



/ LOCOMOTIVE SOLUTIONS



AC PROPULSION SOLUTIONS FOR LOCOMOTIVES

**TRUST
IN MOTION**



TRANSPORT SYSTEMS
TRAINS
BUSES
SIGNALLING
COMPONENTS
SERVICES

Your Way
to Future Mobility

CAF is one of the international leaders in the design and supply of comprehensive transport systems.

A benchmark in sustainable transport sector, the company offers a wide range of products and services, including the supply of trains, propulsion & wheelset solutions, buses, signalling systems, services and comprehensive turnkey transport solutions.

CAF is a long standing International company that has been in business for over 100 years and currently employs 15,000 people across the globe.

Our industrial footprint currently encompasses the USA, Brazil, Mexico, Spain, France and United Kingdom. We offer a large array of railway and transit technologies such as Lithium-Ion propulsion batteries, Silicon Carbide and IGBT inverters, Hydrogen fuel cells and many more.



TRUST IN MOTION



AC PROPULSION SOLUTIONS FOR LOCOMOTIVES

Our background within the CAF Group, one of the largest rail vehicle manufacturers with more than 100 years of experience, allows us to offer the precise integration of our components in a one-stop shop.

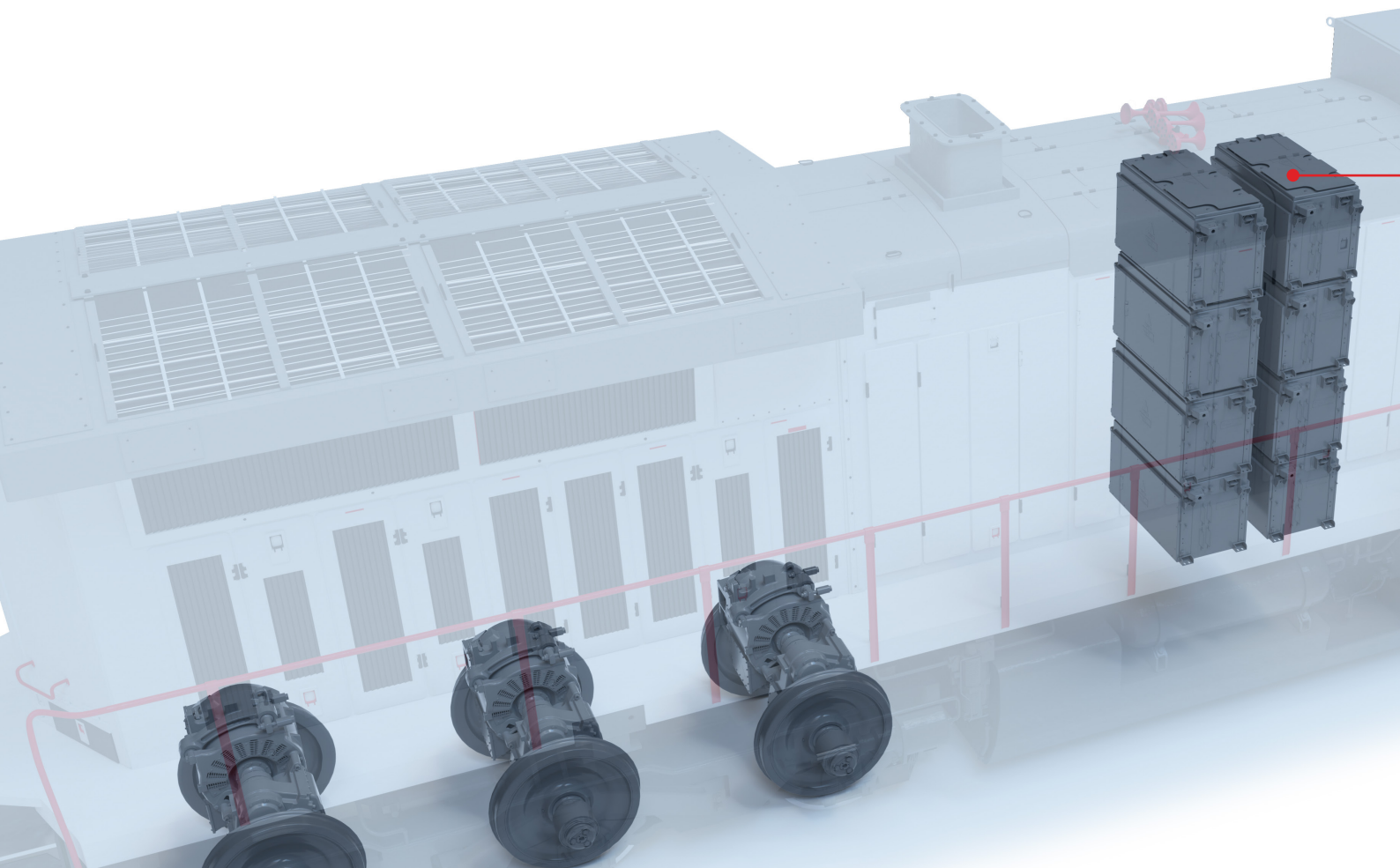
Our modular systems allow us to provide industry specific propulsion solutions, that guarantee the upmost reliability, efficiency and safety.

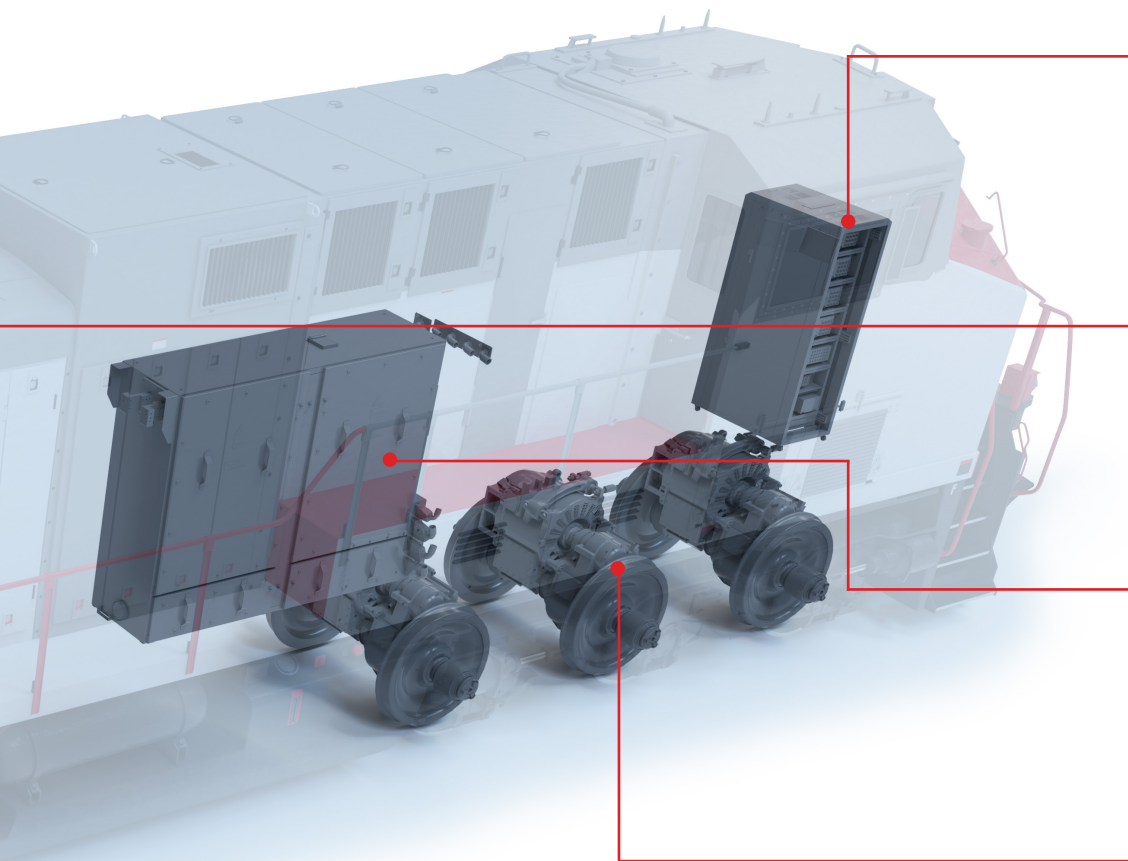
**INCREASE
PULLING
CAPACITY**

**INCREASE
RELIABILITY**

**REDUCE
LIFE CYCLE
COST**

**REDUCE
EMISSIONS**





**CONTROL SYSTEMS
AND DIGITAL
SOLUTIONS**

**LITHIUM-ION
PROPULSION
BATTERY
SOLUTIONS**

**INVERTER/
CONVERTER
SOLUTIONS**

**AC TRACTION
MOTOR
COMBOS**





AC PROPULSION SOLUTIONS FOR MODERNIZATIONS AND NEW LOCOMOTIVES

CAF Locomotive Solutions provides modern Silicon Carbide (SiC) and IGBT-based compatible Traction Systems developed using in-house technology and modular based design that ensures the maximum fleet interchangeability.

These systems are available for a wide range of locomotives and can be applied to both DC and AC configured locomotives. CAF Locomotive Solutions offers a wide array of tailor fit solutions based on your fleet requirements.



KEY TECHNOLOGIES

- / **AC TM Combo with zero pinion and oil leakage failures.** CAF's advanced proprietary technology prevents from pinion breakage and oil leakage
- / **IGBT or SiC-based Inverter Cabinet** featuring Axle Control and upmost efficiency





BENEFITS

SINGLE TM COMBO SOLUTION

- / Valid for different truck models

TOTAL FLEXIBILITY

- / Compatible with any energy source (diesel, natural gas, batteries,...)

INCREASE PULLING CAPACITY

- / Starting Tractive Effort +20/+45%

INCREASE RELIABILITY

- / No brushes and commutators

REDUCE MAINTENANCE COSTS

- / No brushes, brush springs, commutators or field coils
- / Just mainly pay attention to bearings (regrease and replace)

REDUCE FUEL CONSUMPTION AND CARBON FOOTPRINT

- / More efficient traction chain. Carrying more cars with same number of locomotives is also more efficient



**Say goodbye
to pinion and
leakage failures.
Say hello to
reliability**

LITHIUM-ION PROPULSION BATTERIES

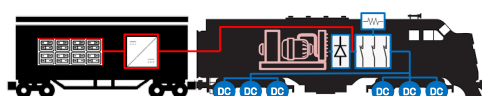
Our experience in lithium ion propulsion batteries allows us to provide customized solutions based on the specific requirement of our customers.

CAF has more than 18 years of experience in the in the propulsion battery market and developed some of the first and largest battery powered trains in existence. CAF is able to integrate batteries into a wide plethora of locomotives, tender cars, and mother slug units.

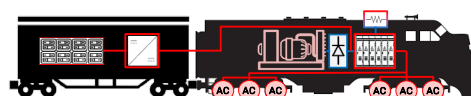


KEY TECHNOLOGIES

- High power and durability batteries: LTO
- High density batteries: LFP



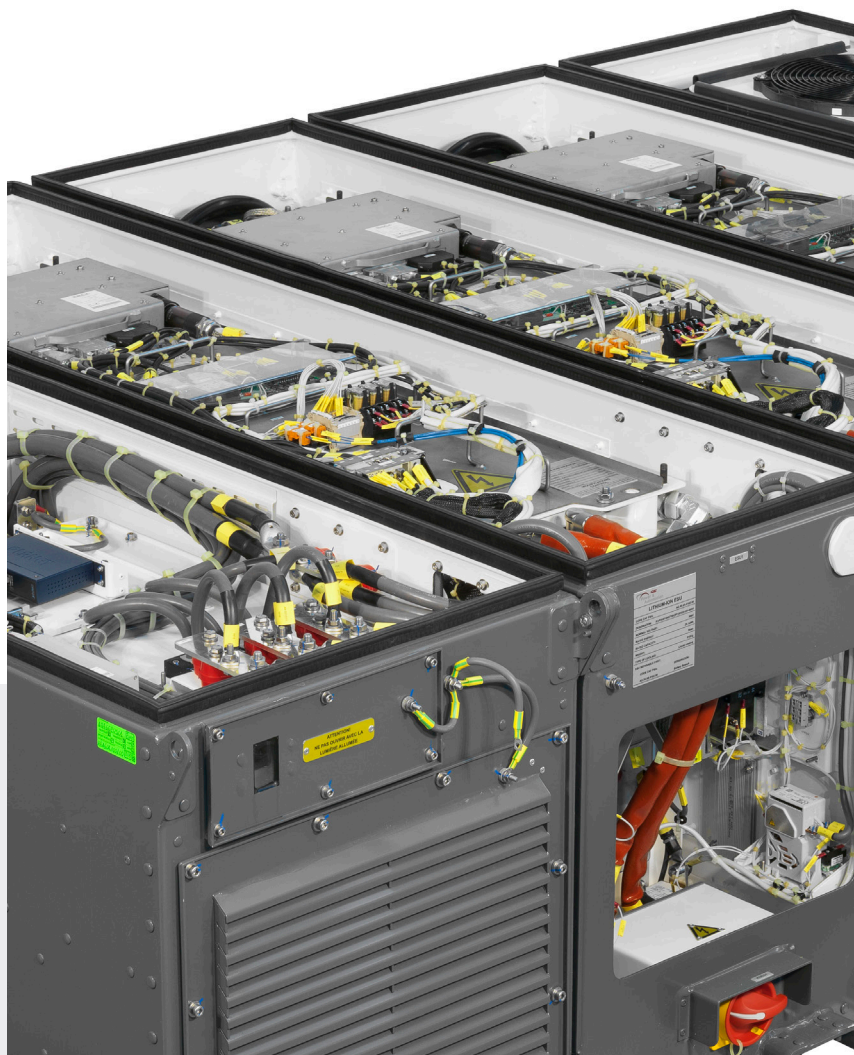
BATTERY TENDER CAR - DC



BATTERY TENDER CAR - AC



BATTERY LOCOMOTIVE



BENEFITS

REDUCES ENERGY BILL AND CARBON FOOTPRINT

- / Braking energy shall be recovered by the batteries
- / Engine shall work longer time in most efficient conditions
- / Start-stop shall be much more efficient

ALLOWS FOR SILENT CLEAN OPERATION

- / Zero emissions operation that removes noise and pollution in urban and critical areas

INCREASE AVAILABILITY

- / Battery can be used to move the locomotive when engine is down

EXTRA POWER

- / Increase vehicle performances supporting the diesel generator

ALL THE ADVANTAGES OF A DC2AC CONVERSION

- / Improved pulling capacity, reliability, maintenance costs and fuel efficiency

LOCOMOTIVE SOLUTIONS PROJECTS ACROSS THE GLOBE

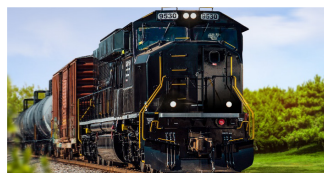
With a successful track record of delivering projects worldwide, we take pride in our ability to provide tailored solutions for a variety of locomotive needs. From freight and passenger locomotives to shunting operations, we have applied the best technological solutions to meet diverse requirements.

At CAF Locomotive Solutions, customer satisfaction is our top priority. Our customers stand as a testament to our commitment to excellence. We strive to deliver beyond expectations, ensuring that every project is a resounding success.



WAG-9 / WAG-7 / WAP-5

INDIA
MAINLINE
AC 25kV – 5MW (6,500HP)



SD70M / SD70MAC

USA
MAINLINE
DIESEL ELECTRIC – 3.3MW (4,400HP)



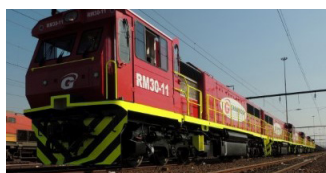
FS-402.A

ITALY
MAINLINE
DC 3kV & 1.5kV – 6MW (8,000HP)



DASH 9

USA
MAINLINE
DIESEL ELECTRIC – 3.3 MW (4,400HP)



GL-36-SCC AC

AFRICA (SOUTH AFRICA)
MAINLINE
DIESEL ELECTRIC – 2.6MW (3,000HP)



DE-18

GERMANY
SHUNTER
DIESEL ELECTRIC – 1.8 MW (2,400 HP)



CFCO

AFRICA (CONGO)
SHUNTER
DIESEL ELECTRIC – 900kW (1,200HP)



CPG2

AFRICA (TUNISIA)
SHUNTER
DIESEL ELECTRIC – 560kW (750HP)

SERVICE AND WARRANTY SUPPORT

Our products are designed for a service life of 30 years, above market standards.

Industrial and Service Footprint in USA, Mexico, Brazil and Europe. Service Support Facilities in Canada, Australia, South Africa, and 40 more countries.

Flexible models to support our clients in service and spare availability.



LEASING AND FINANCIAL SUPPORT

At CAF we provide tailored financing solutions for your locomotive requirements. From leasing options to customized packages, we ensure you get the technology you need without compromising your finances.

Contact us today to explore how we can support your locomotive operations and upgrades.





**CAF LOCOMOTIVE
SOLUTIONS,**
THE TECHNOLOGICAL
PARTNER FOR YOUR FLEET



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🌐 [/caf-locomotive-solutions](https://www.caf.net)

🌐 www.caf.net

SCAN TO VISIT
OUR CHANNEL

