



May 2018



### Aumann at a glance

#### **Right business**

Fully automated E-drivetrain production lines ...



...based on modular machines and exclusive motor winding technologies...





..leveraging know-how from special machinery of Aumann's Classic segment





#### **Right capabilities**

80 years of winding experience

**30** years partner of automotive OEMs

~ 1,200<sup>1)</sup> highly skilled professionals

6 locations in Germany, China and USA

~ 45,000 sqm of shop floor

#### Select customers

















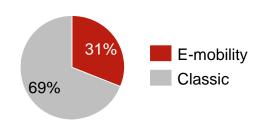


#### **Strong growth**

## Revenue<sup>2)</sup> in million €



## Segments As of 31 March 2018







- Strong growth due to E-mobility revolution in the automotive industry
- Exclusive winding technologies in combination with deep automation know-how
- 3 Decades of automotive experience and trusted relationships with OEMs
- 4 Profitable and asset-light growth with good visibility
- Clear **expansion strategy** with possibility of add-on acquisitions



## An E-mobility revolution is underway

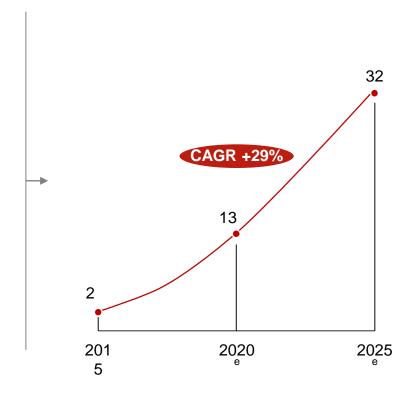
Three factors put electric vehicles on the road

Technology push

Consumer pull

Regulatory push

Electric vehicles\*
Global production in million vehicles per year





#### E-mobility has gained further traction

#### Additional momentum from OEMs



**All car models** to be electric or hybrid from 2019

July 2017



**80 electric models** by 2025 and **€34 billion** Capex

September 2017 / November 2017



**All car models** electrified by 2022 September 2017



**25 electrified** and **12 all-electric models** by 2025

September 2017



**All car models** electrified from 2020 September 2017



At least **20 all-electric models** by 2023 *October 2017* 

#### Additional regulatory pressure



Quotas for electric cars from 2019/2020

All automakers producing or importing more than 30,000 cars in China affected

New Electric Vehicles (NEVs) comprising all-electric, plug-in hybrid, hydrogen-powered

10% minimum from 2019 12% minimum from 2020



Ban on non-electric car sales by 2040



**Ban** on non-electric car sales by 2040

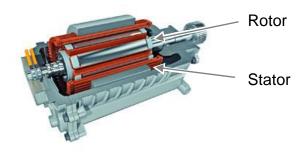


Proposal to further **cut** maximum **CO2 emissions by 30%** from 2021 to 2030



# Aumann automates the production of electric drivetrains with focus on the electric motor

#### Electric motor



Winding of stator and/or rotor

### Energy storage /conversion



Assembly of modules, packs, fuel cells

#### Electric drivetrain





#### Aumann offers highly automated production technologies for traction motors

#### Thin wire

#### Thick/flat wire

## Conventional Insert-in



**Indirect Winding** 

Lower automation High stress on wire Random wire positions

## Distributed Needle Winding



**Direct Winding** 

High automation

Low stress on wire Defined wire positions

• aumann exclusive

## Conventional Hairpin



Assembly

High automation
Many welding points
Larger copper heads

aumann

#### Continuous Hairpin



Winding / Assembly

High automation No welding points Smaller copper heads

• aumann exclusive



## Aumann has a unique combination of capabilities, industry experience and corporate setup

Technological leadership	E-mobility focus	Corporate setup and size
	<b>→</b>	> 300m
Exclusive winding technologies	Decades of automotive focus	> €300 million revenue 2018FC
Highest degree of automation	Relationships to major OEMs / Tier- 1s	6 locations in Europe, China, USA
Complete production lines	Technologies for E-drivetrain	Experience with large order volumes

Global leadership in highly automated production lines for E-mobility





#### Close partnerships with blue chip customers enable Aumann's E-mobility growth

Longstanding customer relationships...

Indicative cumulative orders last 25 years



> € 460m Relationship since 1990



> € 400m
Relationship since 1990



> € 250m Relationship since 1999



€ 200-250m Relationship since 1986



€ 75-100m
Relationship since 1985

...leading to an accelerated E-mobility business

E-mobility segment customers



Automotive







(A) BOSCH

E-bike

**(**Ontinental **⅓** 

...based on experience in ICE drivetrain, automation and winding for non-automotive customers

Classic segment customers



Automotive







Consumer electrics Other industries







#### The acquisition of USK in Q4 2017 has further improved Aumann's position

Why Aumann acquired USK in Q4 2017

Where Aumann and USK stand in Q1 2018

Engineering capacity



**Automotive experience** 



Technological capabilities



#### Capacity balancing between sites

First orders shifted to USK in 2017
Partial retargeting of sales engineers

#### E-mobility growth at USK

First traction motor order at USK in Q1

High interest in USK fuel cell technology

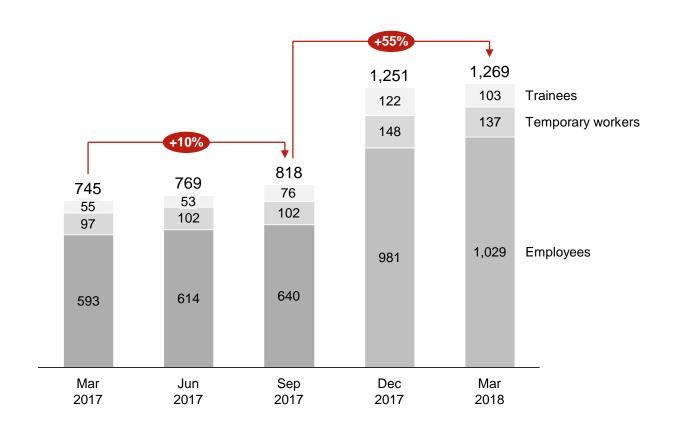
#### Ongoing integration and expansion

Step-wise integration of processes and IT ✓
New plans for expansion at USK site



### USK drastically increased Aumann's engineering and delivery capacity

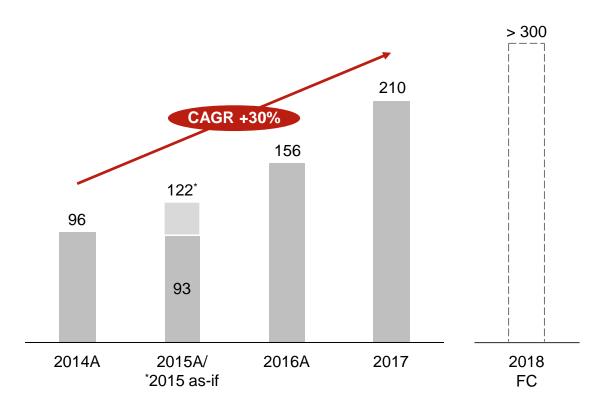
## Organic and anorganic capacity ramp Headcount





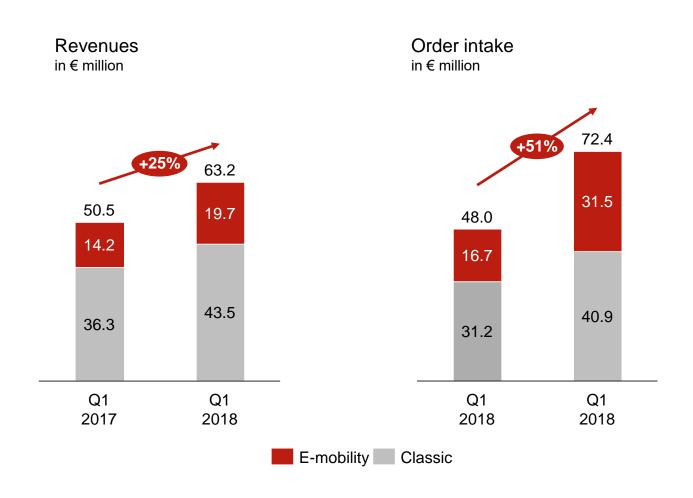
## Growth is our priority for 2018 and we aim at revenues of more than €300 million

Total revenues in € million





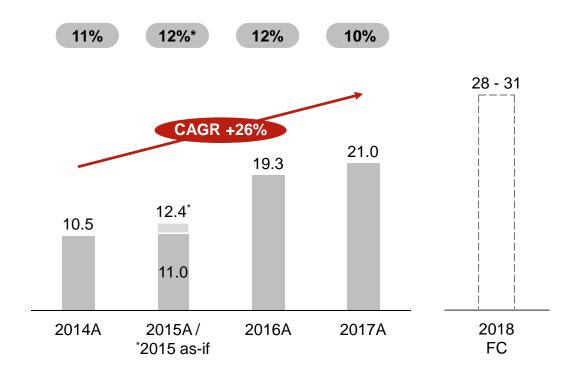
In the first quarter 2018, Aumann grew both revenues and order intake significantly





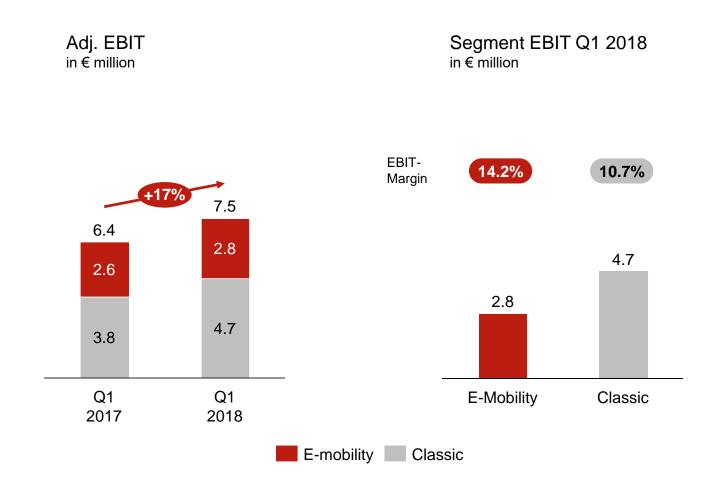
### Due to capacity bottlenecks, EBIT margin was lower in the second half of 2017

Adjusted EBIT in € million and in % of revenues





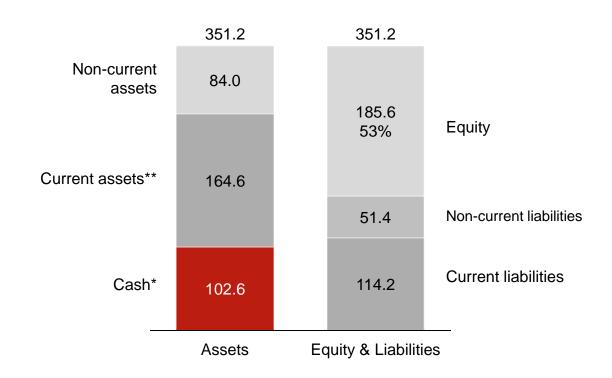
In the first quarter 2018, profitability has clearly recovered as de-bottlenecking progresses





### A strong balance sheet allows further investments into Aumann's growth

Balance sheet 31 March 2018 in € million



<sup>\*</sup> Liquidity & securities

\*\* without cash



#### We have made significant progress on strategic roadmap to market leadership



Ramp-up capacity

Grow skilled work force

+ 78% ✓ +13.000 m² ✓

Expand shop floor

Ongoing



**Expand** globally

Expand facility in China

- Ongoing
- Build up of USA/NAFTA activities

IT hardware, licenses and projects

Ongoing

- Further regional growth
- New customers



Increase service share Build up new R&D centres

- Ongoing
- Expand scope of R&D centres
- New modules

Build up service hubs

Ongoing



Maintain technological leadership Increase R&D activity

- Yes ✓
- Develop new winding technologies
- Ongoing
- Additional E-mobility technologies
- Fuel cell ✓



USK ✓

Ongoing

Acquisition of



No matter who will prevail in the E-mobility revolution, they will need Aumann's machines for electric drivetrain manufacturing

www.aumann-ag.com



### Financial Calendar

Commerzbank Conference (NYC and Boston, USA)	16 May 2018
Hauck & Aufhäuser Stock Picker Summit (St. Tropez, France)	17 May 2018
Berenberg USA Conference (Tarrytown, NY, USA)	23 May 2018
Half-Year Financial Report 2018	16 August 2018
Commerzbank Sector Conference (Frankfurt, Germany)	29 August 2018
Berenberg/GS Corporate Conference (Munich, Germany)	25 September 2018
Quarterly Report Q3/2018	16 November 2018
Deutsches Eigenkapitalforum (Frankfurt, Germany)	26 November 2018
Berenberg European Conference (Pennyhill, UK)	4 December 2018
End of fiscal year	31 December 2018





Aumann AG Dieselstr. 6 48361 Beelen Germany

Tel.: +49 2586 888 7800 Fax: +49 2586 888 7805 www.aumann-ag.com info@aumann-ag.com



## Appendix



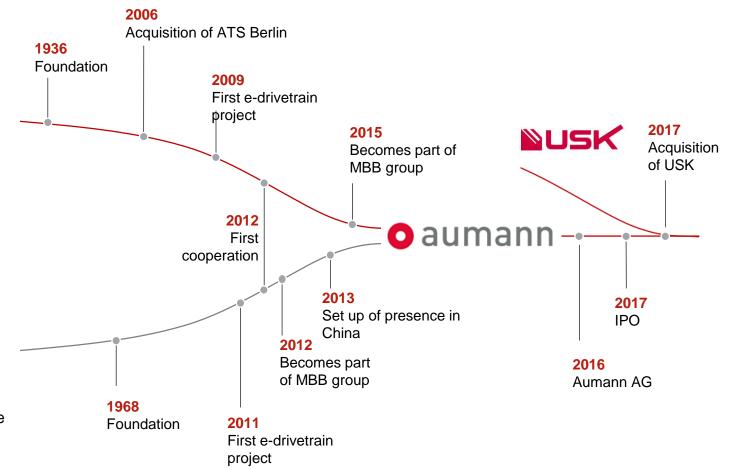
#### The historical roots of Aumann



- E-mobility focus
- E-mobility references
- Winding technology

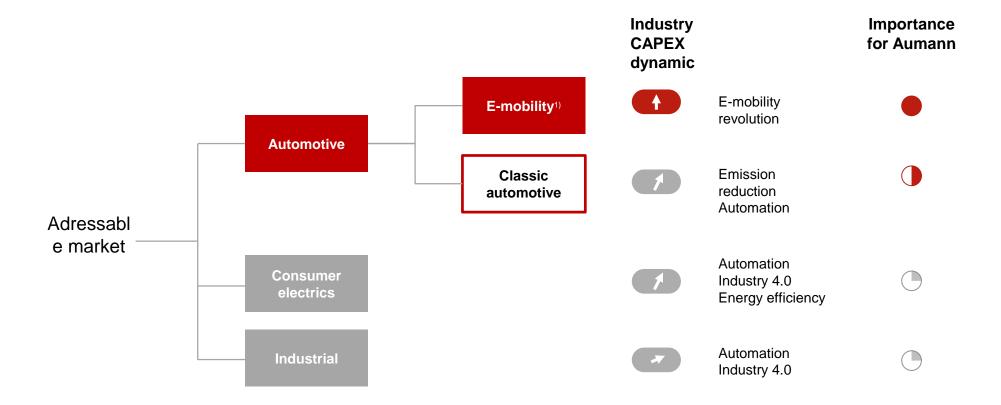


- Automation know-how and production scalability
- E-mobility experience and process excellence
- OEM relationships





## Key markets and growth dynamics





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