ANDRITZ GROUP

Capital Market Day 2017, Graz

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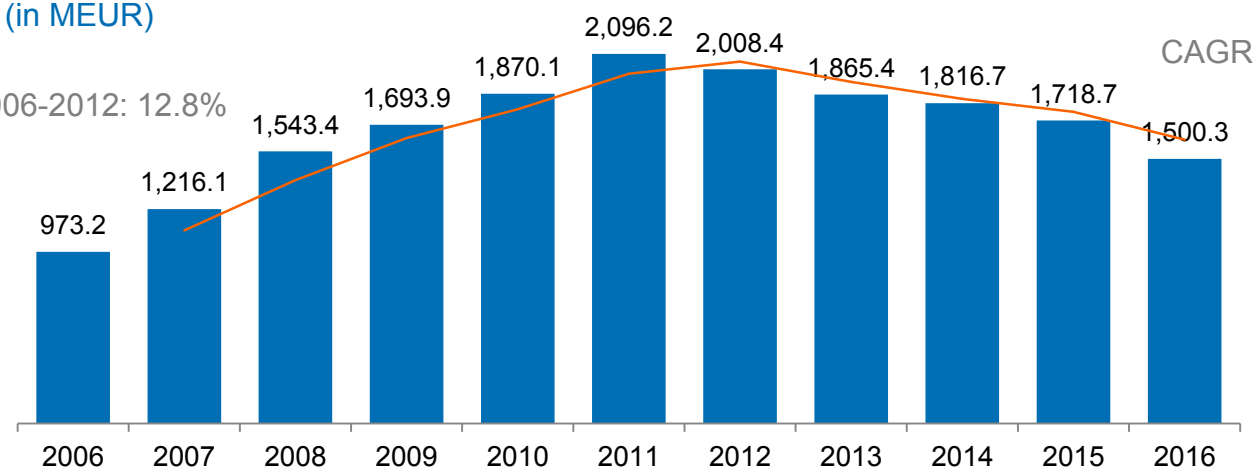
ANDRITZ HYDRO order intake peaked in 2011

Order intake (in MEUR)

CAGR 2006-2012: 12.8%

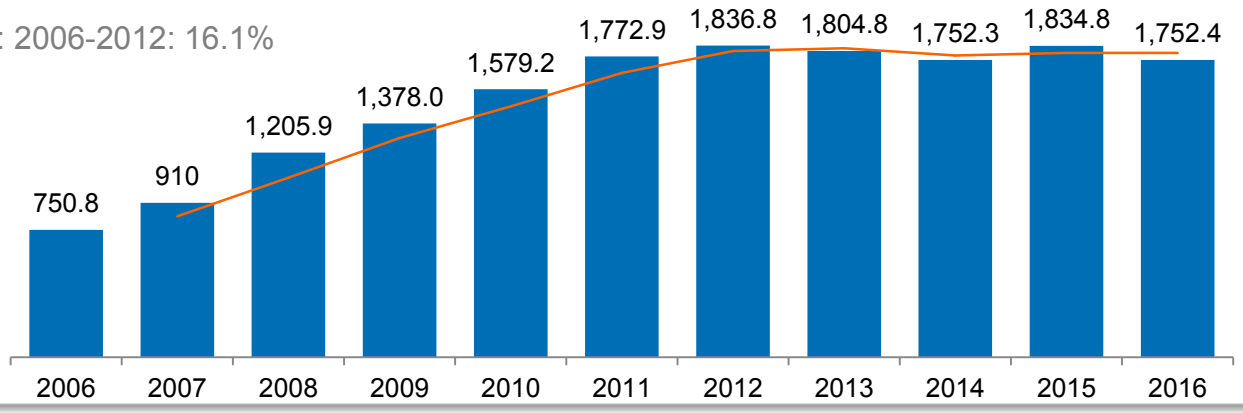
CAGR 2012-2016: -7.0%



Sales (in MEUR)

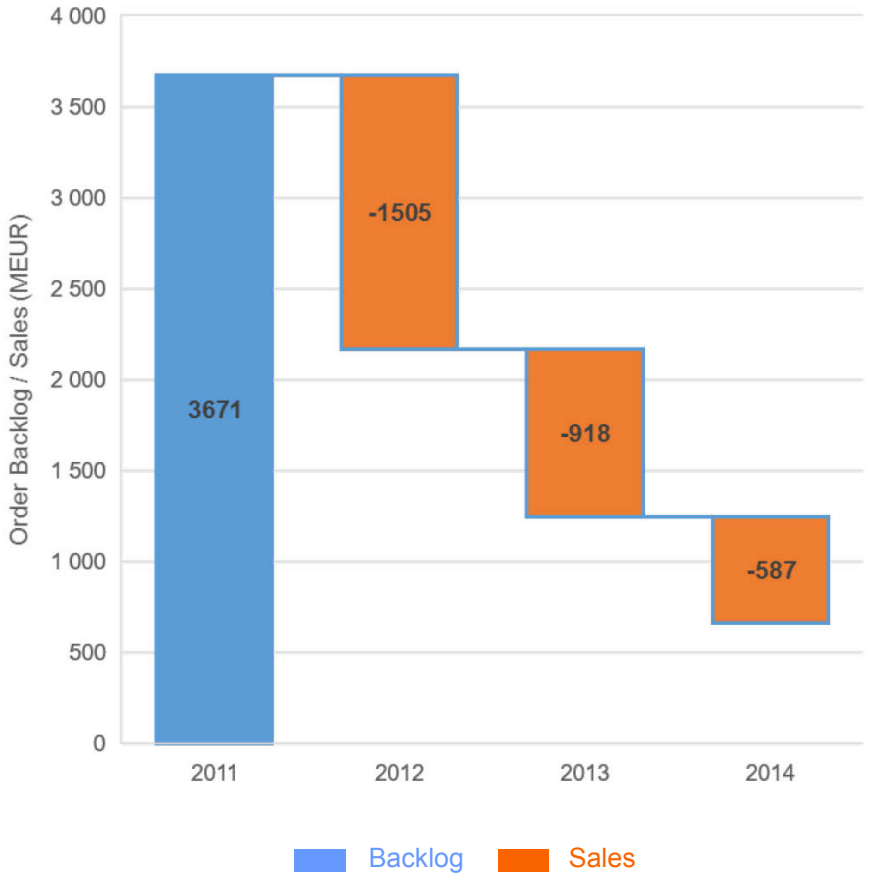
CAGR: 2006-2012: 16.1%

CAGR: 2012-2016: -1.2%

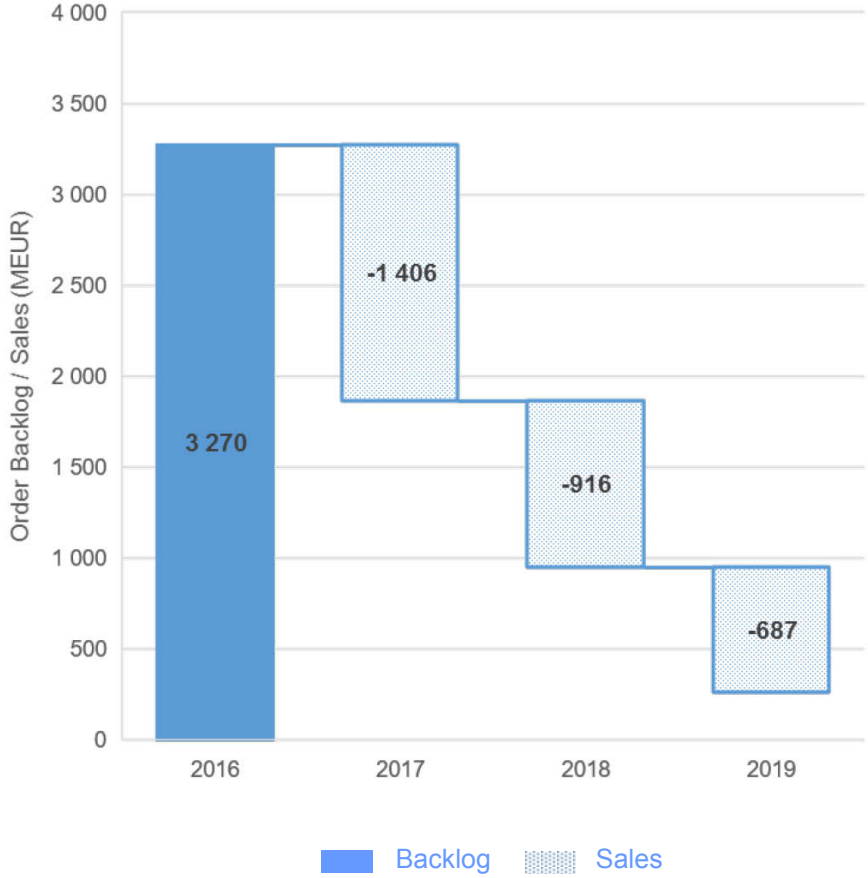


HYDRO: sales generation from order backlog

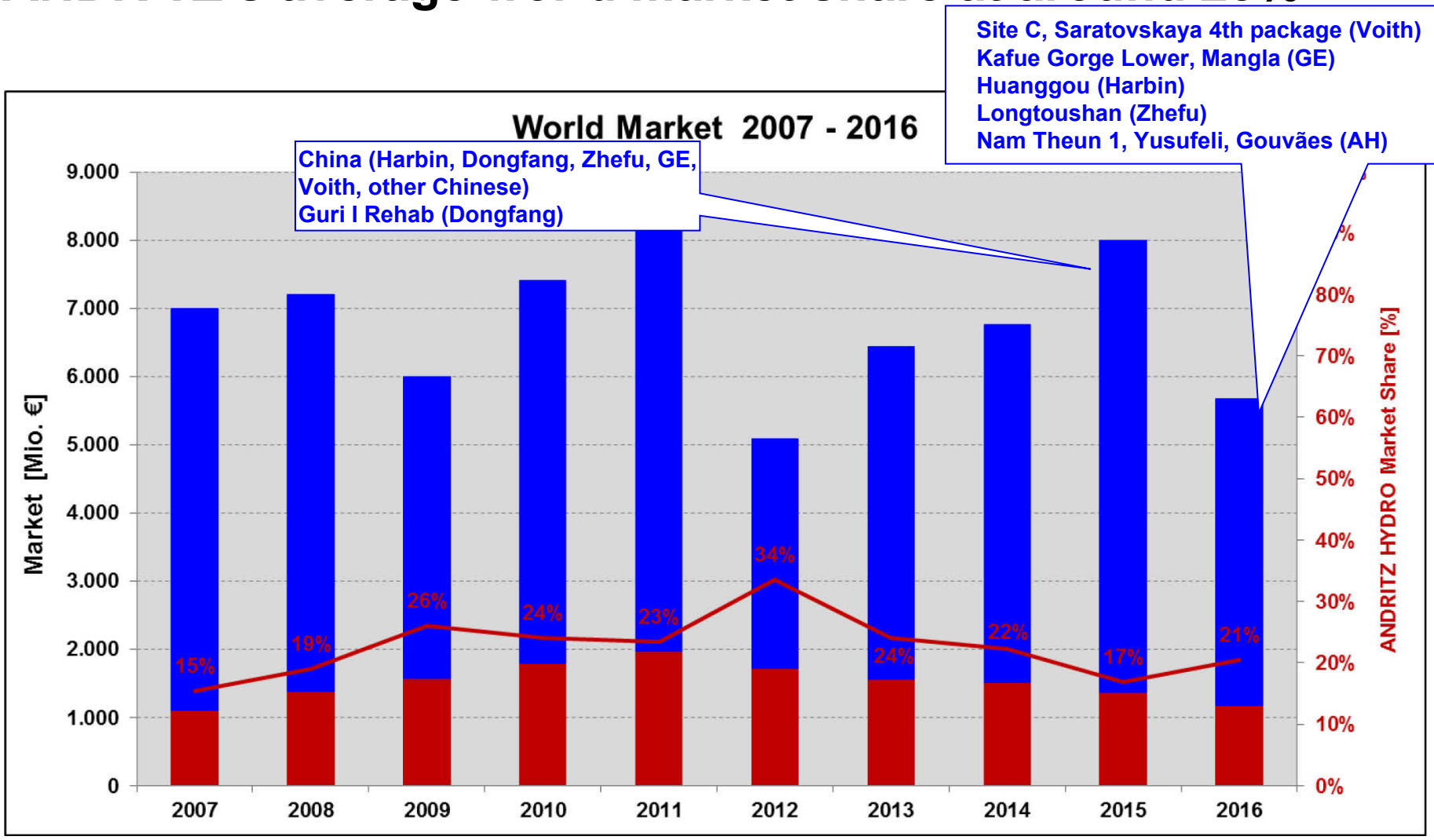
Sales generation from order backlog 2011



Expected sales generation from order backlog 2016



ANDRITZ's average world market share at around 23%



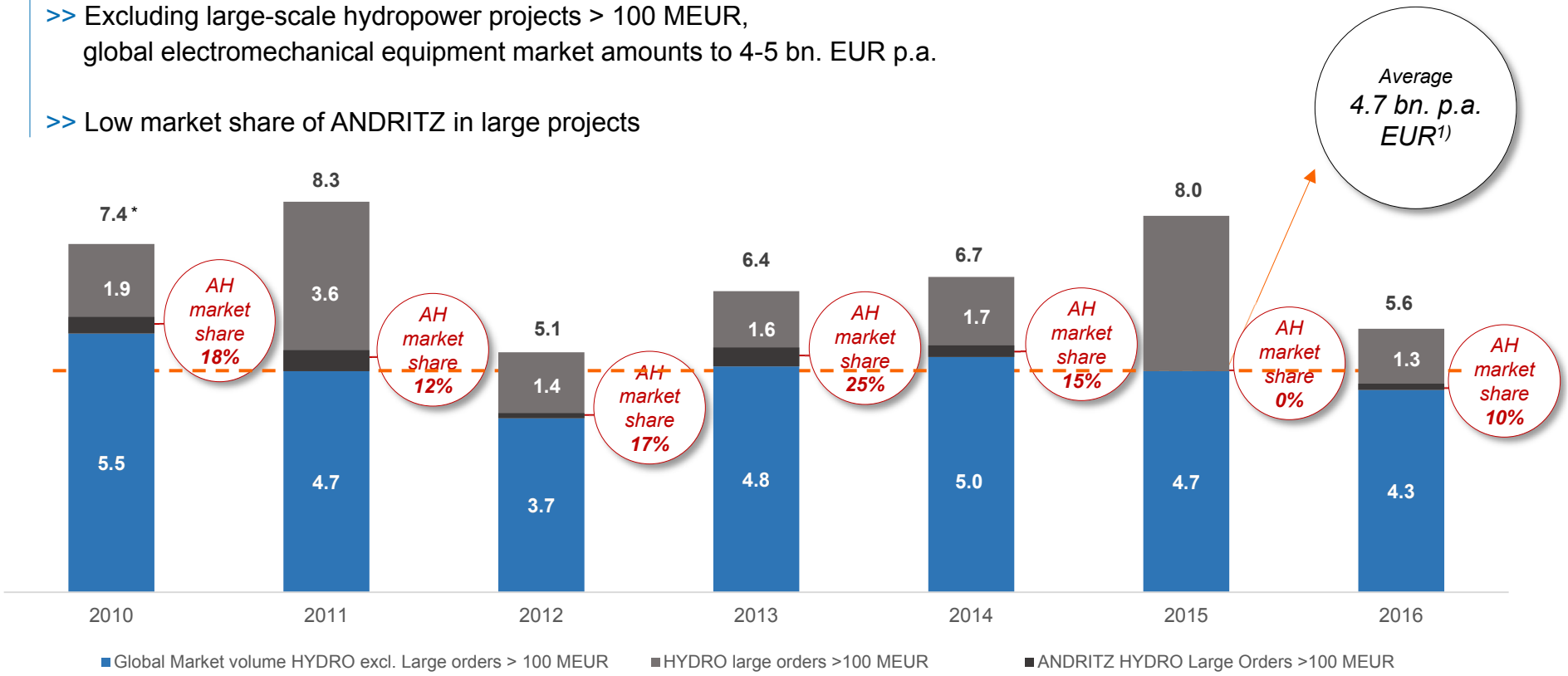
Source: ANDRITZ HYDRO project data base

Global market for electromechanical equipment: market volatility mainly caused by large scale projects

>> Change/reduction of global market volume mainly caused by large-scale hydropower projects > 100 MEUR

>> Excluding large-scale hydropower projects > 100 MEUR, global electromechanical equipment market amounts to 4-5 bn. EUR p.a.

>> Low market share of ANDRITZ in large projects

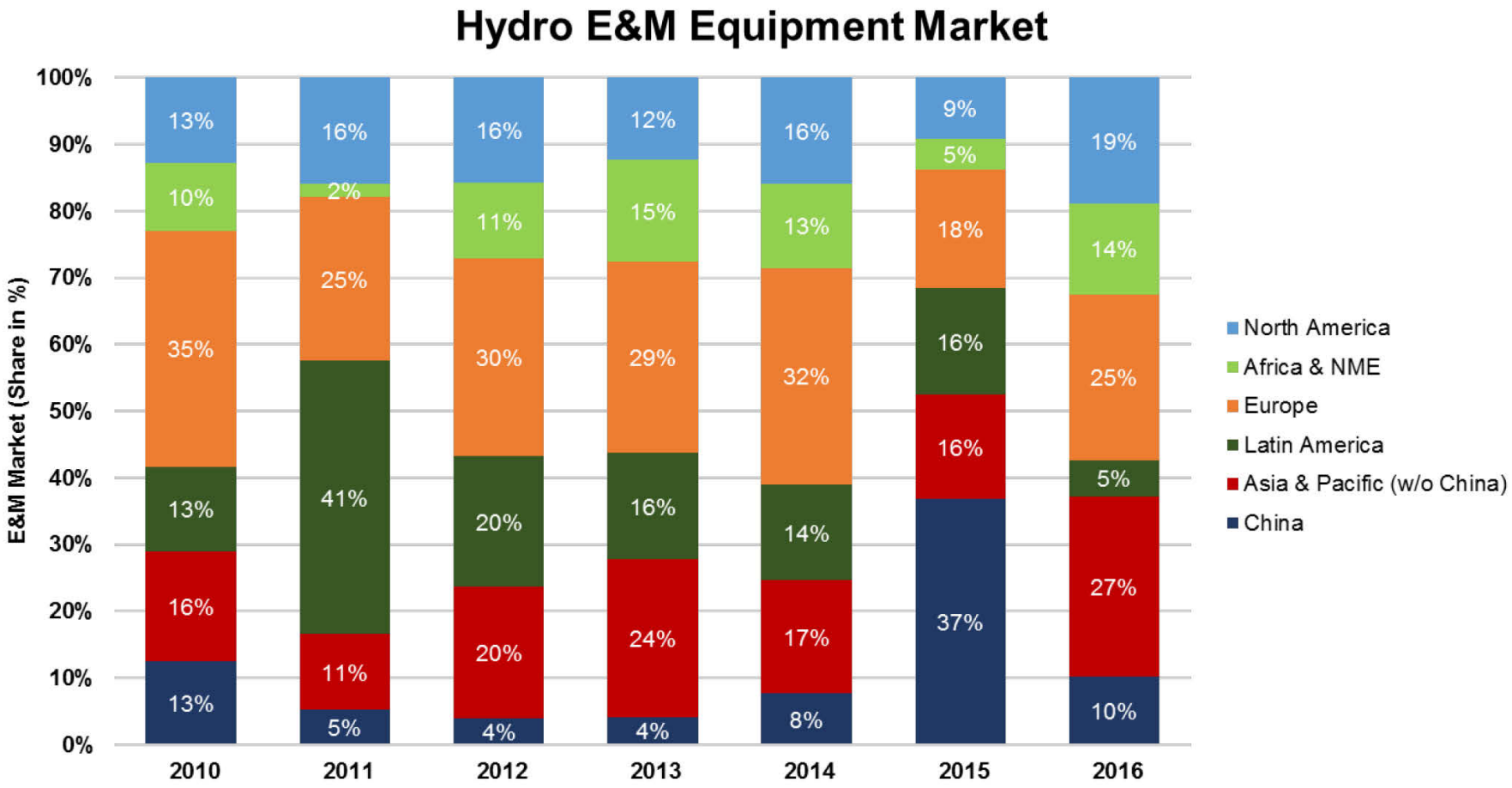


* bn. EUR

Source: ANDRITZ

1) Average global market volume for electro-mechanical equipment below 100 MEUR per project

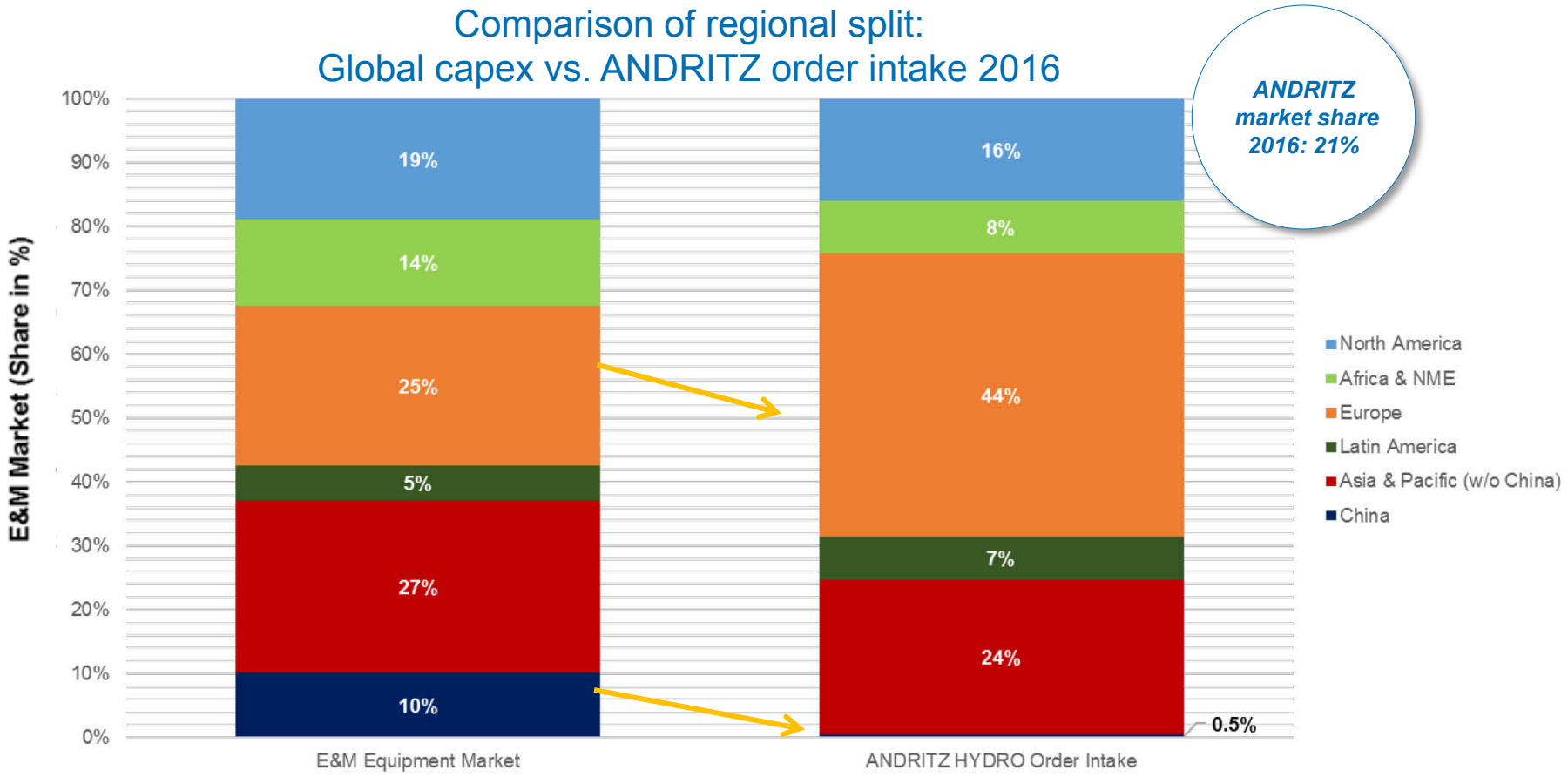
Regional split of global hydropower equipment capex



Source: ANDRITZ HYDRO project data base
NME: Near Middle East

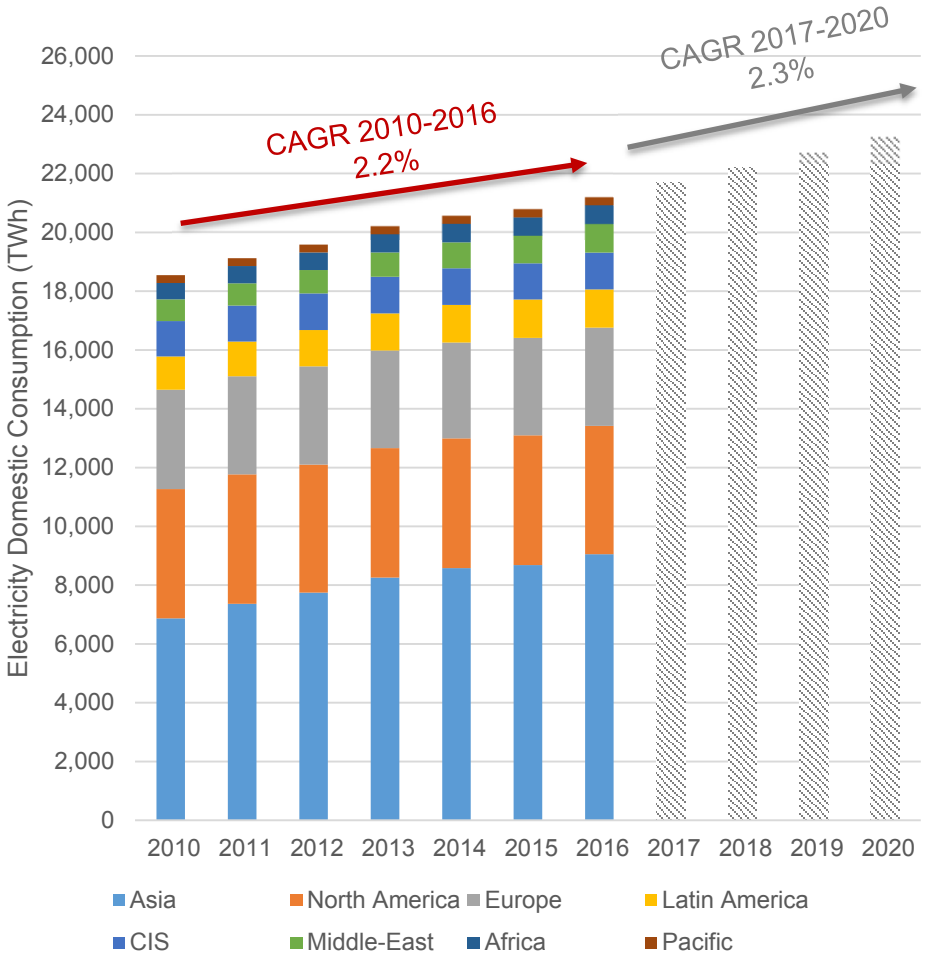
Regional mismatch of global capex and ANDRITZ orders

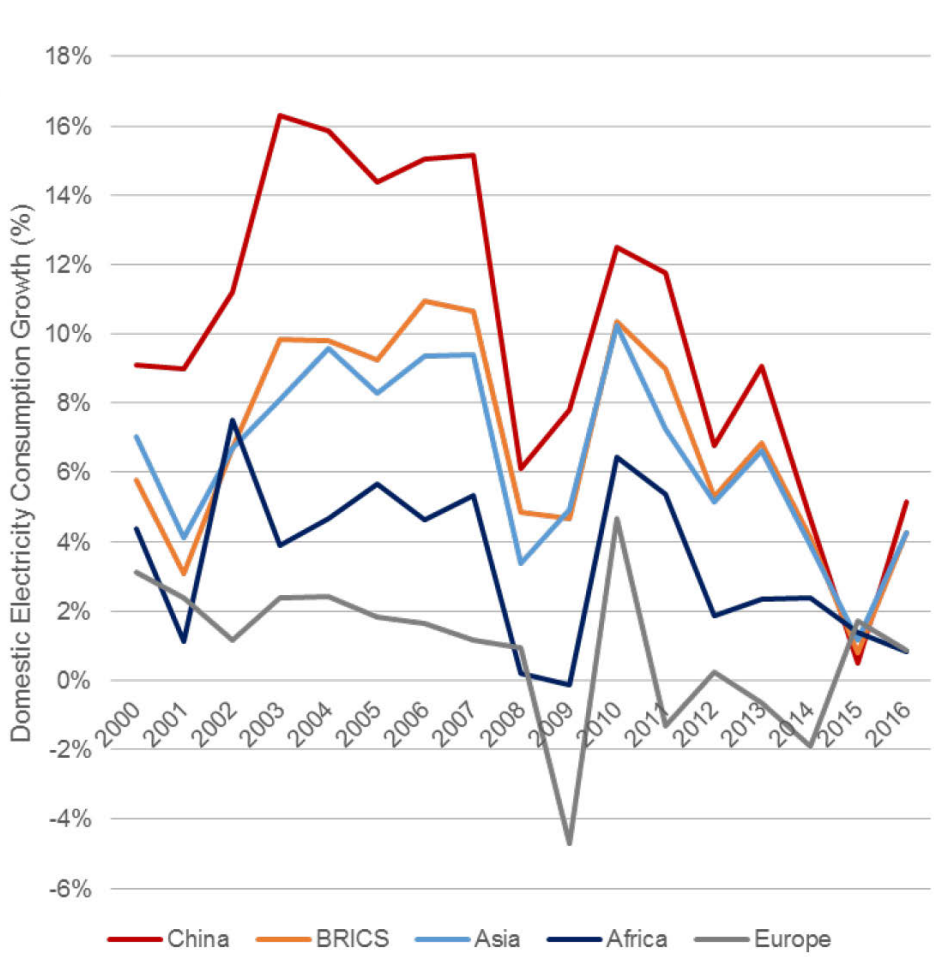
ANDRITZ strong in Europe, weak in China



Source: ANDRITZ HYDRO project data base
NME: Near Middle East

Electricity demand globally and by regions

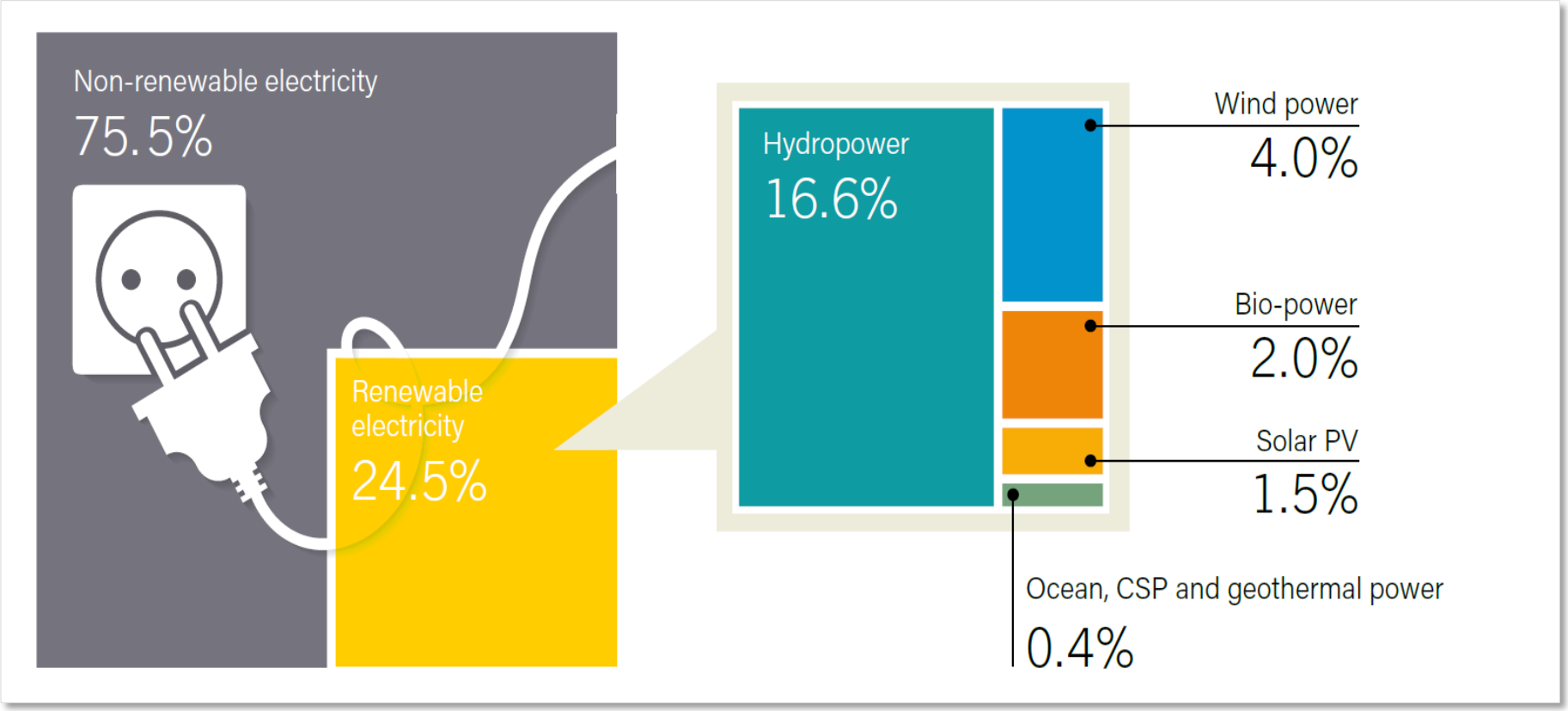




Source: Enerdata, Global Energy Statistical Yearbook 2017; IEA

Hydropower the key renewable energy source

Split by renewable energy source 2016

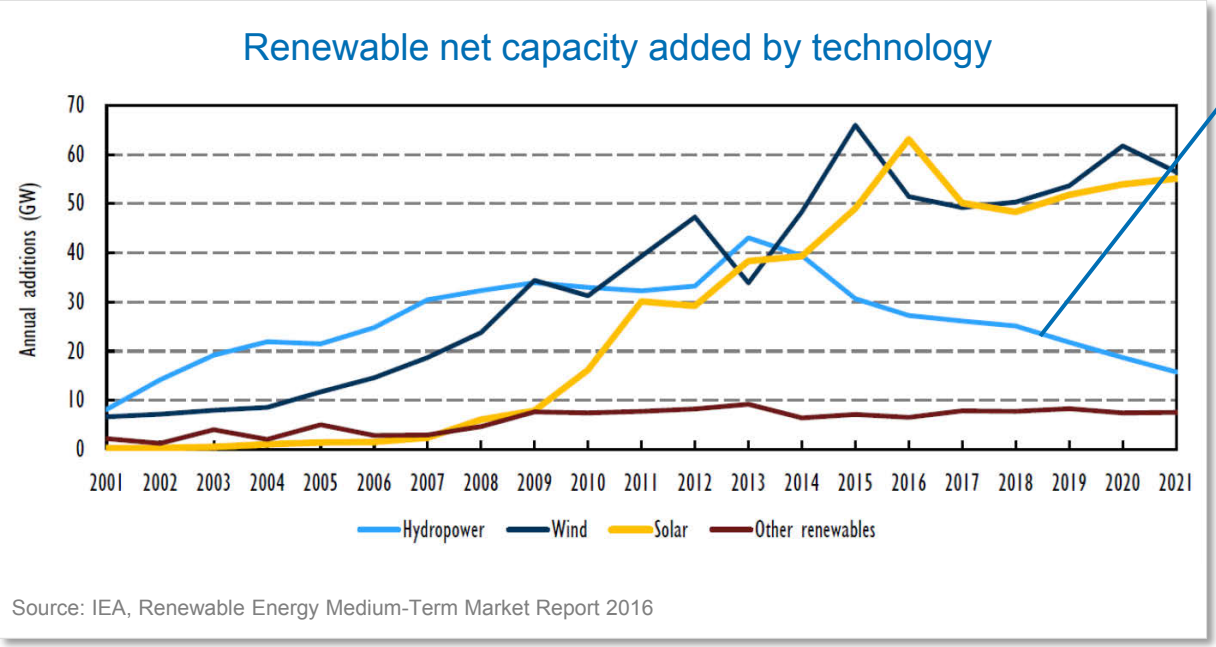


Source: Renewables 2017 Global Status Report
Note: Based on renewable generating capacity at year-end 2016

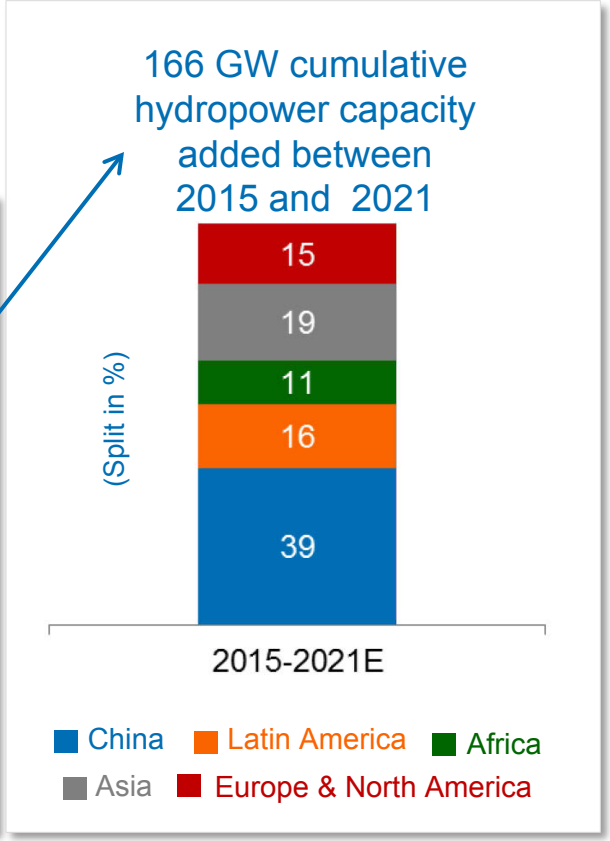
Renewable net additions to capacity by technology

(2001-2021E)

- Since 2013, yearly capacity additions for solar and wind have surpassed capacity additions to hydro
- China, Asia and Latin America will be the most active regions for new hydropower capacities until 2021



Source: IEA, Renewable Energy Medium-Term Market Report 2016



Global grid-connected energy storage capacity

by technology 2016

~ 156 GW installed + ~7 GW in 2016

Pumped storage

150 GW

+ 6 GW in 2016

+ 0.2 GW in 2016

3.1 GW
Thermal storage

1.6 GW

1.7 GW

Electro-chemical

+ 0.6 GW in 2016

Electro-mechanical

+ > 0.1 GW in 2016

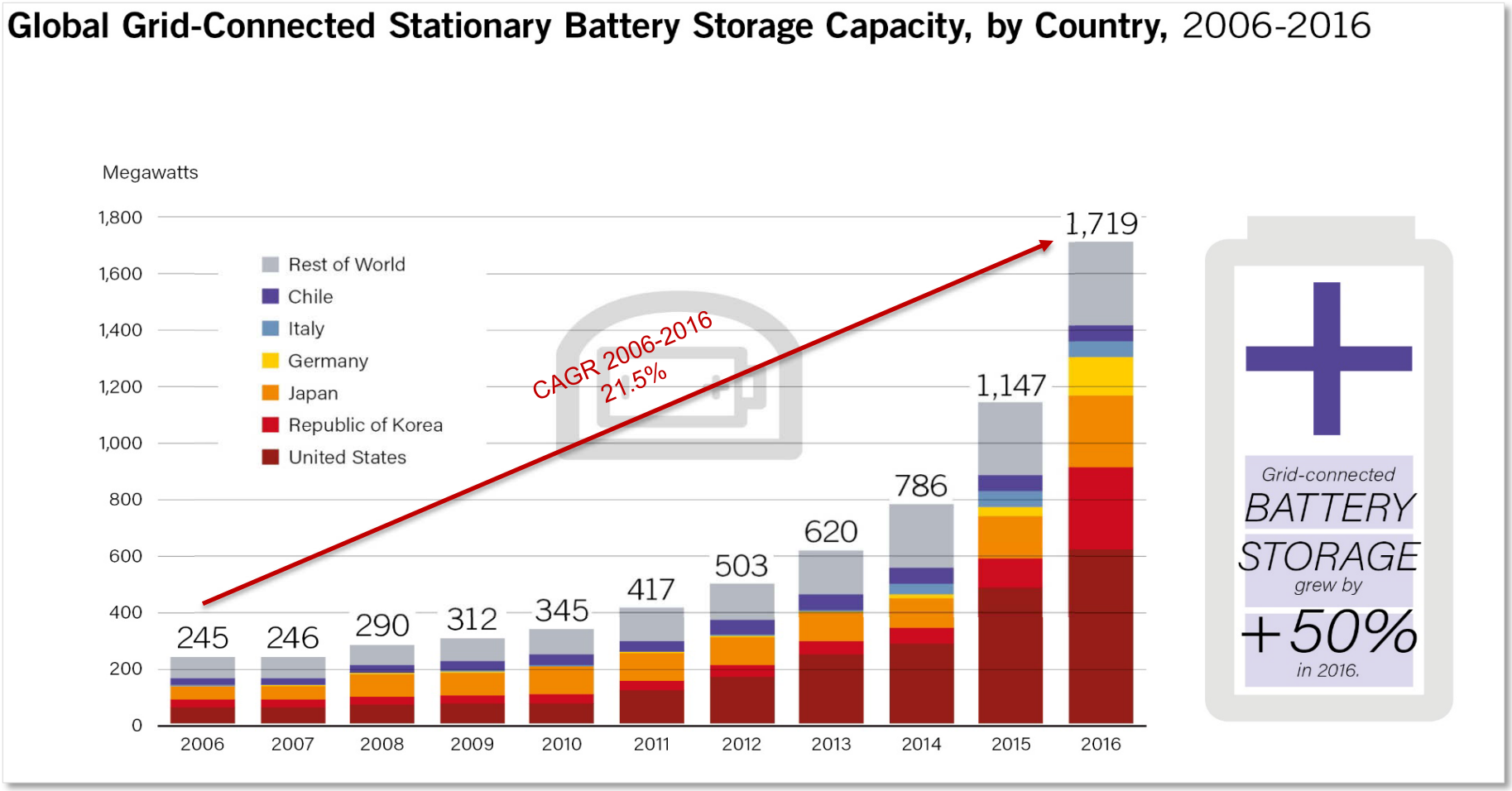
Electrochemical
- Lithium-ion, lead-acid, sodium sulphur and sodium nickel chloride batteries

Thermal Storage
- mostly molten salt storage at CSP (concentrated solar power) plants
- Phase change materials
- Ice storage
- Thermo-chemical storage

Electromechanical
- Pumped hydro (separately shown in this chart)
- Flywheels
- Compressed Air
- Experimental types like gravitational storage

Global grid-connected energy storage capacity

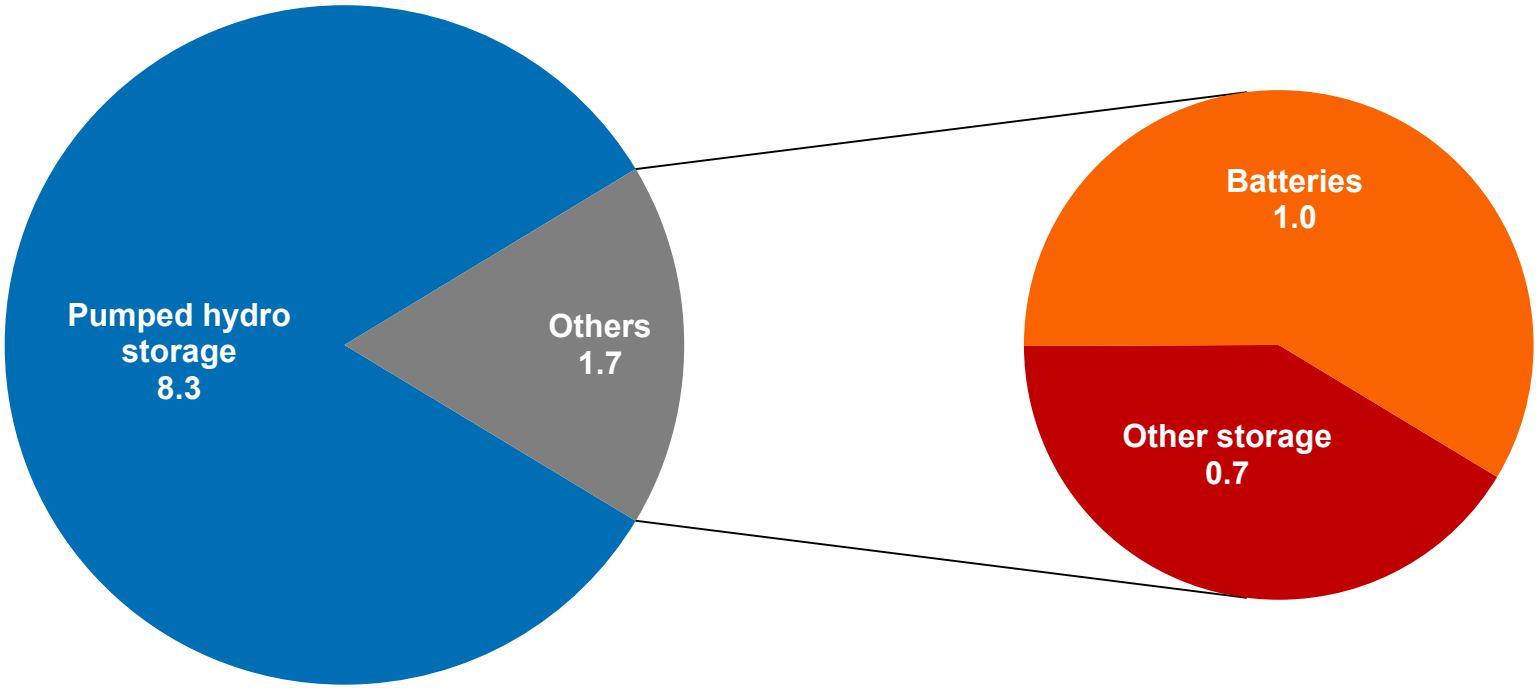
by technology 2016



Source: Renewables 2017 Global Status Report

Global electricity storage investments

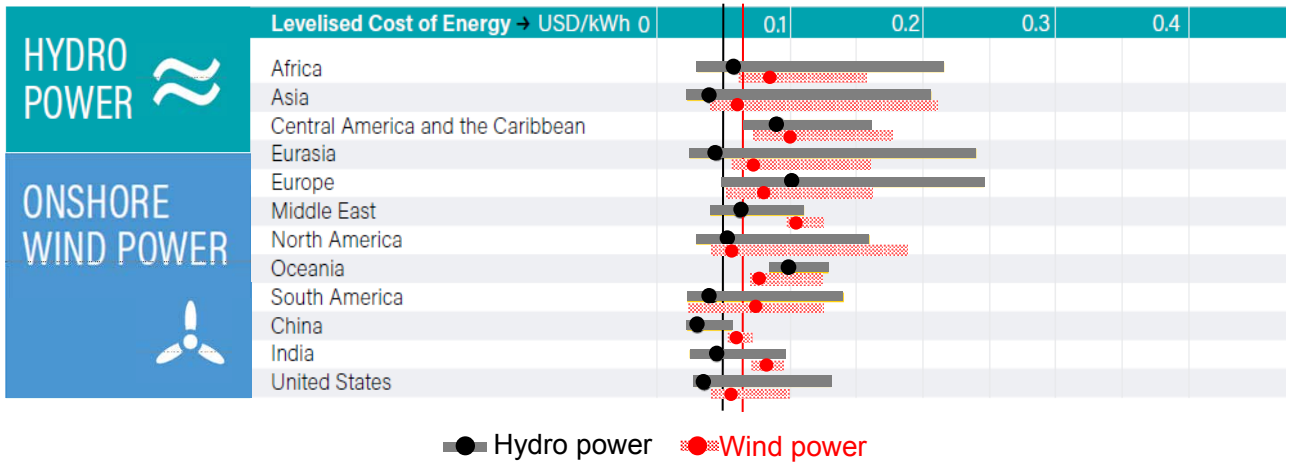
(2015; in billion USD)



Batteries include: lithium-ion, lead-acid, nickel-cadmium, redox-flow, sodium-sulphur, other batteries
Other storage includes: thermal storage, flywheel, Compressed Air Energy Storage (CAES)
Source: IEA - World Energy Investment 2016

Levelised cost of energy

Hydropower vs. onshore wind power



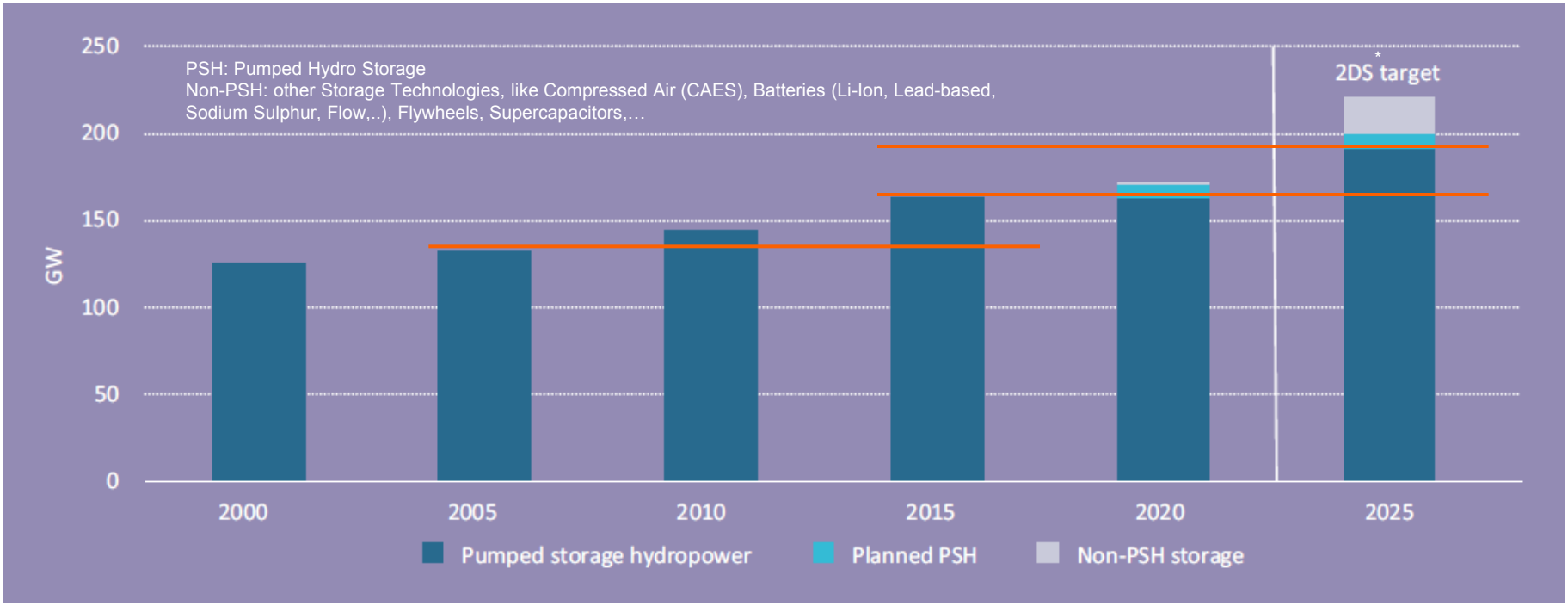
Global average:

- **Hydropower**
  5 $ct/kWh
- **Onshore wind power**
  7 $ct/kWh

Hydropower is still the cheapest form of renewable energy

Source: Renewables 2017 Global Status Report

Hydro pumped storage expected to remain dominating



*) IEA 2DS (“Two Degrees”) Scenario; energy system deployment pathway and an emissions trajectory to limit the average global temperature increase to 2°C.

Source: IEA, Energy Technology Perspectives 2017

Update on Hydro capacity adjustments and strategy

- Target is to increasingly shift resources China and India to cover and serve growing Asian and Chinese markets locally
- In line with this strategy and based on overall low market activity several capacity adjustment measures have been taken during the last three years
- Total restructuring costs 2014-2016: 23 MEUR
- Reduction of total headcount by approximately 1,000 employees and almost 400 contracted personnel
  - Increase in China and India
  - Reduction in most other countries
- Reduction of direct labour hours by around 10%:
  - Increase India to become by far largest production facility
  - Reduction in other facilities, mainly Sweden, Spain, Switzerland, and Austria
- Additional slight restructuring highly likely in 2017 to further adjust capacities to market conditions

Conclusions regarding hydro (1)

Market:

- Declining growth rates in electricity consumption worldwide
- Majority of investments in renewable energies relate to solar and wind

Still optimistic about future of hydropower:

- Future availability of cost-competitive sites for onshore wind?
- Closure of nuclear/coal-fired power plants will lead to need for new baseload capacities → chance for hydro?
- High potential for production increases of existing hydropower stations by refurbishments
- Despite sinking costs for battery storage, hydro pumped storage will remain the cheapest form for energy storage

Conclusions regarding hydro (2)

ANDRITZ:

- Generally low market share (~15%) in large hydro projects → goal 20%
- Re-entry in China in pumped storage achieved → potential for future orders
- Further growth of pumps business targeted

- **Business volume potential for ANDRITZ HYDRO:**
  - Average global hydro equipment market: 6,000 MEUR
    - thereof 23% market share ANDRITZ 1,380 MEUR
    - Pumps, Turbogenerators 250 MEUR

  Total HYDRO >1.630 MEUR

  plus possible volume from market share in increase in large projects

Contents

PULP & PAPER

Satisfactory project and investment activity

Modernizations

Satisfactory project and investment activity for modernization/refurbishment projects → change of production from graphic to packaging paper, increase productivity and efficiency

Outlook: Stable +/-

Long-term average growth potential:
2-3% p.a.

Service

Solid market development to continue

Outlook: Slightly up

Competition

Stable competitive environment

Greenfield

Investments in greenfield pulp mills to continue; mid- to long-term good project activity for greenfield pulp mills; most likely no greenfield order to be placed in Brazil in 2017; some mid-sized projects in Russia

Outlook: Stable +

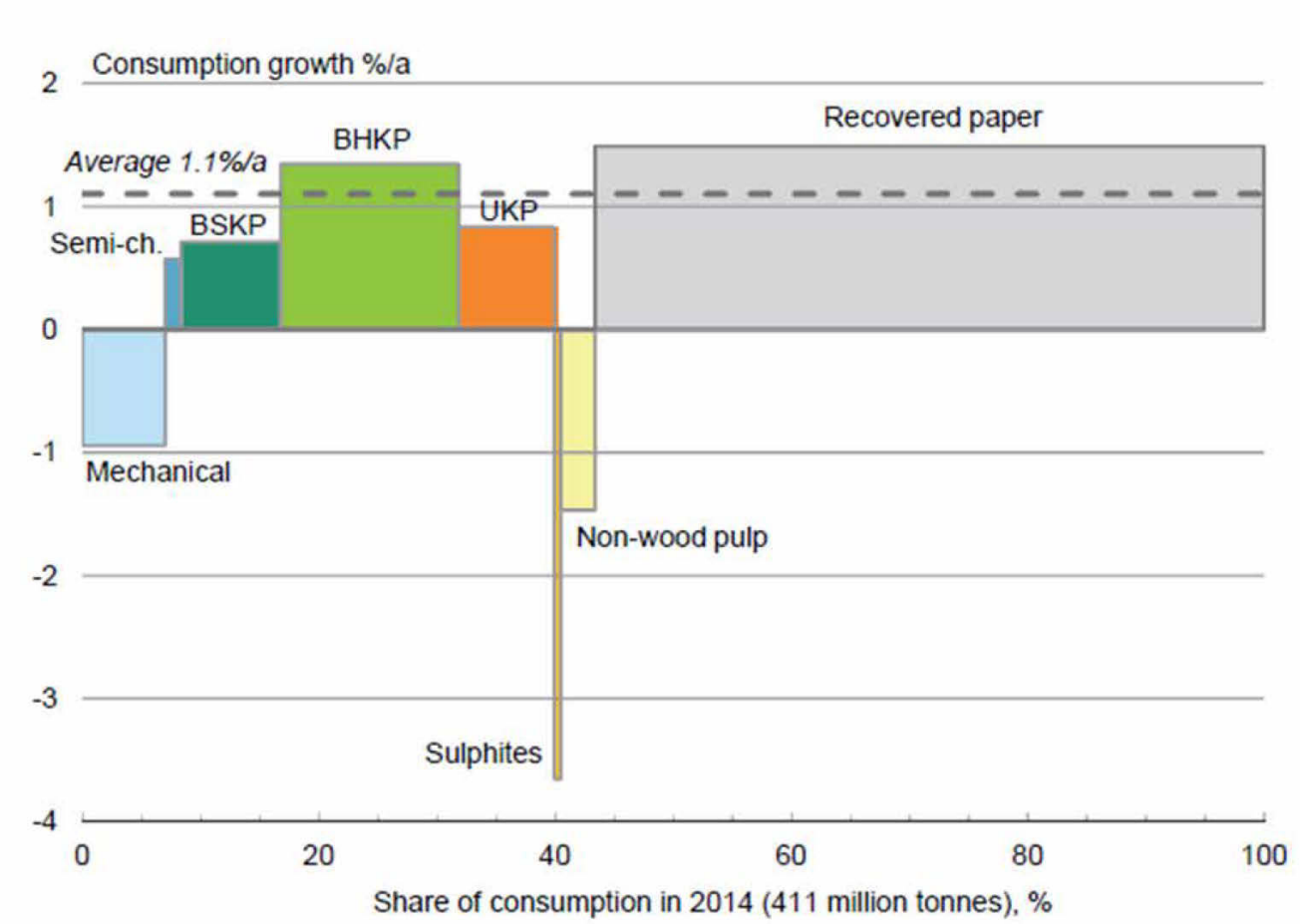
Nonwoven

Continued good project activity.

Outlook: Slightly up

Papermaking fibre consumption growth 2014-2030E

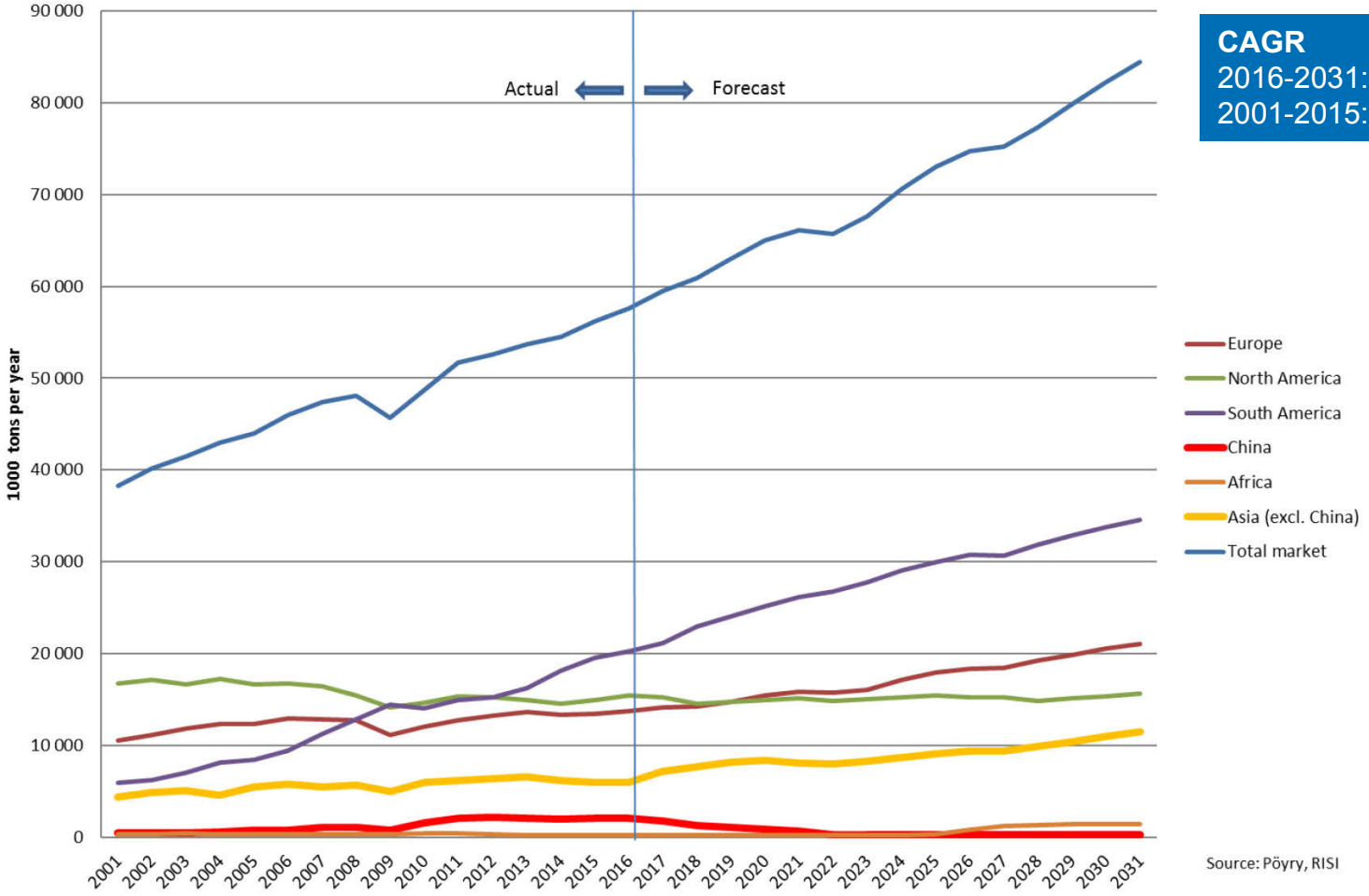
Highest growth rates for BHKP and recovered paper



Source: Pöyry Fibre Outlook up to 2030

Continued market pulp production growth (BHKP, BSKP)

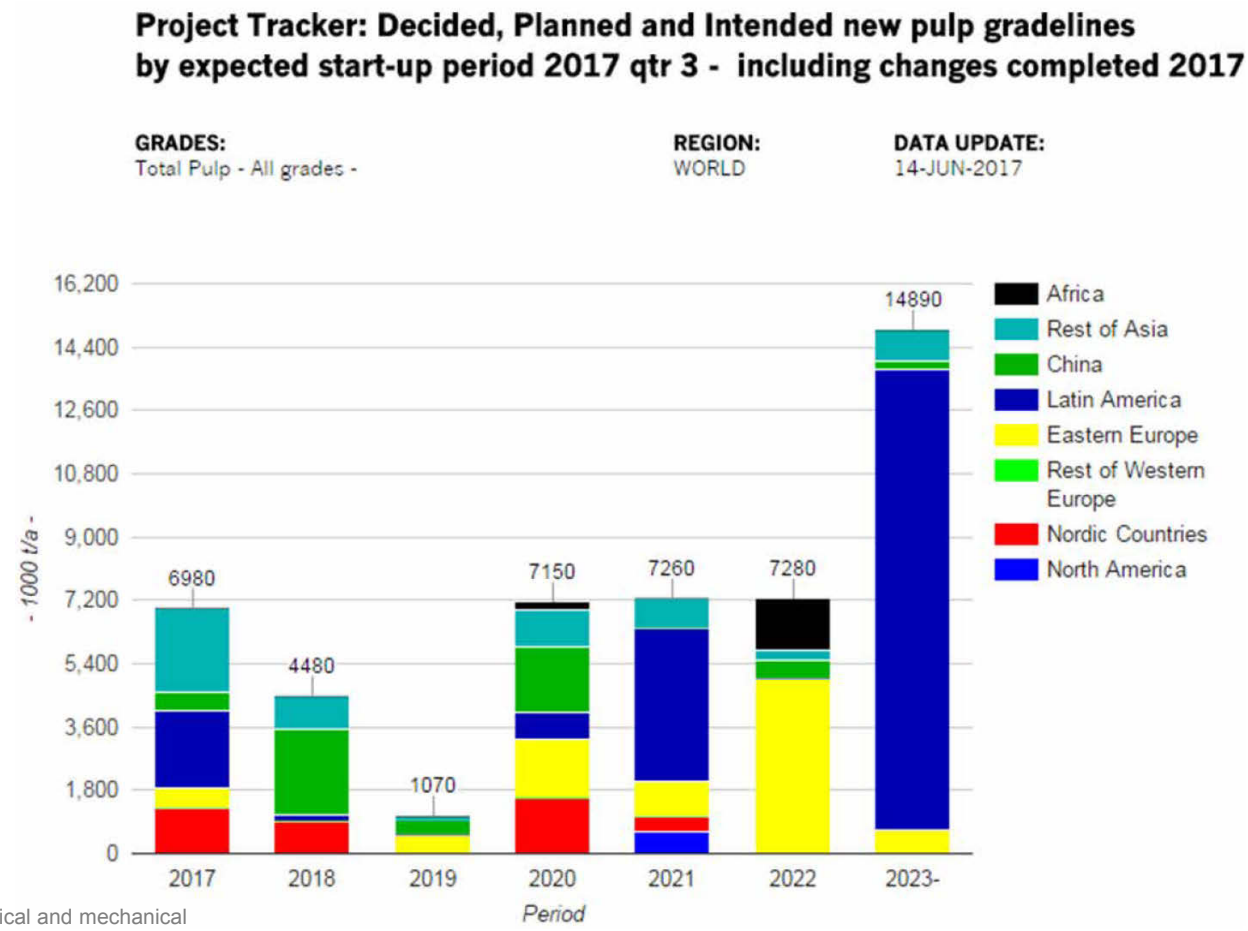
Growth mainly in South America and Europe



CAGR
2016-2031: 2.6%
2001-2015: 2.8%

New pulp line start-ups by region

High investments in Latin America expected



Note: Chemical and mechanical
Source: Pöyry

PULP & PAPER

Good project pipeline for greenfield pulp mills

USA:

Owner – project	Capacity/a.*	Planned start-up
SUN BIO Arkansas	0.6	2020

Chile:

Owner – project	Capacity/a.*	Planned start-up
Arauco – MAPA	1.6	2021

Brazil:

Owner – project	Capacity/a.*	Planned start-up
Eldorado – Três Lagoas	2.3	2021**
Veracel – Eunápolis	1.8	2022 et seq.
Braxel – Peixes	2.0	2022 et seq.
CRPE Holding S.A – Ribas do Rio Pardo	2.2	2022 et seq.
Suzano – Imperatriz	1.3	2022 et seq.
Fibria – Aracruz	1.7	2022 et seq.
Eldorado - Três Lagoas	2.3	2022 et seq.
CMPC Brazil – Pelotas	1.8	2022 et seq.

Mozambique:

Owner	Capacity/a.*	Planned start-up
Portucel	1.5	2022 et seq.

Finland:

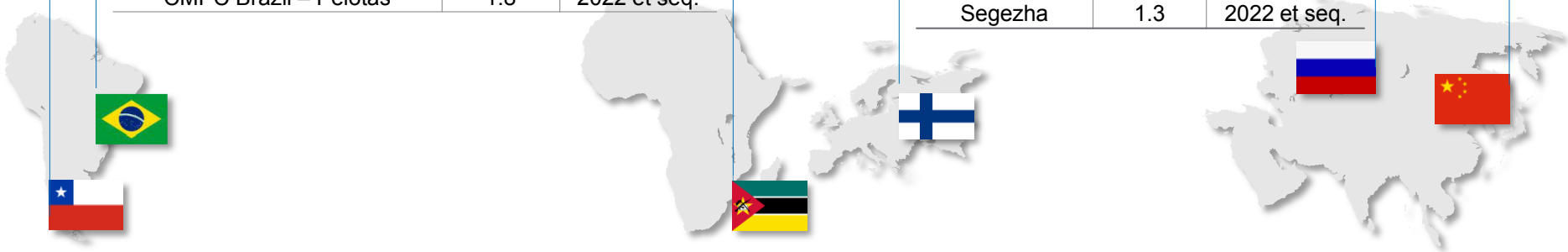
Owner – project	Capacity/a.*	Planned start-up
Finnpulp – Kuopio	1.2	2020
Kemijärvi	0.4	2020

China:

Owner – project	Capacity/a*	Planned start-up
Guangxi Jingui – Qinzhou City	1.2	2020

Russia:

Owner – project	Capacity/a*	Planned start-up
Siberwood	0.9	2019
Sveza Group	1.2	2020
Segezha	1.3	2022 et seq.



* Annual capacity in million tons (may change over time); source: Pöyry. Capacity/year refers to added gross capacity (i.e. relevant as accessible market) without taking into account possible shut-downs of existing capacities

** open after sale to APP Group

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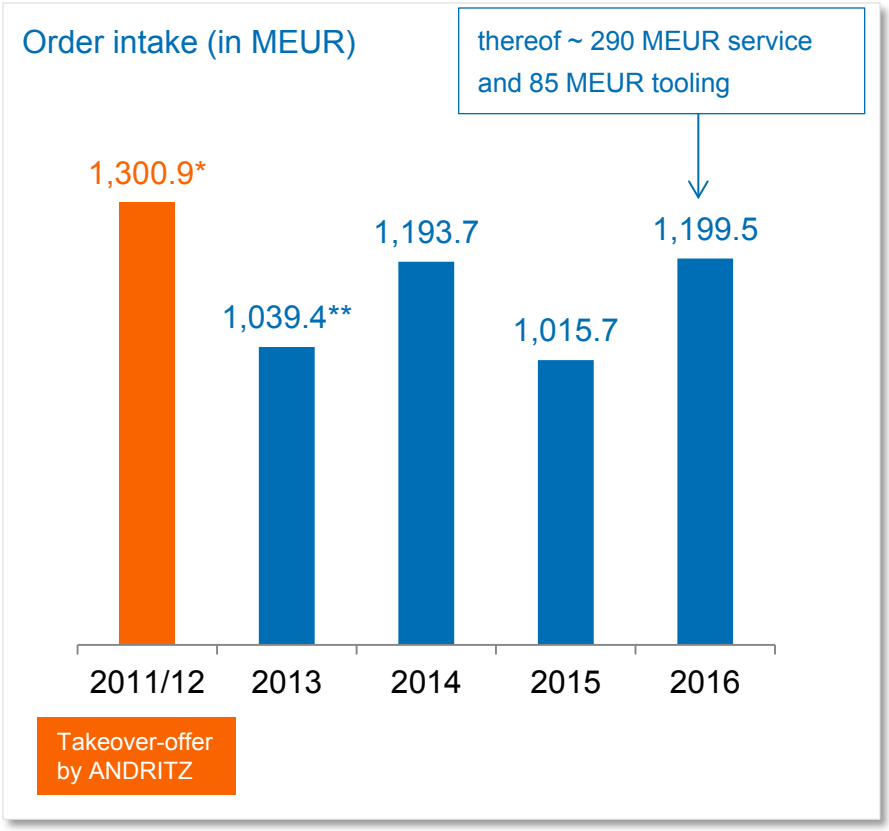
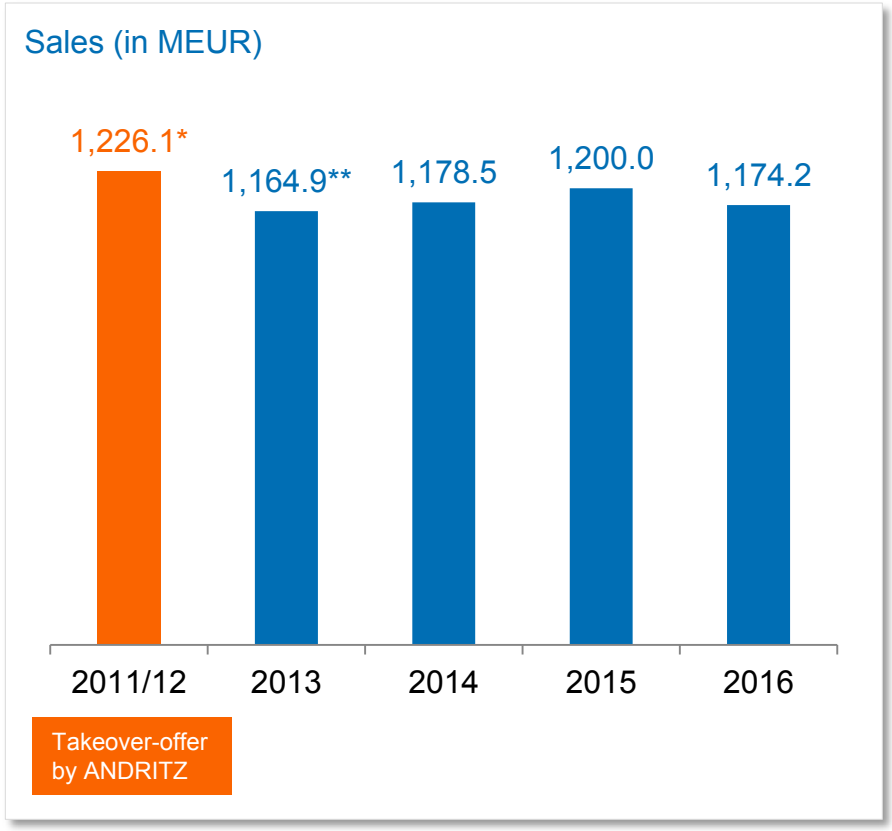
Schuler

Order intake and sales 2012-2016

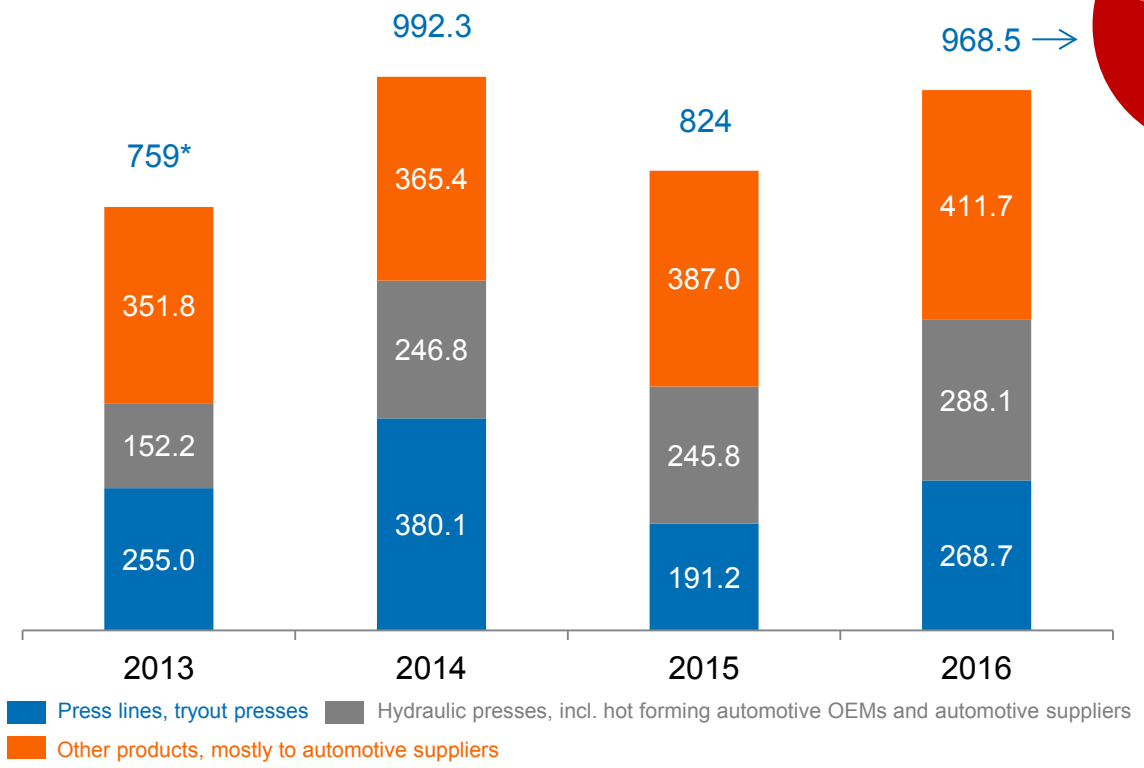




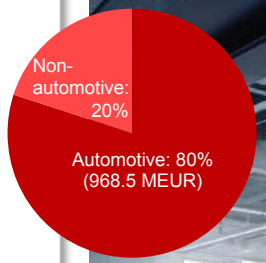
* 01.10.-30.09.
** Pro forma 1.1.-31.12., first-time consolidation in March 2013

Schuler: automotive accounts for ~80% of the business

Order intake from automotive OEMs, tier 0.5 and automotive suppliers (in MEUR)



Schuler: split of order intake 2016

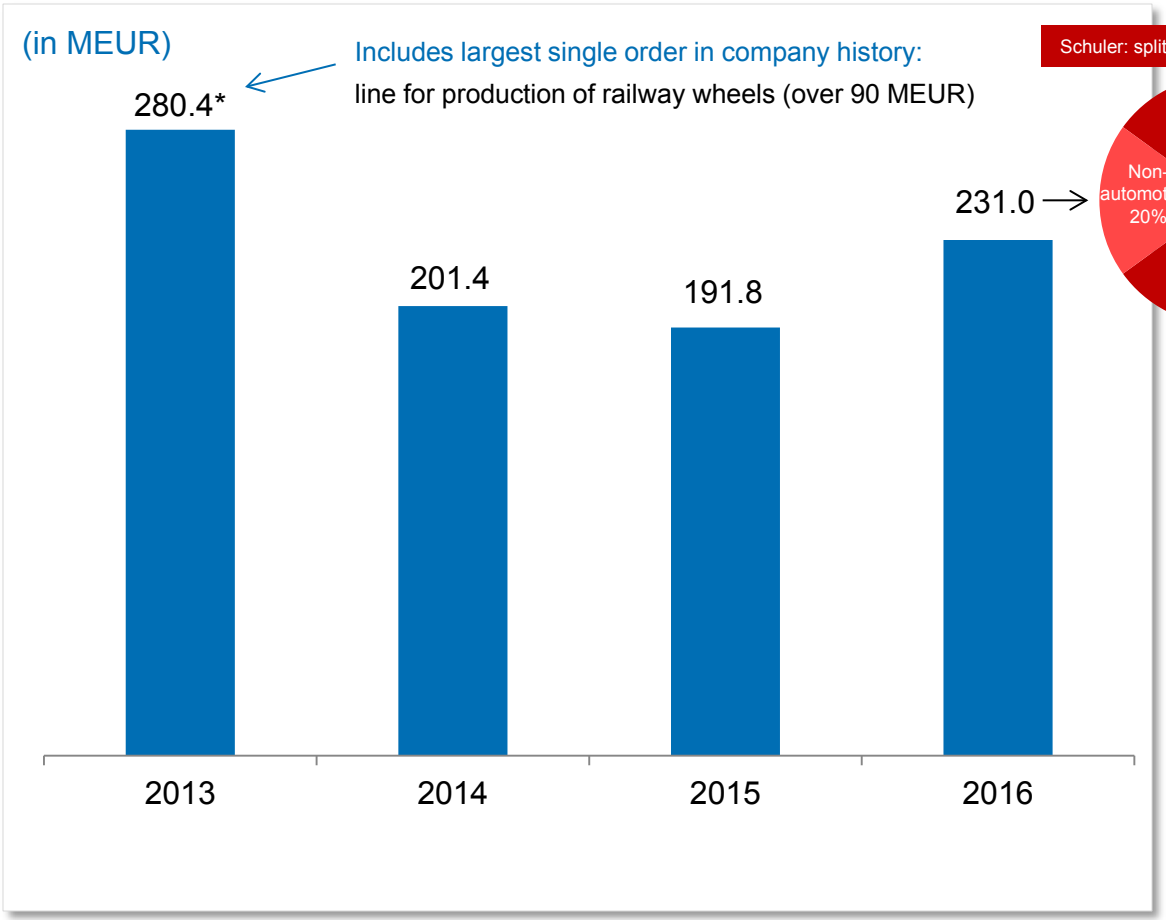


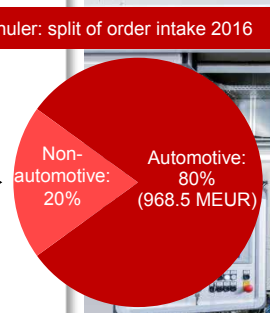
▲ Production of double parts at an automotive components supplier with a servo press in tie rod design with 16,000 kN press force

* Pro forma; first-time consolidation in March 2013

Schuler: order intake non-automotive

Coin minting, railways, white goods, etc.





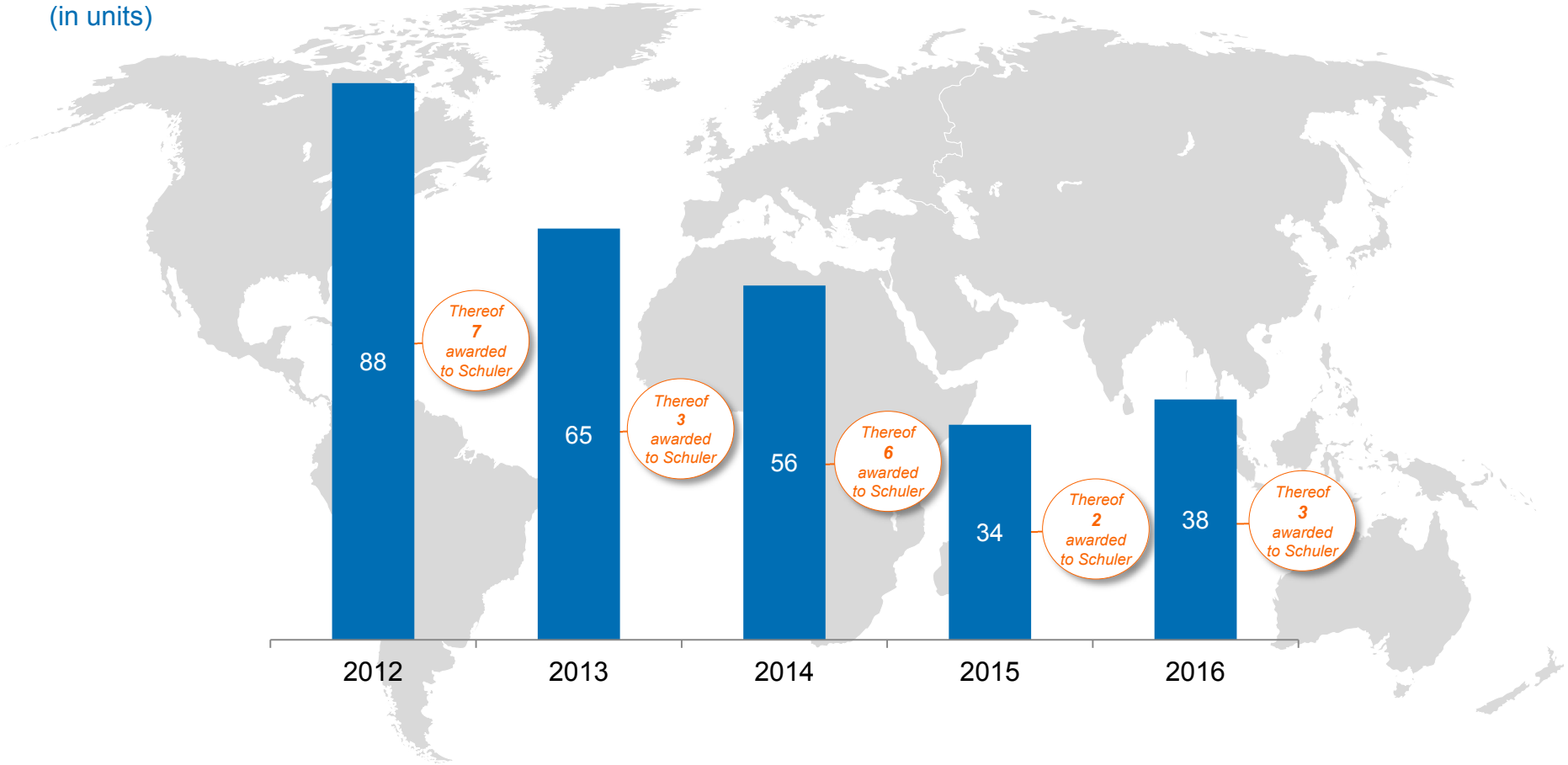
▲ A wide variety of materials can be processed on the Schuler Blankmaster SAK for the manufacture of blanks for coins or circular blanks for aluminum packaging applications

* Pro forma; first time consolidation in March 2013

Total number of press lines awarded worldwide

2012-2016

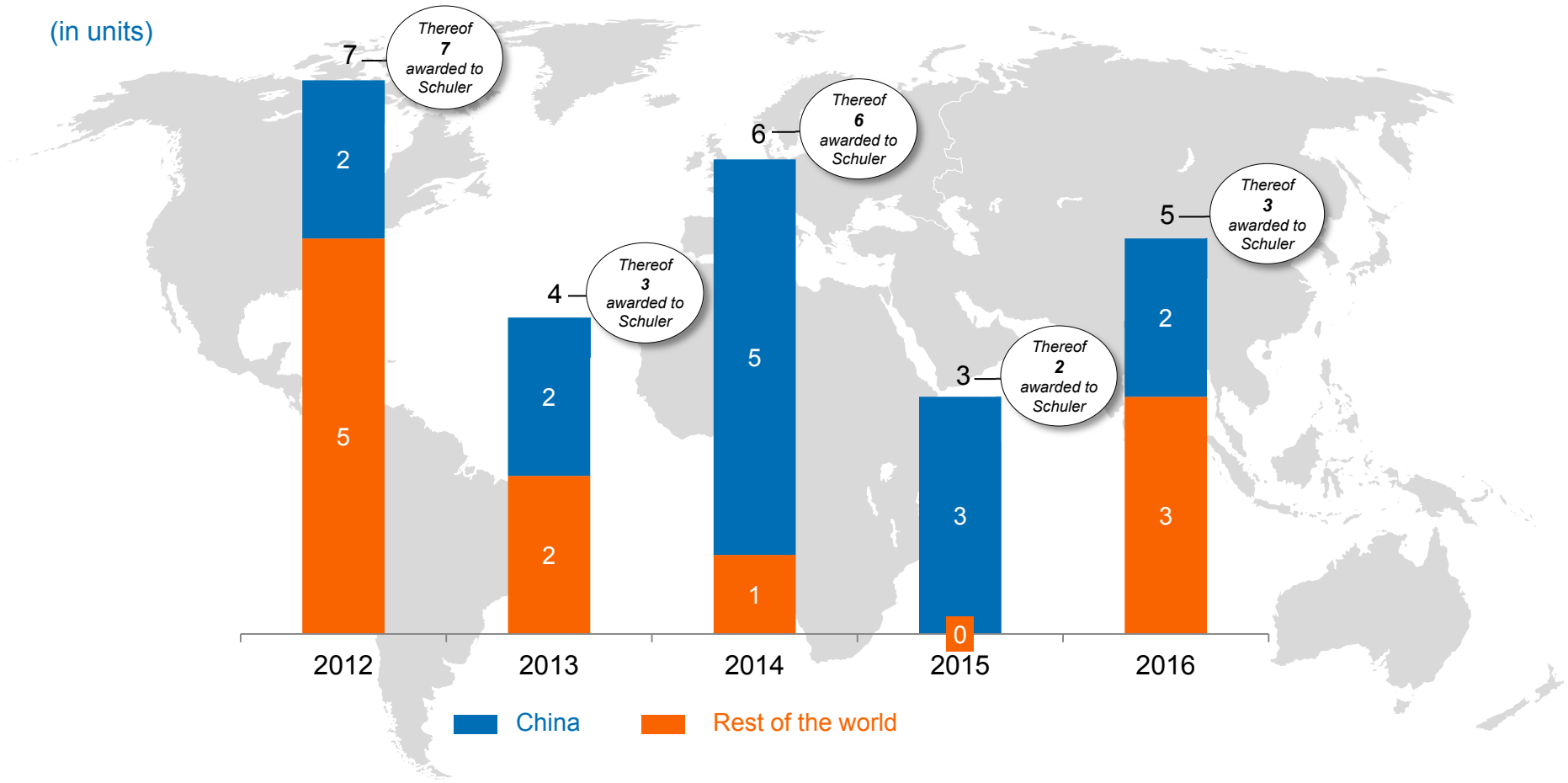
(in units)



Note: total amount of press lines sold in A, B, C segments

Order awards for press lines by

German automotive OEMs by region



Development of global market volume for presses

Schuler-Yadon addresses B-segment

CAGR 2016-2020E:

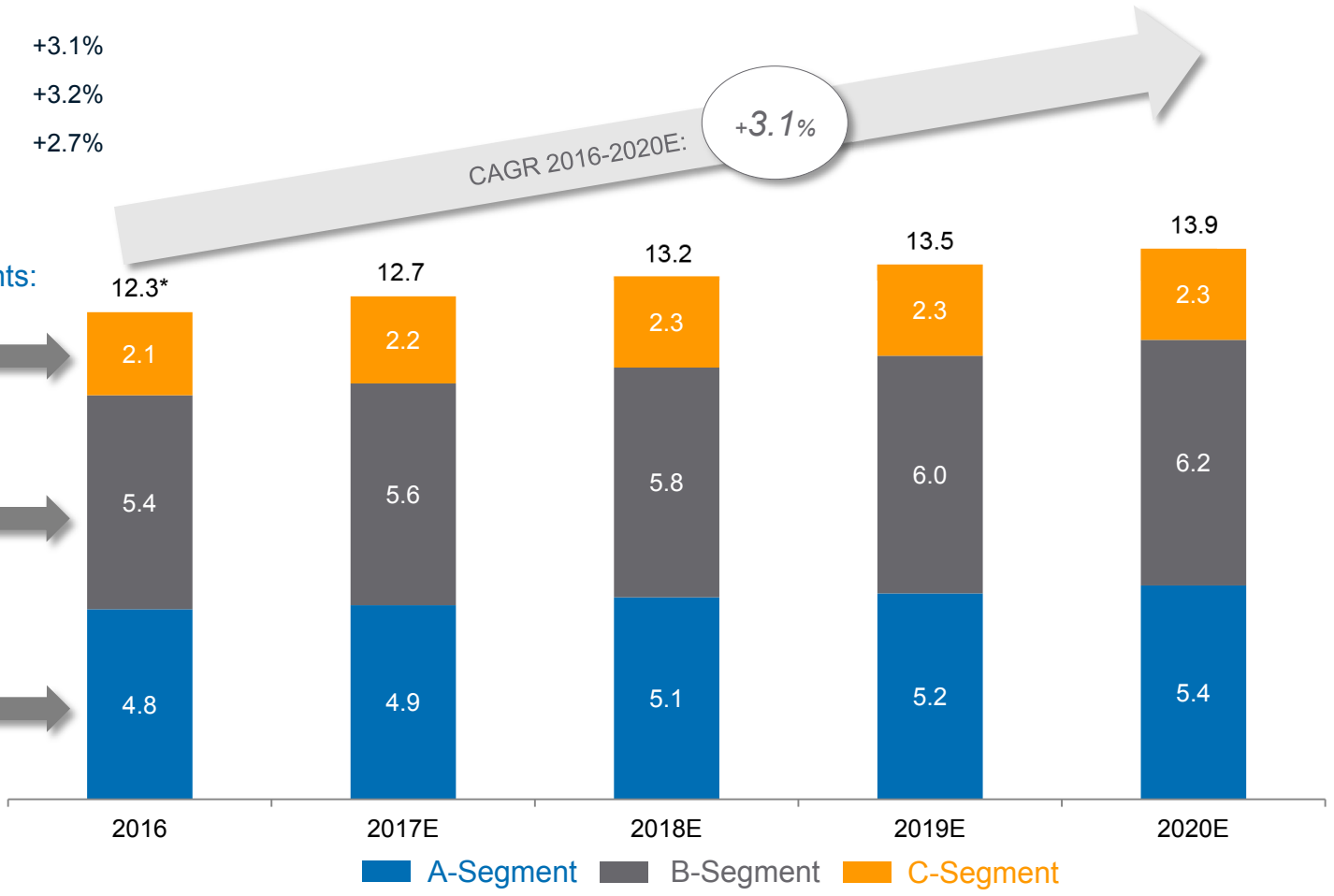
A-Segment	+3.1%
B-Segment	+3.2%
C-Segment	+2.7%

Group companies and addressed target segments:

YADON

Schuler-Yadon

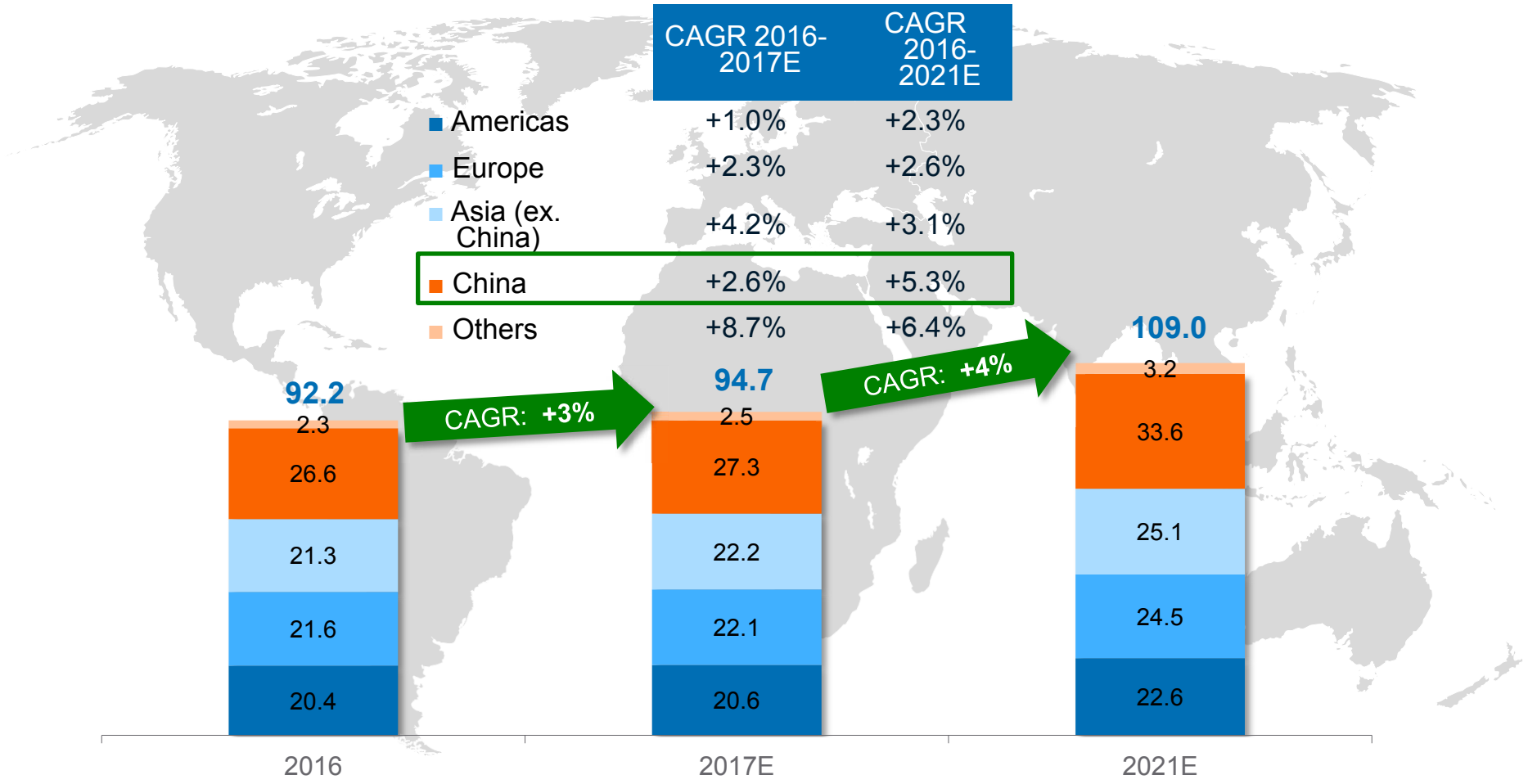
SCHULER
Member of the ANDRITZ GROUP



* bn. EUR

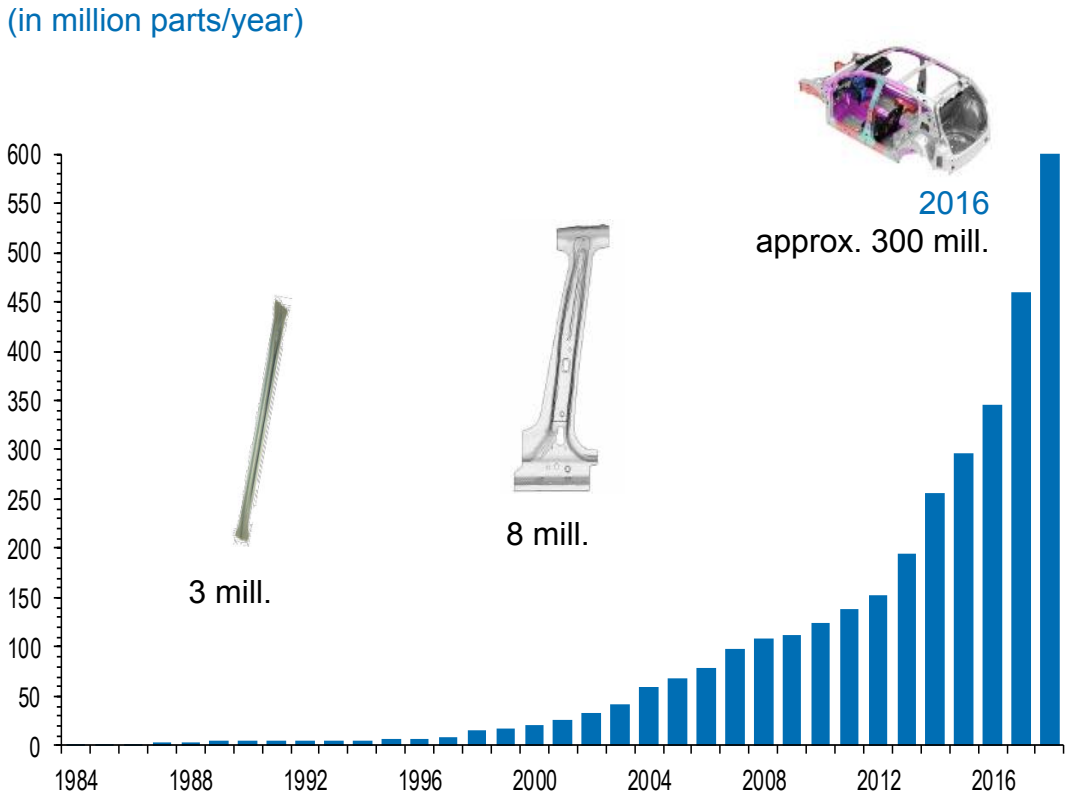
Light vehicles production (in million units)

Further growth expected until 2021, especially in China



Source: PwC, Autofacts, July 2017

Strong rise of hot forming parts per vehicle expected



Trend upwards

- Number of hot forming parts per vehicle will increase from an average of 10 today to more than 30 in 2018
- OEM experts say that by 2018 up to 600 million parts per year will be needed
- 1/3 of installed base from Schuler

Ford USA orders three hydraulic hot stamping lines

with PCHflex technology

- In late July 2016, Schuler received an **important order from Ford USA, Michigan** for **three hydraulic hot stamping lines with PCHflex technology** incl. automation and furnace

- **Schuler PCHflex technology** is leading technology for **Pressure Controlled Hardening:**
  - Improved part quality
  - Short cycle times of up to eight seconds (conventional process: approx. 15 seconds
  - Precise cooling to achieve special steel characteristics

▲ Hydraulic hot stamping line with PCHflex technology

First order for hot stamping line with

PCHflex technology for China

- The Chinese car manufacturer **Baowei** placed an order with Schuler in July 2016 for a **hydraulic hot stamping line with PCHflex technology** incl. automation
- Baowei is thus the **first Chinese customer to invest in a hot stamping line with PCHflex technology**
- The line will be supplied to the company's **Hangzhou (Chongqing) facility** in China. It will be used to produce **hot stamped parts**
- Baowei is a joint venture between Baosteel and Chongqing Pingwei Enterprise

BAOSTEEL

Chongqing Pingwei Enterprise co.,Ltd.

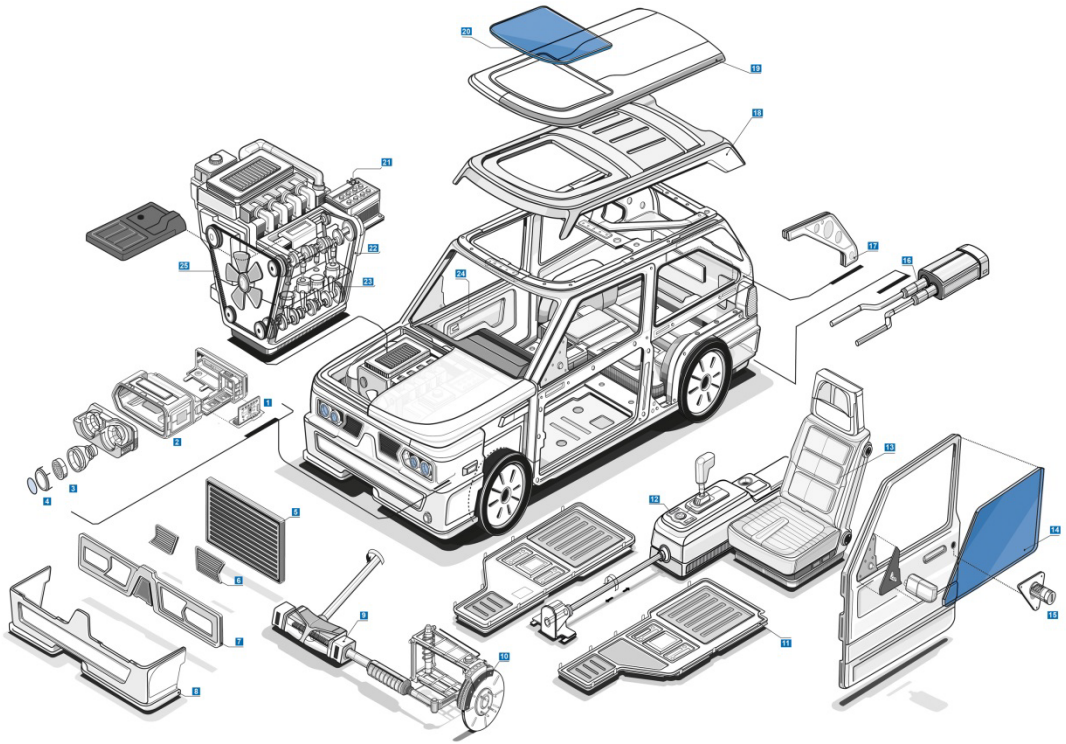
▲ Hydraulic hot stamping line with PCHflex technology

Today‘s cars are composed of over

10,000 single parts/component groups

In addtion to the items shown in the image, technologies from ANDRITZ and Schuler are also used in production of the following vehicle components:

- **Card body** (tailgate, engine hood, side panels, roof, doors, wheelhouse, rocker)
- **Chassias** (axles, axle shaft, side and cross members, twist beam, wishbone, shock absorbers)
- **Powertrain** (engine cradle, cylinder head gasket, oil and fuel filter, fuel tanks, drive shaft, con rod, rolling elements, prop shafts)
- **Exhaust system** (diesel particulate filter, catalytic converters, muffler)
- **Interior and exterior fittings** (dash panel, airbag material, floor, car mats, rear luggage cover, underseat crossbeam, sunroof, windscreen, door reinforcement)



▲ Over 10,000 single parts and component groups in a car

Number of component groups in powertrain by type of car

Powertrain designs		Component groups	Number of component groups
1. Cars with combustion engines	Components designed specifically for combustion engines	Engine components and gear boxes, gearbox shafts, gear parts, gear transmissions, crank shafts, piston rods, cone gear wheels, toothed wheels, pistons, parts for plate hubs, combustion gas and exhaust systems, axle shafts, drive shafts, stretchers, bevel wheels for differential gears, cone gear wheels	19+
2. Hybrid	Components designed specifically for hybrid drives **(1)+(3)**	Motor/engine components and gear boxes, gearbox shafts, gear parts, gear transmissions, crank shafts, piston rods, cone gear wheels, toothed wheels, pistons, parts for plate hubs, combustion gas and exhaust systems, axle shafts, drive shafts, stretchers, bevel wheels for differential gears, magnetic sheet steel for electric motors, energy storage systems (battery cells, battery modules, battery connectors, battery packs)	25+
3. Electric cars	Components specifically designed for electric cars	Magnetic sheet steel for electric motors, energy storage systems (battery cells, battery modules, battery connectors, battery packs), axle shafts	6+

Schuler sales for equipment related to powertrains amounted to ~50 MEUR in 2016

ANDRITZ furnaces for high-strength steel production

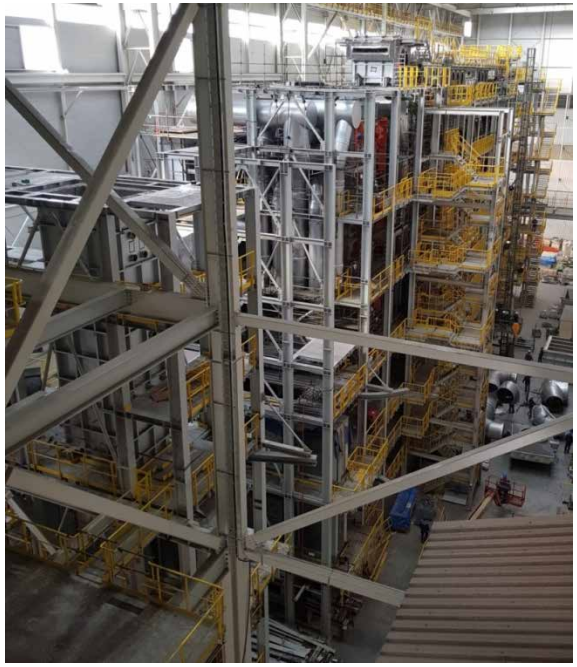
Confidential customer

Introduction:

Today the customer does not have a galvanizing furnace which is able to process the AHSS-grades of the 3rd generation with a hot dip coating (Q&P = Quench & Partitioning).

Technical data:

Scope	Installation of a new ANDRITZ furnace for production of AHSS-grades of the 3rd generation with a hot dip coating (Q&P = Quench and Partitioning) Max. strip temp. at DFF exit: 700°C - 900°C at exit of RTH
Dimensions	Strip width: 850 - 1880 mm Strip thickness: 0.6 - 2.1 mm Process section speed max. 180 m/min Non Q&P 120 m/min for Q&P
Coating:	GI
Start of operation	5th of January 2018



▲ ANDRITZ furnace for production of Advanced High-Strength Steel

Schuler technology for laser blanking lines

Mercedes-Benz Kuppenheim

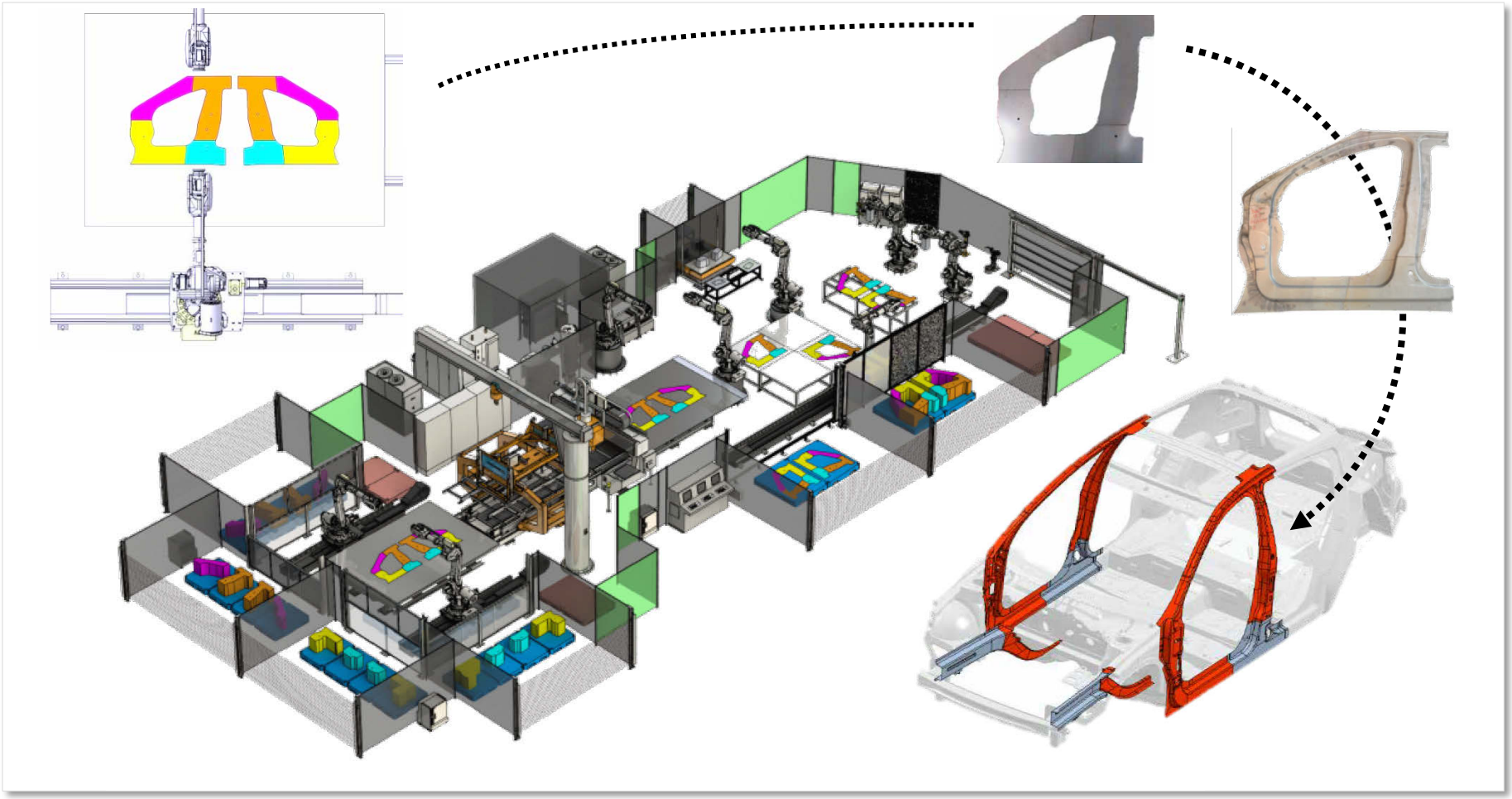
- Lines cut blanks out of a moving sheet metal coil which are then formed into car body parts in further steps.
- As fiber lasers are used for the cutting process, no dies are required – in contrast to conventional blanking lines.
- Product changes without any set-up time – simply by loading the corresponding cutting program.
- Material can be saved by optimizing nesting

▲ As the Schuler line uses fiber lasers, no dies are required – in contrast to conventional blanking lines.

▲ In modern car manufacturing, as with this Schuler laser blanking line at the Mercedes-Benz plant in Kuppenheim, thousands of high-strength, weight-optimized car body parts are blanked every day out of extremely heavy aluminum coils.

ANDRITZ Soutec

Soutrac welding line for hot stamped door rings



Laser welding systems from ANDRITZ Soutec

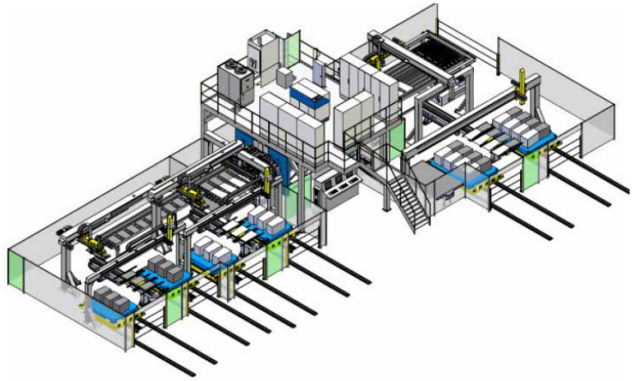
voestalpine, Linz, Austria

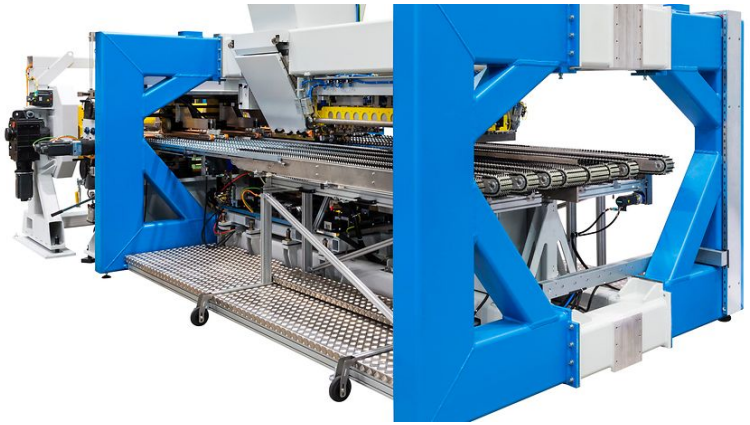
Technical data: SOUSPEED®

Scope	Fully Automatic Laser Welding System: ▪ Dimpling and Blank Turning ▪ Gap controlled filler wire ▪ 6kW Disk Laser ▪ Souvis® 5200 Quality Control System
Material	HSS, AHSS, zinc coated, galvannealed Usibor / Ductibor
Line capacity	5 Mio. TWBs p.a. 30 m/min max. speed in process section
Dimensions	Blank thickness: 0.5 mm – 3.0 mm Blank length: 100 mm – 600 mm
Start of operation	February 2015

System highlights:

- Worldwide fastest TWB welding system
- Multi partition pallet system with in cooperated dimpling and blank turning system
- Maximum possible capacity





▲ SOUSPEED is the high speed laser welding system for Tailored Blanks

Acquisition of Powerlase

- Acquistion of 50.1 percent stake
- Powerlase provides high-energy laser technology for ablation, surface processing, cleaning and processing composite materials in industrial applications with high production speed demands.
- International customers from the photovoltaic, microelectronics, automotive, and aerospace industries.

- **Reasons for the acquisition:**
  - ANDRITZ Soutec, Switzerland, has been using lasers from Powerlase in its ablation systems for removing coatings from metal, e.g. in the production of tailored welded blanks.
  - Potential is anticipated in other fields of business.

- Headquarters: Crawley, West Sussex, UK
- Employees: ~ 28
- Annual sales: ~ 2 MEUR
- Assigned to: METALS Processing / Welding & Stamping division

Schuler

First order for new battery business unit

Promising growth opportunities in market for e-mobility

- In November 2016, the **Battery business unit** from Schuler received its **first order** from one of the **world's leading battery manufacturers**
- Scope of supply: a **complete production line incl. process technology** for the **manufacture of battery casings for electric vehicles**
- The line consists of **two presses** as well as peripheral equipment from suppliers (trimmers, washing machine and optical inspection)
- **Delivery** is planned for **late 2017**; **production is due to be launched** in **2018**

▲ Schuler helps to produce prismatic and cylindrical battery cases

Update on Schuler restructuring program

- **2015:** 78 MEUR provisions for restructuring (thereof 18 MEUR released in 2016) → main focus on reduction of production capacities to avoid cost under-absorption in times of lower order intake
- Closure of inhouse production of Waghäusel and Weingarten
- All cost saving targets reached
- Reduction of headcount of around 650 employees since 2013 (corresponds to -30% of workforce in Germany)
- Reduction of direct labour hours for new machines in Europe from 1.8 to 1.5 million direct labour hours
- Direct labour hours in emerging markets doubled, now around one third of total direct labour hours

Conclusions regarding Schuler

Market:

- Continued growth of light-weight vehicles produced
- E-mobility will reduce the total number of car body parts, however very limited impact on Schuler expected
- New steel types require new press and die technologies → opportunity for Schuler

Schuler:

- Still too focused on German car manufacturers and their suppliers
- Mid-term strategy:
  - Develop attractive products for Non-German car manufacturers (China, US, Europe)
  - Additional growth from non-automotive products

Contents

SEPARATION

Satisfactory investment and project activity

Municipal

Investment activity at reasonable levels, mainly in developed markets

Outlook: Stable +

Feed and biomass pelleting

Solid project activity

Outlook: Stable +/-

Long-term average growth potential:
2-3% p.a.

Industrial

Reasonable demand in chemicals and mining/minerals;
low project activity in food

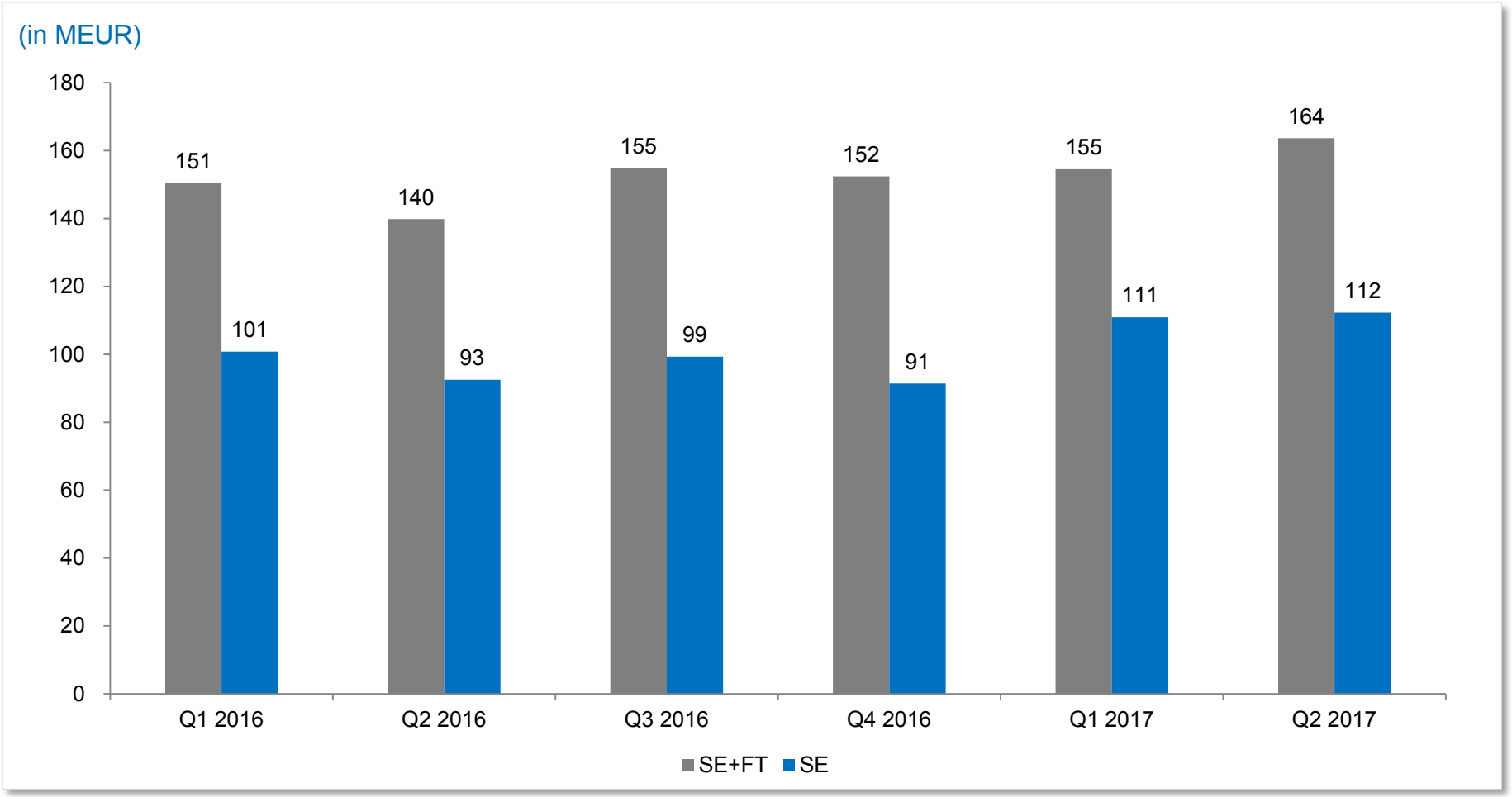
Outlook: Stable +

Competition

Unchanged market environment with some global and many regional competitors

SEPARATION (1)

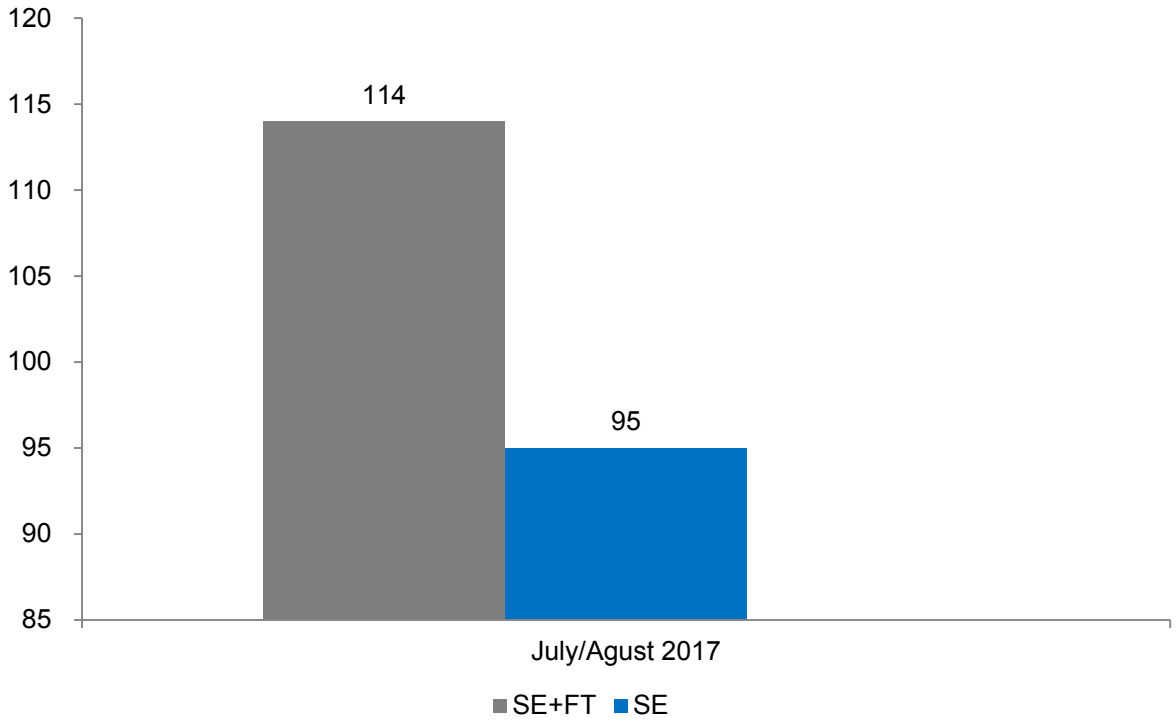
Quarterly development of order intake since 2016



SEPARATION (2)

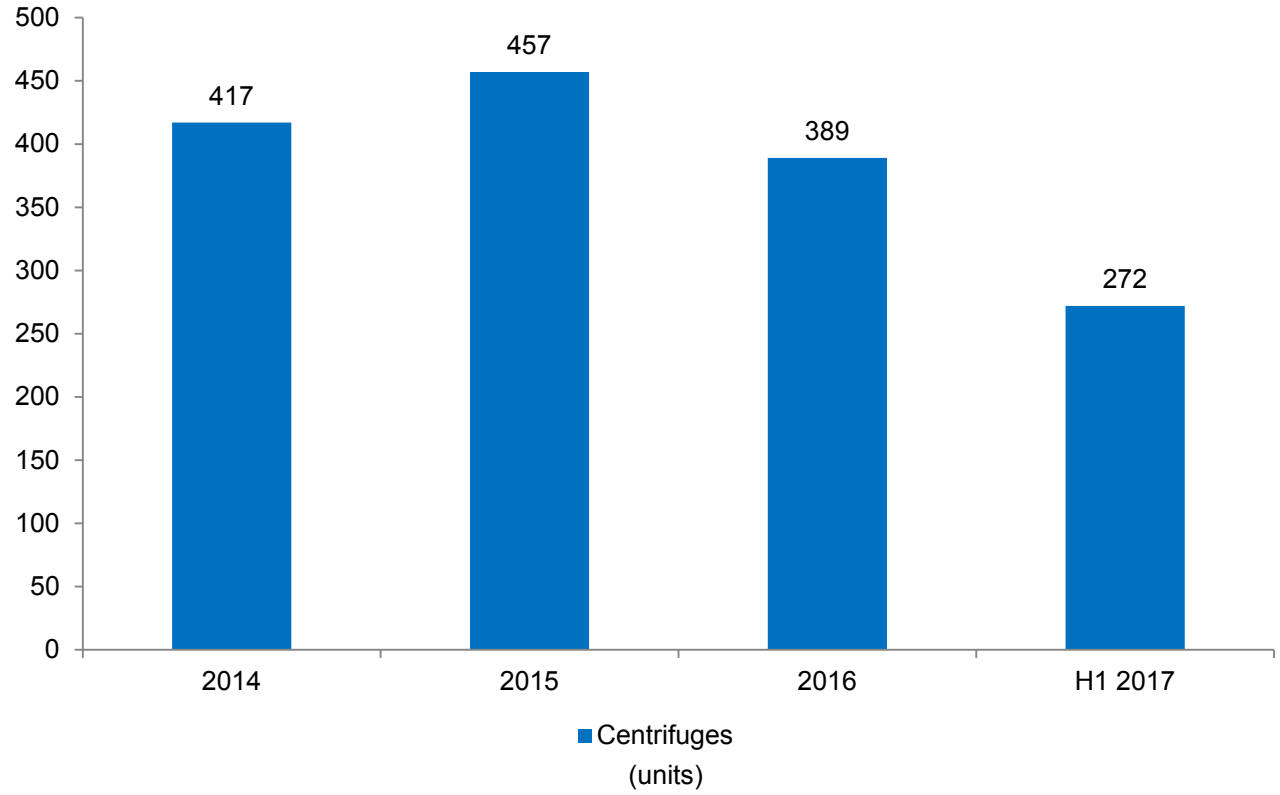
Development of order intake in July and August 2017

(in MEUR)



SEPARATION (3)

Development of centrifuges sold since 2014



Launch of several innovative products

Substantial reduction in power consumption for large decanters

- Reduction of power consumption of **up to 40%,** achieving a decrease in operating costs and total cost of ownership
- Reduced service costs by enhanced wear protection and so further reduced total cost of ownership
- Achieving same performance with less power consumption

RheoScan - Real time, automatic adjustment

of polymer doses

First optical measurement system on the market

- Detects actual sludge viscosity during thickening and dewatering process
- Adjusts the needed polymer dose
- Is compatible with all models of belt filter presses, gravity belt systems and polymer dosing systems

Benefits

- **Cost savings** due to reduction of polymer consumption up to 40%
- **Amortization period** of only a few months
- **Increase of operation stability** and plant reliability
- Operation **without requiring supervision**

Contents

Results H1 2017: Major findings

ANDRITZ GROUP	Unit	H1 2017	H1 2016	Change	Q2 2017	Q2 2016	Change
Order intake	MEUR	**2,771**	2,566	+8%	**1,211**	1,319	-8%
Sales	MEUR	**2,779**	2,761	+1%	**1,393**	1,476	-6%
EBITA (%)	MEUR	**207 (7.5%)**	183 (6.6%)	-	**110 (7.9%)**	99 (6.7%)	-

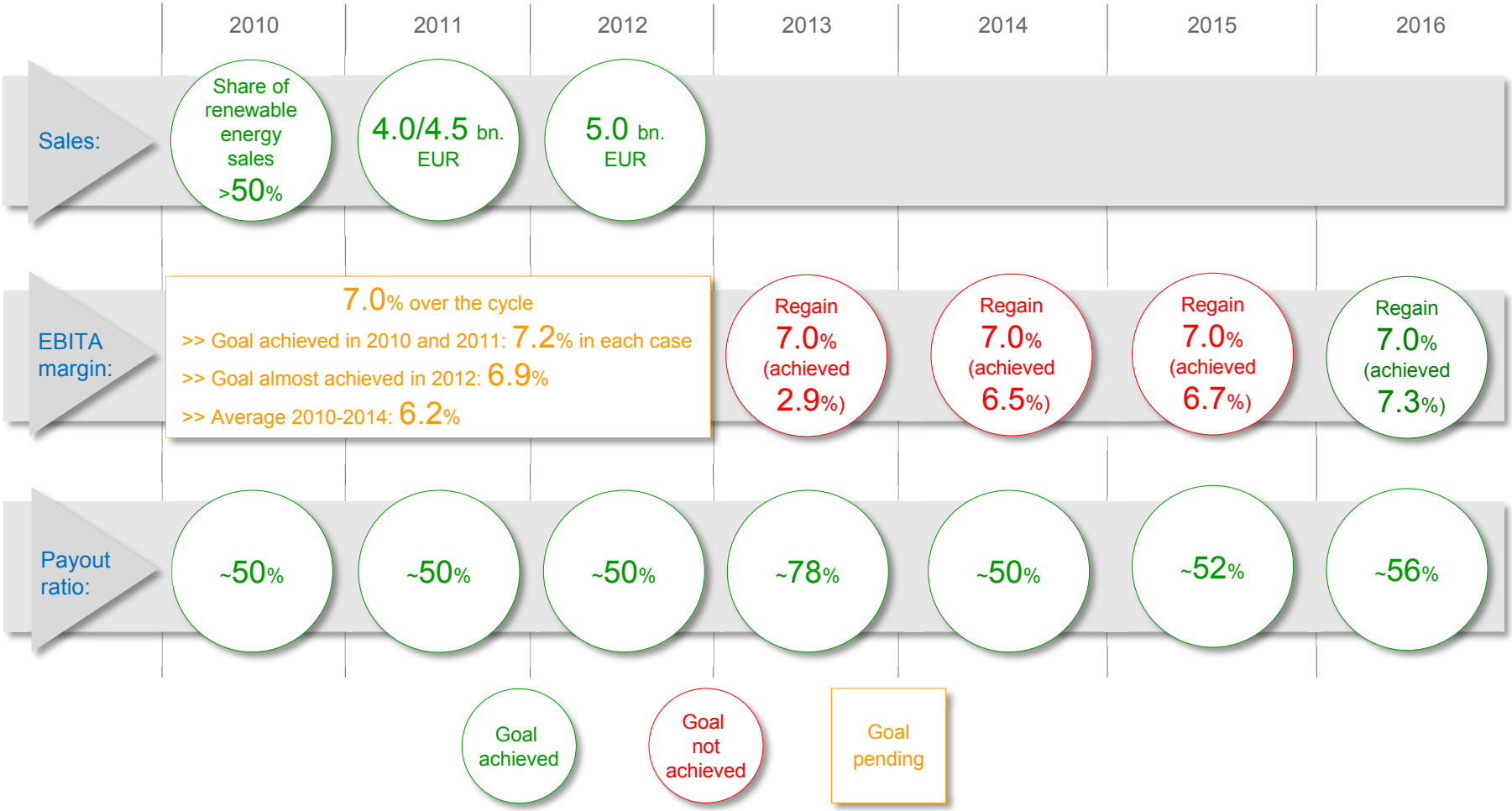
Order intake:
Weak first H1 in METALS and HYDRO, no orders in automotive, no large projects in hydro

EBITA at 7.5%, without extraordinary items is 6.6% which is the same level as H1 2016 on a comparable basis

Rise of order intake and **stabilization of profitability** in SEPARATION

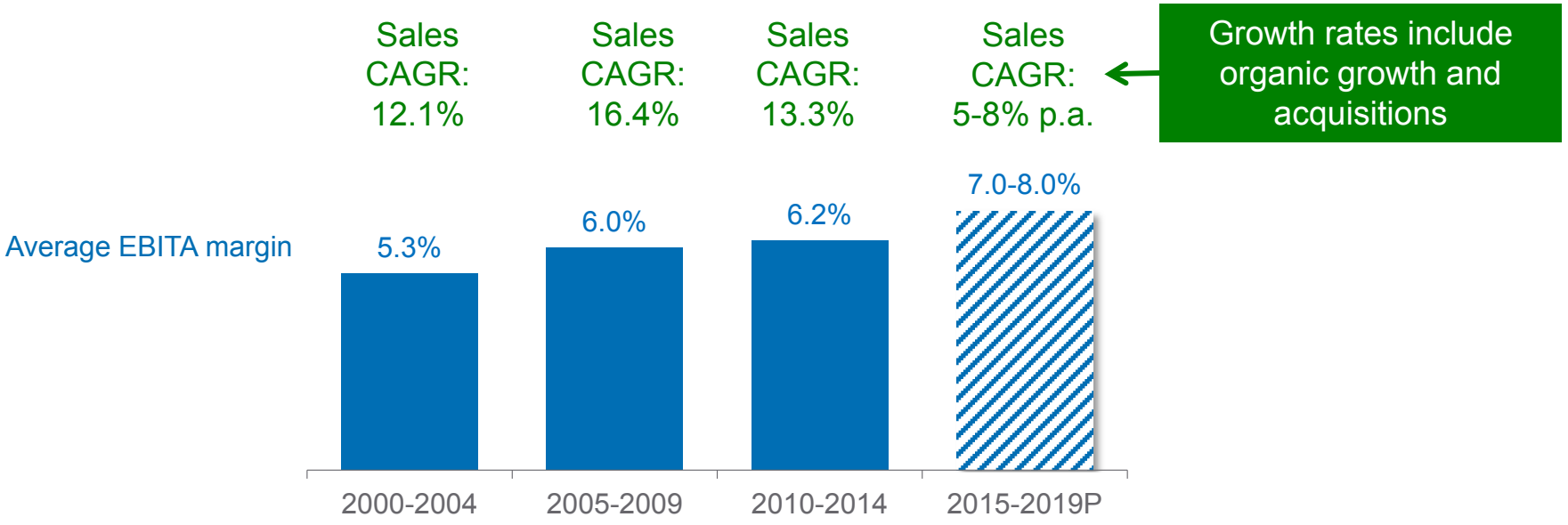
Extraordinary profit from the sale of Technical Center in China

Review of past Capital Market Day goals



Target to continue long-term profitable growth

Goal: further improve profitability with top-line sales growth

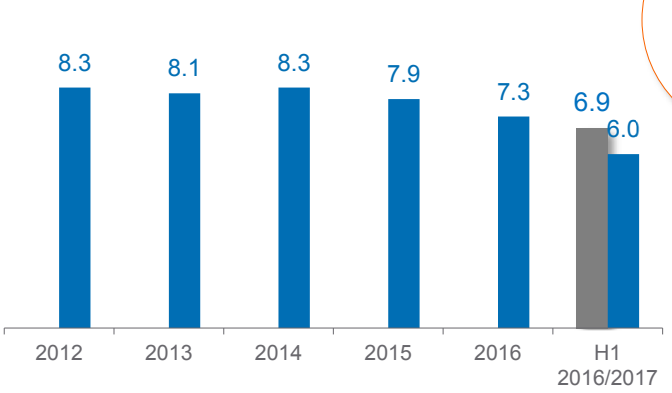


How to achieve long-term profitable growth:

- Price discipline
- Launch of new service products (OPP, eShop)
- Continued cost optimization
- Focus on further acquisitions

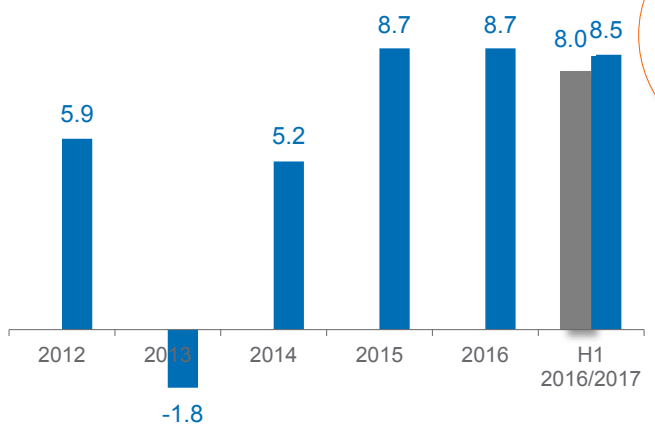
Update on long-term EBITA margin goals per business area

HYDRO



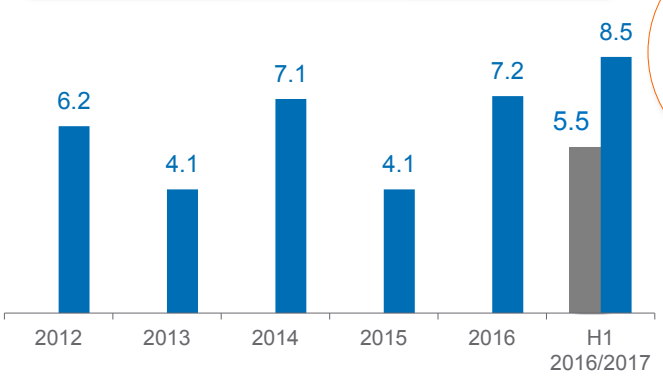
Long-term goal: *8.5-9.0%* ***CONFIRMED*** ✓

PULP & PAPER



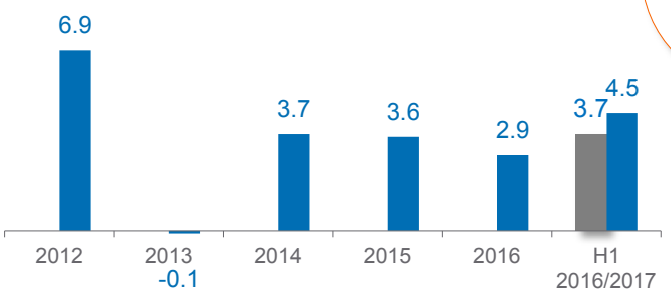
Long-term goal: *7.0-8.0%* ***NEW: >8%***

METALS



Long-term goal: *7.0-8.0%* ***NEW: 6.0-7.0%***

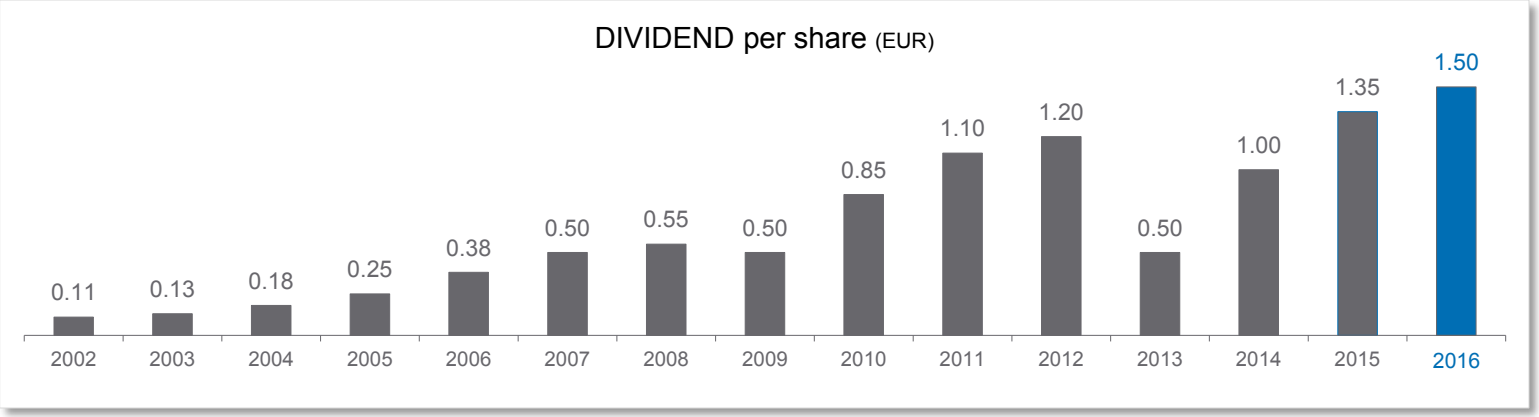
SEPARATION



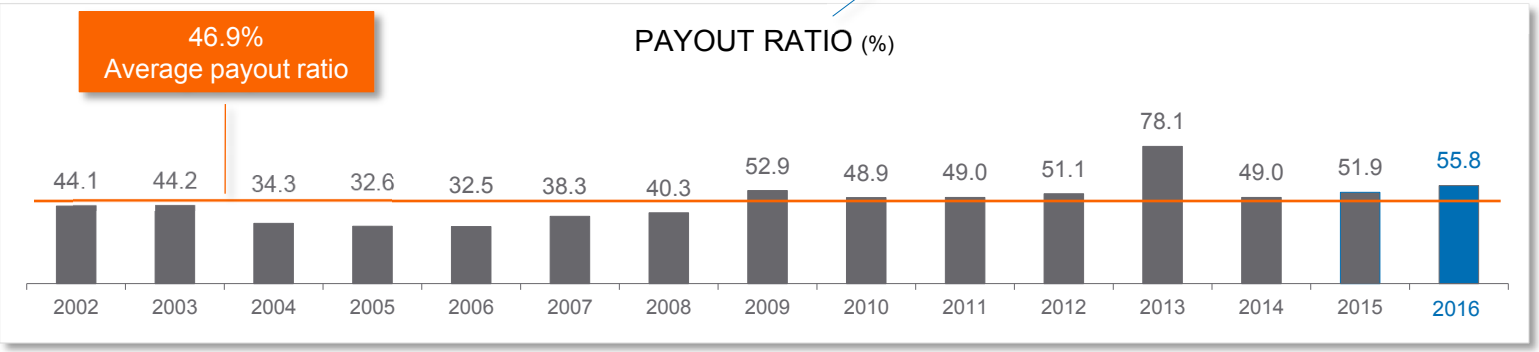
Long-term goal: *8.0-9.0%* ***CONFIRMED*** ✓

* Including restructuring expenses of ~40 MEUR for Schuler
** Schuler: 8.8%

Consistent dividend policy



Confirmation of dividend goals:
- Maintain payout ratio at a minimum of ~50%
- Mid-term increase to ~60%



ANDRITZ GROUP growth opportunities

Aftermarket:

- Digital business
  - Metris IoT solutions and Metris spare part catalog (eShop)
  - Mill maintenance
  - O & M (HYDRO)
- Grow METALS aftermarket

Capital:

- HYDRO → China
- Schuler → B-segment automotive/non-automotive
- SEPARATION

ANDRITZ GROUP

Capital Market Day 2017, Graz