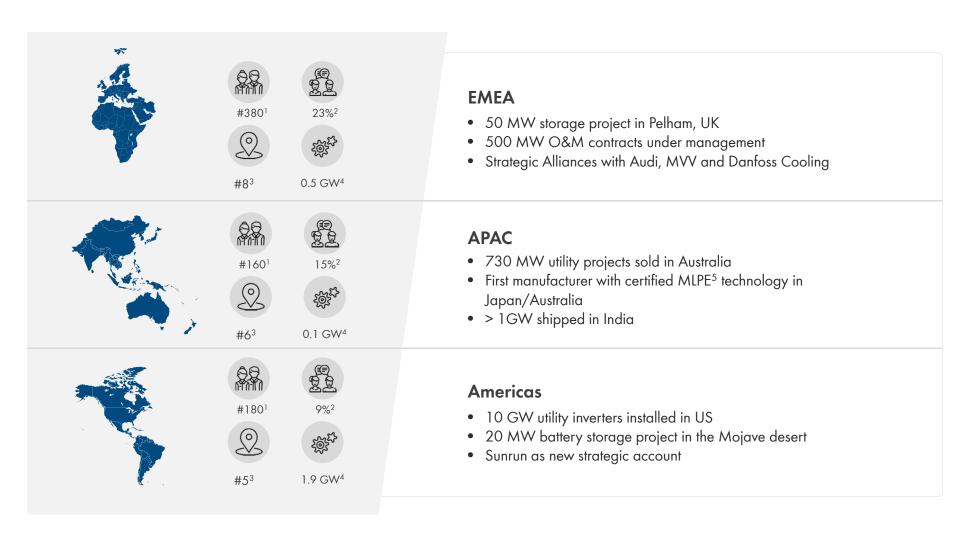
grids worldwide

Open Source

approach

No other competitor has a similar Specialized Sales and Service Infrastructure and Access to all Channels





> SMA will launch an online channel to serve markets with a weak SMA presence.

- 1. Sales and Service FTE
- Market share 2017, based on revenue, incl. PV and Storage Inverters
- 3. Country presence with subsidiary
- 4. O&M under management
- 5. MLPE: Module Level Power Electronics

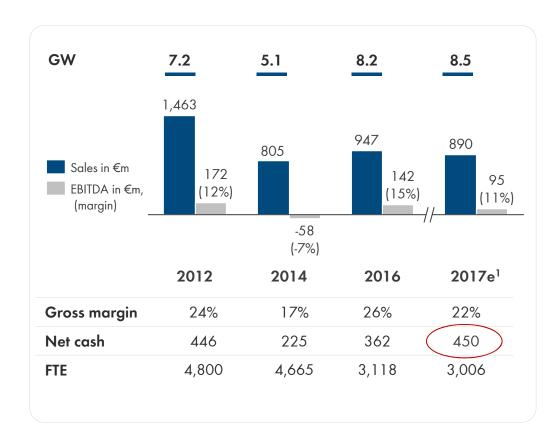
7. Financials





SMA Sucessfully Managed fast Changing Market Conditions and Protected its High Net Cash Position





Strategic Iniatitives

- Acquisition of Zeversolar to improve sourcing and portfolio (2012)
- Strategic alliance with Danfoss to improve competitiveness and enter into new business (2014/2018)²
- Restructuring / Head-count reduction to improve breakeven (2014)
- Invest >€600m in R&D since 2012 to reduce specific costs and expand into storage and EMS³
- Invest in Tigo Energy to complete portfolio with MLPE⁴ (2016)
- Closure of Denver production to reduce fixed costs (2016)
- Divestment of SMA Railway (2017)
- Set up digital solution business to increase profitability (2017)

^{1.} Preliminary figures

^{2.} Joint Venture with Danfoss cooling to offer energy management solution for Food/Retail

^{3.} Energy Management System

^{4.} MLPE: Module Level Power Electronics

2017 was a Transitional Year due to US demand. The Shortage of Electronic Components Impacted SMA as well.



Preliminary Key Financials (in € million)

| | 2016 | 2017e | Change |
|------------------|------|-------|--------|
| Sales | 947 | 890 | -6% |
| Residential | 191 | 208 | 9% |
| Commercial | 273 | 268 | -2% |
| Utility | 397 | 240 | -40% |
| Service | 45 | 77 | 71% |
| Other Business | 41 | 97 | >100% |
| EBITDA | 142 | 95 | -33% |
| EBIT | 65 | 45 | -30% |
| Net income | 30 | 30 | +/- 0% |
| Net cash | 362 | 450 | 24% |
| NWC ratio (in %) | 24% | 22% | n.m. |
| | | | |



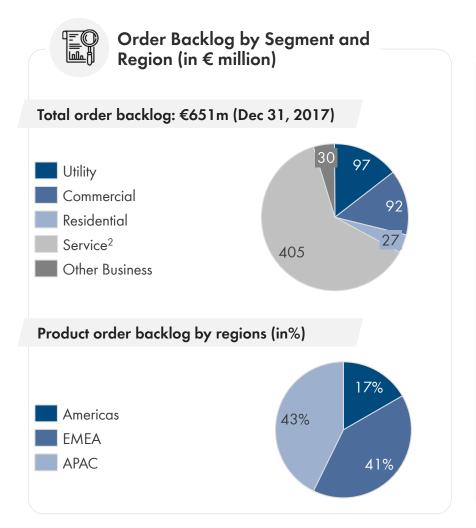
Comments 2017

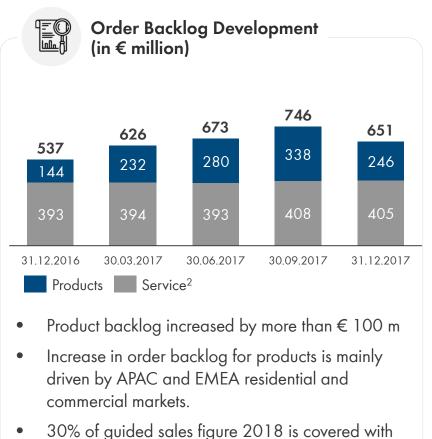
- Sales decline mainly due to weak US Utility business. Strong growth in APAC and EMEA.
- Positive development in residential, service and storage business.
- Net income impacted by adjustment of deferred tax assets (US) and reserve tax accruals for Chinese entities.
- Since many years, SMA has a policy to distribute 20%-40% of its group net income to shareholders.

> SMA's annual report will be published on March 28, 2018.

SMA Experienced a Strong Order Intake 2017







product backlog.

> SMA starts with a solid order backlog into 2018.

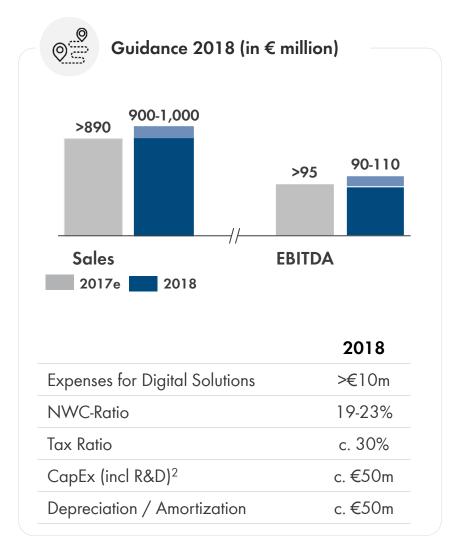
8. Guidance, Strategy and Investment Highlights





SMA's Management Estimates Sales and Earnings Growth in 2018







Management Comment

- SMA plans to increase market share, mainly in APAC (China, Japan, Australia)
- Strong growth in commercial and residential (incl. Optimizer) due to new products. Storage will increase significantly due to market development
- Energy Management and digital solution business will only have limited sales contribution.
- Price pressure in utility remains high. Moderate development in all other segments.
- Supply constraints will ease starting Q2/2018.
- Acquisitions in the fields of energy management technology and O&M portfolios and additional optimizer technology are likely (total volume €50-100 m).

> Earnings Guidance 2018 is impacted by expenses for new digital business. Sufficient FX-hedging is secured.



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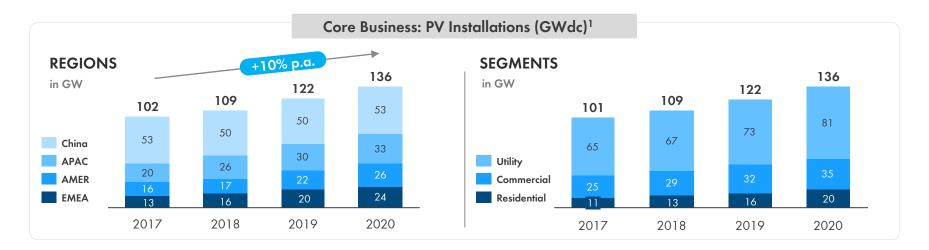


BACK UP

SMA Solar Technology AG

Positive Global Outlook of +10% Volume Growth p.a. Until 2020





Market Trends



The volume growth in the EMEA and APAC regions is expected to continue.

Growth rates are between 25% and 15% p.a.



China remains the largest market but with a rather flattish development.



The utility and commercial segments account for >85% of total volume. Strong growth of 26 GW (+9% p.a.) is expected until 2020.



Growth in mature markets is driven by the competitive costs of solar power and significant battery penetration for self-consumption.

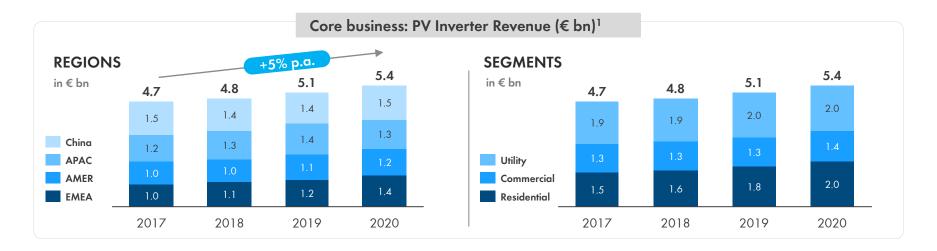


Effective programs drive fast growth from a small base in many countries (e.g. Indonesia) or help to reach ambitious political targets (e.g. India).

> New growth regions² become relevant in the near future.

The Change in the Product and Country mix will lead to Value Growth of 5% p.a. until 2020





Market Trends



During the last 12 months PPA²-prices for large ground-mounted PV projects declined by more than 30% below 20 USD/MWh.



Projects compete on the cost of energy independent from the technology.³



Key success factors for ground-mounted projects are the right market focus and cost-competitiveness over lifetime.



In contrast, roof-top projects compete for the best site. Key success factors are the right segment focus, the technical knowhow to integrate the solution and the brand.

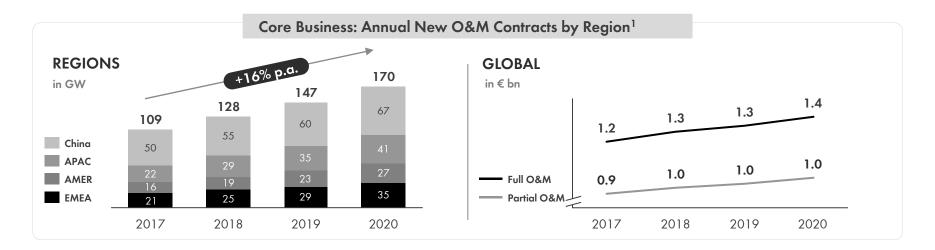


The stabilization of price pressure is expected towards 2020.

> Mature markets and roof-top applications will become the key value drivers.

PV Projects >250 kW move Towards long-term Service Contracts – Battery Storage will Accelerate Growth in Service









As Capex for equipment constantly declines, after sales and O&M service are becoming more important.



In mature markets O&M is a business on its own. Independent service providers (ISP) are selected separately from the EPC to ensure data integration, analytics and qualified PV technicians.



For large-scale PV plants investors/asset managers reject string inverters due to the potential of slower outage response time and higher O&M service costs.

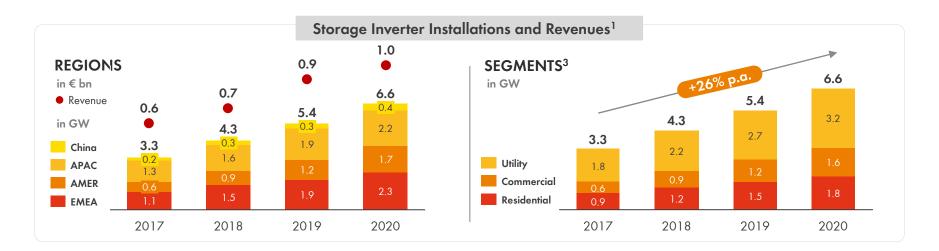


The fast growing battery storage business offers huge growth potential for ISP with technical expertise and global service infrastructure.

Contracts shift from all-inclusive, fixed price models to service plans and customer specific scope of work

Battery Storage will Increasingly be Integrated in New and Existing PV Systems and thus Increase Complexity





Market Trends



Battery storage price reduction is the most important growth driver for nano- and microgrids.



Mature markets will adopt first to increase residential share (eg. US, EU, JP).



SMA expects storage prices of <750 €/kWh for residential applications and <300 €/kWh for utility applications by 2020.



Battery storage can address many use cases in parallel². Therefore, competencies in grid integration and battery technologies are key to untap market potential.



The share of system technology in different battery application is significantly higher compared to the traditional PV inverter business.



Since every application is different, significant customization is needed to untap full potential.

> Greater complexity will lead to lower commodization of PV inverter equipment.

As a Result of the Megatrends, New Energy Service and Data Solutions Represent Emerging Value Pools



Decarbonization

Sector Convergence

Decentralization

Digitalization

Decentralized, convergent energy networks require solutions that manage flexibility and complexity



New Business: Energy Services

Providing data driven energy management and efficiency improvement hardware, software and services for residential and commercial customers

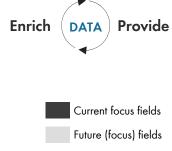


Use of energy generation and consumption data to facilitate energy fingerprint based business models

New Business: Energy Data

Data emerges from energy networks, which can be used to tailor new solutions for energy (and beyond)

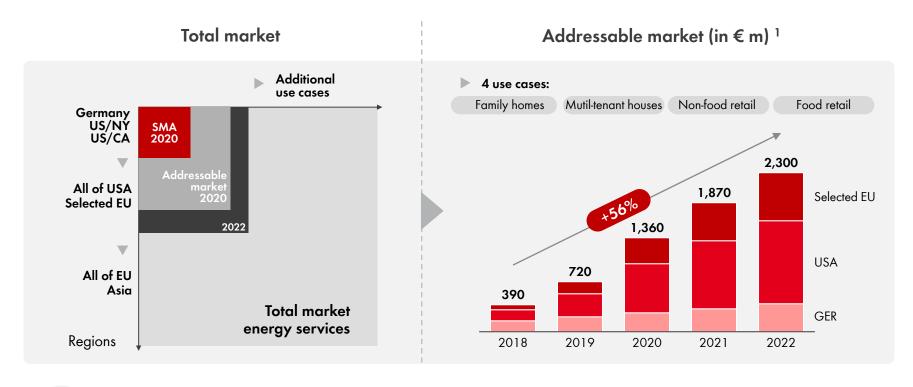
| Energy efficiency improvement | Invoice validation | Regulatory consulting | Enrich DAT |
|-------------------------------|--------------------------|------------------------------|--------------|
| Metering services | Energy procurement | Sale of excess generation | • |
| Flexibility | Local load management | Energy monitoring | Curi Futu |



| PV feed-in | Performance | User |
|--------------------------|-----------------------|---------------------------|
| forecasting | benchmarking | profiling |
| Lead | Risk | Lifetime |
| generation | assessment | forecasting |
| Portal infrastructure | Platform as a service | Analytics as a service |

Value Pools from the Addressable Market for Selected Energy Services are Expected to be as High as €2.3 bn in 2022







In 2022 addressable market for the four considered use cases can reach €880 m for food-retail stores, €650 m for family homes, €640 m for non-food retail chain stores and €120 m for multi-tenant housing

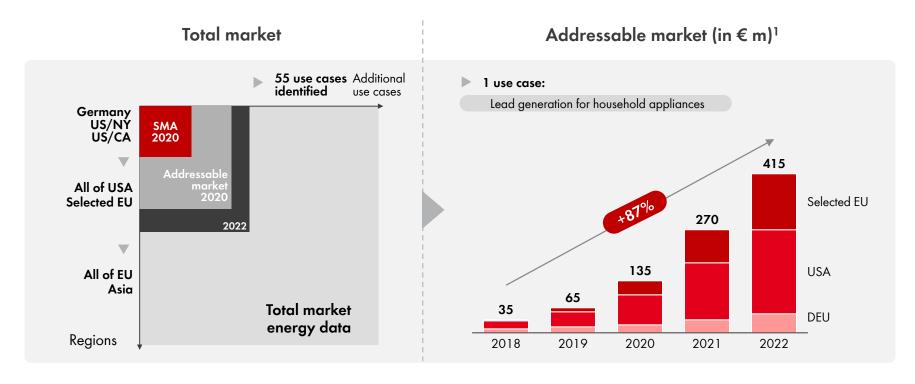


To capture these value pools, an automated management of relevant energy sources and demand is required

^{1.}Roland Berger calculations: Relevant buildings are derived from the number of family homes, multi-tenant housing, non-food and food retail stores based on census data and forecasted adoption rates of energy management solutions. The market value per building is calculated based on energy savings potential and the savings share attributable to energy management solutions (8-40 % depending on the use case). A regional scaling is applied to adjust the market share addressable by an energy service provider in USA and European countries between 2017 and 2022 (from 0% to 10-40% depending on the country and use case)

Value Pools from Energy Data are Emerging – Value Pools from Lead Generation Alone Could be €415 m in 2022







With other use cases the addressable market from energy data can be a manifold of the €415 m (2022) for lead generation



Access to data and technologies for data collection and analysis are required to capture this value pool

^{1.} Roland Berger calculations: Number of energy-data based leads derived from marketing budget for digital market content (22% of total marketing budget) by country and type of household appliance (major, small) adjusted for an usage rate of energy data starting at 0% in 2017 and growing to 80% in 2022 (comparable to rates in early internet advertising). Number of leads valued at costs per lead for digital content marketing in manufacturing. A regional scaling is applied to adjust the addressable share over time from 0% in 2017 to 100% in 2022 in USA and European countries.

Digitalization of the Energy Industry Enables Analysis and Optimization of Energy Demand and Supply

AI algorithm



Example

Al¹-based virtual power plants for electric vehicle fleets

Solution

Data Input

- Mobility demands
- GPS data
- Power prices
- Level of charge





Al algorithm

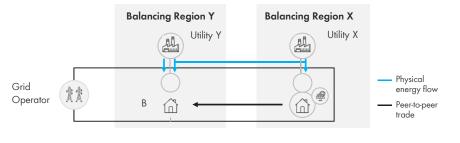


DSO

Comment

- e-vehicle fleet functions as a virtual power plant to feed electricity back to the DSO or to absorb excess power depending on demand predictions from AI¹ algorithm
- SMA collaborates with VW, Audi, **Daimler**

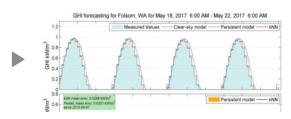
Blockchain-based peer-topeer trading of electric power



- Blockchain technology logs peer-to-peer trades as transactions and make it available to utilities, prosumers and solution providers
- New regulatory framework required

Al¹ to predict power output from solar





- Al¹ provide solar power forecasts of high accuracy, which allow to integrate solar energy into the grid cheaply and reliably
- SMA provides data collected in PV plants to Tennet
- > The need for digital solutions is creating new, rapidly growing value pools that can build on the traditional inverter business with a key role to be played by system integrators.

39

SMA has a Sound Strategy in Place to Benefit from the Disruption in the Energy Sector



01

GLOBAL MARKET LEADER in all Segments

We want to be #1in the RESIDENTIAL, COMMERCIAL, UTILITY, SERVICE and OFF-GRID & STORAGE segments.

02

SMA is a Provider of Systems and Solutions

By 2020, sales of non-PV inverters are expected to rise from around 20% of total sales to > 40%.

О3

Sustainable Profitability and low Capital Intensity

SMA strives for continuous efficiency improvements. If necessary, the profitability will be ensured by means of reductions in structural costs.

04

Development of SMA by means of Disruptive Approaches

We want to achieve this by focusing on three disruptive initiatives. "Energy Services" and "Energy Portal" are technology-driven, data-based business models while "Energy Shop" is an end-to-end sales model to digitize our sales channel.

O5

SMA is an ATTRACTIVE COMPANY

We live by our values and provide freedom for responsible entrepreneurial action. We stand out due to fairness, internationality and sustainability.

Experienced Management Team with Proven Track Record



Management Board



Pierre-P. Urbon CEO/CSO born 1970 With SMA since 2005 Contract :2022



Dr.-Ing. Juergen Reinert¹
CTO/COO
born 1968
With SMA since 2011
Contract 2019



Ulrich Hadding CFO born 1968 With SMA since 2009 Contract 2019

Executive Management Team²

- Jon I. Ekker, Service
- Dr.-Ing. Johannes Kneip, Technology³
- Nick Morbach, BU Residential and Commercial
- Alexander Naujoks, HR
- Thomas Pixa, Finance
- John Susa, Sales Americas/APAC
- Mike Terlinden, Operation
- Boris Wolff, BU Utility

^{1.} Deputy CEO

^{2.} Alphabetical order

^{3.} Speaker

At Your Service



Investor Relations Team:



Pierre-Pascal Urbon, CEO



Stephanie Peschinger, Investor Relations E-Mail: Stephanie.Peschinger@SMA.de

Phone: +49 561 9522 1177

Active Research Coverage with access to SMA's Management:

Independent Research, Landesbank Baden Württemberg, Macquarie Research, Metzler; Oddo BHF, Warburg Research

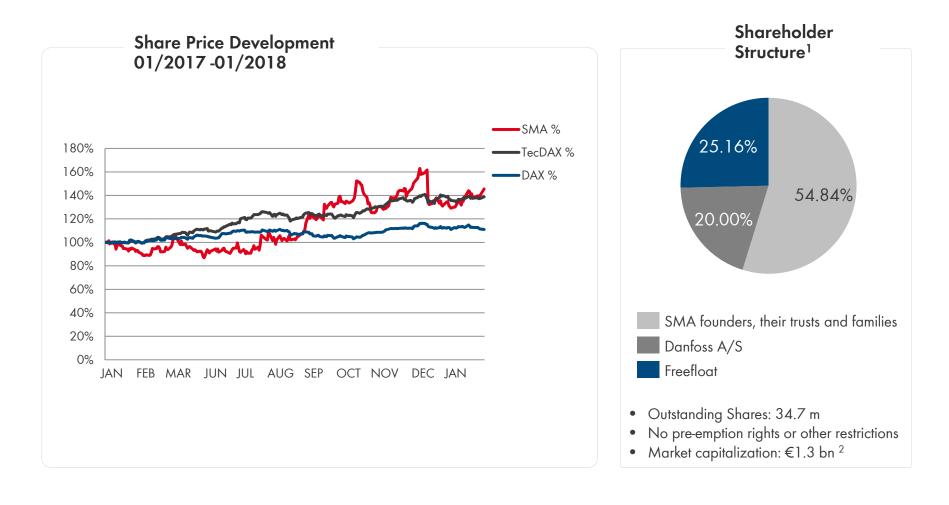
Financial Calendar:

| March 29, 2018 | Publication of the SMA Group 2017 Annual Report Analyst Conference Call: 09:00 a.m. (CET) |
|----------------|--|
| May 24, 2018 | Annual General Meeting 2018 |

> Visit our IR website http://www.ir.sma.de

SMA's Share Price Rallied in 2017







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