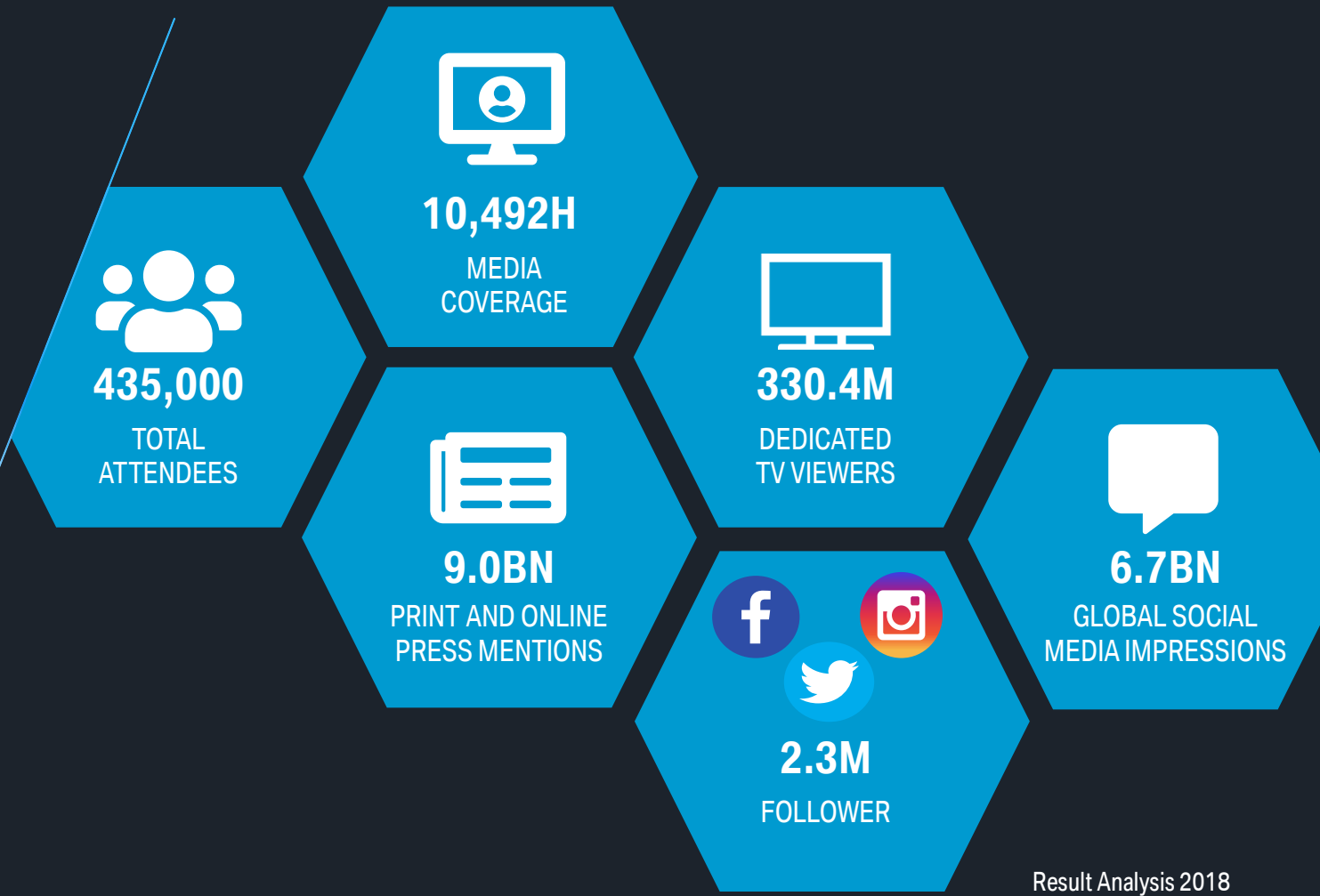
ROAD TO iNEXT.
BMW GROUP BOOSTS ELECTRIC MOBILITY.

FORMULA E: ONE OF THE FASTEST GROWING TOP RACE SERIES IN THE WORLD.

- World's first FIA race series for fully electric cars.
- Debut-Season: September 2014 - June 2015.
- **Season 4: 10 teams, 20 drivers**, 40 cars (two drivers and four cars per team).
- **Season 5: 11 teams, 22 drivers**, 22 cars.

Growth of audience in Season 4: +48%



Result Analysis 2018

BMW i ENGAGEMENTS IN FORMULA E.

FORMULA E OFFICIAL VEHICLE PARTNER.

- BMW i was founding partner of the Formula E from Season 1 onwards.
- BMW i provides the **Support Car Fleet** for Formula E.
- Support cars include the i8 **Safety Car,** i3 Medical Car, i3 Race Control Car, Rescue Car.

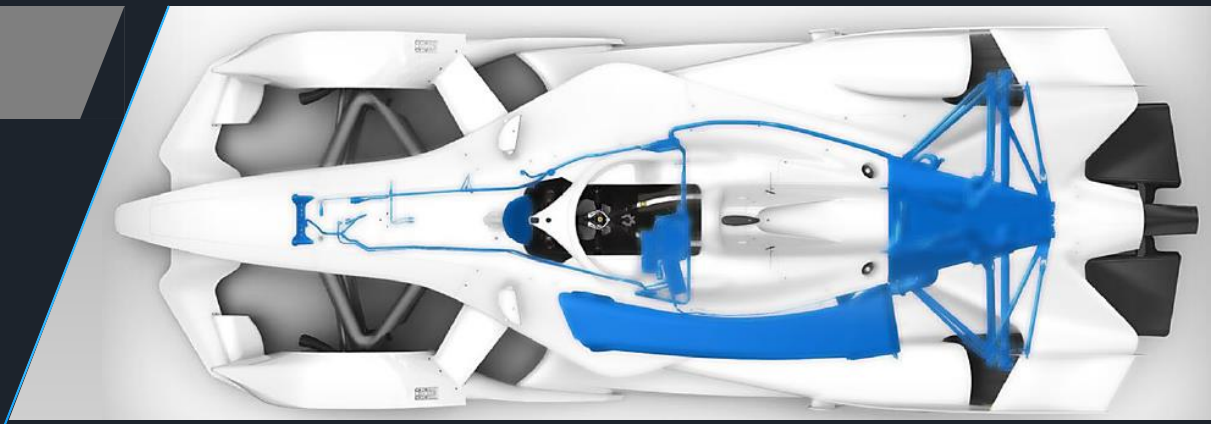
BMW i ANDRETTI MOTORSPORT.

- BMW has now officially entered the racing series as manufacturer with its own **race team "BMW i Andretti Motorsport"** from Season 5 onwards.
- BMW works drivers: Antonio Felix da Costa, Alexander Sims.
- Race car: BMW iFE.18.

IN-HOUSE DEVELOPMENT PARTS OF BMW iFE.18.

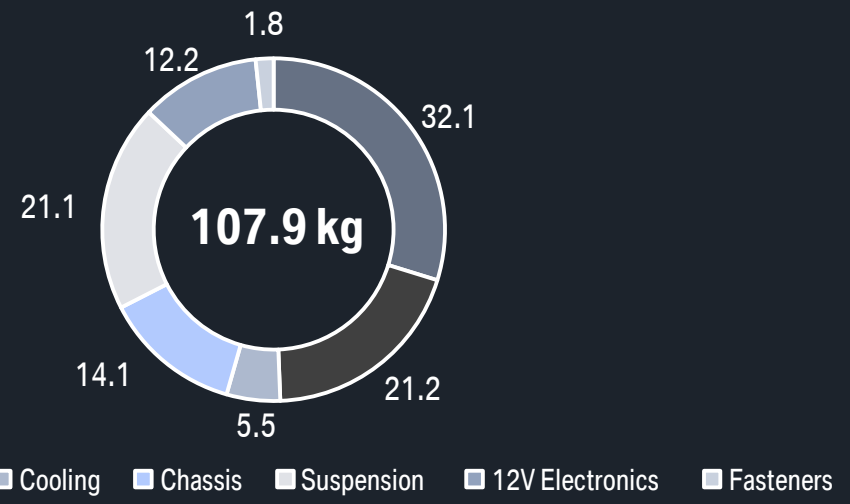
UNITY PARTS (WHITE):

- Standard chassis: Spark Racing Technology
- High-Voltage Batteries: McLaren
- Tires: Michelin



BMW PARTS (BLUE):

- Power train
- Rear-end structure
- Rear suspension
- Shock absorber
- Power train cooling
- 12V Electrics
- Brake-by-Wire
- Software (on-car / off-car)
- Oil development (with Shell)



FORMULA E – GEN2.
UNIQUE DESIGN AND EXCELLENT TECHNOLOGY.

KEY SPECS.

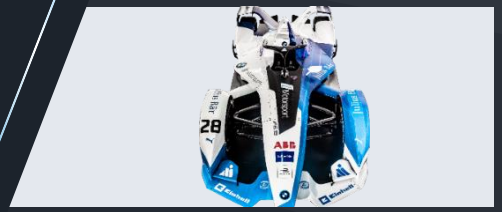
Max. Output Qualifying:	**250 kW (335 HP)**
Max. Power Race:	**200 kW (270 HP)**
Max. Speed:	**240 km/h**
Acceleration:	**0-100 km/h in 2.8 seconds**
Length:	**5200 mm**
Width:	**1800 mm**
Height:	**1050 mm**
Minimum weight:	**900 kg (Battery 385 kg)**

DESIGN FACTS.

The **BMW Emblem** as the colouring **model of the entire design**.

Elements of this **year's BMW M Motorsport Design also in BMW iFE.18**.

Colour gradient from light- to dark blue shows movement and transition – Key topics of emobility.

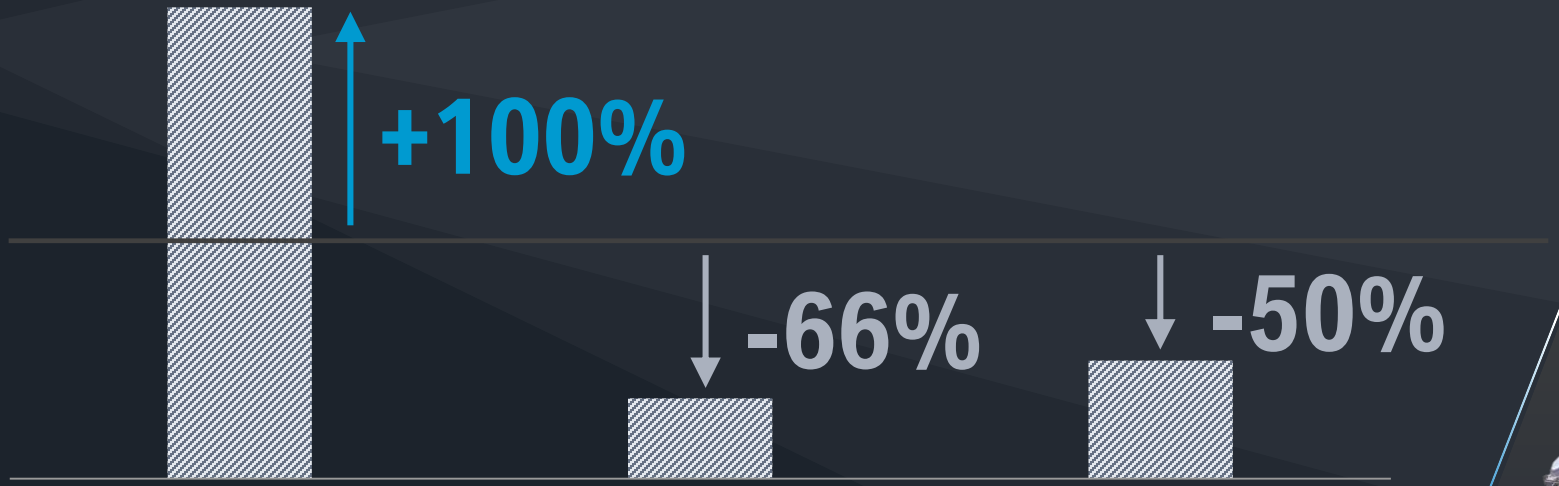


The natural colours of pure electrification spread into a graphic network of blue and violet vanes.

In certain areas violet "synapses" appear at network-crossings. The closer those crossings are located next to the BMW i power train, the more these are visible.

TECHNOLOGY LAB FORMULA E.
BMW iFE.18 COMPARED WITH BMW i3.

BMW iFE.18.
E-Machine



BMW i3.
E-Machine

100% BMW i3.

THE TRAIL OF SUCCESS OF E-MOBILITY IS IRREVERSIBLE. BMW GROUP ELECTRIFICATION ROADMAP.

2013:
Born electric.

2013

2017


2018

BMW i8 Roadster

2019

MINI BEV

2020

BMW iX3 BEV

2021

BMW iNext


BMW i4 Vision Dynamics

By 2025:
25 electrified models

OUR FUTURE IS ELECTRIC.
AMBITIOUS TARGETS FOR SALES OF ELECTRIFIED VEHICLES.

311
2013

17,800
2014

32,000
2015

62,000
2016

103,000
2017

142,600
2018

ELECTRIFIED VEHICLES

500,000
BY THE END OF 2019
ON THE ROAD

PHEVS ARE KEY TO REDUCE CO2 EMISSIONS. NEW PHEV MODELS IN 2019.

13 PHEVs until **2025.**

Electric range up to **75 km (WLTP)*.**

Zero emission driving in urban areas.

Attractive model line-up.

*80 km (NEDC)

BMW 330e

BMW 745e/745Le

BMW X5 xDrive45e

BMW X3 xDrive30e

EMISSION-FREE DRIVING PLEASURE.

12 pure electric vehicles until 2025.

Range up to **600 km (WLTP).**

Modular System Gen5 for all electrified models.

MINI Electric* 2019

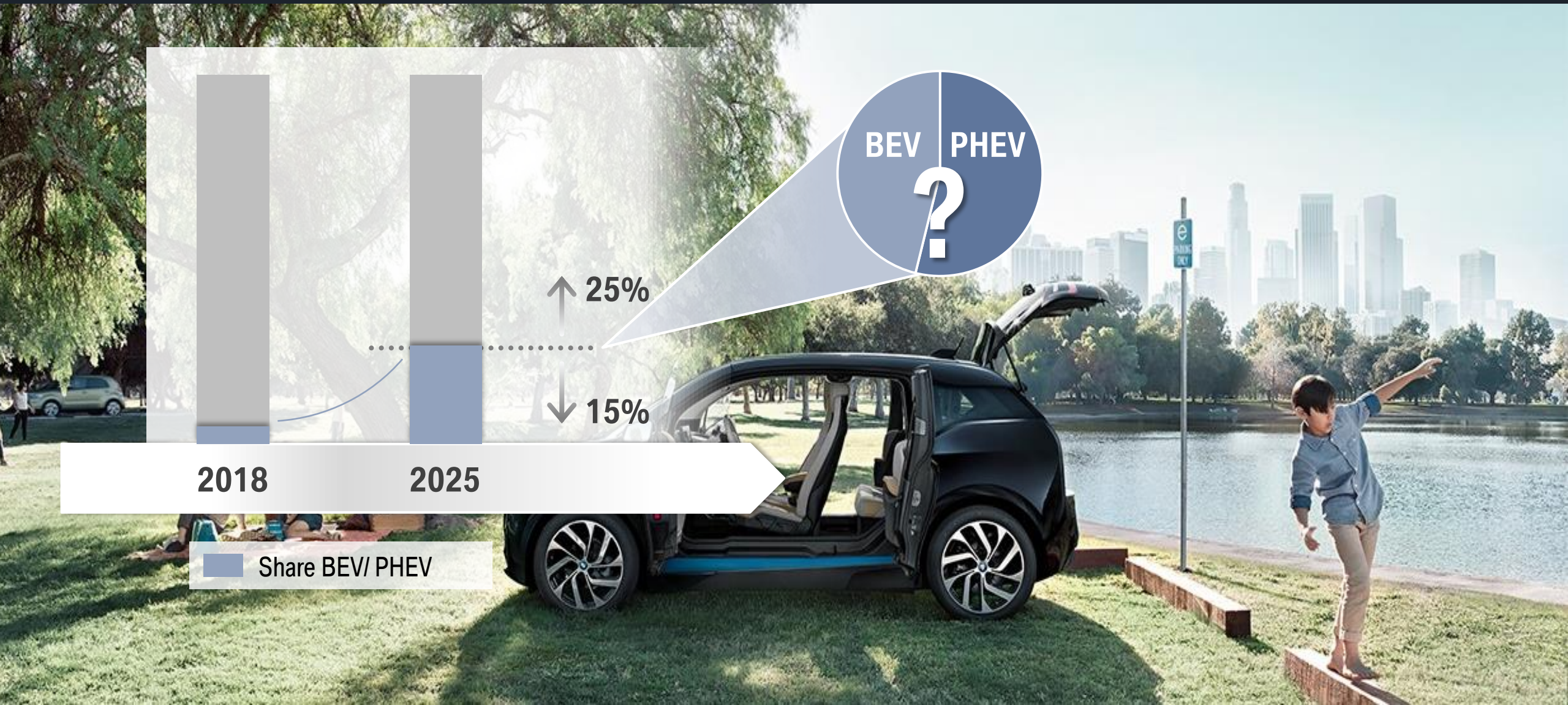
BMW iX3 2020

BMW iNEXT 2021

BMW i4 2021

*partly Gen5

FLEXIBILITY IS THE KEY TO FULFIL OUR CUSTOMER NEEDS.



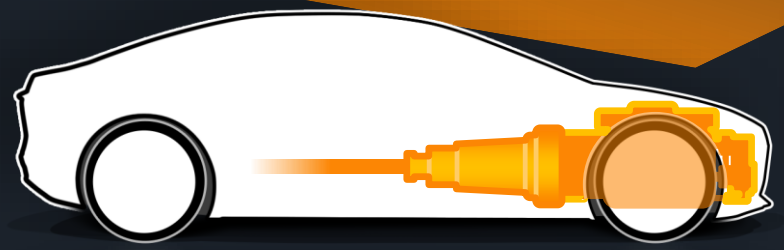
BMW i. FROM ‘BORN ELECTRIC’ TO A COMMON ARCHITECTURE FOR ANY TYPE OF POWERTRAIN.

2013

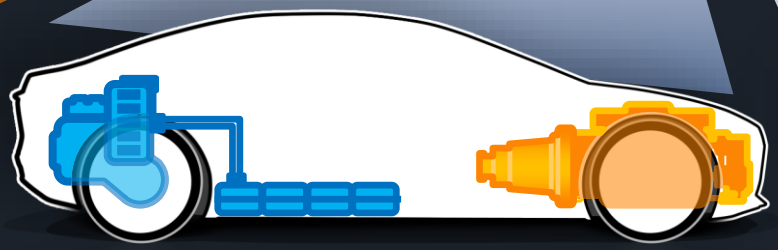
‘Born electric’

One flexible architecture for all drive trains…

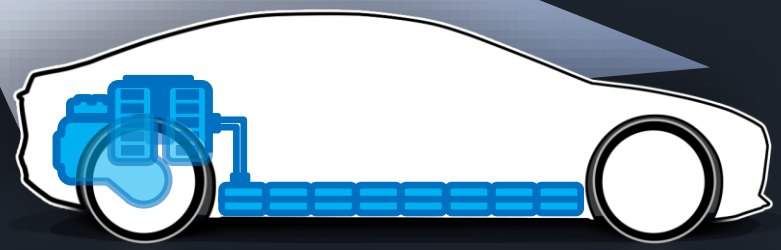
2021 ONWARDS



› Combustion engine



› Plug-In-Hybrid (PHEV)



› Pure electric (BEV)

THE GEN5 MODULAR SYSTEM ENSURES THE IMPLEMENTATION OF THE DIFFERENT VEHICLE ARCHITECTURES.

PHEV & BEV

Flexible modular system

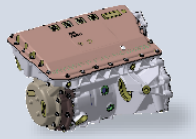
Combined Charging Unit (CCU).

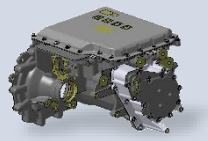
3.7 kW

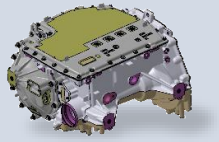
scalable

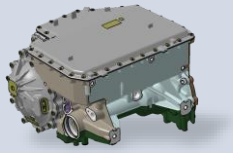
22 kW

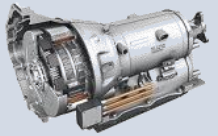
Electric drive unit & hybrid transmission.











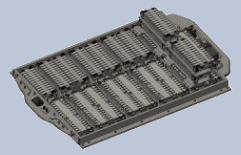
BEV ENTRY
90 kW

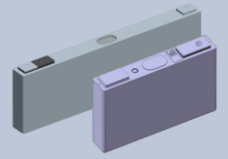
scalable

BEV PERFORMANCE
> 300 kW

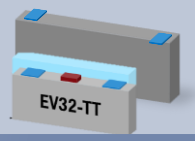
P2-PHEV
Up to 150 kW

Battery & battery cell

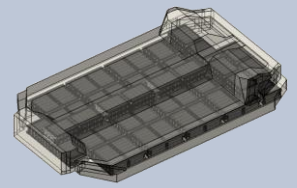




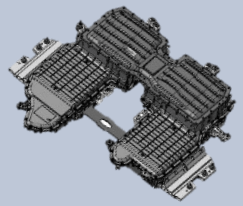
Upright battery



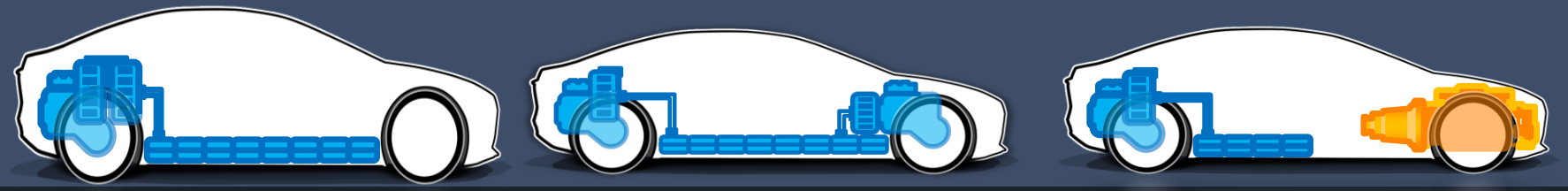
scalable



Flat battery



Vehicle architectures



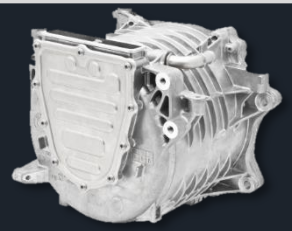
ROADMAP E-DRIVE TRAIN OF BMW GROUP. CREATING SYNERGIES.

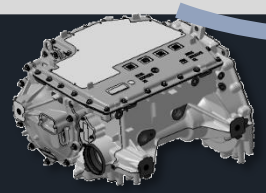
MOTORSPORT

2018

SERIES

2013 | 2015 | 2021 | 202x





INEXT

Series Model

Formula E

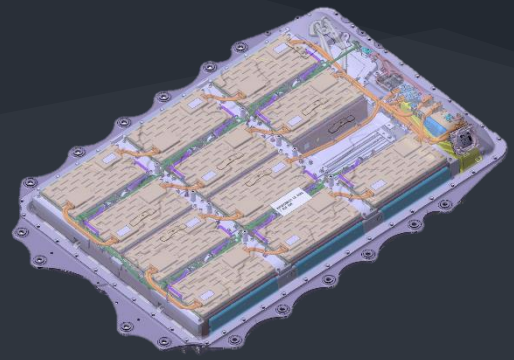
	2013	2015	2021	202x
Efficiency	η 97 %	η 97 %	η > 97 %	η 97%
Rare Earth	2.01 kg	1.09 kg	2.4 kg	0-? kg
Power Density	3.07 kW/kg	4.07 kW/kg	> 15 kW/kg	10 kW/kg
Compactness	23 kW/l	32 kW/l	> 63 kW/l	90 kW/l
			0 kg	
			η 97%	
			7.07 kW/kg	
			60 kW/l	

Note: Power density regarding active material e-machine

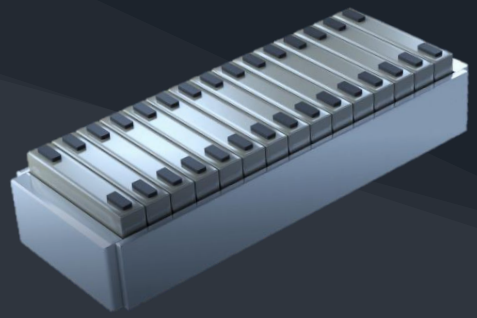
BMW IN-HOUSE DEVELOPMENT AND PRODUCTION OF BATTERY MODULES AND PACKS SINCE 2008. FULL COMPETENCE IN CELL DESIGN.

Development and Production In-house

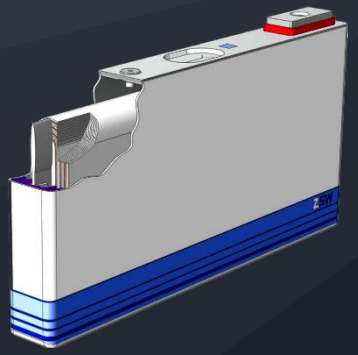
xEV Vehicles



Battery



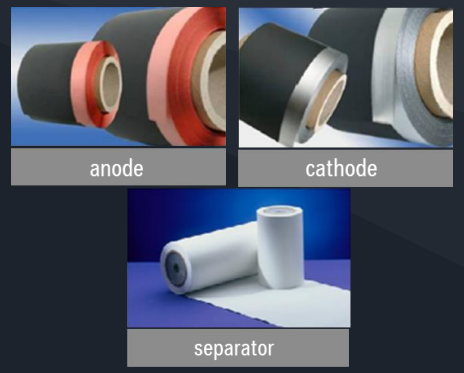
Battery subsystem/ Module



Battery cell

Jelly Roll (electrodes)

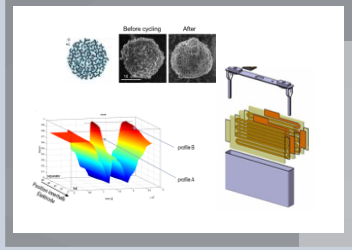
Full Specification and Design Competence



Subcomponents / Electrodes

BMW CONTINUOUSLY INCREASES CELL COMPETENCE TO ENHANCE THE LEVERAGE FOR REALIZATION OF CUSTOMER RELEVANT INNOVATIONS.

Research & Development



BMW Group Battery Cell Centre of Competence

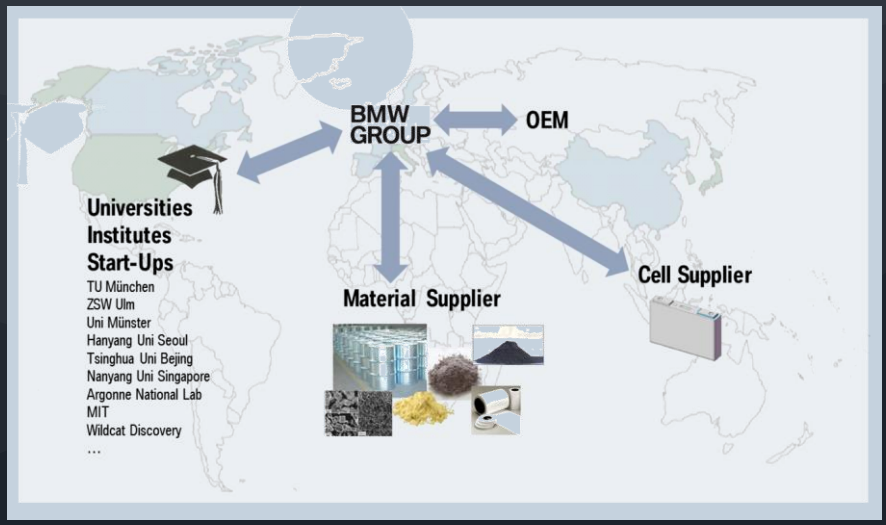
Opening July 2019

Materials & Analytics

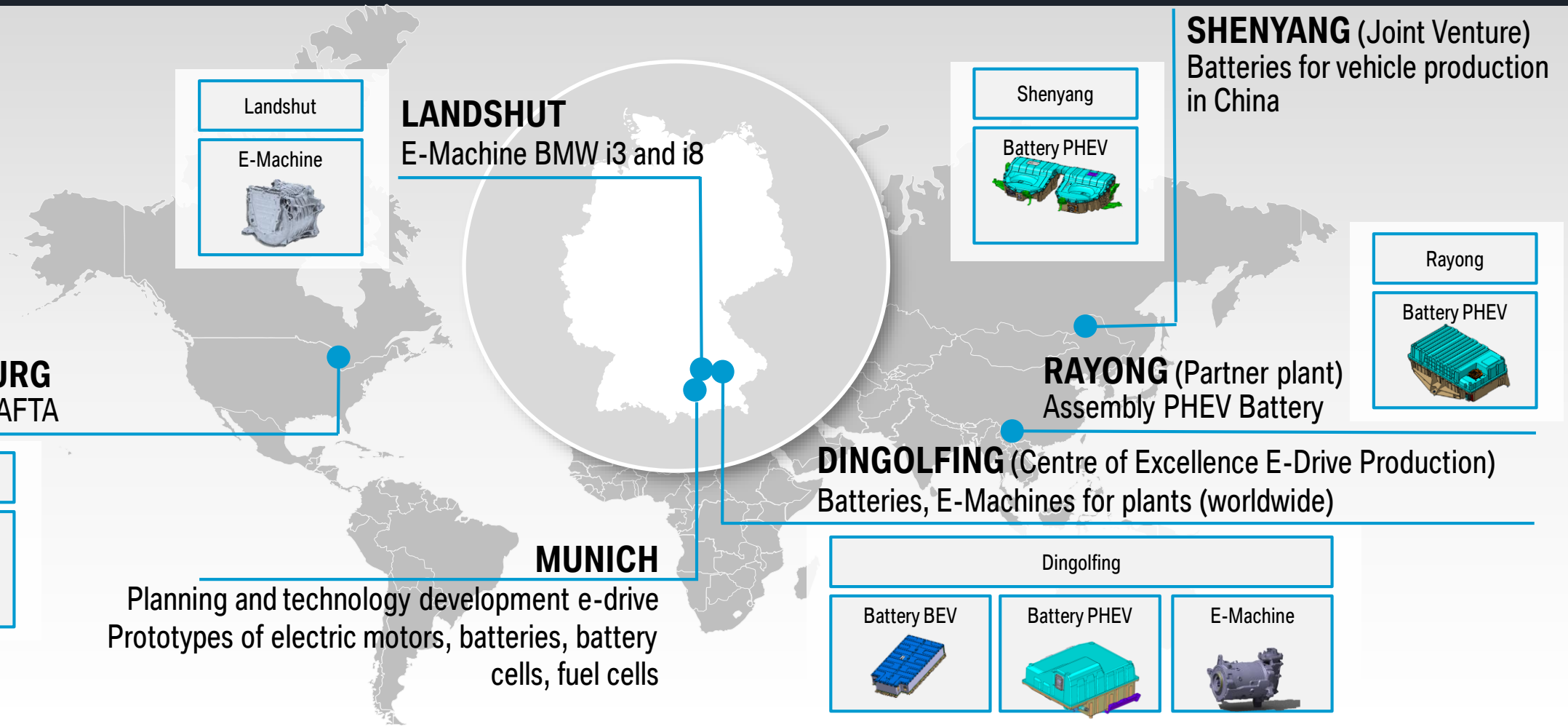
Securing Supply

Prototypes & Testing

… in combination with worldwide network



E-COMPONENTS PRODUCTION: PRODUCTION NETWORK ON THREE CONTINENTS WITH STRATEGIC EXPANSION.



BMW iFE.18.
TECH LAB FOR iNEXT.

- Maximum efficiency.
- Maximum performance.
- Lightweight design.
- Minimum package.
- Robustness in extreme conditions.
- Latest technologies and materials.
- Know-how transfer series and motorsport.

iNEXT


BROADWAY TICKETS
UP TO 50% OFF
IN 30 SECONDS
FINDING
NEVERLAND
EDDIE
GEORG
DOS CAMINOS
Reeses
HERSHEY'S
Julius Bär
MAGNA
28
Einhell
harman/kardon
Motorsport
HELLO SCIENCE. BYE FICTION.