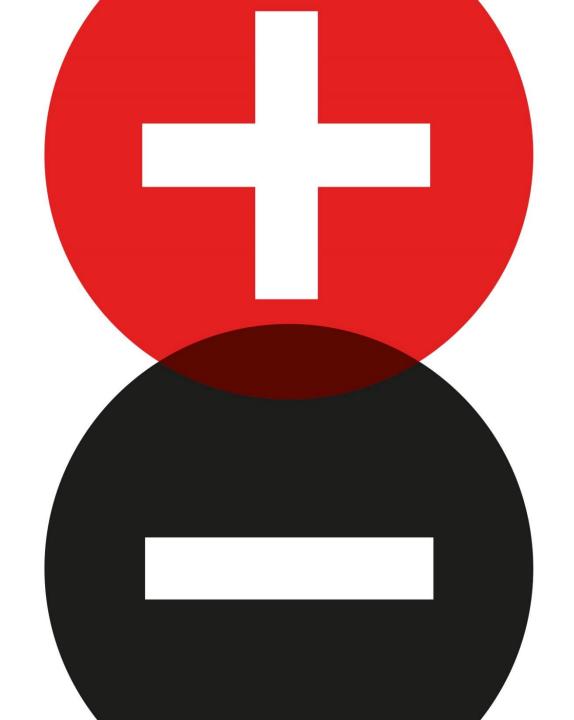
# Voltabox electrifies!

Roadshow & Conference Presentation

June 2019





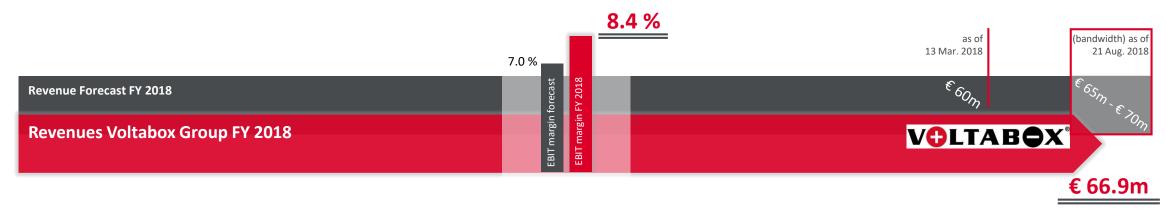


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- Highlights
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- Business Overview
- Financials
- Appendix Financials



## Highlights from FY 2018



Continued top line growth +145%

EBIT margin better than expected and including burden

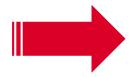
of new Triathlon contract at 8.4%

Equity ratio decreases to 85,3%

**Liquid funds** at € 28.2m

Main drivers in FY18: and A

Slightly higher CAPEX: € 13.6m



Forecast for 2019: Revenues of € 105-115m, EBIT margin between 8-9%



## Voltabox Corporate Development

2019 ff.	+ Start Intralogistics in-house development + Entry into Intralogistics US market	+ EV-Buses + stationary energy storages + Rail & Port	+ Gardening & Cleaning + OEMs	2019e: € 105 – 115m Revenue, 8-9 % EBIT margin > ~ 300 FTE
2018	+ Acquisitions of Concurrent Design & ACCURATE (Branch: Korntal-Münchingen) + Start of Intralogistics direct sales		E-Bikes / Pedelecs	→ € 66,9m Revenue, 8,4 % EBIT margin 235 FTE
2017	Change of legal form to AG & IPO + Branch Aachen	Agriculture & Construction  VOLTAPOWER®	/⊕LTAF⊜RCE°——V⊕LTAMOTI⊜N°-	→ € 27,3m Revenue, -10,3 % EBIT margin 99 FTE
2016		Mining		→ € 14,5m Revenue, -25,4 % EBIT margin 67 FTE
2015		Material Handling (Intralogistics)	Motorcycles	→ € 7,4m Revenue -31,6 % EBIT margin 62 FTE
2014	Foundation Voltabox Deutschland GmbH + Branch Austin (TX, USA)	Trolleybuses		→ € 4,6m Revenue -9,7 % EBIT-Marge 41 FTE
	Strategic Milestones	M	larket Development	Results



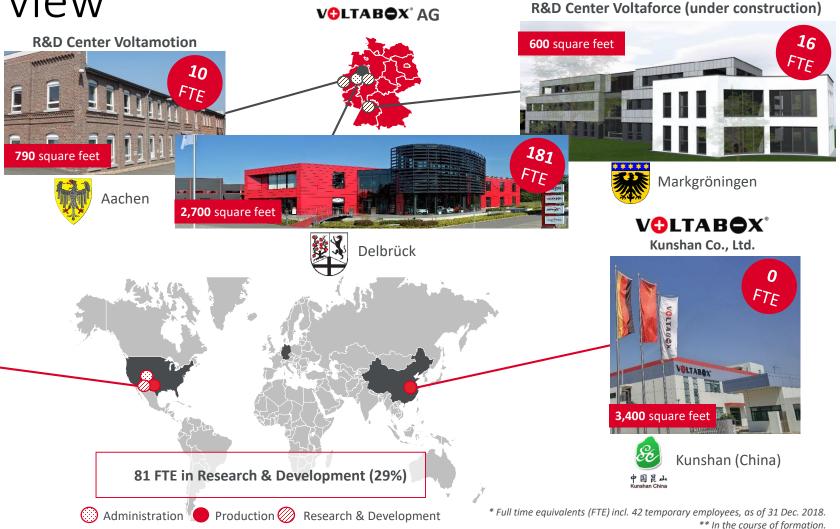
## **Location Overview**

With 277 FTE\*, technology hubs and state-of-the-art production facilities, Voltabox is well positioned to grow its business on a global scale.





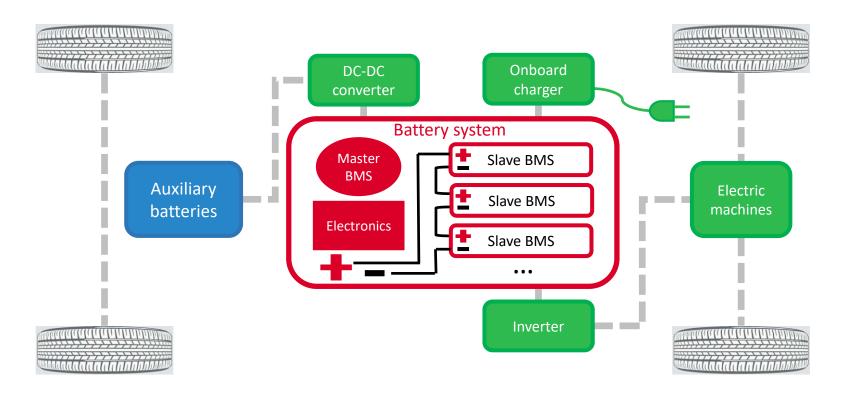






## Product segments

#### **Voltapower – Voltamotion – Voltaforce**





## Key Developments in Product Segments in FY2018



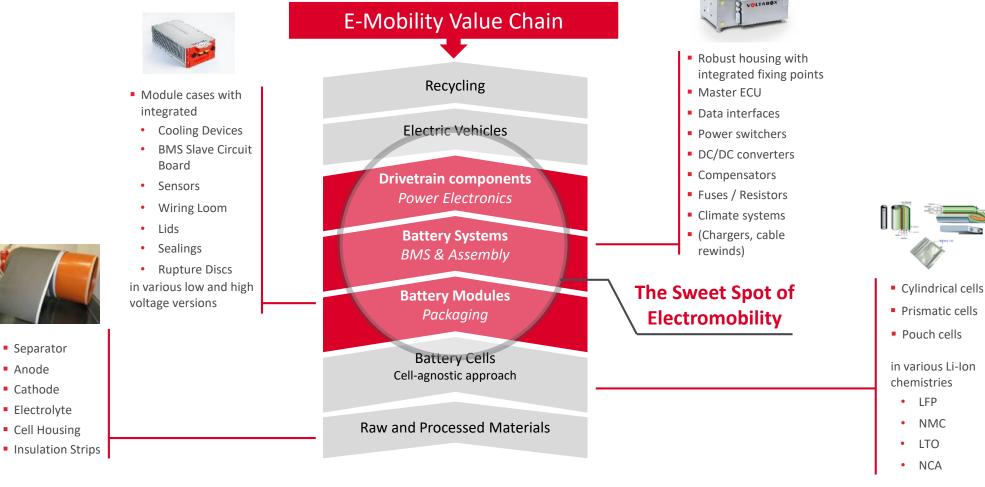


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## E-Mobility Pure Play



Separator

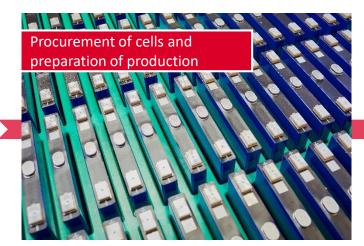
Anode

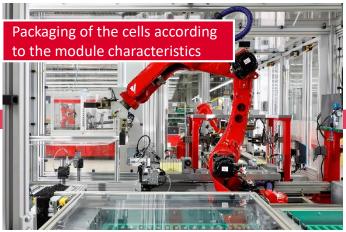
Cathode

Electrolyte



## Production Steps - From the Cell to the Complete System









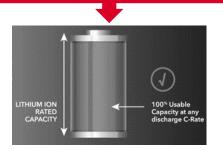






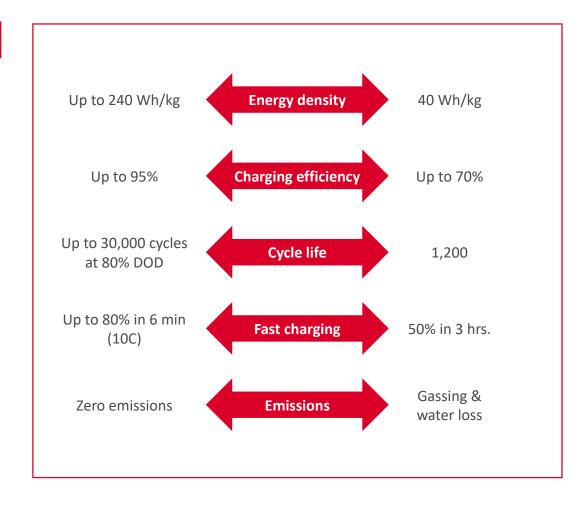
## TCO-Advantages Driving Substitution of Lead-Acid by Li-Ion

#### Li-Ion Technology



#### Additional advantages:

- No memory effect (opportunity charging)
- Very low self-discharge
- No maintenance
- Full functionality at low temperatures
- Optimum control and (remote) monitoring







## Cell Expertise in the Group



Cell Supplier Base

















11

On paper, lithium-ion technology has been convincing right from the start. However, after we have installed numerous Li-lon-based systems in the market over the past few months, the strengths of the cell chemistries we use are also evident in practice. Lithium-ion battery systems impress with their flexibility, high charging rates, long service life and massive advantages in terms of total cost of ownership".

## Voltabox is Cell Agnostic!

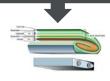
## Cylindrical



A spirally wound design (jelly-roll).

Designated by size, e.g. 26650 cylindrical battery (Diameter: 26mm, length: 65.2 mm; code for cylindrical shape: 0)

# Prismatic



A prismatic design indicate a flat battery design. The stacks can be wound (as shown in the photo) or stacked (with alternating cathode/separator/anode structure). The stacks are usually inserted into rigid casing to form prismatic

#### Pouch



Rather than rigid metallic casing, conductive foil-tabs are welded to the electrodes and seal the battery fully. The tacks inside can be wound or stacked. Swelling and gassing could be a concern for pouch cells

#### <u>Lithium Iron Phosphate (LFP)</u>

- Nominal cell voltage: 3.2 V to 3.3 V
- No risk of thermal runaway (in case of an accident)
- High cycle stability of up to 4,000 cycles at 80% DoD
- Large operating temperature range
   -20/+ 55 °c
- High energy density (125 Wh/kg and 292 Wh/l)
- Using only a small portion of rare earths

#### **Nickel Manganese Cobalt (NMC)**

- Nominal cell voltage: 3.6 V to 3.7 V
- High cycle stability of at least 6,000 cycles at 80% DoD
- Great operating temperature range of -30/+ 60 °C
- High energy density (136 230 Wh/kg and at least 309 Wh/l)

#### **Lithium Titanium Oxide (LTO)**

- Nominal cell voltage: 2.3 V
- Highest cycle stability of up to 30,000 cycles at 80% DoD
- High level of safety thanks to LTO anode
- Great operating temperature range of -30/+ 55 °C
- Energy density of 96 Wh/kg or 202 Wh/l
- Great SoC range useable with the highest performances

#### Nickel Cobalt Aluminum Oxide (NCA)

- Nominal cell voltage: 3.6 3.7 V (vs. graphite)
- Very wide operating temperature range of -20 /+75°C
- High cycle stability of up to 1,500 cycles at 80-70% DoD
- High energy density (140 280 Wh/kg and 300 - 590 Wh/L)
- Currently being tested or upscaled by many cell manufacturers

Source: IDTechEx.



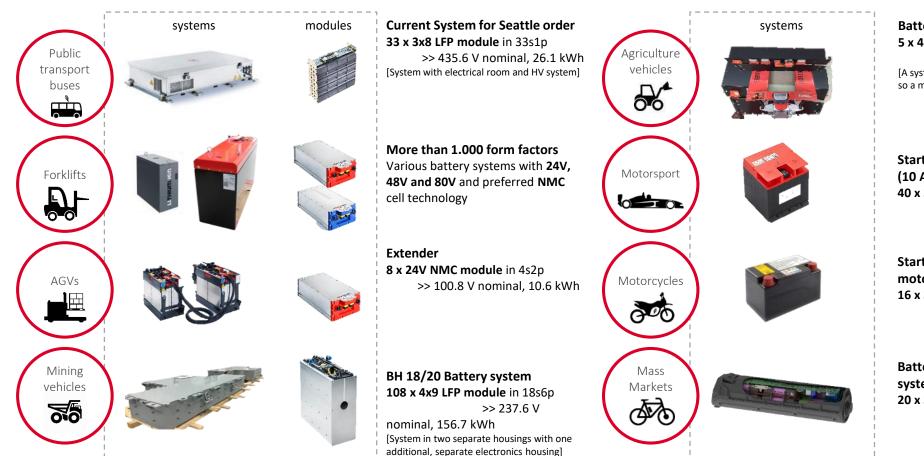
## Li-Ion Battery System Supplier for Defying Applications

- Voltabox is a pioneer in the electrification of industrial applications.
   In 2018, the Group expanded its solution portfolio in order to open up further mass markets in the future.
  - Mindset focus on applications
     (authentic added value solutions)
  - Exceptional integration power (experience in automotive interfaces)
  - Superior realization processes
     (short time-to-market with modular kit)





## Characteristics of selected battery systems



#### **Battery system for yard loader 5 x 48V module** in 5s1p

>> 252V nominal, 6.7 kWh [A system can consist of either one or two battery troughs, so a maximum of 13.4 kWh at 252V nominal is possible]

Starter battery for Motorsport applications (10 Ah)
40 x 3,3V LFP round cells in 4s10p

>> 13,2V nominal, 330 Wh

Starter battery for high-performance motorcycles (10 Ah) 16 x 3,3V LFP round cells in 4s4p >> 13,2V nominal, 132 Wh

Battery system for Fazua Pedelec drive system 20 x 3,6V NCA round cells in 10s2p >> 36V nominal, 252 Wh



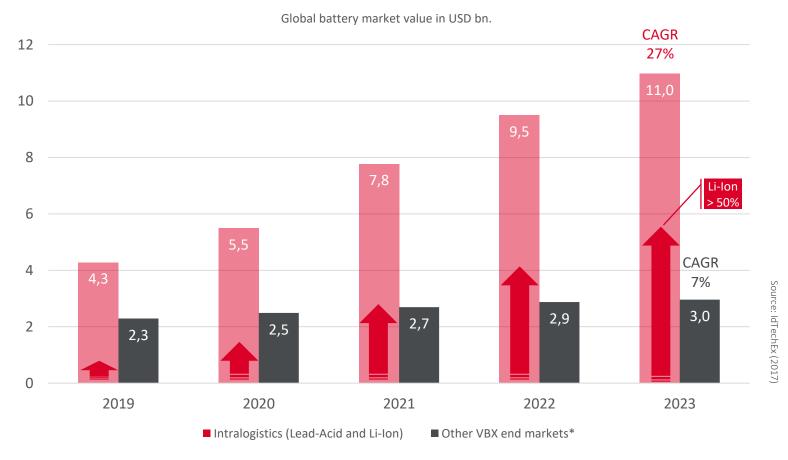
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## Market Dynamics

- Overall usage of batteries will increase due to E-mobility mega trend
- Ongoing substitution of lead acid batteries resp. diesel generators by lithium-ion batteries in occupied submarkets
- 12% global market growth expected for battery systems in current Voltabox end markets in 2019
- Intralogistics submarket expected to show fastest adoption of Li-Ion technology due to TCO advantages
- Market penetration of Li-Ion expected to exceed 50% of new sales by 2023 in intralogistics



\* HEV/PHEV Buses over 5 meters, mining vehicles, agriculture & construction, motorcycles, pedelecs/e-bikes.



## Intralogistics: New Sales Strategy for the booming market

The intralogistics market is **preparing** itself for the future right **now**. This led us to the conclusion, that Voltabox has to act proactively in order to take on a pioneering role in terms of electrifying the intralogistics market. In 2019, our strategy for worldwide sales in this market will be implemented clearly visible.

Dr. Patrick Ries Head of Sales Voltapower





TRIATHLEN

INTELLIGENT BATTERIES

JT Energy

 What? Mass-produced modules for Triathlon & Jungheinrich systems How? Call-offs according to sales agreements

**To whom?** Small and medium-sized fleet operators & Jungheinrich



 What? Completely in-house produced and technologically leading Voltabox (Replacement) battery systems
 How? Direct sales via own Voltabox sales team

To whom? OEMs and large fleet operators



- What? Voltabox (replacement) battery systems
- How? Order via integrated on-demand option for Voltabox systems in the ForkOn platform
- To whom? all customers of the ForkOn fleet management software



- Voltabox
  Direct sales
- What? Tailor-made Voltabox battery systems for the North American market
- How? Direct sales via own Voltabox sales team

To whom? OEMs and large fleet operators



## Intralogistics: Notes on the business with Triathlon



Deutsche Bundesbank on 21 Nov. 2018: Granting of "Investment Grade" for Triathlon



Extension of payment terms in H2/2018 has ended at 31 Dec. 2018



Current payment terms: mainly **30 days net** 



Triathlon pays on time (Q4/18: € 5.7m paid prematurely due to forward-looking cash planning)



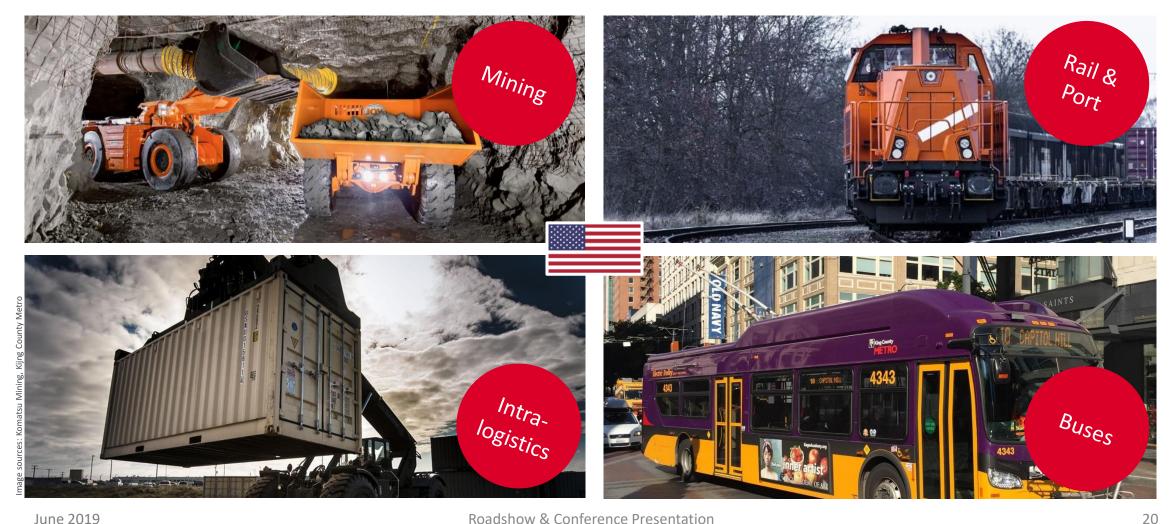
Triathlon's share of Voltabox' sales in 2018 remained on previous year's level



In 2019e: share reduction by 2/3!

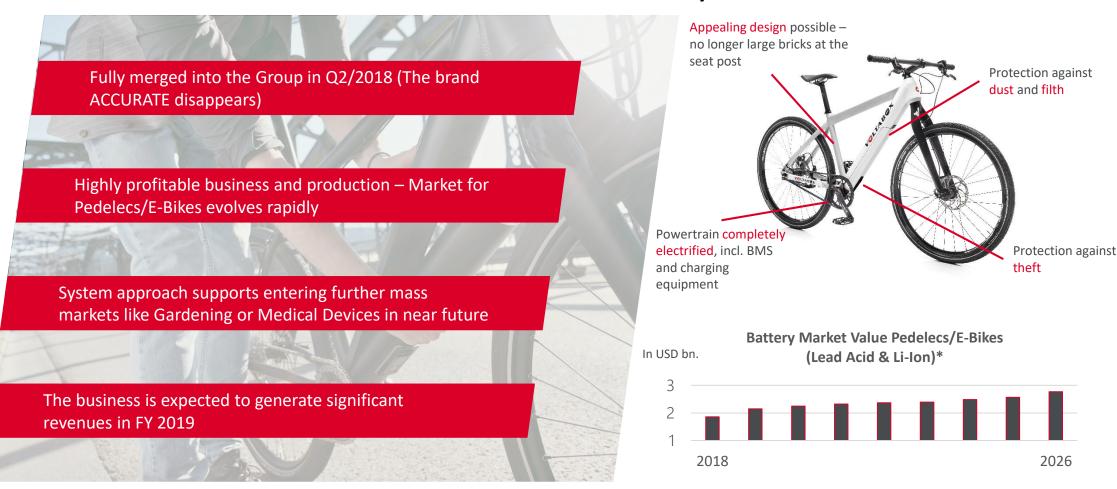


## Voltabox of Texas: It's all about Seizing Opportunities





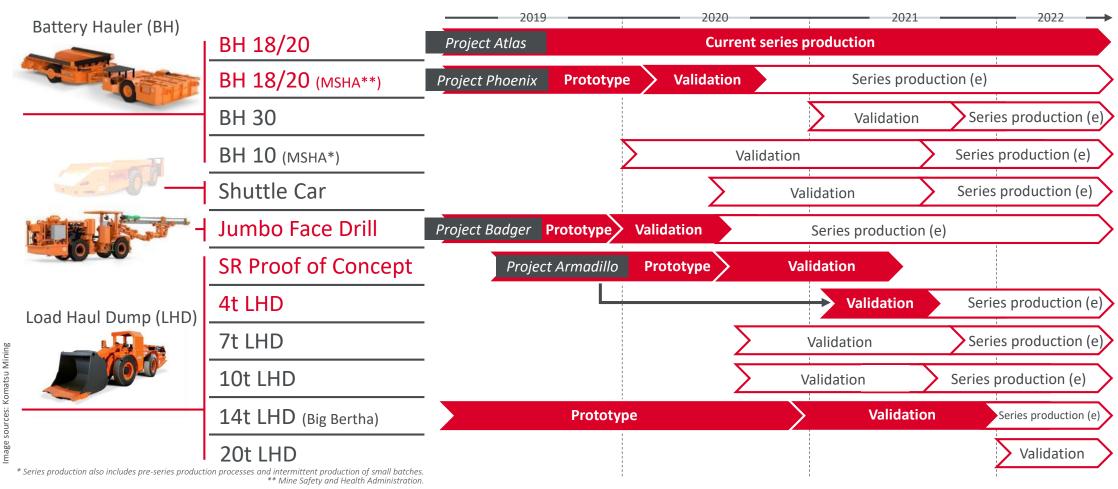
## Mass Markets: ACCURATE as a key



\* Source: IDTechEx.

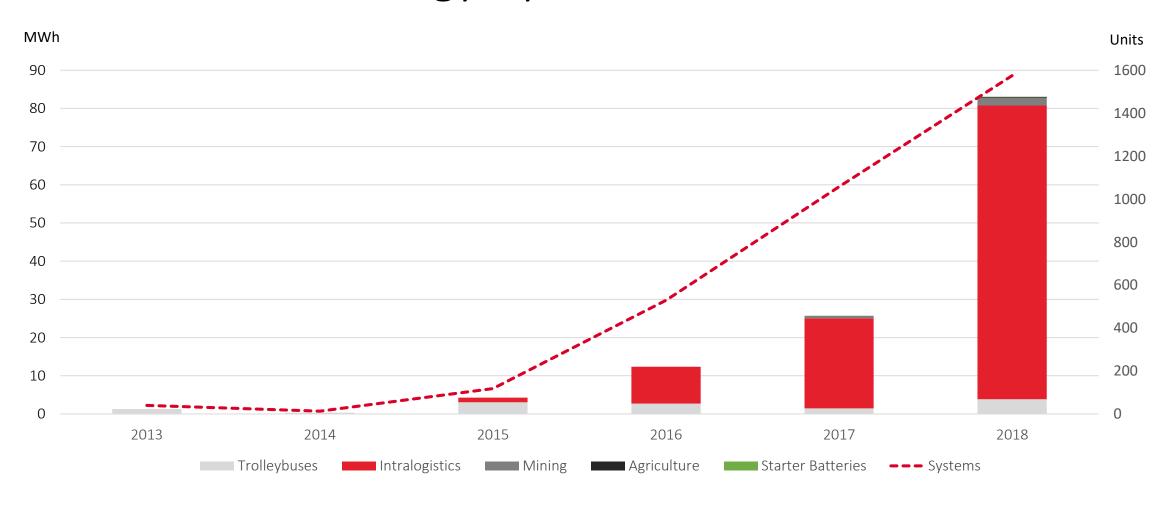


## Mining: Updated Roadmap\* for the Komatsu projects



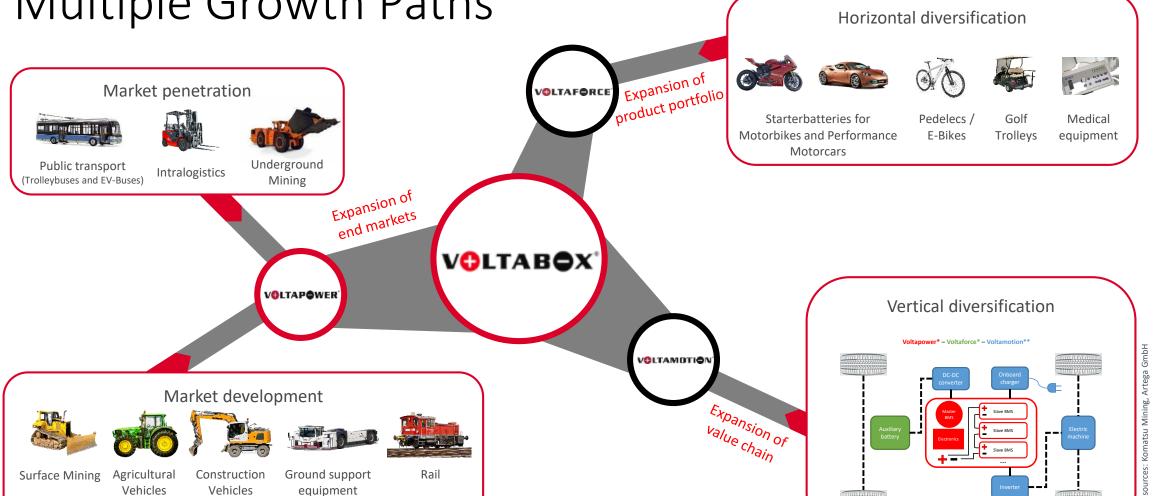


## Installation of Energy by End Markets





Multiple Growth Paths

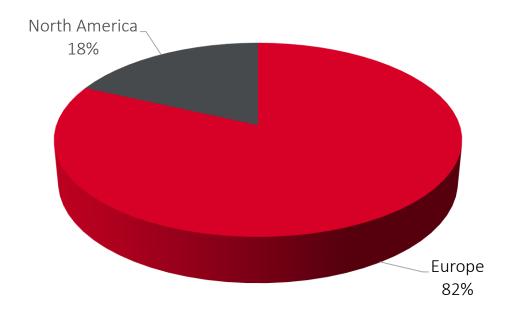




## 60-Months Cumulative Order Book\*

- Total 60-months order book\* amounts to around € 1.1bn.
- Thereof approx. 64% signed orders and framework agreements (weighted with 100%)
  - Estimated order backlog is weighted according to the expected lifetime and the probability of occurrence
  - Serves as base for planning
  - Evaluation system in place since inception in 2011

60-months cumulative order book\* with 100% weighting as of 31 Dec. 2018



<sup>\*</sup> As defined by the company.



## Keyfacts for Revenues 2019e

### **Megatrend Electrification:** Agriculture / Construction **Intralogistics** Direct sales **75** Mining Triathlon share Port / Rail **Bus industry** Mass markets **Electric Vehicles** (Starter batteries, Pedelecs, ...)



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## Financial Highlights Q1 2018

**7** € 12.6 million

7 243 employees\*

Revenues (previous year: € 5.1 m)

(31 December 2018: 235)

Targets achieved according to plan – Forecast for further strong growth confirmed

**7** € 2.5 million

**7** € 0.6 million

Margin: 19.9 %

EBIT (previous year: € -0.8 m)

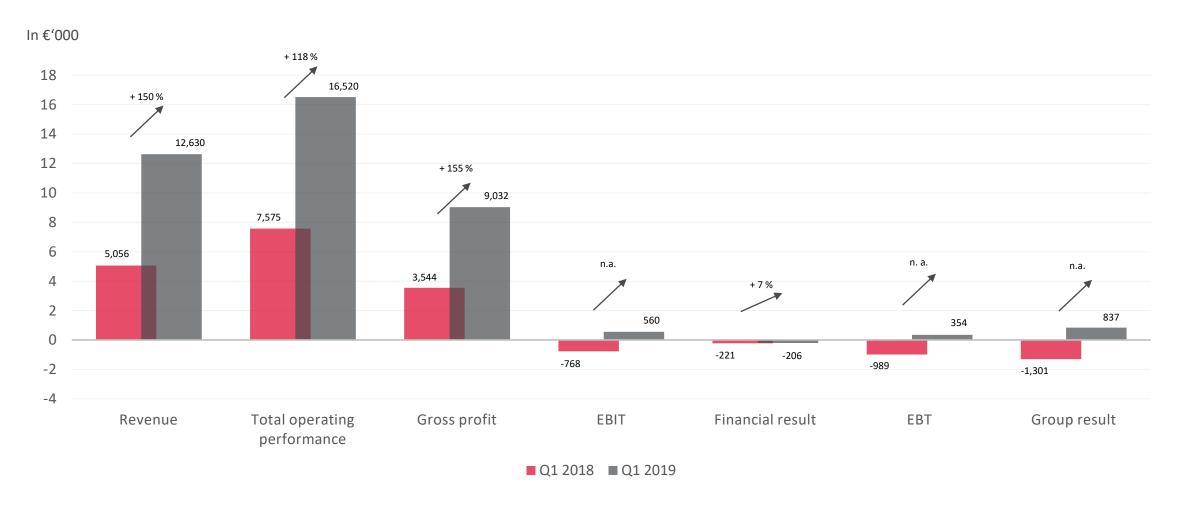
EBITDA (previous year: € -0.0 m)

\* Excluding 42 temporary employees, as of 31 December 2018.

**Margin: 4.4 %** 



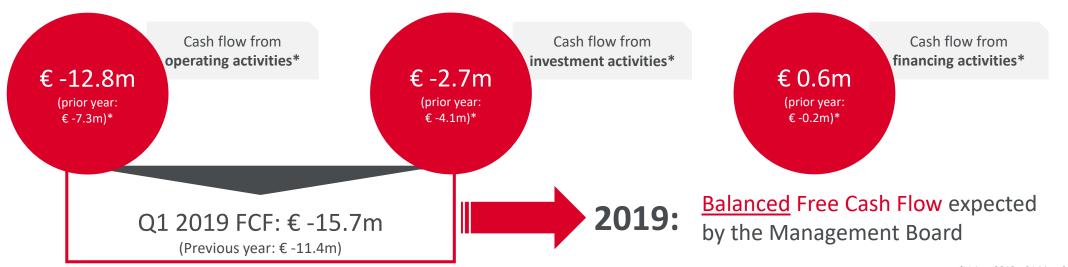
## Further Strong Top Line Growth – Profit to rise





## Cash Flow Statement

- Decrease in trade receivables (while increase in previous year); significant decrease in trade payables and other liabilities
- Buildup of inventories against the backdrop of production expansion
- Payments for investments in property, plant and equipment due to facility expansion in the U.S.
- Payments for investments in intangible assets after 3 months: € 1.7m

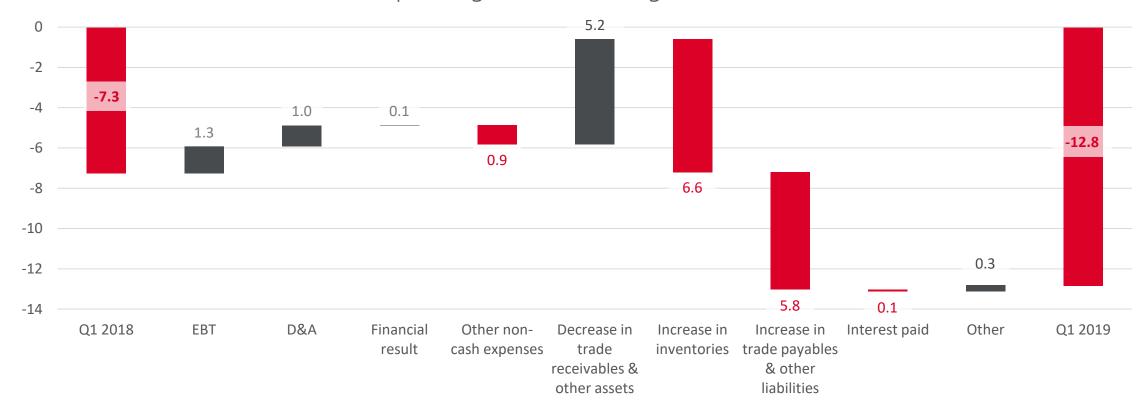


\* 1 Jan. 2019 – 31 Mar. 2019.



## Operating Cash Flow Bridge Q1 2019 (y-o-y)







## Key Cash Flow Developments in 2018







#### Corrections to the Consolidated Financial Statements 2017

- Voltabox AG made adjustments from the previous year in the 2018 consolidated financial statements, which
  mainly relate to the recognition of deferred taxes and expenses from the IPO, which were allocated to other
  operating expenses and offset against the profit carried forward.
- The resulting corrections for fiscal year 2017 are explained in the notes to the consolidated financial statements for fiscal year 2018 and have been published on May 6, 2019 in accordance with Section 109 (2)(1) of the German Securities Trading Act (WpHG).

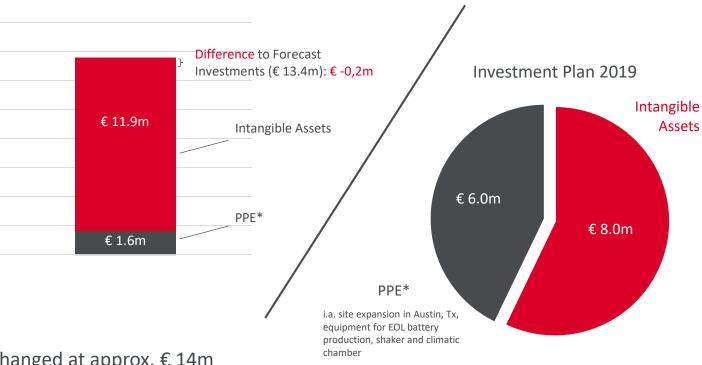
VBX FY 2017 (€m)	Before	Amendment	After	Nature
EBIT	0.6	-3.4	-2.8	Inclusion of reallocated operating expenses from IPO
Tax	-0.1	-2.9	-3.0	Disallowance of deferred tax losses at Voltabox of Texas
Reallocation	9.9	-9.9	0.0	Profit from paragon transfer agreement recognized directly in equity
Net income	9.7	-16.2	-6.5	The above effects
Number of shares (m)	11.3		4.7	Weighted average calculation corrected for timing of debt conversion
EPS (€)	0.86	-2.25	-1.39	
Net assets	3.3	-3.0	0.4	Deferred tax assets disallowed



## **CAPEX Investments**

- FY 2018 CAPEX Investments:
   € 10.0 million in GER and € 3.6 million in the US
- Own work capitalized mainly for following projects
  - Development of battery system for Komatsu BH18/20 vehicle (as well as for 14t LHD)
  - Development of standard container for Trolleyand EV-Buses
  - Further developments of Battery Systems for Schäffer Front Wheel Loader and KUKA AGV
- In 2018, capitalized development costs fell significantly due to direct revenue recognition in the context of long-term, combined development and series supply contracts







FY 2019 CAPEX Investments: Virtually unchanged at approx. € 14m

Capitalized development costs amount to about 57 % of the investment total

\*Property, Plant and Equipment.



## 2018: Expectations Met – 2019: Ambitious Business Goals



Further expansion of direct sales activities in Europe - Upcoming (additional) orders in Germany and further European countries expected for 2019

UL Certification of battery system for US intralogistics market – First Voltabox of Texas sales with intralogistics systems expected for H2/2019

Acceleration of projects with Komatsu - transfer of validation projects to series production

Start of parts of Voltaforce production in Kunshan plant, China – Expansion of production facilities at Austin branch

**Opening up new mass market segments** 



## Forecast 2019

7 € 105-115 m

Revenues 2019 (e)

7 ca. 8-9 %

**EBIT Margin 2019 (e)\*** 

\*Considering € 1.5m add. expenses from rearrangement of intralogistics partner agreement



## Forecast and Analyst Consensus

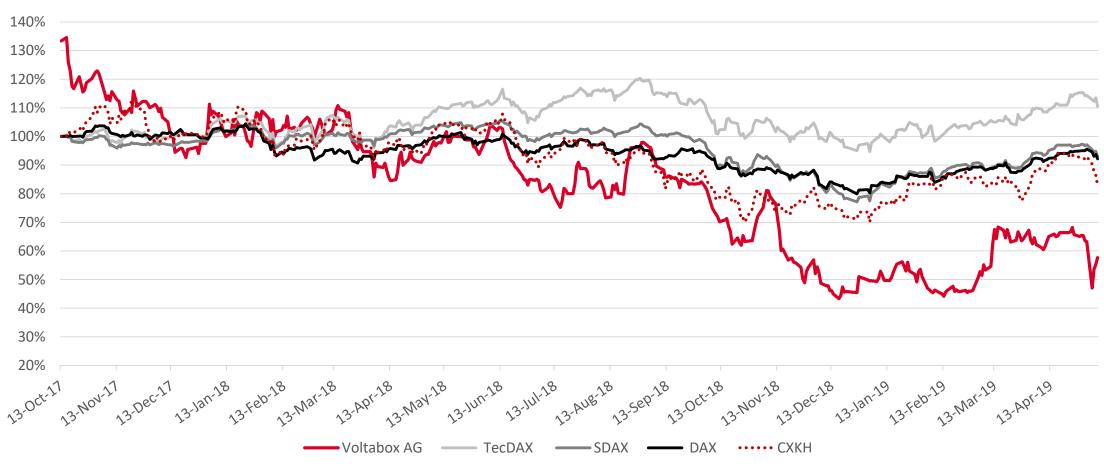
Financial performance indicators of Voltabox AG	2018		2019	
[in € million / as indicated]	Latest Forecast	Results	Forecast	
Group revenue	65 – 70	66.9	Approx. 105 – 115	
EBIT margin	7 %*	8.4 %	Approx. 8 – 9 %**	
Investments	13.4	13.6	Approx. 14	
thereof: IAS 38	5.8	3.0	Approx. 8	
Analyst estimates	2018		2019	
Group revenue	65.5		112.1	
EBIT margin	6.8 %		9.5 %	

<sup>\*</sup> Considering € 2m add. expenses from rearrangement of intralogistics partner agreement.

\*\* Considering € 1.5m add. expenses from rearrangement of intralogistics partner agreement.

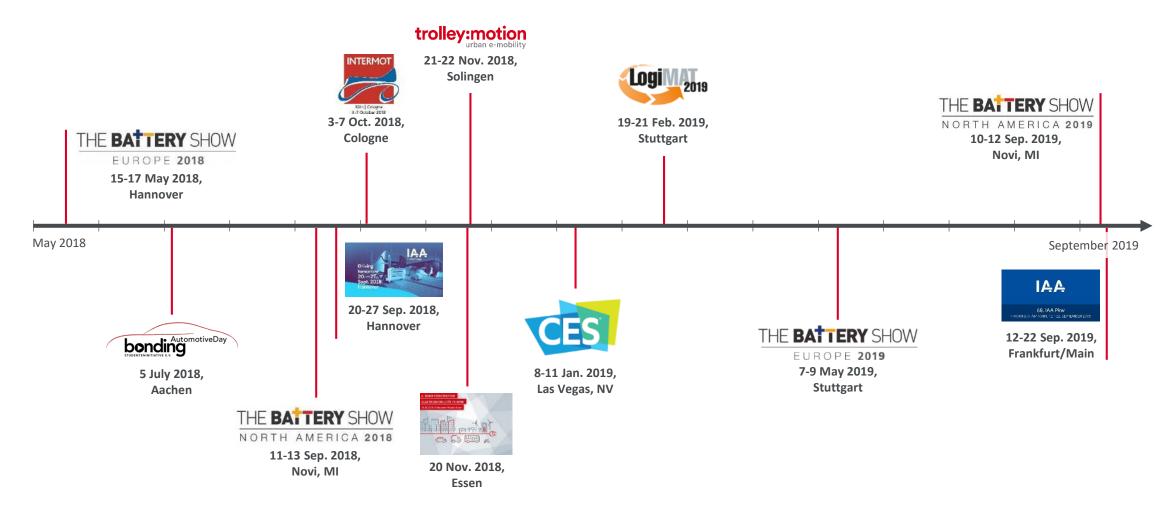


# Performance of Voltabox Share (VBX) since IPO





#### Voltabox on the Road — Trade Fairs and Exhibitions





#### Financial Calendar 2019

<ul><li>J</li></ul>	lanuary 10-11	ODDO BHF FORUM, Lyon
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January 31
 Bankhaus Lampe German Corporate Conference, London

February 19-20
 ODDO BHF German Conference, Frankfurt am Main

April 1 Annual Report – Consolidated Financial Statements 2018

April 3-5
 Bankhaus Lampe German Conference, Baden-Baden

April 11 Solventis Aktienforum, Frankfurt am Main

Group Interim Report as of March 31, 2019 – First quarter

Annual General Meeting, Delbrück

Group Interim Report as of June 30, 2019 – Half year

Equity Forum Fall Conference, Frankfurt am Main

Group Interim Report as of September 30, 2019 – 9 months

Eigenkapitalforum, Frankfurt am Main

November 25-27

September 2-3

November 13

May 13

May 16

August 21

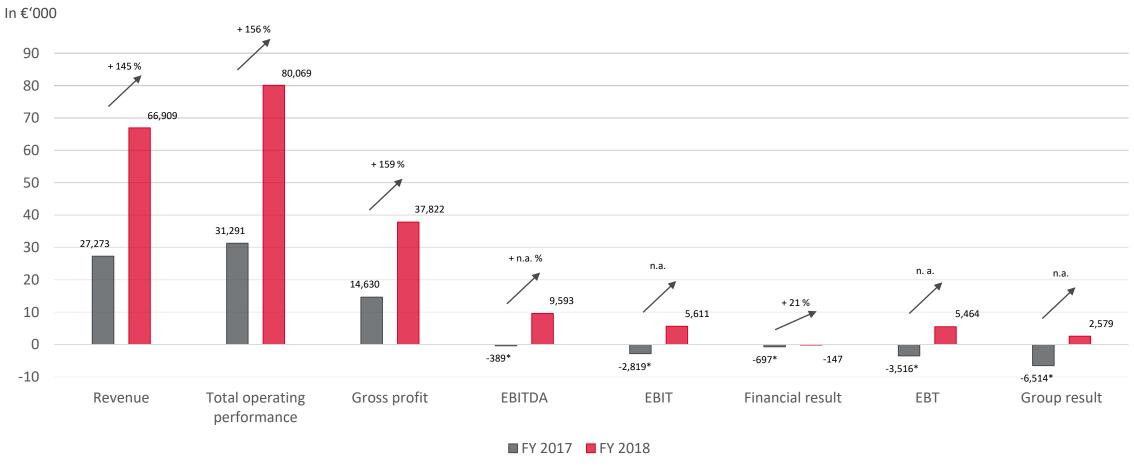


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## Continuous Dynamic Top Line Growth in FY 18





#### Cash Flow Statement FY 18

Significant increase in net working capital due to increase in trade receivables resulting from

- very good business development and
- sales financing support for main Voltabox partner (limited to H2/2018, ended at Dec. 31)

as well as due to higher inventories resulting from

- ensuring delivery capability in the context of entering the direct intralogistics business and
- preparation for revenue recognition in the first quarter of 2019





\*\* 1 Jan. 2018 – 31 Dec. 2018.

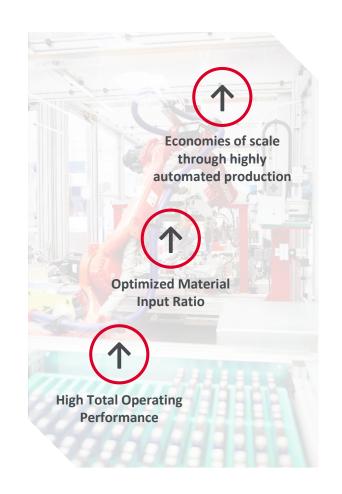
\*\* As retrospectively amended in FY 2018 consolidated financials statements.

\*\*\* Adjusted for transactions.



## Key Factors for Profitability Development in FY 18

-10,3







#### Key Developments of Assets in FY 18

- Increase of noncurrent assets by € 23.7m
  - Intangible assets € +11.5m capitalized development expenses and extended scope of consolidation
  - Goodwill € +6.5m Acquisitions of Concurrent Design and ACCURATE
  - Other assets € +5.0m predominantly attributable to longterm accrued expenses and contractual assets
- Decrease of current assets by € -10.0m
  - Inventories € +23.0m expansion of the operating business and in this context entry into the intralogistics direct business
  - Trade receivables € +34.0m temporary extended payment terms to the customer Triathlon
  - Liquid funds € -74.4m short-term capital commitment in operating activities due to the Group's business expansion
  - Other current assets € +6.2m prepaid expenses and recognition of contractual assets



<sup>\*</sup>As retrospectively amended in FY 2018 consolidated financials statements.



#### Key Developments of Equity and Liabilities in FY 18

- Decrease of noncurrent provisions and liabilities by € -0.5m
  - Noncurrent loans € -3.4m
  - Deferred tax liabilities € +2.9m
- Increase of current provisions and liabilities by € 11.8m
  - Current loans € +3.0m
  - Trade payables € +5.7m
  - Liabilities to related parties € -1.3m
  - Other current liabilities € +3.5m
- Increase of equity by € +2.4m
  - Equity ratio at 85.3 % (Dec. 31, 2017: 90.7 %) as expected resulting from the rise in total assets

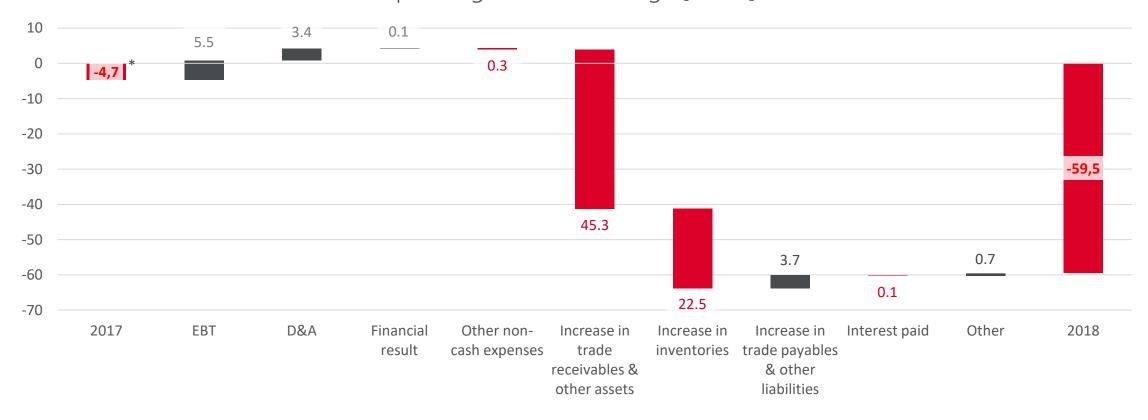
	Dec. 31, 2018	Dec. 31., 2017*
Equity	154,484	152,111
Subscribed capital	15,825	15,825
Capital reserve	127,992	127,992
Profit/loss carried forward	7,614	14,038
Consolidated net income	2,579	-6,514
Currency translation differences	474	770
Noncurrent provisions and liabilities	7,808	8,287
Noncurrent finance lease liabilities	17	16
Noncurrent loans	141	3,532
Deferred tax liabilities	7,650	4,739
Current provisions and liabilities	19,224	7,375
Trade payables	9,257	3,591
Liabilities to related parties	557	1,813
Other current liabilities	5,871	1,439
	181,516	167,773

<sup>\*</sup>As retrospectively amended in FY 2018 consolidated financials statements.



## Operating Cash Flow Bridge (y-o-y)

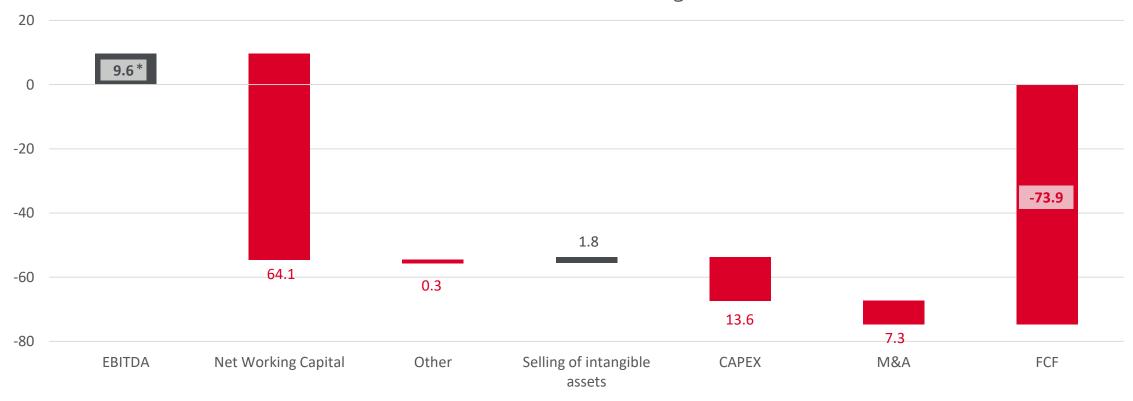
#### Operating Cash Flow Bridge [in €m]





# Key Cash Flow Developments in FY 18







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## Company Contact

Voltabox AG

**Investor Relations** 

Dr. Kai Holtmann

Artegastraße 1

D-33129 Delbrück

Phone: +49 (0) 5250 9930-964

E-Mail: investor@voltabox.ag

