



# ELECTRIP

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## CAPITAL MARKETS DAY

18 September 2018  
COLOGNE GERMANY

Dr. Frank Hiller, CEO



# DEUTZ Environment

Mega Trends in our Industry



## Sustainability



Electric

Gas

Downsizing



Clean

Disruption

Paradigm shift



Evolution  
Revolution

DIESEL  
Discussion

NOx



Energy  
saving

Corporate  
Responsibility

Hydrogen



Noise  
Reduction

Drive System  
Optimization

Pollution

Hybrid

Low local  
emission

# DEUTZ Strategy

We are taking action



**DEUTZ** completes its clean diesel technology to the full range of **advanced drive systems for professionals**

**DEUTZ** is driving the **next revolution**, delivering efficiency, performance & sustainability

**DEUTZ** has proven its **emission after treatment technology** at early state and therefore is well positioned for upcoming regulations as CHINA IV

**DEUTZ** is the leader in efficient diesel technology and holds as first manufacturer in the world a **full Stage V certified engine portfolio**

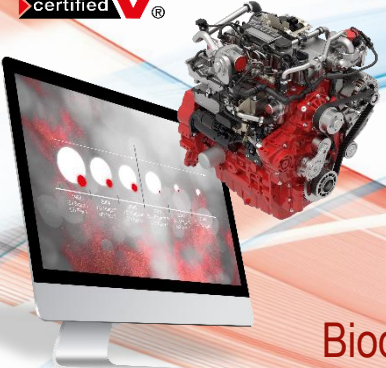
**DEUTZ** is taking action: We will make our engines **more efficient** and **more environmentally friendly**

# DEUTZ Market Positioning

Advanced Drive Systems for clean Power



STAGE V certified



48V  
Mild Hybrid



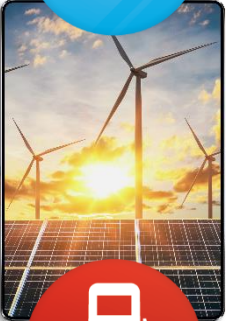
360V  
Full Hybrid



Battery Electric  
Vehicle



renewable  
ELECTRICITY



Biodiesel



Multi-Fuel



Hydrogen



Synth. Fuels

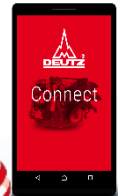
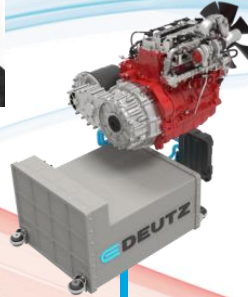
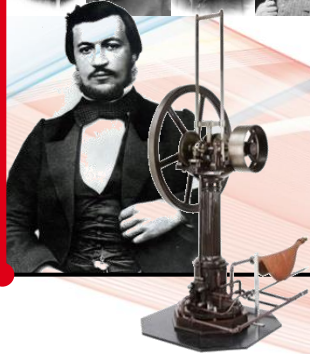


renewable  
FUELS



# DEUTZ Philosophy

Revive Heritage, Ingenuity & Dynamic Spirit



red dot award 2018  
winner

**torqeedo**

A **NEW** DYNAMIC

**DEUTZ** is reinventing its roots as revolutionary company & people to shape the world

**DEUTZ** purchases torqeedo in 2017 to benefit from internal technology transfer

**DEUTZ** creates A **NEW** DYNAMIC in the whole company; how to develop fastly serial-close prototypes for electric and hybrid systems as cooperation of DEUTZ & torqeedo Team in realtime and live via webseries

**DEUTZ** will provide the answer to key economical and ecological questions in our industries by heritage & ingenuity

**DEUTZ** also implements start-up thinking, to redesign business concepts & finding new digital services for more efficiency, performance & sustainability

# DEUTZ Internationalization

## Worldwide footprint



**DEUTZ** internationalize its production, supply chain, sales & after sales network

**DEUTZ** is setting up a new powerful local production in ASIA for other engine suppliers with our core competence for clean diesel & after treatment technology for China IV

**DEUTZ** extends its current range with electric & hybrid systems with production as new core competence in DEUTZ own facilities

**DEUTZ** extends its current range of clean diesel portfolio by cooperations with other engine suppliers such as for 8l segment with Liebherr & others are in evaluation phase

**DEUTZ** investigates in other technology paths through hydrogen and synthetic fuels with special providers

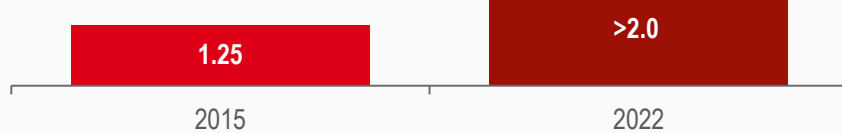
**DEUTZ** is positioning itself strategically as advanced system provider for professionals in all regions and applications

# DEUTZ Performance

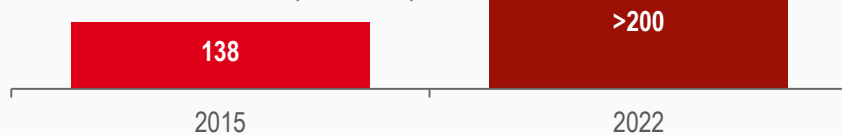
## Operational Excellence



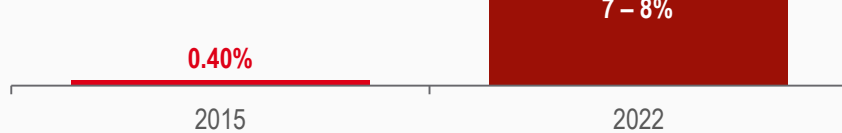
### REVENUE (in bn €)



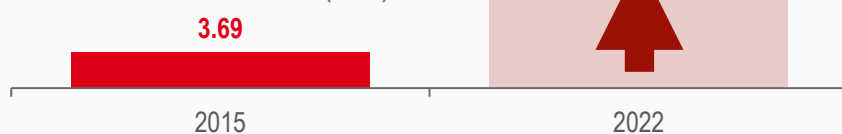
### UNIT SALES (in 1,000)



### EBIT MARGIN (in %)



### STOCK PRICE (in €)



**DEUTZ Revenue** will be stabilized by different pillars such as engine sales in OEM and distribution, clear after sales lifetime programs worldwide for deeper penetration in origin parts, liquids, labour and new eServices

**DEUTZ Sales** with constant growth plans for engine sales into seasonal balanced industries to ensure min production capacity of 200.000 units

**DEUTZ EBIT** to be steadily increased by optimized capacity utilization, efficient growth in core market segments, well balanced mix of engine sales & after sales, plus efficient technology portfolio development by our new cooperation network

**DEUTZ** will also convince OEMs, distribution network & even end-customers with an outstanding CustomerXperience, via standardized customer Sales & After Sales Journeys and eServices

**DEUTZ** strives for sustainable stock share development and value for our investors by innovation, growth and performance

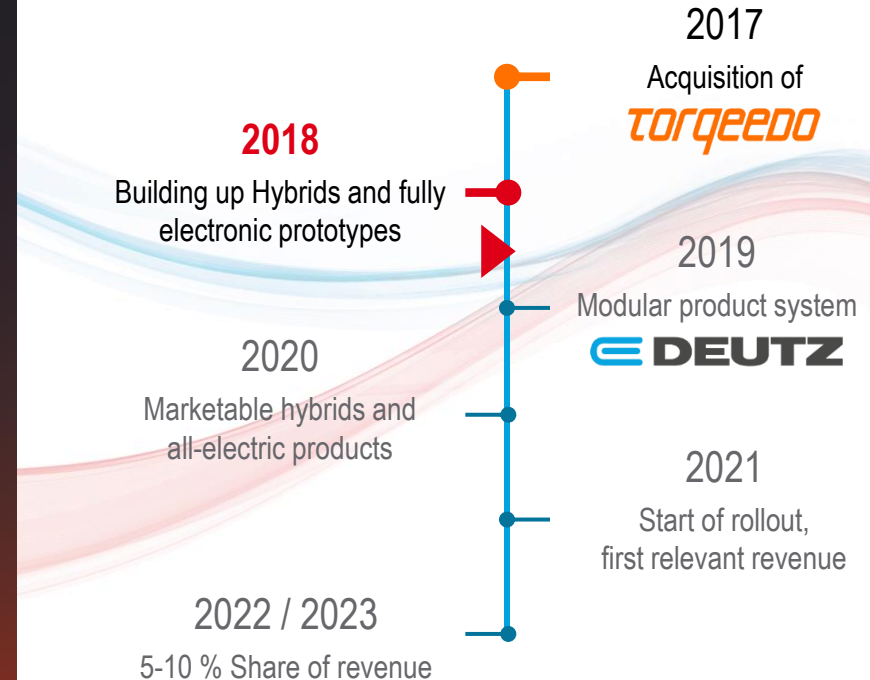
**DEUTZ** is in the fast lane...and invests in future in new business fields, technologies & experts as **TORQUEDO**

# ADVANCED DRIVE SYSTEMS

## The E-DEUTZ Story



**DEUTZ** is synonymous with pioneering spirit, passion and innovation culture. DEUTZ is positioning itself as the market leader in advanced drive systems.





### VISION

DEUTZ builds the most advanced drive systems for professionals, providing outstanding performance to shape the world.

### MISSION

Through pioneering spirit and innovation, DEUTZ shaped the industrial revolution.

Now, we are driving the next revolution – delivering efficiency, performance and sustainability for our customers.

**DEUTZ** will play a key role in driving the **next revolution**

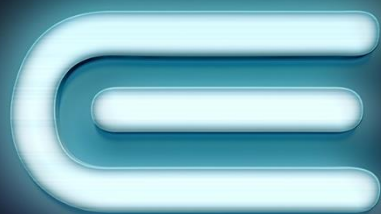
**DEUTZ** provides **clean diesel and gas** technology incl. LPG, CNG and BI-FUEL

**DEUTZ** extend its portfolio to alternative drive systems as **hydrogen, hybrid and electric**

**DEUTZ** presents today its brand **new hybrid & electric solutions & new philosophy**



## ADVANCED DRIVE SYSTEMS



ELECTRIP

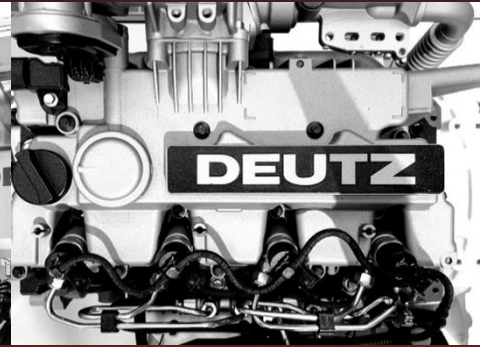


**ON WATER**

powered by **E DEUTZ**



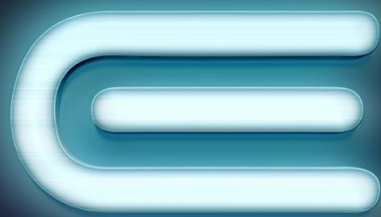
ELECTRIP



**ON GROUND**

powered by **E DEUTZ**





ELECTRIP



innovation  
CENTER





# ELECTRIP

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COLOGNE GERMANY

Dr. Andreas Strecker, CFO



# DEUTZ Performance Program

## Strategic & Operative Levers



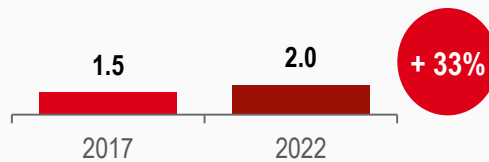
### IDENTITY

### VISION

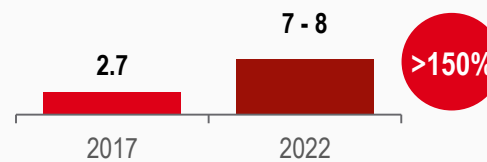
### MISSION

### TARGETS

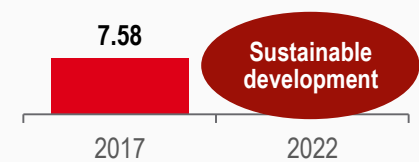
#### REVENUE (bn €)



#### EBIT MARGIN (%)



#### STOCK PRICE (€ per share)



### STRATEGIC DIRECTION

- 1 INNOVATION LEADERSHIP
- 2 OPERATIONAL EXCELLENCE
- 3 INTERNATIONALIZATION
- 4 EXPANSION OF PRODUCT AND SERVICE PORTFOLIO
- 5 COMPLEXITY REDUCTION
- 6 ACQUISITION & COOPERATIONS TO BOOST GROWTH
- 7 TRANSPARENCY
- 8 HIGH PERFORMANCE ORGANIZATION

**REVENUE** to exceed 2 bn € (cyclically adjusted)

**SERVICE REVENUE** to grow strategically for less dependency on economical downturns

**Production Volume** has to be stabilized above 200,000 units (excluding JV in Asia)

**8 Target levers** for DEUTZ Group to increase value & performance

# DEUTZ Performance Program



## Summary of Core Projects

### INTERNATIONAL

- New Set-up in Asia, Americas and Europe
- Torqeedo stand-alone
- Full combustion engine portfolio
- Electric, Gas & Hybrid portfolio

### INNOVATION

- **E-DEUTZ** with hybrid and full E-systems
- GAS with LPG, CNG and BI-FUEL
- EU Stage V and China IV
- Digital & Content Marketing, Customer Apps & eServices

### OPERATIONAL EXCELLENCE

- Process speed & quality offensive
- Complexity reduction via product standardization of variants
- Product & Market strategy via core segments, critical mass & pricing
- Service revenue >400 Mio. € p.a.

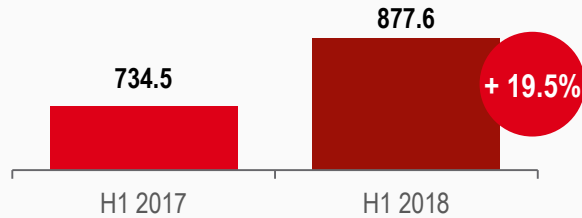
### HIGH PERFORMANCE

- Cultural Transformation
- Digital connected world wide
- Dynamic spirit throughout network

# DEUTZ Performance Program



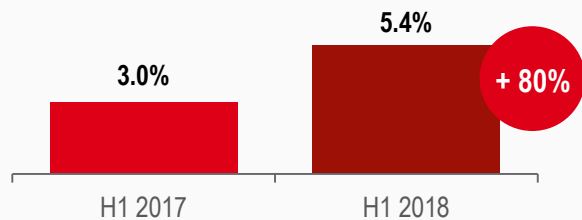
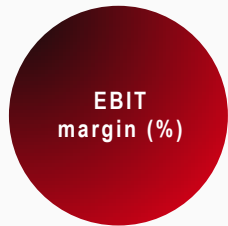
## Key figures



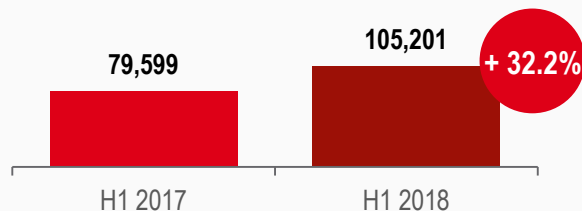
**DEUTZ** revenue growth plans are on track



**DEUTZ** order backlog indicates strong 2nd half-year 2018 and good start for 1st half-year 2019



**DEUTZ** core projects and levers will improve profitability



**DEUTZ** EBIT margin for 2018 grow to  $\geq 4.5\%$





# ELECTRIP

# ON GROUND



**DEUTZ** unit sales increased over the last 3 years

**DEUTZ** sales volume has to ensure capacity utilization above 200,000 units for stable profitability even if markets slow down

**DEUTZ** sales has to compensate business seasonality by harmonized mix of industries, segments & sales channels

**DEUTZ** will optimise production planning to improve efficiency

**DEUTZ** pushes further in after sales business, by expanding parts sales, liquids, life time warranties, customer uptime programs & dense network



ELECTRIP

ON WATER



*torqeedo* is a dynamic growth story

*torqeedo* production is already partly integrated in DEUTZ facilities to raise synergies

*torqeedo* extending the current B2C to also bigger B2B activities such as inner city transport for key cities

*torqeedo* delivering a huge technology transfer to **E DEUTZ**



# ELECTRIP



**DEUTZ** invests in Torqeedo, in know how transfer of electric motors, batteries and software applications to expand DEUTZ' business

**DEUTZ** invests in China IV technology to win business with OEMs in Asia.

**DEUTZ** invests in strategic cooperations like Liebherr to continuously expand product portfolio

**DEUTZ** invests in Gas with LPG, CNG, BI-FUEL & hydrogen technology

**DEUTZ** invests in people, start-up mentality, new cooperation models & efficient work places

**DEUTZ** invests in digital processes, speed, scale & IT infrastructure

**DEUTZ** will invest in new business development, cooperations and new segments



# ELECTRIP

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## CAPITAL MARKETS DAY

18 September 2018  
COLOGNE GERMANY

Michael Wellenzohn, CSO





# DEUTZ – A NEW DYNAMIC

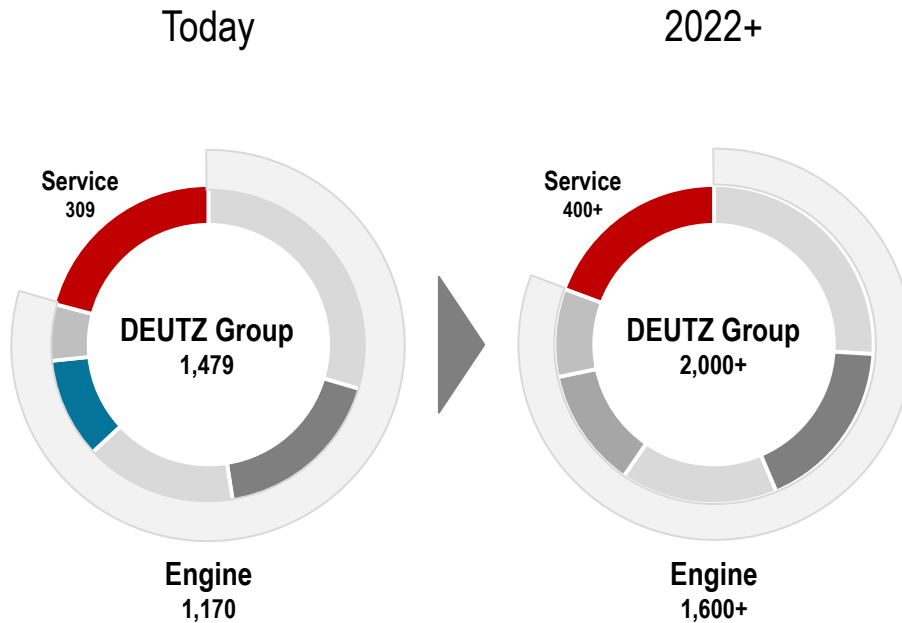
## Sales & After Sales Performance Program



### DEUTZ Group 2017

Revenue split

€ million



**DEUTZ** strives for >2 billion Euro Sales through 4 equalized sales regions for well balanced diversification

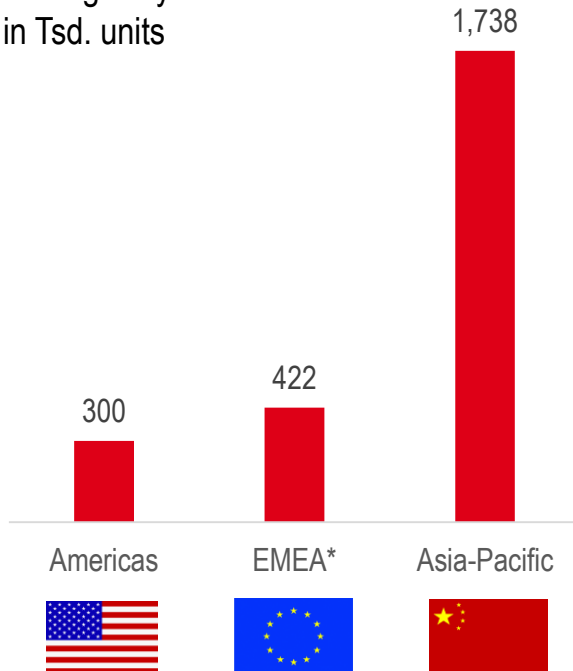
**DEUTZ** becomes a significant player in Construction, Material Handling, Agriculture, and Stationary Equipment in every region

**DEUTZ** will represent significant market share in its target applications

**DEUTZ** achieves that by innovations with a modular customized drive portfolio and service supported by digital solutions

## Regional Growth Strategy

Off-Highway Market 2017  
in Tsd. units



**China** biggest market worldwide => growth potential through IC technology at CN4

**ASIA** Japan/Korea further OEM penetration with innovation drives with diesel & full electric

**EMEA** further development of OEMs, market penetration with innovative drive systems such as full electric & hybrid

**Americas** further growth potential will full electric, hybrid, gas and BIFUEL drives

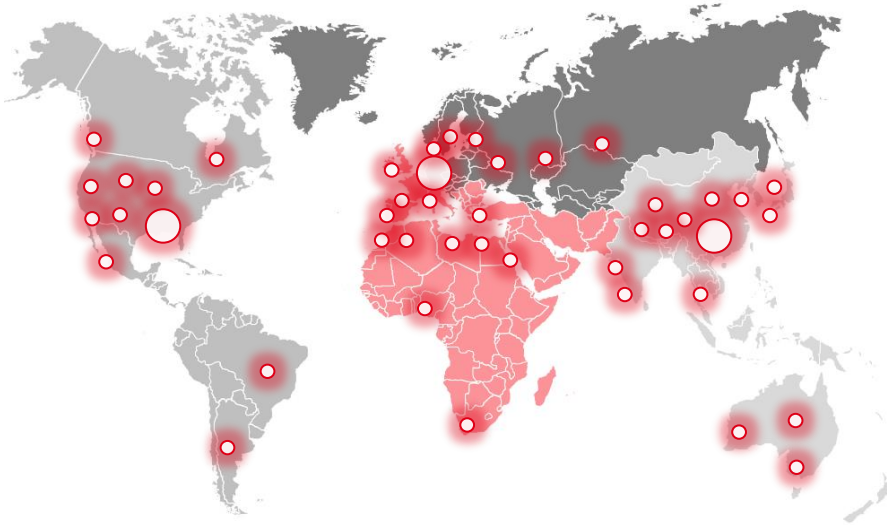
**Attainable market:** Non-captive engine supply, CE / AG / MH / StE segments, 19-620 kW, emission level >= Tier 3 (based on PSR 2017 database)

\*EMEA = CNEE + WSEMEA

▶ **DEUTZ Target Market share will be 15% long term**

# DEUTZ – A NEW DYNAMIC

## Key actions on Service Business



**DEUTZ** improve further the order to delivery by digital connection in ordering, warehousing and spare parts delivery

**DEUTZ** develop the distribution network for best in class field service quality and response time

**DEUTZ** enable the distribution to enlarge the scope of business with warranty extension, bonuses on genuine parts and fluid usage

**DEUTZ** is connecting engines in operation by digital services to avoid downtime and reduce repair costs

**DEUTZ** Connect users to distribution workshops, for fast repair, maintenance & preventive measures, spare parts supply and documentation

**▶ DEUTZ Service Business to grow >400 Mio. EUR**

# DEUTZ – A NEW DYNAMIC

DEUTZ offers Advanced Drive Systems



1999 - 2019

No<sub>x</sub> -95.7%  
particels -97.9%

STAGE V certified



48V  
Mild Hybrid



360V  
Full Hybrid



Battery Electric  
Vehicle



renewable  
ELECTRICITY



Biodiesel



Multi-Fuel



Hydrogen



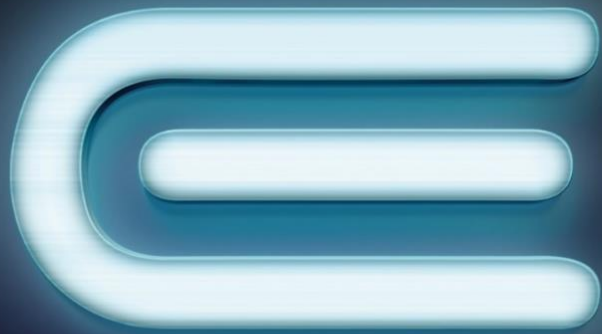
Synth. Fuels



renewable  
FUELS

► Easy configuration of the individual advanced drive solution!





# ELECTRIP

# ON GROUND



**DEUTZ** is targeting 5-10% electric drives for 2022

**DEUTZ** is transferring synergies of Torqeedo's system know how in E-drives for off road applications

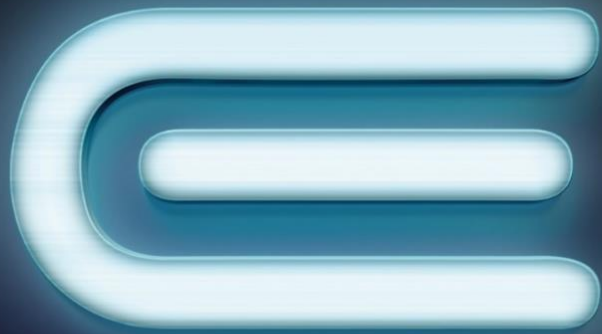
**DEUTZ** has developed a modular product kit for full electric & hybrid drives with focus on 48V and 360V solutions for hybrid and electric solutions

**DEUTZ** offers modular kit solution for customer specific drive specifications

**DEUTZ** will also extend the product portfolio to alternative fuels

**DEUTZ** presents to you today:

- Electric and hybrid drive systems
- Clean diesel & Gas solutions
- Outlook on hydrogen opportunities



ELECTRIP

ON WATER



*torqeedo* is world market leader in electric boating

*torqeedo* has more then 80'000 E drive systems based on Li – Ionic Batteries in in the field

*torqeedo* growth opportunities are ahead

*torqeedo* helps to speed up the electrification of DEUTZ engine portfolio by fast engineering services

*torqeedo* will build up clean concepts for alternative city transportation on water

*torqeedo* is realizing synergies joining DEUTZ Group in industrialization and purchasing

*torqeedo* uses sales synergies through DEUTZ distribution network



# ELECTRIP



April 2018

**DEUTZ** announced to focus on advanced drive systems and presenting first eDEUTZ concept at INTERMAT with invitation to “MORE” to come

May 2018

**DEUTZ** starts digital marketing for drive integration & electrification by agile engineering of demonstrators via live videos on youtube

May – August 2018

**DEUTZ** invites customers, dealers, press, investors & public to this Event to demonstrate its full program of clean advanced drive systems

August 2018

**DEUTZ** already achieves high focus of OEMs, distribution & press for electrification efforts by >750.000 clicks online for total campaign

September 2018

**DEUTZ** shows built up hybrid and full electric functional demonstrators, being planned, designed and implemented within 6 months

**DEUTZ** gained new opportunities and already e-prototypes orders

**DEUTZ** will handover the first electrified prototype this week



# ELECTRIP

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CAPITAL MARKETS DAY

18 September 2018  
COLOGNE GERMANY

Dr. Christoph Ballin, CEO *torqeedo*





# Who we are



- We build the best electric and hybrid propulsion systems for boats worldwide.
- Our products capture by far the highest market shares in electric and hybrid boating.
- We are known for
  - Superior overall efficiencies
  - Fully integrated systems (low-voltage and high-voltage)
  - High-tech and industrial approach to design, manufacturing and branding





# Key facts



- Global #1 in electric mobility for boats
  - #1 in volume: > 80,000 electric propulsion systems in the field.
  - #1 in performance: Best performance in addressed segments
  - #1 in technology: Latest technologies, largest patent portfolio for electric and hybrid boating
  - #1 in capabilities: >150 employees, largest organization in electric boating, longest experience and benefits from learning curve
  - #1 in innovation: no other company in the marine industry with as many credentials for electric boating
- Power classes equivalents from 0.5 to 100 kW on motor level (up to 200 kW on system level)
- Last year sales volume 25 EUR millions



# Strategic rules for success in e-mobility



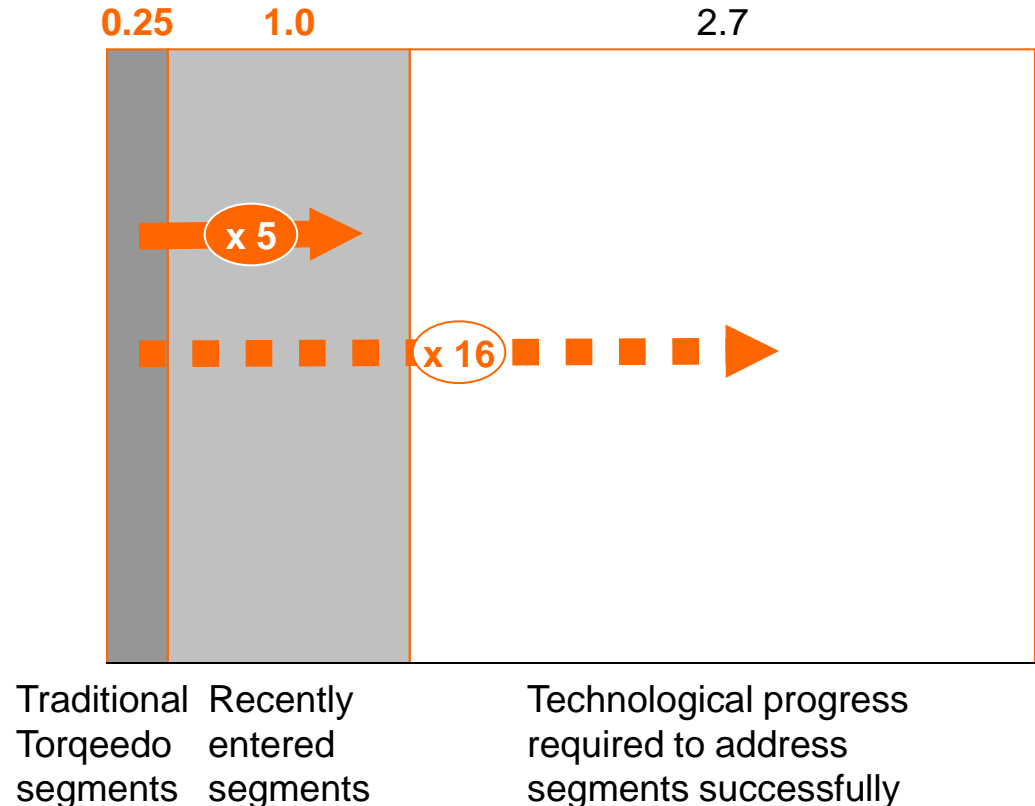
- 1. Sustainability**  
is always one element in the value proposition – but never the only element
- 2. Segments**  
e-mobility attractiveness varies greatly among segments. It is important to focus on segments that can be successful today
- 3. Great Products**  
are the core of everything

# Addressed market volume by focus segments



- Total marine propulsion market for boats amounts to approx. 4 EUR billions.
- **Torqueedo is currently taking electric mobility into pure combustion engine segments – driving growth & marine sustainability**
- Addressed segments today include
  - Tenders
  - Sailing
  - Ferries & Taxis
  - Selected niche segments (e.g. kayak fishing, green lakes, rescue/life-saving)
- Objectives: Secure market shares in currently addressable segments and drive technological development to address even more market segments over time

Market segment sizes in EUR billions





# Segment example: Kayak fishing



## Why electric

- Motors enable kayak fishermen to catch more fish
- 2.5 mln registered kayak fishermen in North America

## Why Torqeedo

- Best solution in the market
  - + Weight incl. battery from 7 kg
  - + Speed up to 11 km/h
  - + Range up to 100 km
  - + On-board computer
  - + Solar charging
  - + Professional safety



# Segment example: Sailing dinghies & tenders



## Why electric

- Low power requirements
- Low range requirements

## Why Torqeedo

- Compares to 3 HP petrol outboard in terms of speed, power and range
- Advantages vs. petrol outboards
  - + Lighter
  - + More convenient
  - + Cleaner
  - + Quieter
  - + Waterproof IP 67
  - + Onboard computer
  - + Solar chargeable
  - + Smartphone App



# Segment example: Luxury sailing



## Why electric

- Better user experience
  - + Quieter, less generator run-time
  - + Clean
  - + Abundant energy on board
- Sustainable

## Why Torqeedo

- Only professional solution available





# Segment example: Ferries & taxis



## Why electric

Economically superior

- + Save up to 80% on operating costs
- + Typical break-even point of 3 to 4 years
- + Long-term battery capacity warranty

Ecologically superior

- + Each diesel ferry emits pollution equivalent to 45 diesel buses \*
- + Each diesel ferry emits CO2 equivalent to 7,500 cars \*\*

## Why Torqeedo

- Plug & Play system off the shelf up to 200 kW available



Source: Torqeedo, Environmental Capital Group (2018):

- \* Pollution defined as emissions of the relevant Criteria Air Pollutants (CAP): CO, HC, NO<sub>x</sub>, and PM.
- \*\* Assuming approx. 29,000 kilometers travel per ferry per year (10 km per route, 8 routes per day, 365 days per year) and assuming 12,000 km travel per average passenger car. CO<sub>2</sub> emission of 40 ferries is equivalent to CO<sub>2</sub> emissions of 300,000 cars.



# Segment example: Rescue / life saving



## Why electric

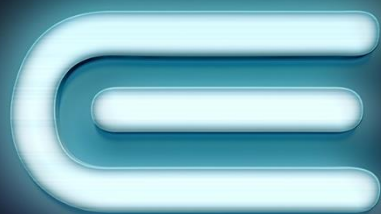
- Rescue / life saving segment undergoing change to improve safety and economics
- Electric solutions suited better for a range of rescue / life saving applications
- Projects underway but not finalized





Joining forces with the DEUTZ Team since  
October 2017





ELECTRIP



*TORQUEDO*

LIVE EXPERIENCE

ON WATER

powered by  DEUTZ





# ELECTRIP

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## CAPITAL MARKETS DAY

18 September 2018  
COLOGNE GERMANY

Dr. Markus Müller  
SVP , Product Development & Tech. Customer Support



# DEUTZ – A NEW DYNAMIC

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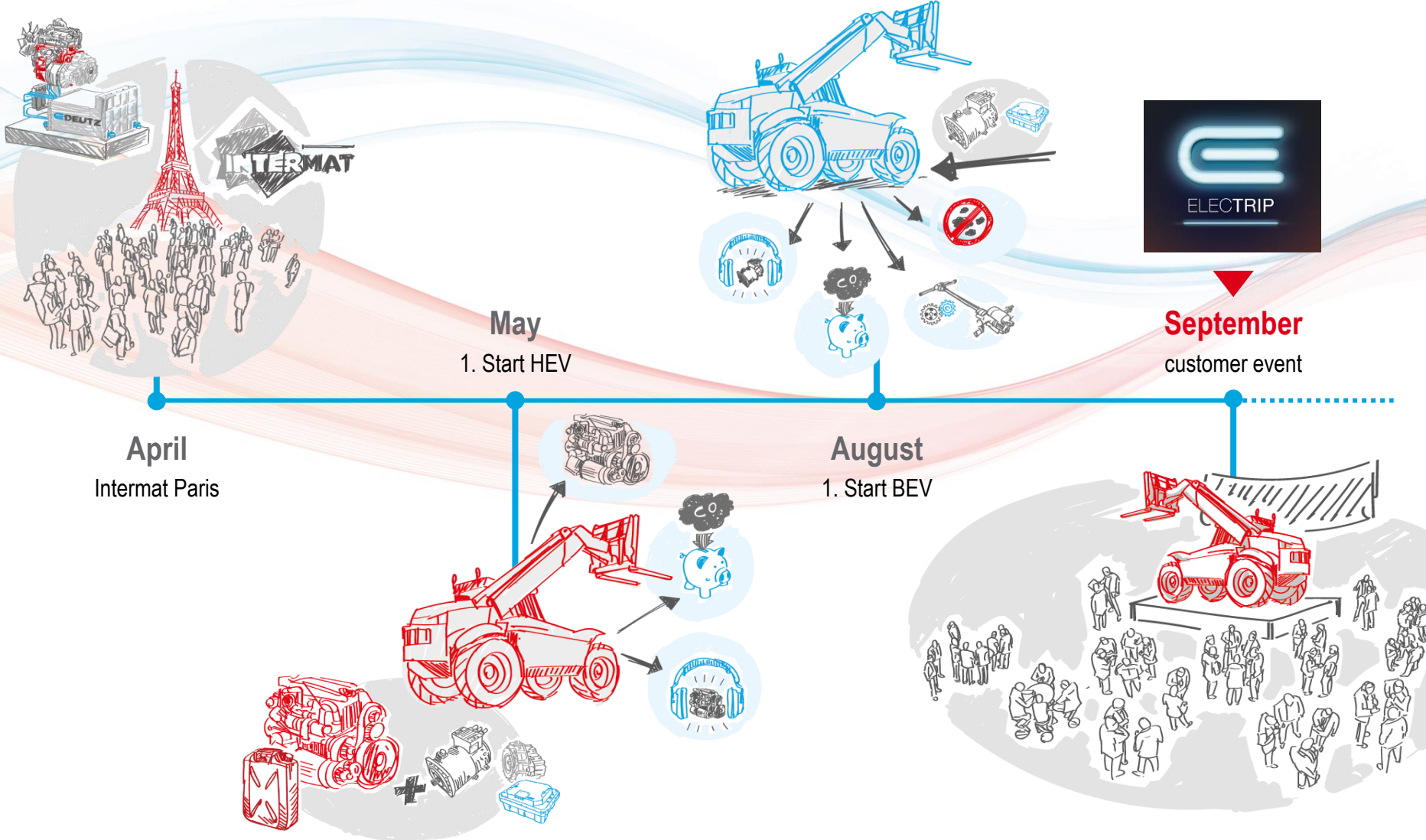


renewable  
FUELS

► The path to CO<sub>2</sub> neutral future with Advanced Drive Systems

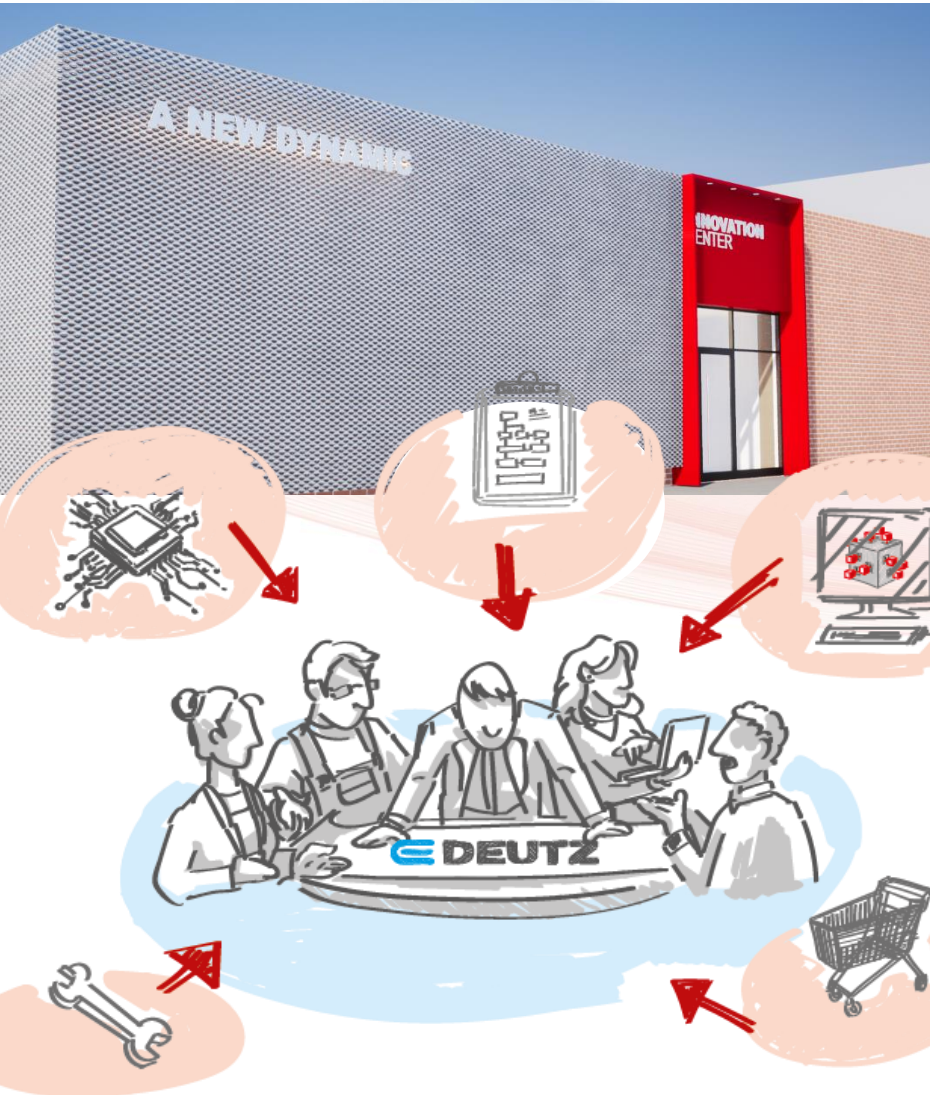
# ELECTRIP on Ground

## E-DEUTZ Roadmap 2018



# ELECTRIP on Ground

E-DEUTZ Team



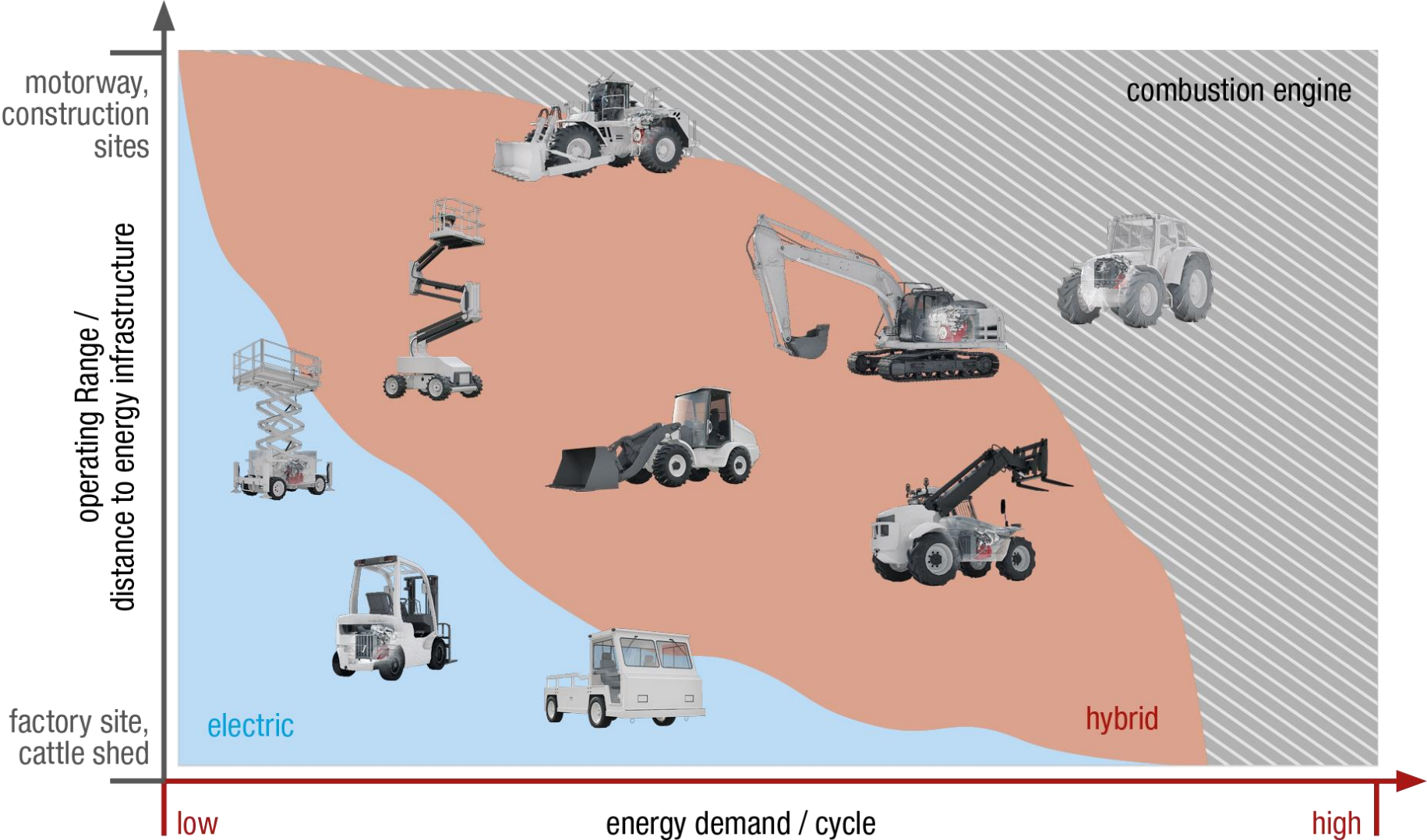
## innovation CENTER

Interdisciplinary team of electronics, software, hardware, purchasing and product management was founded in January 2018 with DEUTZ and Torqeedo colleagues.



# ELECTRIP on Ground

Motivation: CO2-neutral future





# ELECTRIP on Ground

## Strategy – Markets/Segments/Applications



Starters & selective replacement of attachments



Diesel downsizing for small equipment **<56kW** (fork lift truck, telehandlers, etc.)

Full replacement of mechanical attachments (e.g. tractor, etc.)



Diesel downsizing for larger equipment **>56kW** (Roller, etc.)

Diesel downsizing for larger equipment **>160kW**



Hybrid

Today

2-10 year horizon

Full-Electric

Today

2-10 year horizon

Compact equipment and material handling **<37kW**

wheelloader, etc.

Small rollers, Forklifts, etc.



Small construction and residential equipment **<56kW**

Lawn, Mowers, etc.

Compact utility tractor, etc.



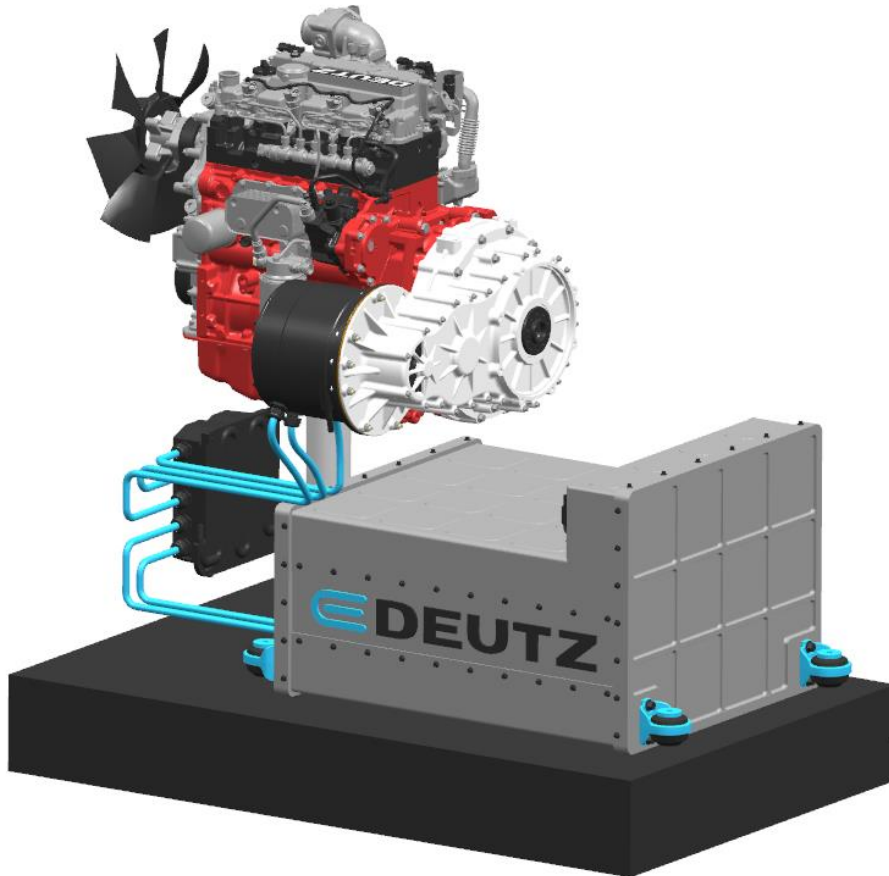
Small construction and agricultural equipment **>56kW**

Telehandler, small tractors, excavators etc.



# ELECTRIP on Ground

INTERMAT 2018 Paris – Trade Show Prototype



## High voltage hybrid system

TCD 2.9 stage V (55.4 kW without SCR)

Intermediate flange gear with integrated clutch

Electric motor and power electronics

High voltage battery package

## Features

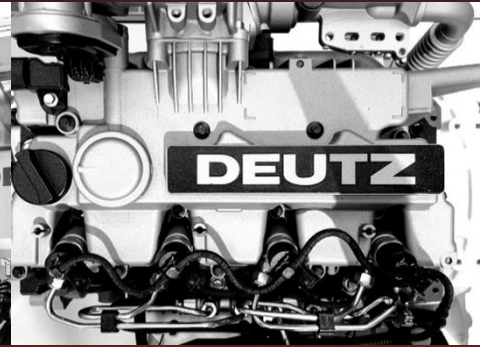
boost

battery charging

pure electric operation



ELECTRIP



# LIVE EXPERIENCE ON GROUND

powered by **E DEUTZ**



## **DISCLAIMER**

Unless stated otherwise, all the figures given in this presentation refer to continuing operations.

The details given in this document are based on the information available at the time it was prepared. This presents the risk that actual figures may differ from forward-looking statements. Such discrepancies may be caused by changes in political, economic or business conditions, a decrease in the technological lead of DEUTZ's products, changes in competition, the effects of movements in interest rates or exchange rates, the pricing of parts supplied and other risks and uncertainties not identified at the time this document was prepared.

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Thank you for your attention