

Greater China

Dr. ZHANG Yilin
Regional CEO Greater China

July 20, 2017
Capital Markets Day 2017
Bühl



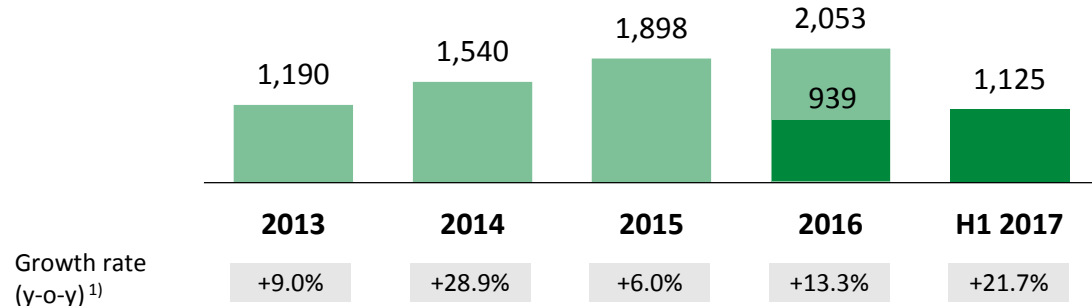
Dr. Yilin Zhang (54)

Regional CEO Greater China

- ▶ 1994/2005 Dr. Zhang received a doctorate in mechanical engineering from Hannover University in specializing in automotive dynamics (1994) and an EMBA degree from Arizona State University (2005)
- ▶ 1994 – 1998 Head of the China business development project for ITT Automotive Europe
- ▶ 1999 – 2004 Chief representative and CFO of Continental Teves' branch in China and Board Director of a joint venture of Teves
- ▶ 2004 – 2014 President Automotive at Schaeffler Greater China
- ▶ Since 2014 Regional CEO Greater China at Schaeffler

13 years with
Schaeffler

Sales development 2013 – H1 2017

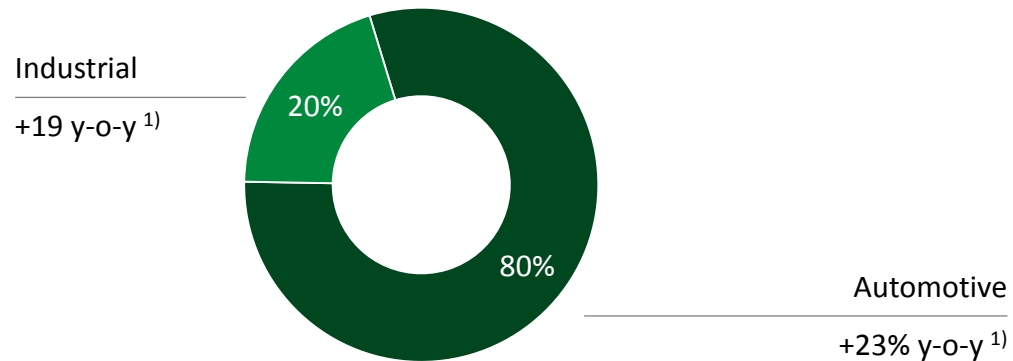


¹⁾ FX-adjusted

Key aspects

- ▶ 22 years presence in China since 1995
- ▶ 9 plants, 1 R&D center, 22 sales offices
- ▶ 12,000 employees
- ▶ Provides Automotive & Industrial products/solutions for both OEM and Aftermarket
- ▶ “Top Employer China” since 2015

Sales split by division H1 2017

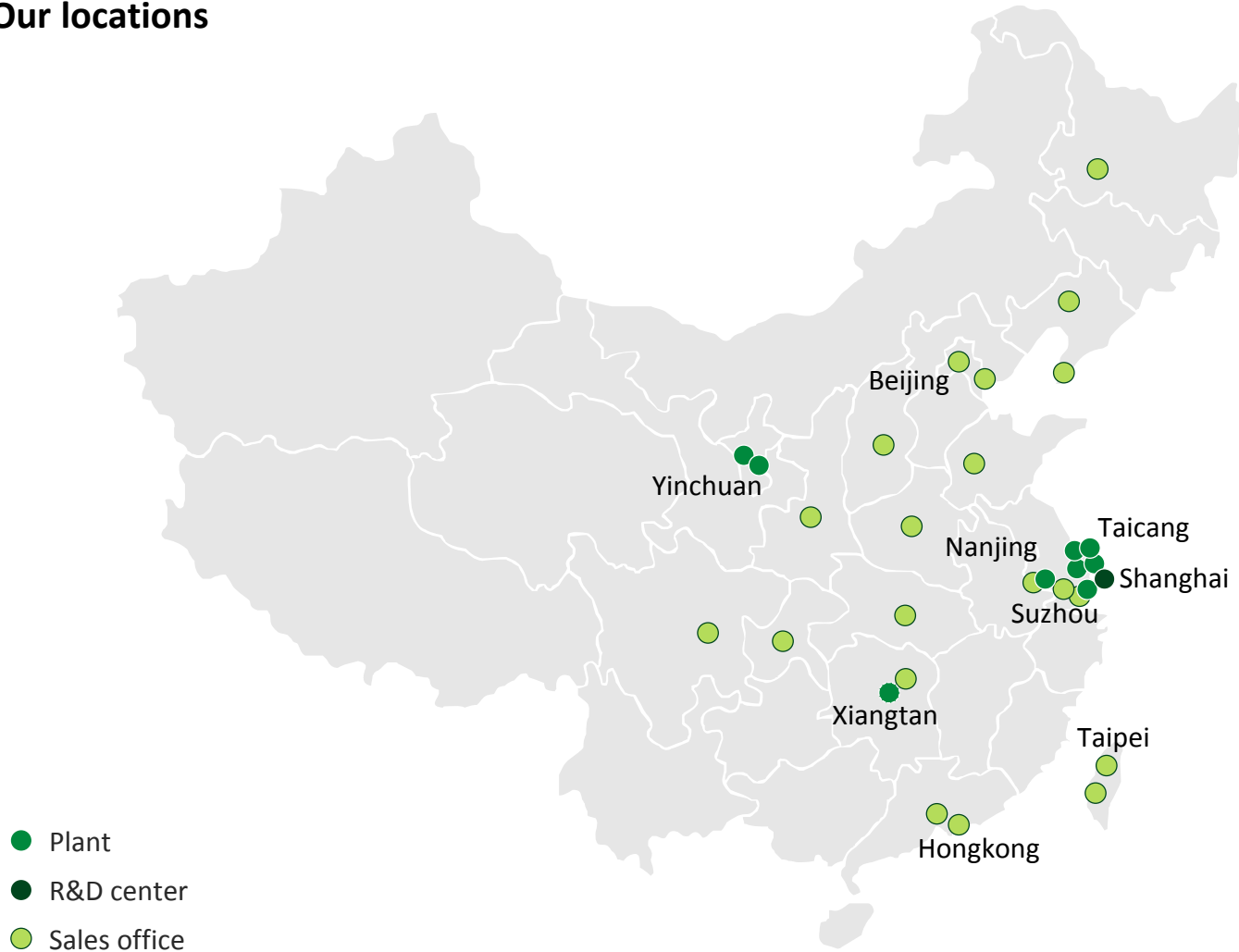


Key customer



Strong footprint in the region – 9 plants, 1 R&D center, 22 sales offices

Our locations



Our plants

Yinchuan



Taicang



Suzhou



Nanjing



Xiangtan – new campus
(Building 1 ready in 2019)



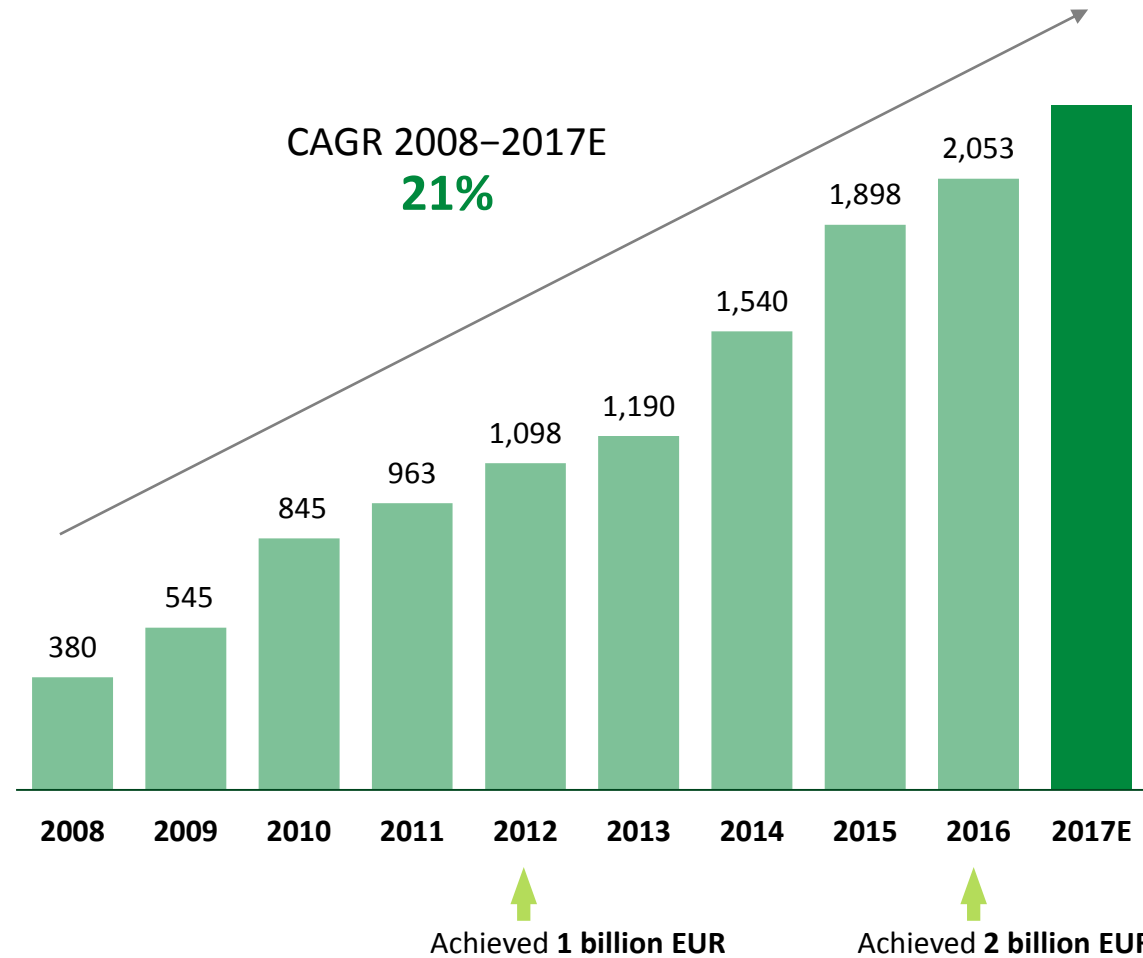
R&D center, Shanghai Anting



Schaeffler China – A global company with local presence

Sales development

in mn EUR



Footprint

- 1990 ► INA Bearing China, Hong Kong
- 1995 ► INA Bearing China, Taicang
- 1997 ► Raybesto Friction Products, Suzhou
- 2001 ► Ningxia FAG Northwest Railway Bearings, Yinchuan
- 2005 ► Schaeffler Holding China, Shanghai
- 2005 ► Schaeffler Trading Shanghai, Shanghai
- 2006 ► Headquarter and R&D Center, Anting
- 2007 ► Schaeffler Taiwan, Taipei
- 2011 ► Schaeffler Nanjing, Nanjing
- 2014 ► Schaeffler Greater China has become an independent region
- 2016 ► Schaeffler Xiangtan officially registered

Made in China 2025

Aim to transform China from manufacturing giant to a world leading manufacturing power

Made in China 2025

- ▶ Industrialization
- ▶ Automation
- ▶ Digitalization
- ▶ Connectivity
- ▶ Artificial intelligence

Industrie 4.0

- ▶ Digitalization
- ▶ Connectivity/Internet of Things
- ▶ Artificial intelligence

10 strategic industrial sectors in 13th Five-Year Plan



Numerical control tools



Aerospace equipment



High-tech ships



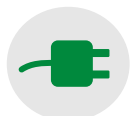
Railway equipment



Medical devices



Power equipment



Energy saving



Agricultural machinery



New Material



New Information Technology

The Belt and Road Initiatives

The Silk Road Economic Belt and the 21st-century Maritime Silk Road



- ▶ 64 countries
- ▶ 63% world population
- ▶ 40% world GDP
- ▶ 1400 billion USD investment

Capacity cooperation

Raw Materials



Infrastructure construction



Machinery



Production of textile/food



Automobile



High Technology export

High Speed Rail



Nuclear Power



Advanced Equipment



Telecom



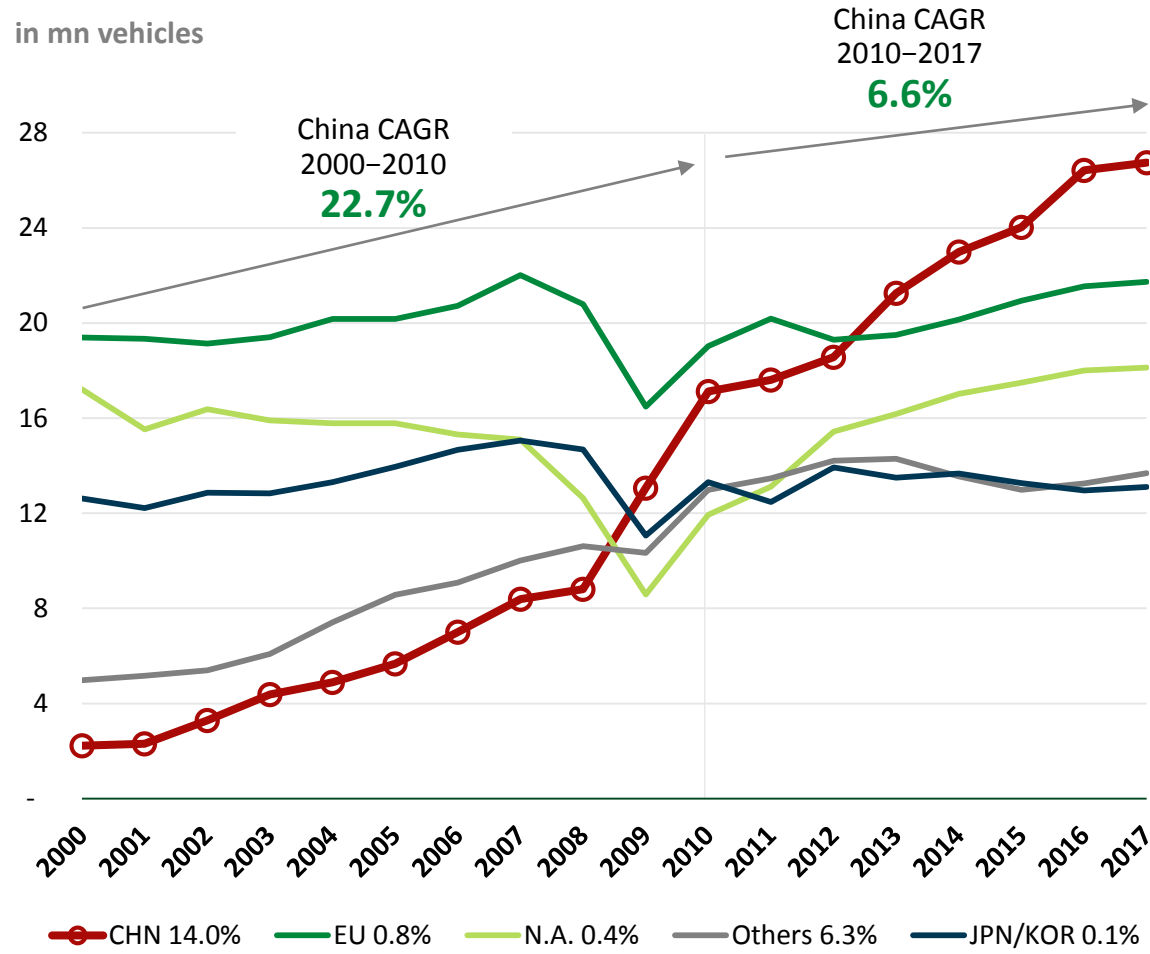
Aerospace & Ocean



Automotive China – Growing significantly above market

Light vehicle production volume

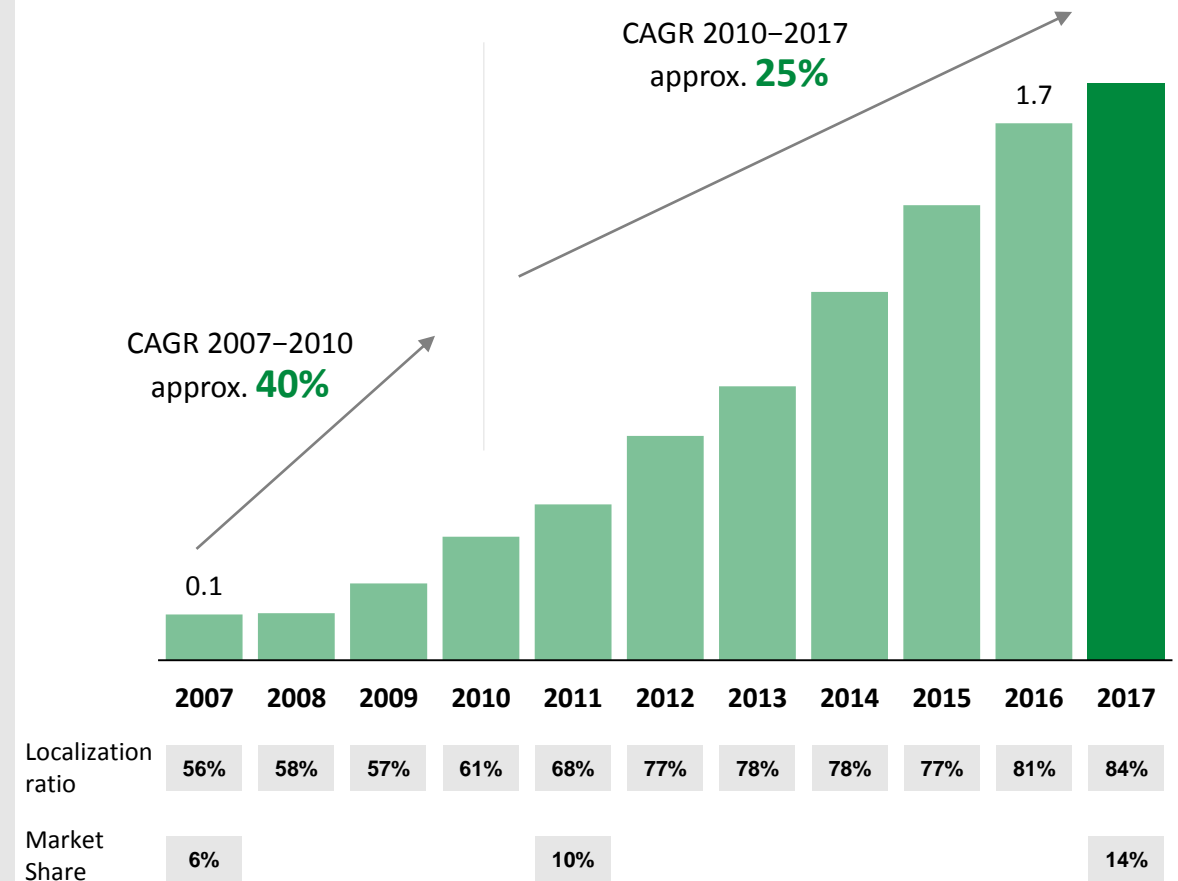
in mn vehicles

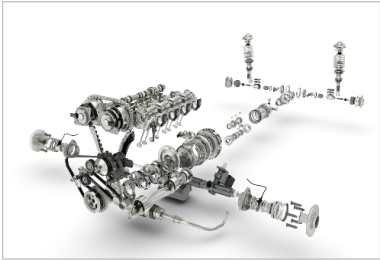


Source: IHS and Schaeffler China Market Intelligence

Automotive Sales

in bn EUR





Products for CO₂ reduction and fuel economy:

- ▶ Valve Train, Cam Phaser, Thermo Management
- ▶ Dual Mass Flywheel, Dampers
- ▶ Hybrid module, etc.

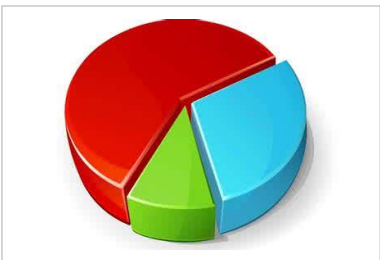
USP on traditional ICE



- ▶ Local production
- ▶ Local R&D
- ▶ Local supplier base
- ▶ Local management

Localization of competence

Balanced Customer portfolio

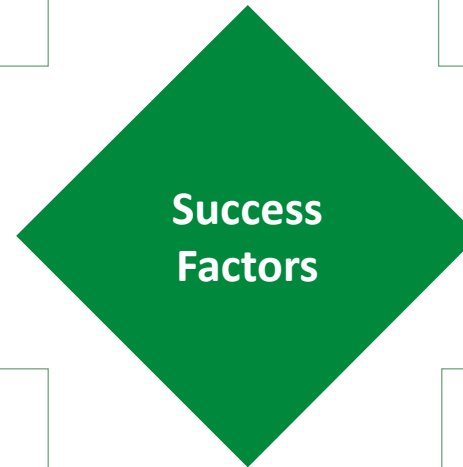


- ▶ Automotive sales structure reflects the OEM market performance
- ▶ As of H1 2017 37% of Automotive Sales with Local OEMs

Proactive Cost optimization



- ▶ Economic scale of production
- ▶ Productivity improvement
- ▶ Local supplier development
- ▶ Localization ratio from 56%(2007) to 84% (2017)



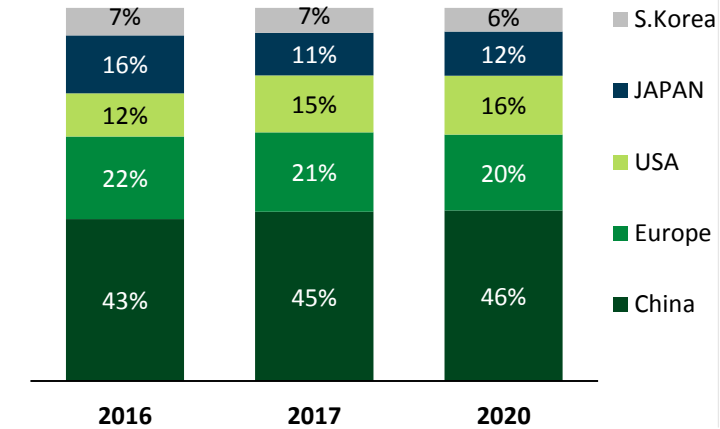
Balanced customer portfolio – Sales shares with OEMs mirroring market

Top 5 car models China

	2005	2010	2016
1	Hyundai Elantra	BYD F3	SGMW Hongguang
2	GM Excelle	VW Laida	GWM H6
3	VW Santana	Hyundai Yuedong	VW Laida
4	VW Jetta	GM Excelle	SGMW 730
5	Chery QQ3	VW Jetta	GM Excelle

Note: The models in green name are Chinese local brands
 Source: IHS and Schaeffler China Market Intelligence, SD

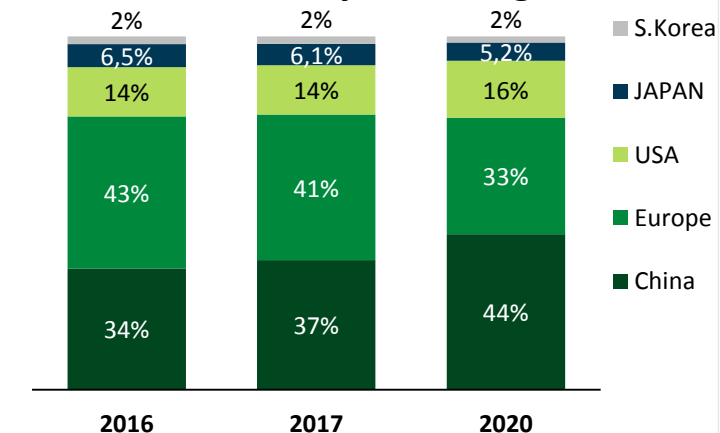
Car production by OEM origins



Note: Passenger Vehicles only

- ▶ Chinese OEMs take more market share from 2015, mainly driven by balanced product portfolio & quality improvement
- ▶ European OEMs keep around 20% market share due to their strong position in sedan
- ▶ Japanese OEMs recovered

Schaeffler sales by OEM origins



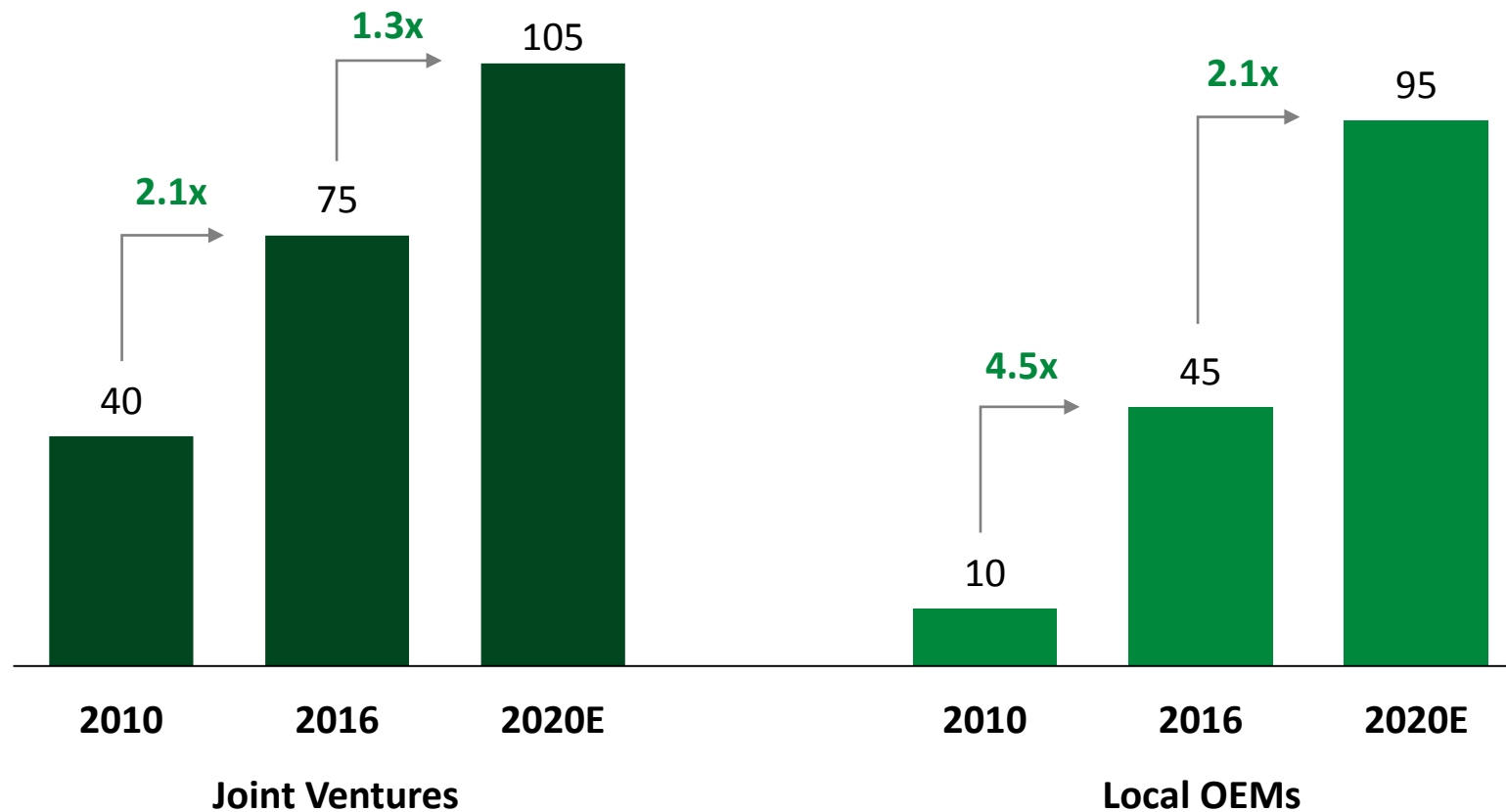
Note: Passenger Vehicles only

- ▶ Local OEMs: In line with the market, more requirement for noise improving and fuel saving products
- ▶ European OEMs: Sales growth in line with market growth
- ▶ US OEMs: New projects nominated for next generation of powertrain

Balanced customer portfolio – Content per vehicle with local OEMs to increase significantly

Content per vehicle ¹⁾

in EUR



¹⁾ Light Vehicle view; sales of AAM excluded

Key aspects

- ▶ Main growth drivers are the technology driven products such as P2 hybrid module, E-Axle, thermal management, double clutches, CVT, damper technology, etc.
- ▶ Content per vehicle (CPV) with local OEMs catch up quickly with CPV of JVs due to local OEMs' forward development and balanced/updated product portfolio (turbo engine, automated transmission, noise improvement and friction reduction for SUV/Sedan/Van)

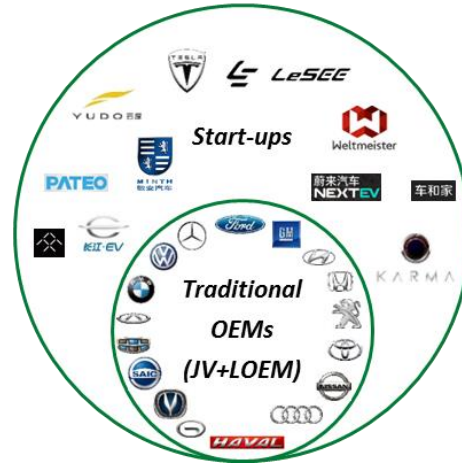
China as the leading market for E-Mobility – Strong investments from all players

1 Numerous participants

Over **200** Chinese local players are applying for New Energy Vehicle (NEV) production licenses

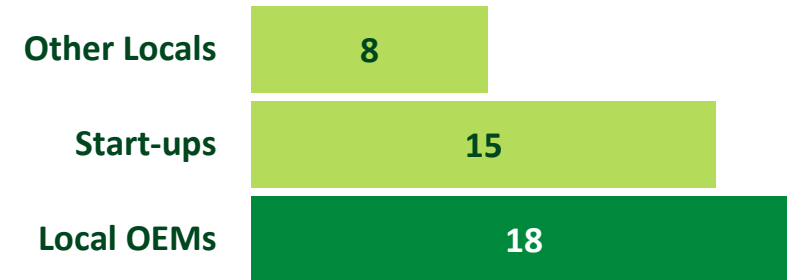
JVs + LOEMs + Start-ups

All have detailed plans on NEV market



2 The biggest investment ¹⁾

NEV Investment until 2020 (bn EUR)



¹⁾ Source: China Times

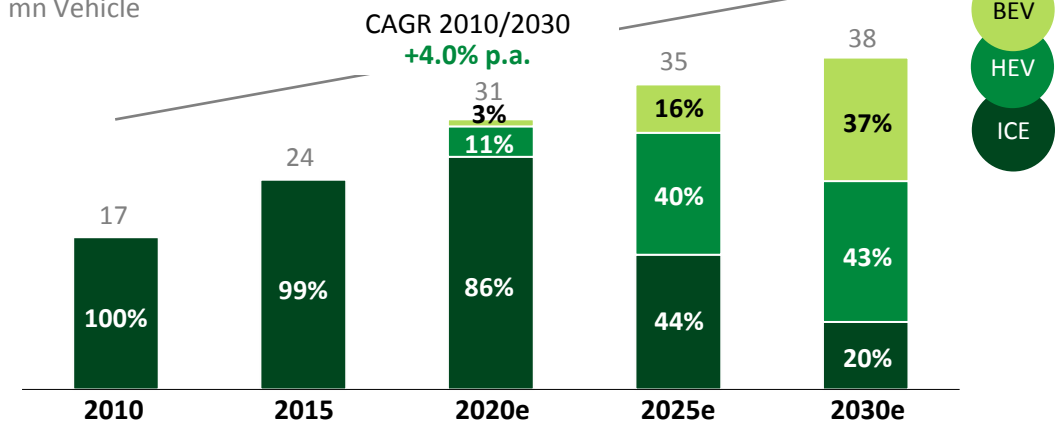
3 Powerful government support

- ▶ Financial support
- ▶ Policies and regulations
- ▶ Consumption incentives
- ▶ Infrastructures



4 Schaeffler Accelerated Scenario

in mn Vehicle



Source: IHS and Schaeffler Assumptions / Values based on Light Vehicles < 6 tons only, HEV ranging from 48V Mild Hybrid to PHEV

Nominated projects

ChangAn
P2 Hybrid Module:



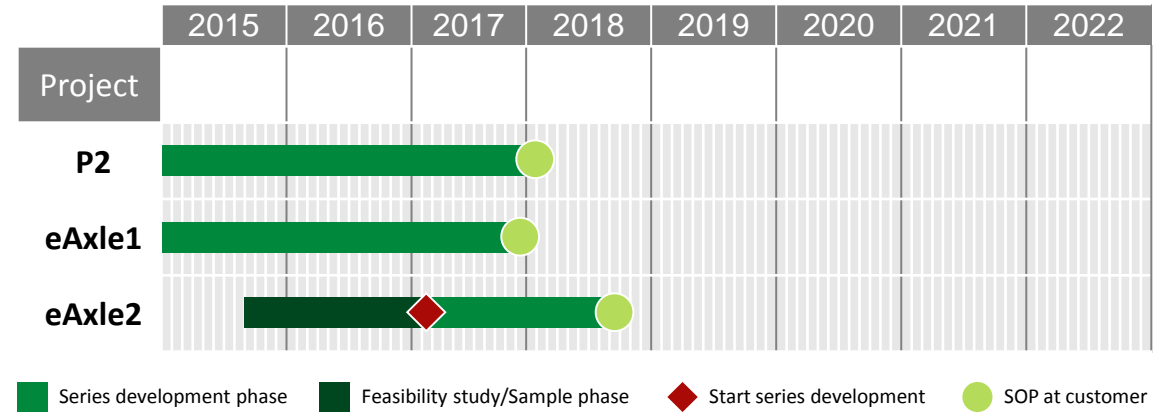
Vehicle data: 60km E-range, 8s (0~100kph), 1.6L/100km Fuel consumption
Involved Products: P2 hybrid module, Valve Train, VCT, OAP, WPB, Timing Chain, Bearings
SOP: 2018

Greatwall (WEY)
E-Axle:



Vehicle data: 50km E-range, 6.9s (0~100kph), 2.1L/100km Fuel consumption
Involved Products: eAxle, Valve Train, RSTM, VCT, WPB, DCT damper, Bearings
SOP: 2017

Nominated project schedule



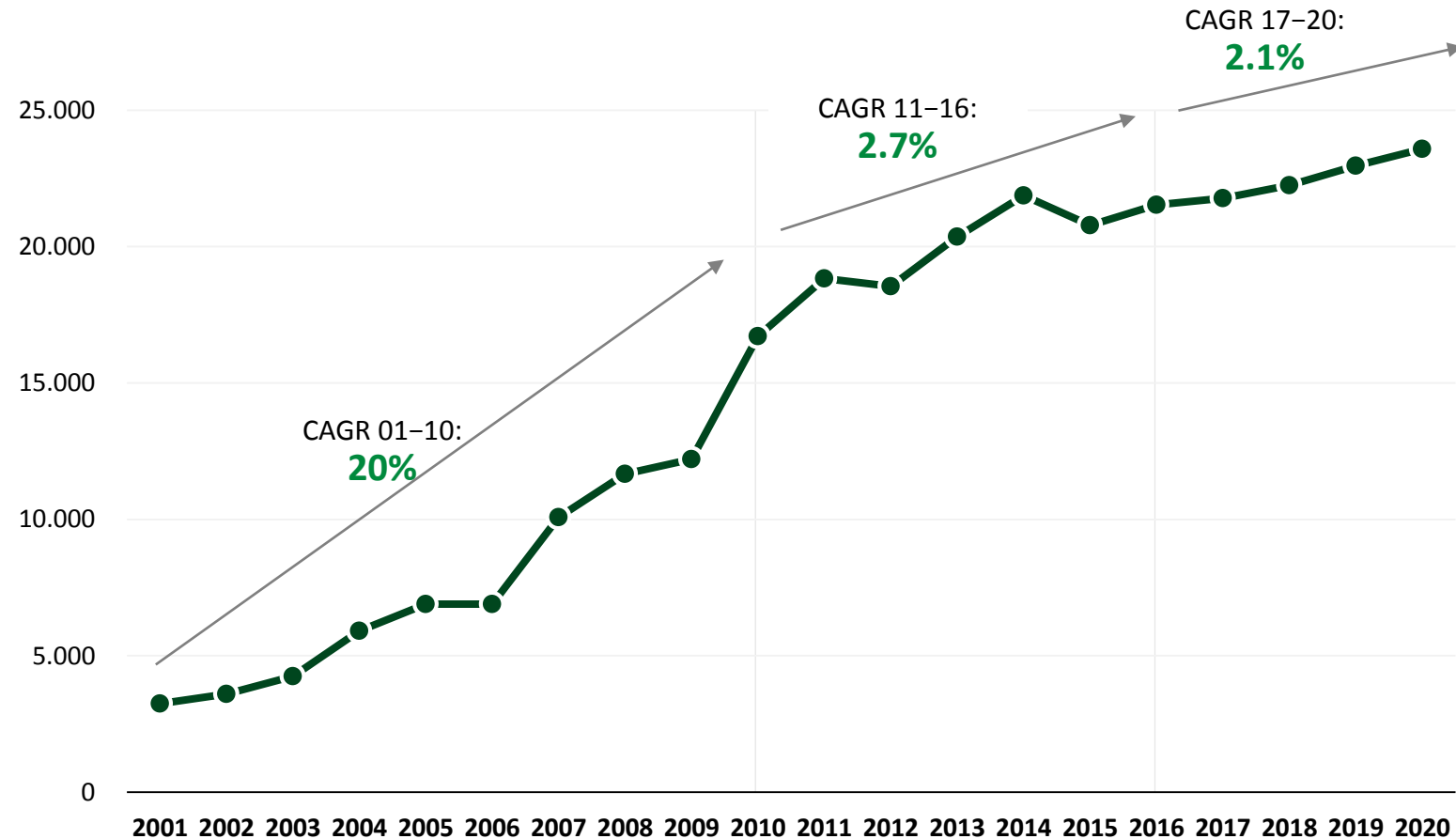
Key aspects

- ▶ Currently, almost all international OEMs in China have in-house solutions, Schaeffler focuses on the sub-system and components
- ▶ For local OEMs, Schaeffler will provide complete systems like P2 hybrid module and E-Axle
- ▶ We have 3 nominated mass production project and 7 potential projects on-going
- ▶ We are working on building up full local competence in order to ensure quick reaction and cost optimization

China bearing market – Growth rates expected to pick up from 2017

China bearing market development

in mn EUR



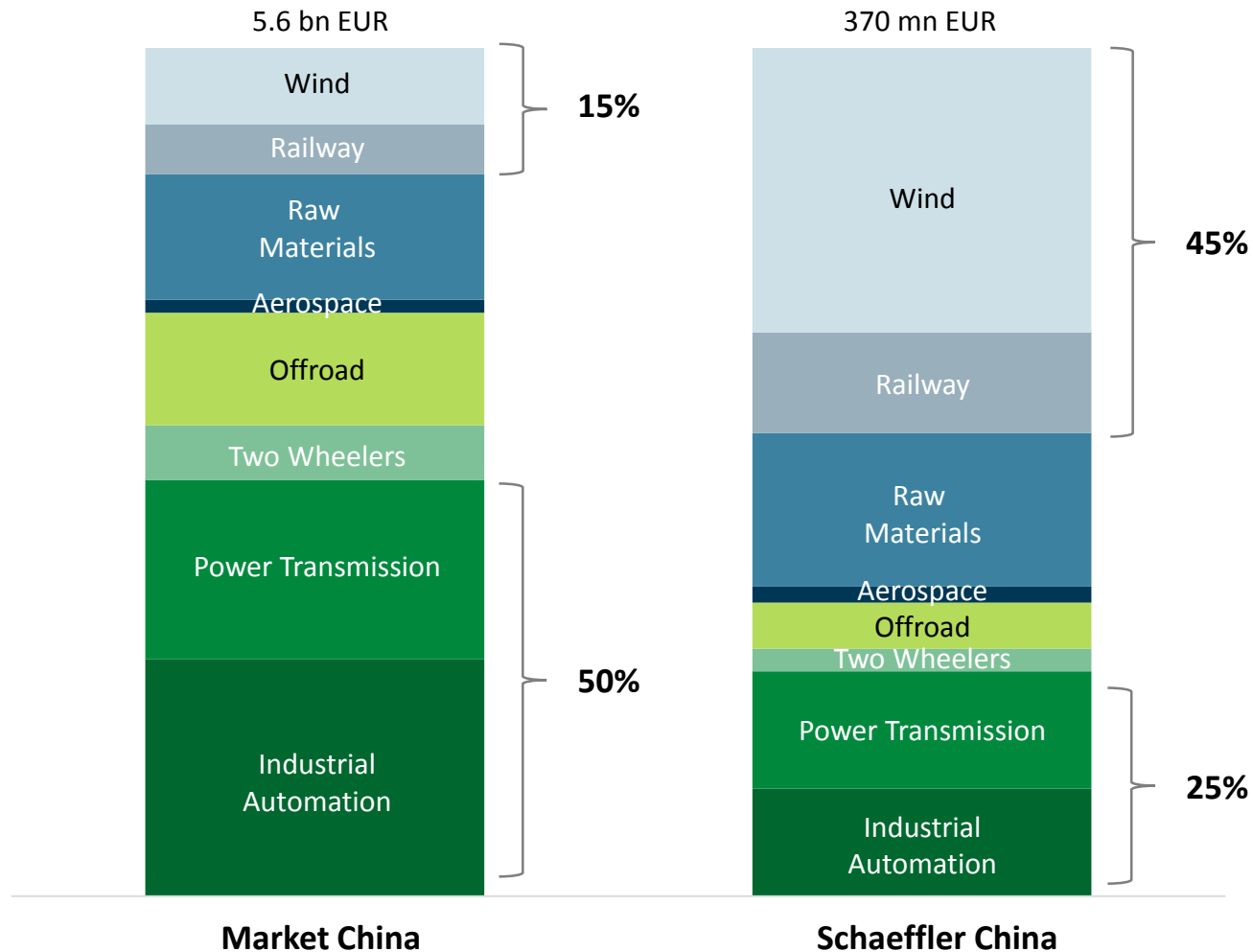
Source: The 13th Five-Year Plan of China bearing industry

Key aspects

- ▶ Ten years booming market from 2001 to 2010, all players benefited from 5 times market expansion
- ▶ Market adjustment and vibration since 2011, both global and local players face the challenges from overcapacity, serious price competition, service upgrades, channel adjustment, etc.
- ▶ Moderate market increase forecast from 2017 until 2020, with the upgraded requirement of quality, cost and availability, which require Schaeffler to undertake localization activities to guard current market share and achieve further development

Industrial China – Strong growth opportunities in a variety of sectors

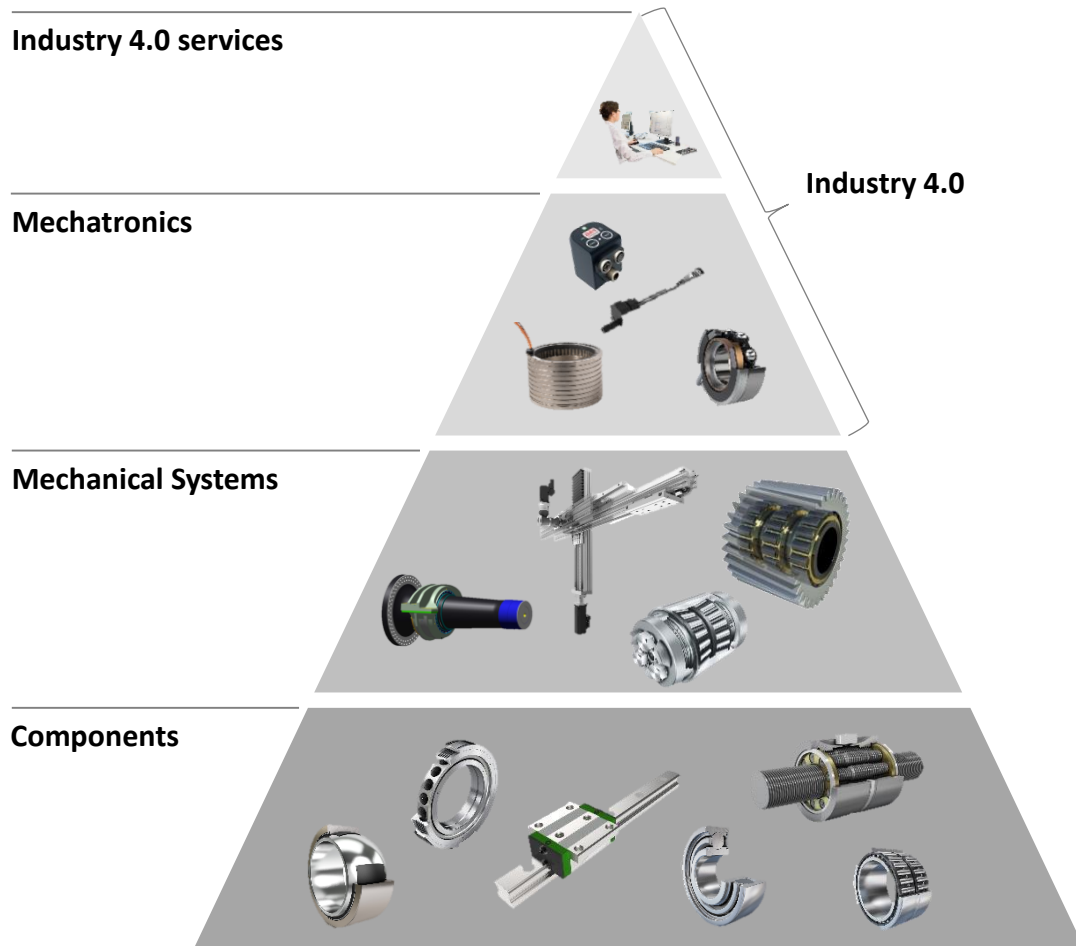
Bearings and related services in China (2016)



Key aspects

- ▶ Chinese bearing market size is around 5.6bn EUR
- ▶ We have a high reputation in the Wind and Railway sectors in which we generate approx. 45% of our sales (despite its relatively small market size)
- ▶ 50% of the bearing market today is Power Transmission and Industrial Automation where we currently have below-average market shares
- ▶ Positive growth outlook drives our expansion strategy into Power Transmission and Industrial Automation
- ▶ Wind and Railway sectors will continue to grow above-average

Portfolio



Our value proposition

2 3
Innovative
Solution
Partner

1 Efficient
Bearing
Expert

Our strategy

- 1 Efficient Bearing Expert**
 - ▶ Synergy of Automotive and Industrial demands
 - ▶ Strong knowhow of production technology
 - ▶ Continuous improvement & ongoing localization

- 2 Innovative Solution Partner**
 - ▶ Technology leadership with local R&D
 - ▶ Focus on strategic partnerships with Key Accounts

- 3 Service business**
 - ▶ Focus on innovation (e.g. new business model, e-commerce, digitalization)
 - ▶ Quick reaction capability

1 Efficient Bearing Expert – Dedicated market push/pull strategy with Generation C bearings



Industrial Automation



Power Transmission



Yinchuan Plant



Focused application:

- ▶ E-motor
- ▶ Home appliance
- ▶ Powertools
- ▶ Textile machinery

Schaeffler solutions:

- ▶ Top class noise level on China market
- ▶ Low friction to save energy
- ▶ Extend bearing life with better sealing design

Local plant & Production equipment:

- ▶ Automatic line with 100% online noise inspection
- ▶ Dedicated line with high productivity (14 million products/line/year)
- ▶ Precision devices with best surface quality

2 Innovative Solution Partner – Growing through quality and technology

Vestas 3.0MW main shaft assembly



Customer problem:

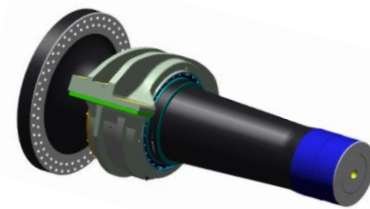
- ▶ Higher reliability requirement
- ▶ Higher quality requirement
- ▶ Professional assembly service

Schaeffler solution:

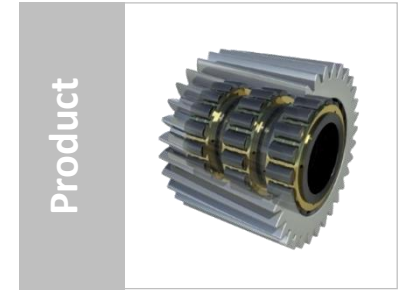
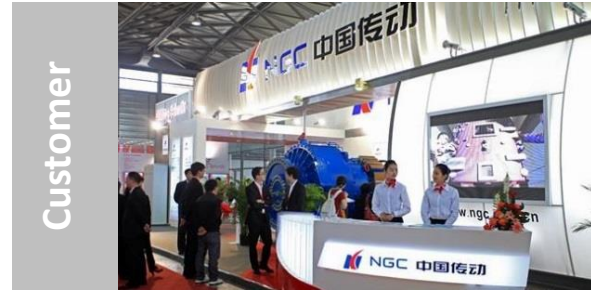
- ▶ Profiled roller bearing
- ▶ Wind Power Standard (WPO)
- ▶ Higher dimension specification

Additional value added:

- ▶ Assembly service
- ▶ Capacity and technical advantage



NGC bore grinding



Customer problem:

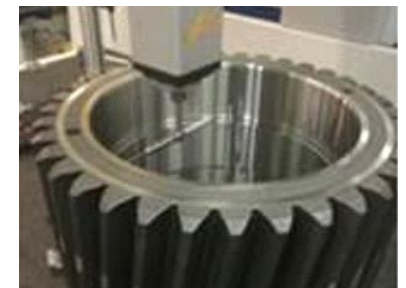
- ▶ Outer ring slippage
- ▶ Downsizing design
- ▶ Bore grinding of planet wheel

Schaeffler solution:

- ▶ Integrated bearing design
- ▶ Wind Power Standard (WPO)
- ▶ X-life quality
- ▶ Durotect® B coating

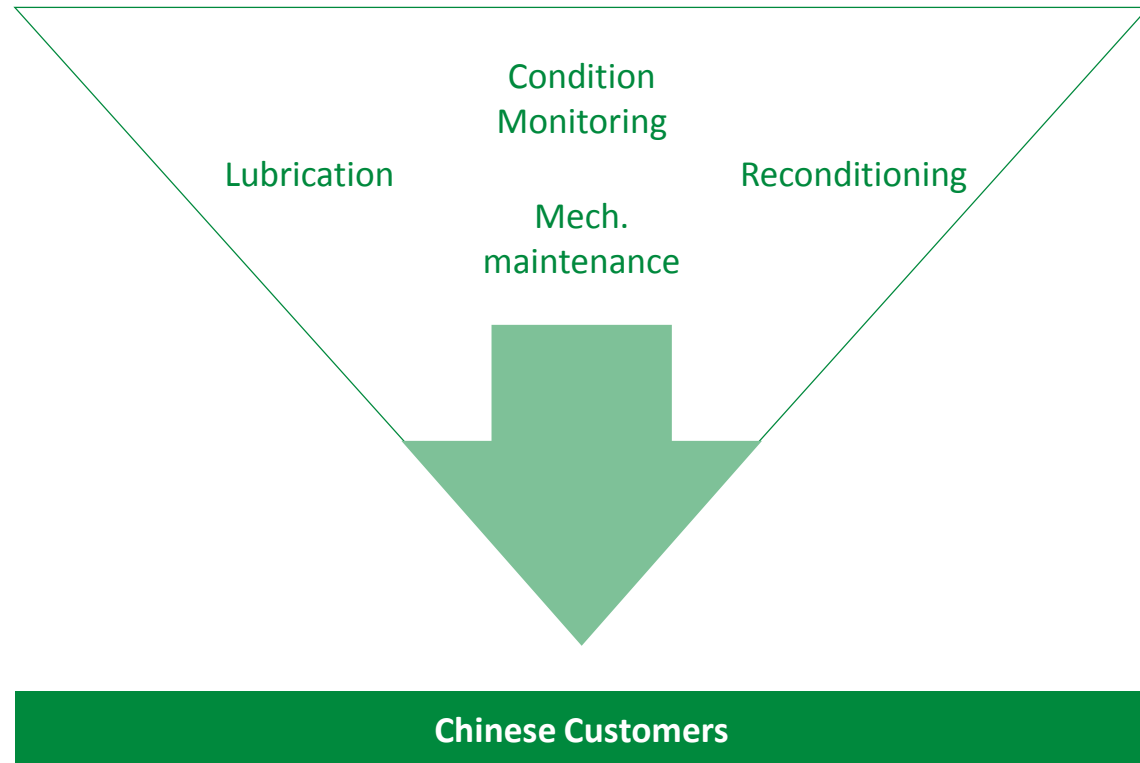
Additional value added:

- ▶ Bore grinding service on planet wheel



3 Service business – Leveraging Schaeffler know-how

Service portfolio



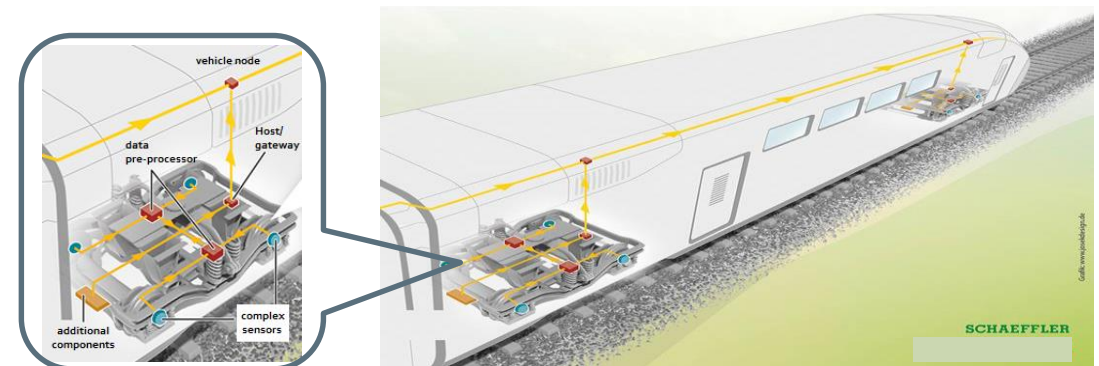
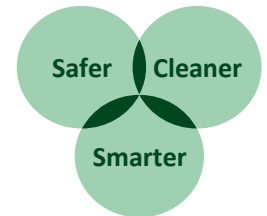
Railway Condition Monitoring System

Customer problem:

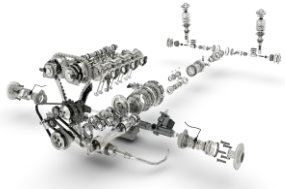
- ▶ High safety risk
- ▶ Low maintenance efficiency
- ▶ Unsatisfied current condition monitoring system
- ▶ Lack of railway predictive health management

Schaeffler solution:

- ▶ Development according to China Railway standard
- ▶ Advanced digital signal processing methodology
- ▶ Schaeffler bearing know-how integration
- ▶ Bearing life time forecast



Automotive opportunities



Powertrain

- Fuel / emission reduction
- Automatic Transmission
- NVH optimization



Hybrid and BEV technology

- P2 hybrid module
- E-Axle
- In-Wheel drive



Automotive aftermarket

- Vehicle population
- Vehicle age

Industrial opportunities



Components

- Industrial Automation
- Power Transmission



Mechanical Systems

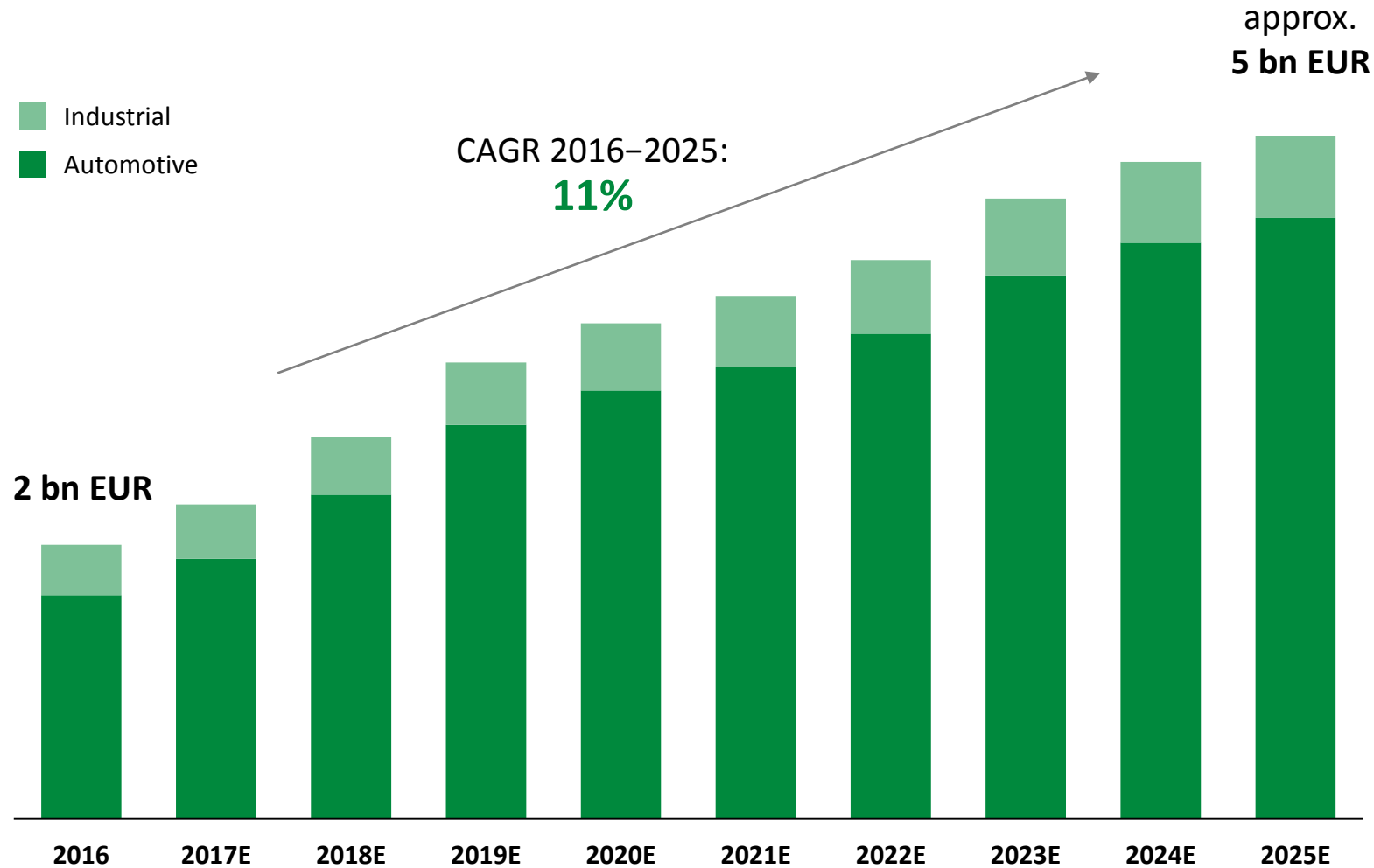
- Railway
- Wind Energy
- Aerospace



Industry 4.0

- Condition Monitoring
- Mech. maintenance
- Industrial automation
- Other services

Sales forecast



Main growth drivers

- ▶ China auto market growth
- ▶ Automation of transmission
- ▶ Hybrid and E-Mobility
- ▶ Industrial sectors, e.g. Wind Energy, Railway, Power Transmission and Industrial Automation

Key messages

1 Our **content per vehicle with local OEMs will more than double** by 2020.

2 China will be the **leading market for E-Mobility** going forward. We are best positioned with already 3 E-Mobility contracts with local Chinese OEMs.

3 We are aiming to further **increase our localization rate** for the Industrial business to gain additional market shares, especially in standard bearings.

4 China **revenues are expected to reach EUR 5 billion by 2025.**

**Continuous
profitable growth
above market in
China**