



ePOWERTRAIN

Power you trust.



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Index

Introduction	4
Product Portfolio	12
ePropulsions	16
Energy Storage	26
Customer Service	36

ABOUT FPT

FPT is a Brand of Iveco Group, dedicated to the design, production, and sale of powertrains and solutions for on and off-road vehicles, as well as marine and power generation applications.

At FPT, sustainability is a common underlying commitment, through the entire product development and as a corporate approach.

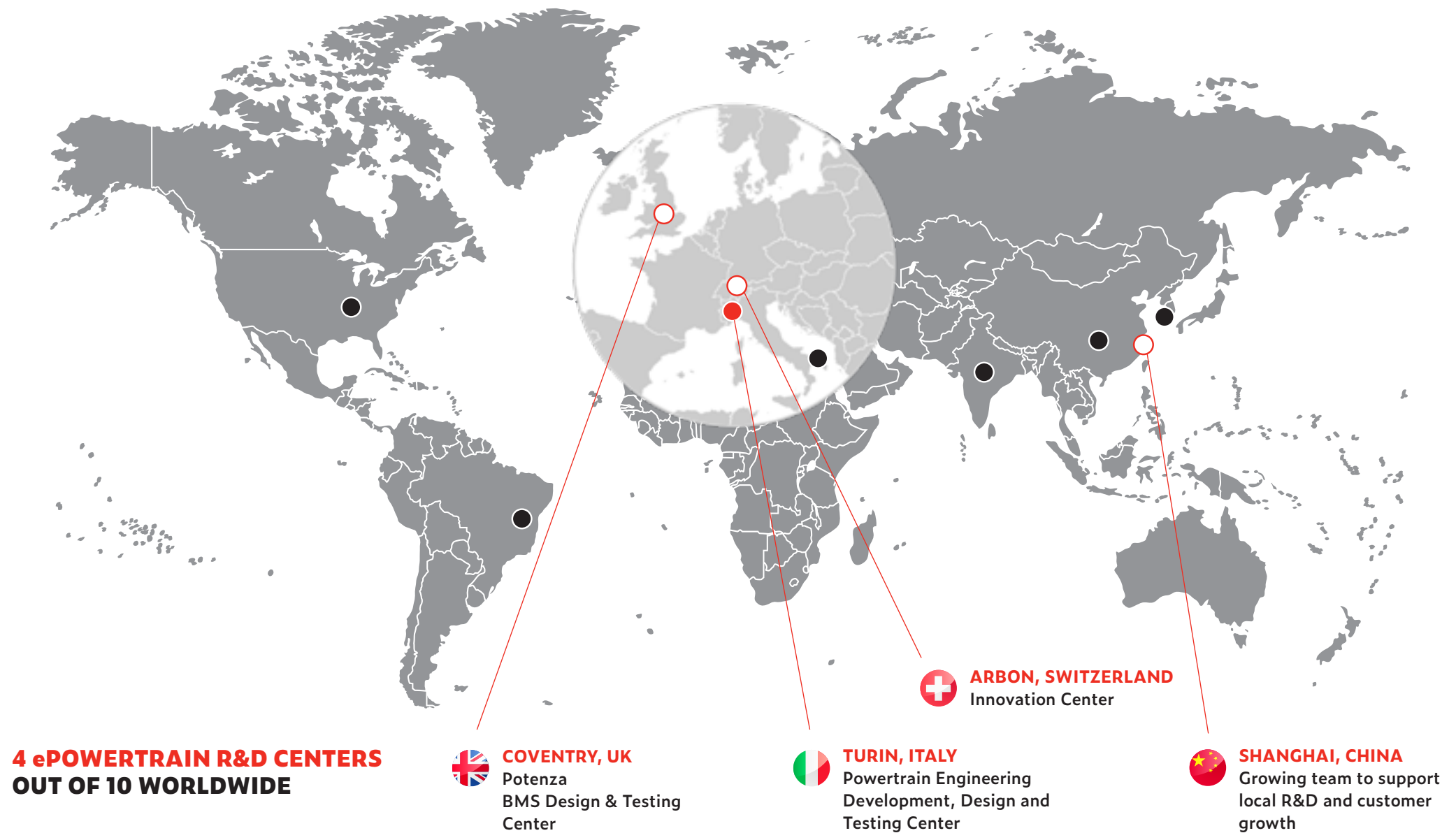
The extensive product offering includes six engine ranges with power outputs from 30 hp to over 1,000 hp, transmissions with torque up to 500 Nm and front and rear axles from 2.45 to 32 tonnes GAW (Gross Axle Weight).

FPT offers the most complete line-up of natural gas engines for on and off-road applications on the market, with power outputs ranging from 50 to 520 hp.

A dedicated ePowertrain division is accelerating the path towards net zero-emissions mobility with electric drivelines, battery packs and battery management systems. This extensive offering and its strong focus on R&D makes FPT a world leader in industrial powertrains and solutions.

We are proud to be a Company driven by sustainability and innovation, one which builds Customer advantage through continuous research and improvement and creates value by leveraging this advantage.

ePOWERTRAIN R&D FOOTPRINT

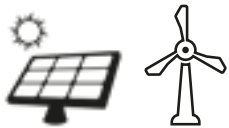


FPT

Turin ePowertrain Plant & Testing Center: 100% Electric and Zero CO₂ Emissions



Totally carbon-neutral plant, with more than 5 dedicated ePowertrain test benches, offsetting its CO₂ emissions by purchasing energy from renewable sources and through carbon credits.



Solar panels installed on the façade and **innovative technologies** such as the “mini-wind tower” and the “smart flower” **generate energy for plant activities.**



The Sustainability Garden: 6,000 square meters of internal space planted with 100 drought-resilient plants of native species **with great CO₂ absorption capacity.**



ePowertrain plant

More than 15,000 square meters dedicated to Electrification

The FPT ePowertrain plant features five production lines dedicated to the new ePropulsions products and Energy Storage.



Central Drive

Light Commercial Vehicles and Minibuses up to 8 tonnes GVW (Gross Vehicle Weight)



37 kWh Battery Pack

Light Commercial Vehicles, Minibuses and Marine Pleasure Applications



69 kWh Battery Pack

Bus and Coach Applications



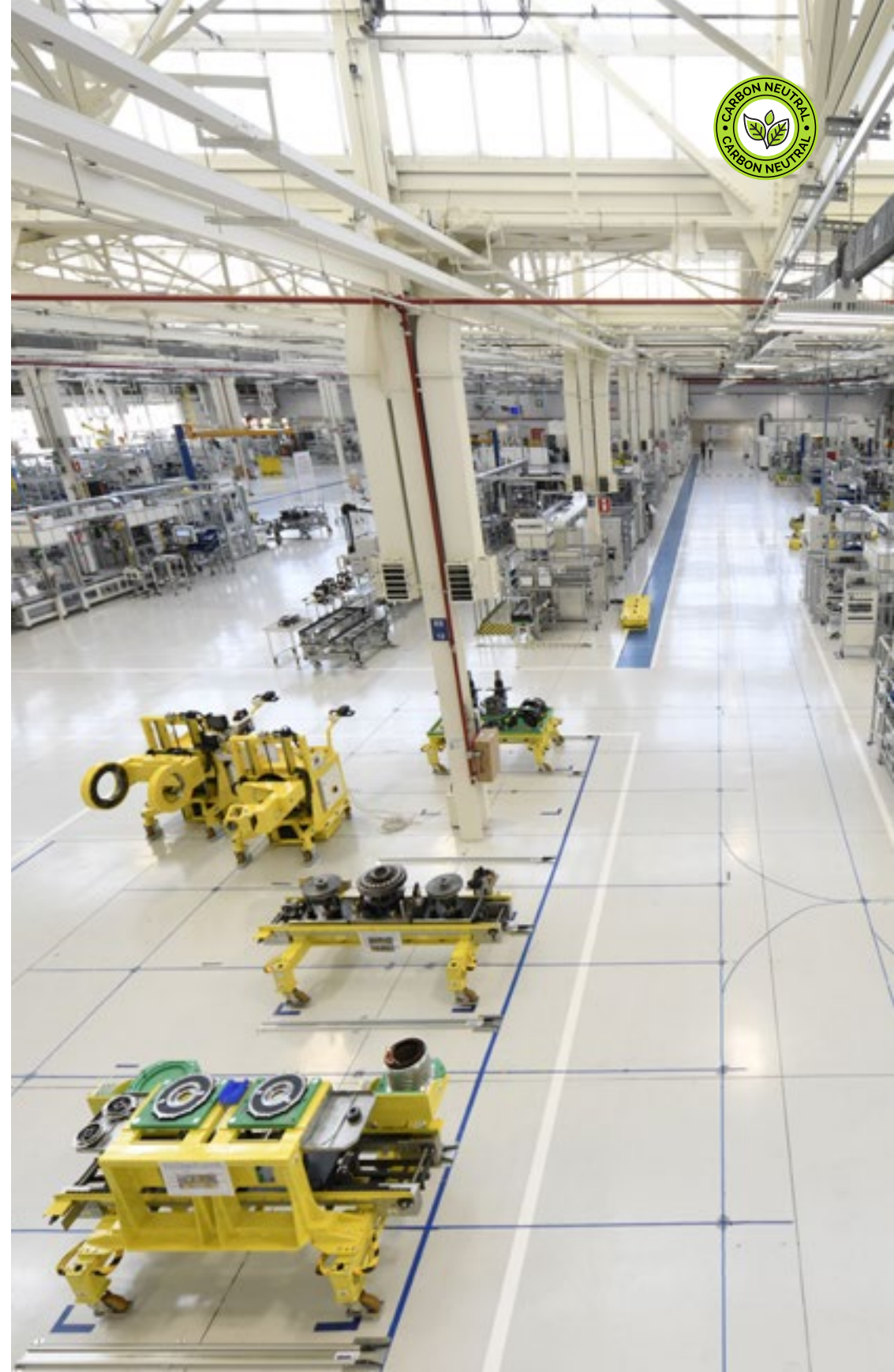
Rear eAxle

Heavy Commercial Vehicles up to 44 tonnes GVW



Front & Rear eAxles

High-Performance Passenger Cars



PRODUCT PORTFOLIO

FPT is responding to the crucial challenges of transport sustainability, energy transition and the reduction of CO₂ emissions with a complete range of innovative products.

Being a global leader means setting new targets that become more challenging every day. To reach these targets, we have drawn on our expertise along with the best innovative start-ups worldwide, through partnerships, acquisitions and joint ventures.

Now, we can proudly present the results, showcasing our full range of ePropulsions, Energy Storage and Battery Management System solutions.

In response to Customer needs, the objective of FPT is not only to supply individual system components but to serve as an ePowertrain system integrator, guiding its Customers through the process of selecting, designing and correctly sizing complete systems for battery and fuel cell electric vehicles.

eAXLES

eAX 300-F



eAX 600-R



eAX 375-R



eAX 840-R



CENTRAL DRIVE

eCD 140



ENERGY STORAGE

eBS 37
eBS 37 EVO

eBS 42

eBS 69
eBS 69 EVO

BATTERY MANAGEMENT SYSTEM

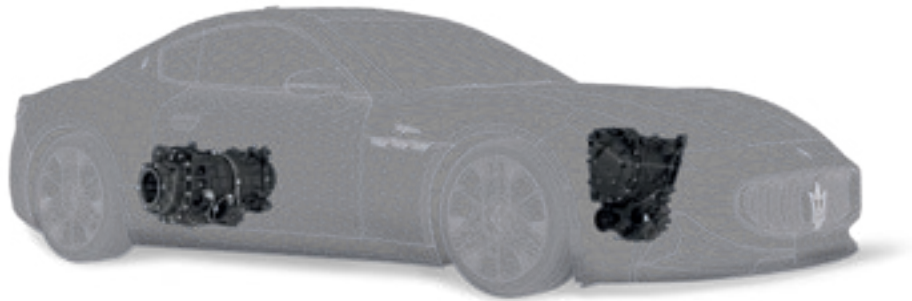
eBM 5



ePROPULSIONS

eAX 300-F

eAX 600-R



Complete, compact and fully integrated solutions for the highest levels of power density.

 *High-Performance Car*



>300 kW (Front) / >600 kW (Rear)

Performance

Top level power density thanks to a high-efficiency system.

Compact Design

Complete, compact and integrated design to optimize weight and installation space.

Tailor-made

Jointly developed by FPT and Maserati for the brand-new GranTurismo Folgore.

FPT and Maserati have worked closely together for the new Maserati GranTurismo Folgore, the first car in the Brand's history to adopt a 100% electric powertrain.

The jointly developed eAxles deliver top levels of power density (up to 4.83 kW/kg) and a high level of performance thanks to the torque vectoring system.

The eAX 300-F front electric axle boasts a peak power output of over 300 kW and maximum wheel torque of 3,100 Nm. It also incorporates a parking lock system for enhanced safety.

The eAX 600-R dual-motor rear electric axle features peak power of over 600 kW and maximum wheel torque of 6,500 Nm.

Both eAxles stand out as a complete solution in an extremely compact design. All components, including the inverters, are perfectly integrated into the eAxles. This offers significant benefits in terms of space and weight distribution.

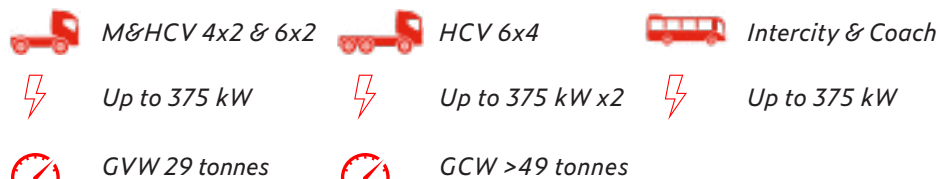
Specifications:

	eAX 300-F	eAX 600-R
Type:	Front Axle	Rear Axle
No. of eMotors:	1	2
Peak Power (kW):	>300	>600
Peak Wheel Torque (Nm):	3,100	6,500
DC Voltage (V):	Up to 800	Up to 800
System efficiency:	>85%	>85%
Weight (kg):	100	160
Power Density (kW/kg):	Up to 3.86	Up to 4.83
Gear – speeds:	1	1
Durability Be10 (km):	Up to 240,000	Up to 240,000

eAX 375-R



High-performance and efficient solution designed for Medium and Heavy-Duty Commercial Vehicles, Intercity and Coach applications.



Scalable solution:

Scalable and adaptable to meet various powertrain requirements.

Durability:

Extended service life (Be10) up to 1,600,000 km (depending on the customer and vehicle mission profile).

Braking torque:

Disc brake system with high braking torque performance.

The eAX 375-R is suitable for Medium and Heavy-Duty vehicles, Intercity and Coach applications.

Thanks to the multi-speed solution and a brand-new design, the eAX 375-R delivers high performance, outstanding efficiency and extended durability. The design, developed by FPT's engineering team, allows the electric axle to be scalable and extremely adaptable to meet the needs of different Customers.

Specifications (pilot phase):

Type:	Rear Axle
No. of eMotors:	1
Peak Power (kW):	375
Peak Wheel Torque (Nm):	30,000
DC Voltage (V):	800
GAW (tonnes):	up to 13
GVW GCW (tonnes):*	29 (medium) >49 (heavy)**
System efficiency:	>92%
Brake system:	DRUM/DISC
Weight (kg):	600 (without brakes and wheel ends)
Gear – speeds:	multiple
Durability Be10 (km):	up to 1,600,000**

* Gross Vehicle Weight | Gross Combined Weight

** Depending on the vehicle mission profile

eAX 840-R



Designed for the Heavy-Duty Commercial Vehicles market.



HCV 4x2 & 6x2



Up to 420 kW x2



GCW 44 tonnes

Performance:

High-performance, high-efficiency electric axle for Heavy-Duty Commercial Vehicles applications.

Integrated layout:

All the mechanical and electrical components are integrated into a lean axle structure, in order to maximize residual vehicle space following installation.

The eAX 840-R has the potential to make a significant impact on the global electric Heavy-Duty Commercial Vehicle market.

The eAX 840-R dual eMotor axle delivers robust performance, efficiency, reliability, and a low Total Cost of Ownership (TCO), making it the ideal solution for Heavy-Duty applications up to 44 tonnes worldwide. It boasts extended oil change intervals and a rated service lifetime of up to 1,200,000 km.

Specifications:

Type:	Rear Axle
No. of eMotors:	2
Peak Power (kW):	840
Peak Wheel Torque (Nm):	45,000
DC Voltage (V):	800
GAW (tonnes):	Up to 13
GCW (tonnes):	44
System efficiency:	Up to 94%
Brake system:	DISC
Weight (kg):	1,360
Gear – speeds:	1
Durability Be10 (km):	up to 1,200,000

eCD 140



Integrating an electric drive system into existing conventional vehicles.



LCV - Minibus



Up to 140 kW



GVW up to 8 tonnes

Durability:

Maximum durability (Be10) up to 350,000 km for GVW up to 8 tonnes.

Easy integration:

Matching with available rear axles into existing platforms.

High efficiency:

Overall system efficiency: >93%.

The FPT Central Drive eCD 140 for Light Commercial Vehicles and Minibuses is a compact and complete solution for easily integrating electric drive systems into existing conventional vehicles.

Born for rear-wheel drive applications, the eCD 140 is extremely durable, efficient and reliable (up to 350,000 km, with lifetime oil fill).

Specifications:

Type:	Central Drive
No. of eMotors:	1
Peak Power (kW):	up to 140
Peak Axle Torque (Nm):	1,600
DC Voltage (V):	400
GVW (tonnes):	up to 8
System efficiency:	>93%
Weight (kg):	117
Gear – speeds:	1
Gear ratio:	4
Durability Be10 (km):	up to 350,000

ENERGY STORAGE

eBS 37 and eBS 37 EVO



Battery Pack for zero-emission urban mobility.



LCV – Minibus



Marine Pleasure



37 kWh

Multipack solution:

High flexibility thanks to the multipack solution.

High energy density:

>140 Wh/kg to guarantee maximum performance and optimize weight and installation space.

Proprietary Battery Management System:

In-house HW & SW BMS designed to achieve long battery life according to mission requirements, certified for ASIL-C Functional Safety levels.

The 37 kWh FPT Battery Pack for Light Commercial Vehicles, Minibuses and Marine Pleasure applications, is a modular battery pack which incorporates cells and modules with Lithium-ion technology for impressive energy density and depth-of-discharge (95%), with advantages in terms of reduced battery weight.

The new eBS 37 EVO battery presents some substantial innovations: the integrated eBM 5 Battery Management System – designed and developed by FPT – and a new internal design which allows the battery to meet the highest safety standards ECE R100.3 and ECE R10.6. This technology enables efficient and responsible battery use, extending its lifespan.

The eBS 37 EVO battery system is a future-proof solution that already meets Battery Passport regulations, ensuring complete traceability and transparency for your fleet.

Specifications:

	eBS 37	eBS 37 EVO
Type:	Battery Pack	
Cell Technology:	Li-ion	
Cooling system:	Water-cooled	
Nominal energy (kWh):	37	
Energy density (Wh/kg):	>140	
C-rate (continuous):	1C (charge) 2C (discharge)	
Cathode technology:	NMC (Nickel, Manganese, Cobalt)	
Protection:	IP67 / IP6K9K	
Life cycles:	>2,500 *	
Weight (kg):	260	
Dimensions (LxWxH, mm):	925x854x310	
Regulation compliance:	ECE R100.2, ECE R10.5	ECE R100.3, ECE R10.6
BMS	FPT eBM 5	

* Depending on the vehicle mission profile

eBS 42



Battery Pack for zero-emission Off-Road applications.



Construction Equipment and Agricultural Applications



42 kWh

Multipack solution:
High flexibility thanks to multipack solution.

Fast charge / discharge:
High C-rate (continuous) for fast charging & discharging times.

High energy density:
To guarantee maximum performance and optimization in terms of weight and installation space.

Enhanced safety standards:
Specific safety features compliant with new regulations.

The eBS 42 for off-road applications is a 42 kWh modular battery pack, which incorporates Lithium-ion cells technology for impressive energy density and depth-of-discharge (95%), along with advantages in terms of reduced battery weight.

The eBS 42 also delivers quick charging times thanks to NMC technology, the most versatile and high-performance solution to date for Commercial Vehicle applications. Furthermore, this advanced, well-designed energy storage system guarantees high levels of energy density and outstanding stability.

Specifications:

Type:	HV Battery Pack
Cell Technology:	Li-ion
Cooling system:	Water-cooled
Nominal energy (kWh):	42
Energy density (Wh/kg):	>170
C-rate (continuous):	1C (charge) 2C (discharge)
Cathode technology:	NMC (Nickel, Manganese, Cobalt)
Protection:	IP68 / IP6K9K
Life cycles:	>4,000 at 80% DoD
Weight (kg):	250
Regulation compliance:	ECE R100.3, R10.6

eBS 69 and eBS 69 EVO



Battery Pack for zero-emission people transport.



Bus



69 kWh

Multipack solution:

High flexibility thanks to multipack solution.

Best-in-Class energy density:

To guarantee maximum performance and optimize weight and installation space.

Life Cycles:

>6,800 depending on the specific mission.

Warranty:

Up to 10 years warranty according to the mission profile.

eBS 69 and eBS 69 EVO, are 69 kWh modular battery packs, which incorporate cells and modules with NMC technology for Class leading energy density which offers highest performance for all Bus applications' needs.

Its customized Battery Management System incorporates specific safety and cyber-security features for Bus applications.

Furthermore, the eBS 69 Battery Pack has been specifically designed to fit perfectly on Bus applications.

Specifications:

	eBS 69	eBS 69 EVO
Type:	Battery Pack	Battery Pack
Cell Technology:	Li-ion	Li-ion
Cooling system:	Water-cooled	Water-cooled
Nominal energy (kWh):	69	69
Energy density (Wh/kg):	>178	>173
C-rate (continuous):	1C (charge) 1C (discharge)	1C (charge) 1.87 C (discharge)
Cathode technology:	NMC (Nickel, Manganese, Cobalt)	NMC (Nickel, Manganese, Cobalt)
Protection:	IP67/IP6K9K	IP67/IP6K9K
Life cycles:	>6,500*	>6,800*
Weight (kg):	389	400
Regulation compliance:	ECE R100.2, ECE R10.6	ECE R100.4, ECE R10.6

* Depending on the vehicle mission profile

eBM 5



BMS
Battery Management System



CMC-36
Cell Monitor Circuit

Cutting-edge Battery Management System.

- Flexibility:**
Highly Flexible, designed according to Customer and mission needs.
- Battery optimization:**
Improves battery capacity and life thanks to control balance of modules and cells.
- Enhanced safety and performance:**
Advanced BMS algorithms.

The FPT eBM 5 Battery Management System is a cutting-edge solution, designed to meet the needs of the most demanding Customers. eBM 5 enhances safety, accuracy and performance.

Thanks to its advanced algorithms, the eBM 5 ensures battery protection, improving its capacity and life and through the balancing control of cells and modules it optimizes the driving range.

eBM 5 also meets ASIL C integrity in accordance with ISO26262 – already certified and Cyber Security.

Specifications:

High Voltage range (V):	400 and 800V system compatible
Low Voltage range (V):	6 to 32
Isolation Fault Measurement (MΩ):	1 to 10
Operating Temperature (°C):	-40° to +85°
Safety measurements:	ISO26262 (ASIL C) Isolation test, HVIL & HV Cyber Security
Software – multipack support:	1-9 packs in parallel
Cell balancing:	Passive
SOx Algorithms:	SOC, SOH & SOP



YOU ASK FOR THE BEST. WE MAKE IT HAPPEN.

When the market becomes increasingly challenging, it is essential to have reliable partners.

We work closely with our Customers to provide tailor-made solutions, maximizing performance and durability. We are committed to doing everything possible to support you and your business.



MyFPT by Customer Service

Electrification is the new industrial challenge both for the development phase and the assistance stage.

This is the reason why we created a dedicated ePowertrain Customer Service Team to guarantee the best vehicle uptime.

Training, monitoring and repairing are our drivers.

Together with the Customer, we define the assistance market strategy. Our Control Rooms is already active on ePowertrain products, monitoring the status of the propulsive system and conducting constant data analysis to prevent vehicle downtime.

We work with each Customer to define a customized assistance package and a complete plan for their product. Our proactive system and constant remote monitoring help to minimize downtime and save you valuable time.

For more tailored needs, we offer on-site field assistance through our dedicated technical team and expert Flying Doctors, providing direct in-field support to ensure prompt intervention.

Sustainability remains a driver for FPT Customer Service through our 5R approach (Refuse, Reuse, Reduce, Repair and Recycle).



You need help? We are here for you.

Because you never stop, neither do we.

Our Customer Contact Centre is active 24/7, to assist you and to activate our local support network.

For any issue or need, our technical and expert support service is ready to help you anytime, anywhere.

If you need technical support or assistance on-site, you can always rely on more than 70 dealers global network and over 900 Service points.

Contact us for any inquiries:





All the pictures, drawings illustrations and descriptions contained in this brochure are based on product information available to FPT at the time of printing (31/10/2023). Some of the engine line-ups may refer to a specific market configuration which may not be present or offered for sale available in all other markets. The colours featured in this brochure may differ from the original colours. FPT reserves the right to introduce any modifications, at any time and without any advance notice, to design, material, components equipment and/or technical specifications.

NOTES

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Contact us

