Business profile in European market

Mitsubishi Electric Europe
Transportation Systems

Jun. 2025

Mitsubishi Electric Europe (MEU)

Mitsubishi Electric Europe Corporate Office (Uxbridge, UK)

President & CEO	Kazuhiko Tamura
Established	June, 1996
Net sales	EUR 4,113.5M
Paid-in capital	EUR 100.6M
Total assets	EUR 2,477.0M
Employees	3,827

* As of March 2025

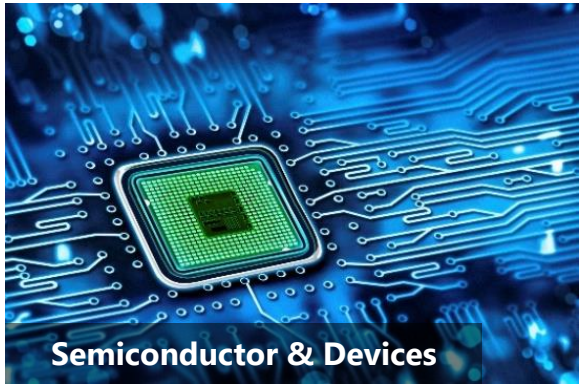
Mitsubishi Electric Europe B.V. (MEU) operates on the corporate principle of contributing to creating a vibrant and affluent society by enhancing its technologies, services, and creative powers, as a leader in the manufacture and sales of electric and electronic equipment used in Energy and Electric Systems, Industrial Automation, Information and Communication Systems, Electronic Devices, and Home Appliances.

Mitsubishi Electric Europe: products & services lineup

- RAC (Room Air Conditioner)
- PAC (Packaged Air Conditioner)
- VRF (Virtual Routing and Forwarding)
- Ventilation
- Air To Water (Heat Pump Boiler)
- Chiller

- Starter Motor
- Alternator
- Engine Control Unit
- Car Navigation System
- xEV (Integrated Starter Generator)
- ADAS (DMS, HD-L)

- Controller (PLC, CNC)
- Drive Product (Servo, Inverter)
- Visualization (HMI, SCADA)
- LVS (Low Voltage Switchgear)
- Mechatronics (Robot, LPM, EDM)
- UPS/ CIS (Contact Image Sensor)



- Power Device (IGBT Module, IPM)
- High Frequency Module
- Optical Module

- Lift
- Escalator
- Modernization

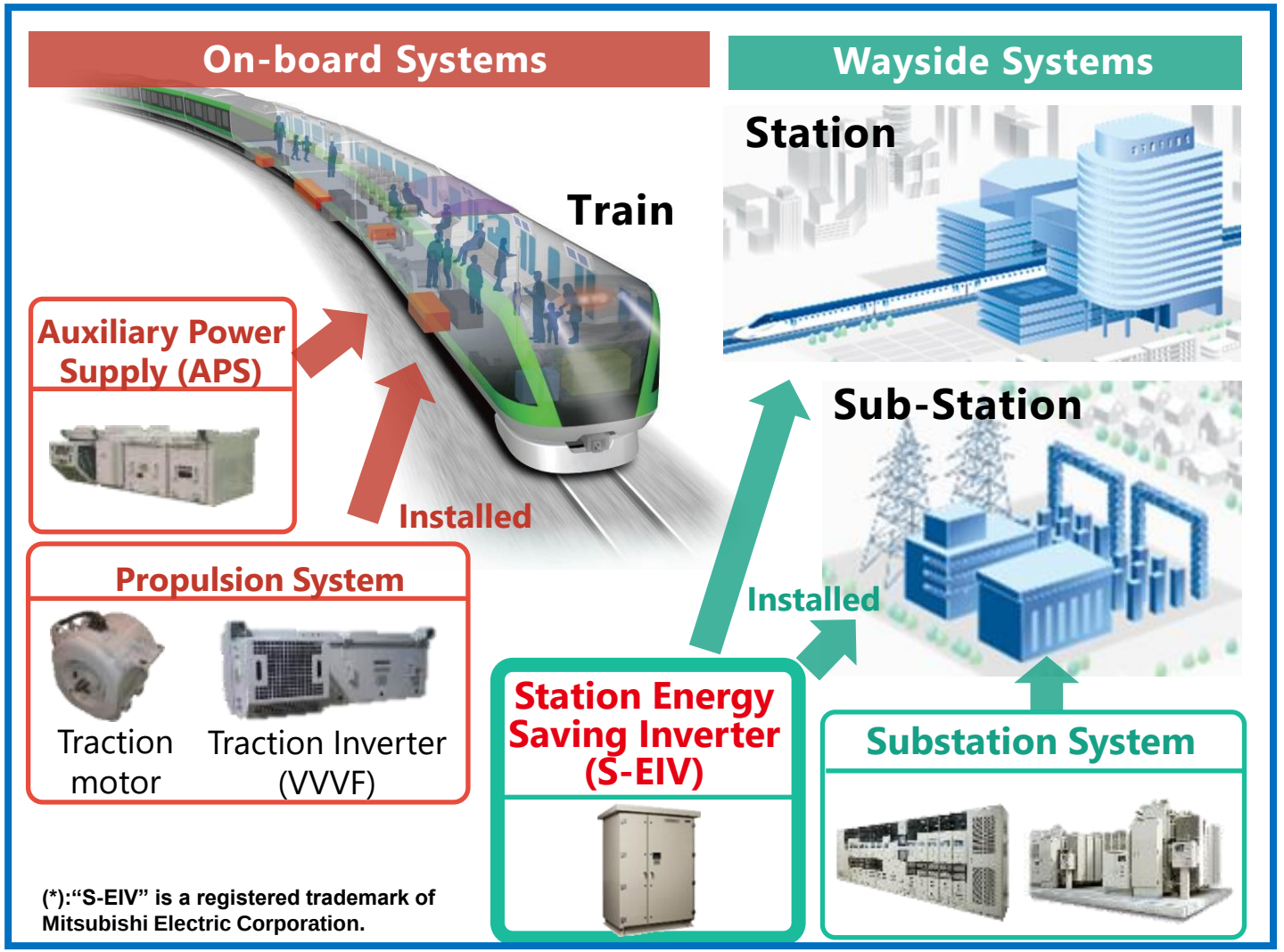
- Transmission & Distribution
- STATCOM (STATic Synchronous COMpensator)
- HVDC (High-Voltage Direct Current)

- Traction systems (TM, INV, CI)
- Main Transformer
- APS
- HVAC (for railway application)
- TCMS

- Defense System
- High Precision Positioning System
- Mobile Mapping System

Transportation Systems Business

Mitsubishi Electric Corporation is on-board and wayside system integrator and manufactures. We are trying to build a better railway system.



Global supply record reference (incl. order backlog)

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Total: Over 67,200cars for 37 Countries & Regions

As of March 2025

Supply record to Bulgaria

Project	Qty	Delivered Products	Manufacturer
Sofia Metro	114 cars	APS	MEDCOM
Sofia Tram	63 cars	Traction Inverter, APS	MEDCOM

<Sofia Metro>

APS

Traction Inverter

Regenerative Energy Management Solutions in Railways for SUMP-Sustainable Urban Mobility Plan

Transportation Systems

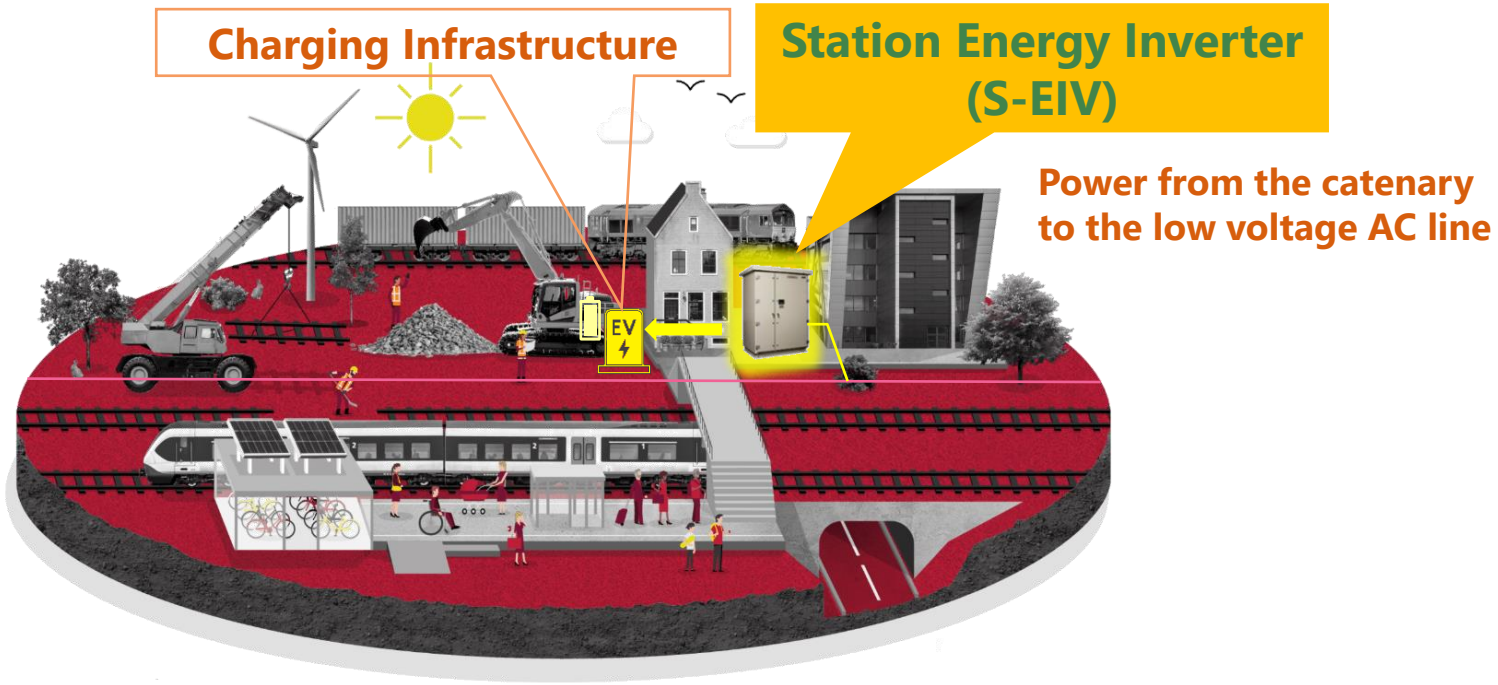
Benefits we gain

1 Reduction of investment in the power distribution

- ✓ No need to strengthen the power grid
- ✓ Increasing on-ground facilities capacity

2 Reduction of CO_2 emissions

- ✓ Replacement oil appliance with electric vehicles
- ✓ Effective use of regenerative power



"Innovation collaboration" confirms feasibility of electrification by S-EIV.

"МЕТРОПОЛИТЕН" ЕАД

Adding Value to the Railroad

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Expansion of energy solutions

About S-EIV (1/3)

S-EIV Use Case

S-EIV is suitable for the use two cases.

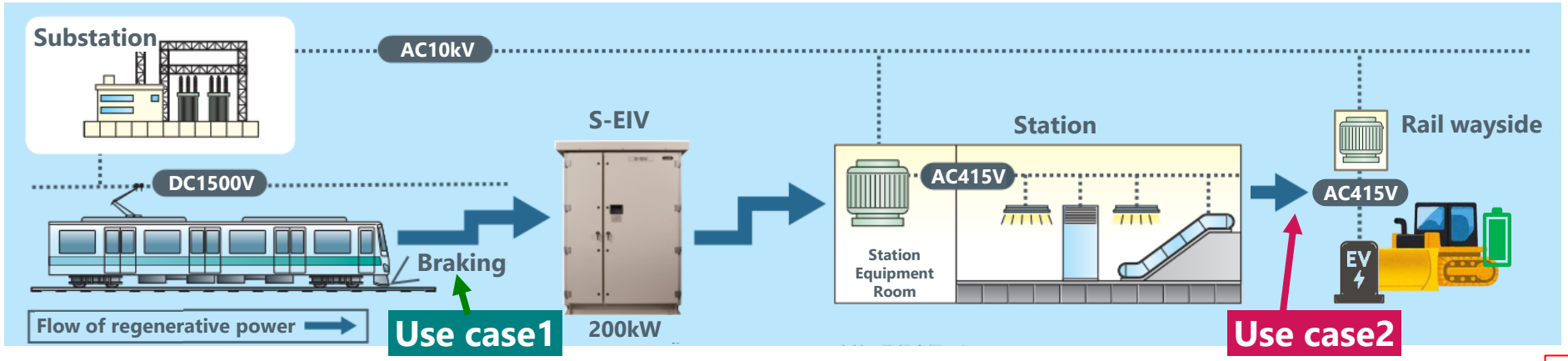
S-EIV supply power from overhead line to low voltage AC line.

Use case1 Energy Saving

- ✓ The surplus regenerative energy generated when a train brakes is supplied to the electrical equipment in the station building.
- ✓ The energy can be effectively used for station lighting, air conditioning, elevators, etc.

Use case2 Increasing on-ground facilities capacity without strengthening distribution grid

- ✓ S-EIV can supply continuous power from sub-station to on-ground facilities via DC1500V overhead line.
- ✓ **Increasing capacity** of on-ground facilities or **adding new equipment** such as EV charger without changing or adding high voltage AC line and transformers.



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Features of S-EIV

Reliable and stable operations

- Mote than 10 years operation record (since 2014 for Tokyo Metro)
- In total 48 units has been supplied

IP54 sealing rating

- Allowing indoor and outdoor installation
- Integrated in cubicle structure

  [Size] H:2180×D:1169×W:1680mm
  [Weight] Approx. 2000kg

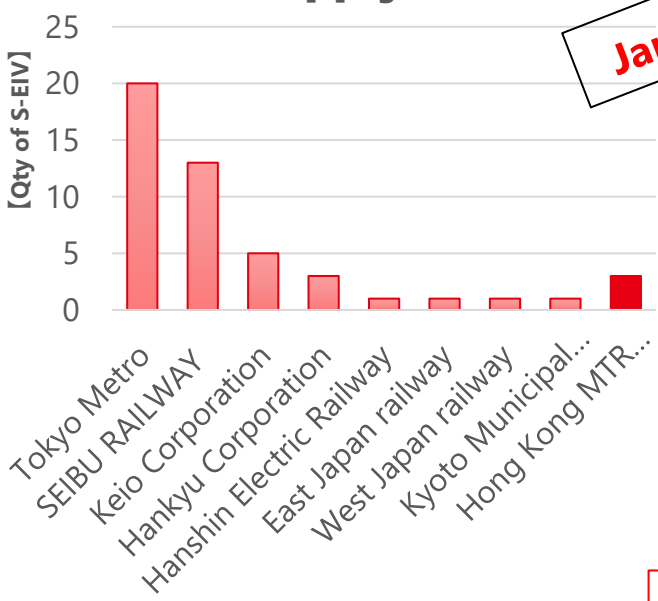
Latest power electronics technology

- SiC(silicon carbide) Modules are used
- Reduce the losses, achieved compactness
- Can be installed in limited space

S-EIV installed example (at the end of a station platform)

S-EIV Supply Record

Japan Made



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Energy saving effects

**S-EIV has been installed in Hong-Kong since 2021.
The introduction of S-EIV has shown positive results in terms of its effectiveness.**

<Source: Sustainable Report from MTR>

MTR

Description of Investment	Installation of Station Energy Saving Inverter (S-EIV) at Hong Kong University Station (HKU) and Lai King Traction Substation (LKT). The S-EIV converts the regenerative energy produced by the train braking system into 415V low-voltage alternative current electricity that can be consumed by the station facilities, thereby increasing the utilization of regenerative energy and reducing external electricity consumption. At Hong Kong University Station, the installation of the S-EIV also helps to decelerate trains more effectively and improve stopping accuracy at the West Island Line stations.
Beneficial Environmental Impact Estimate	Annual savings estimated in HKU station: 170MWh — By 1 S-EIV Annual savings estimated in LKT substation: 409MWh — By 2 S-EIVs Total electricity saved per annum: 579MWh
Equivalent Carbon Offset (GHG Emission Avoided in tonnes CO_2e)	**310 tonnes of CO_2 equivalent** based on the average CO_2e emission factors of 0.535kgCO_2e/kWh for CLP[1] and HK Electric[2] at total investment amount. **270 tonnes of CO_2 equivalent** based on the average CO_2e emission factors of 0.535kgCO_2e/kWh for CLP[1] and HK Electric[2] at investment amount funded by sustainable finance.
Carbon Offset per Million Investment (HK$)	**37.26 tonnes**

Benefits from S-EIV in 2 stations by 3 S-EIVs :

579 MWh /year

115,800 EUR /year(*)

310 tonnes of Co2-equivalent /year

***200.00 EUR/MWh**

We are developing a next generation model, and this presentation is based on it.

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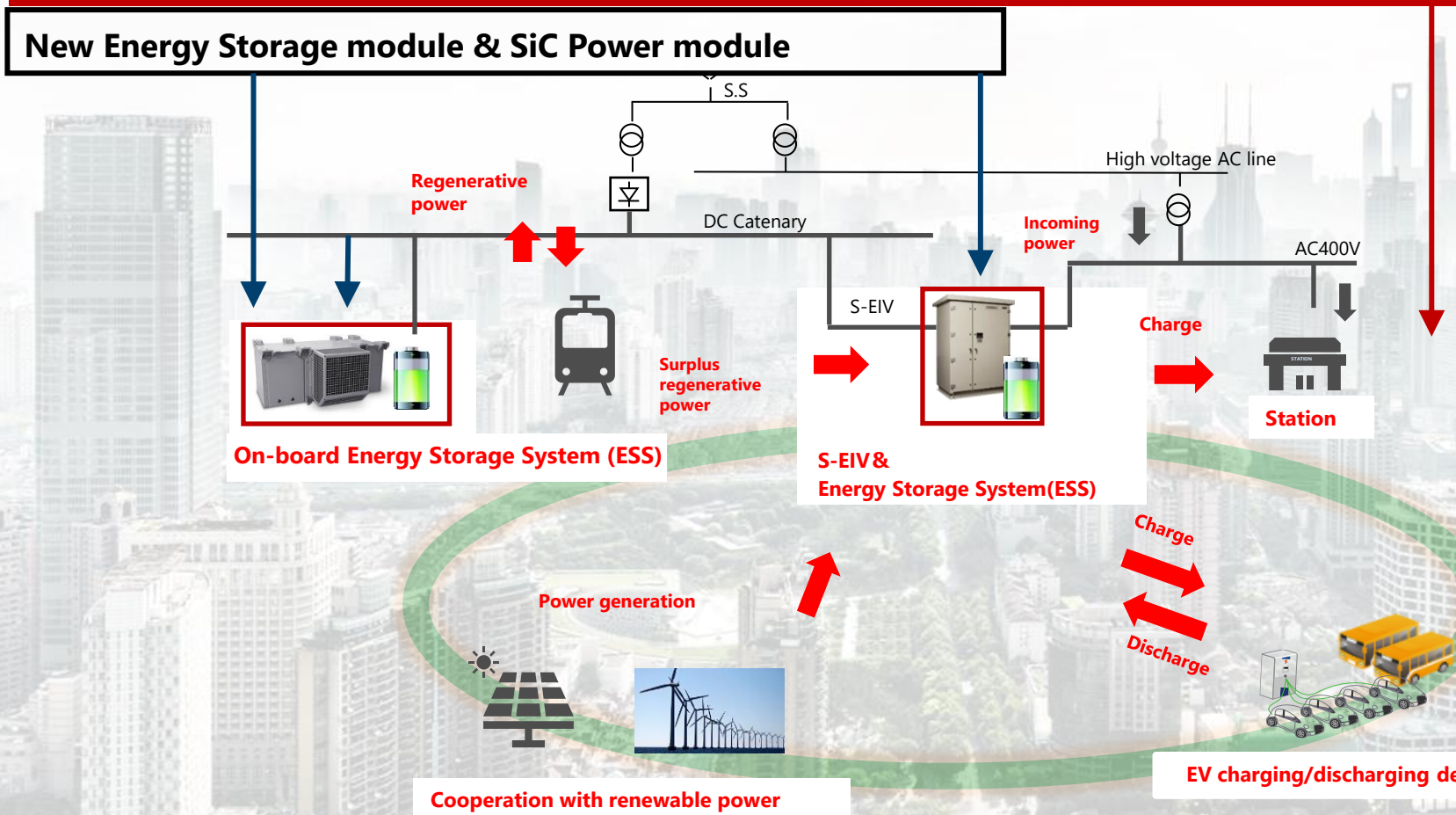
Furtherer saving and utilizing regenerative power Local EMS solution

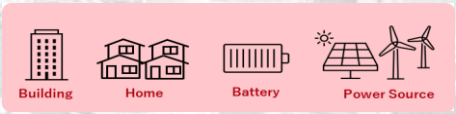
Managing and operating the power balance of S-EIV & power storage devices, renewable power generation, and EV charging/discharging equipment to streamline power operation

Energy Management System

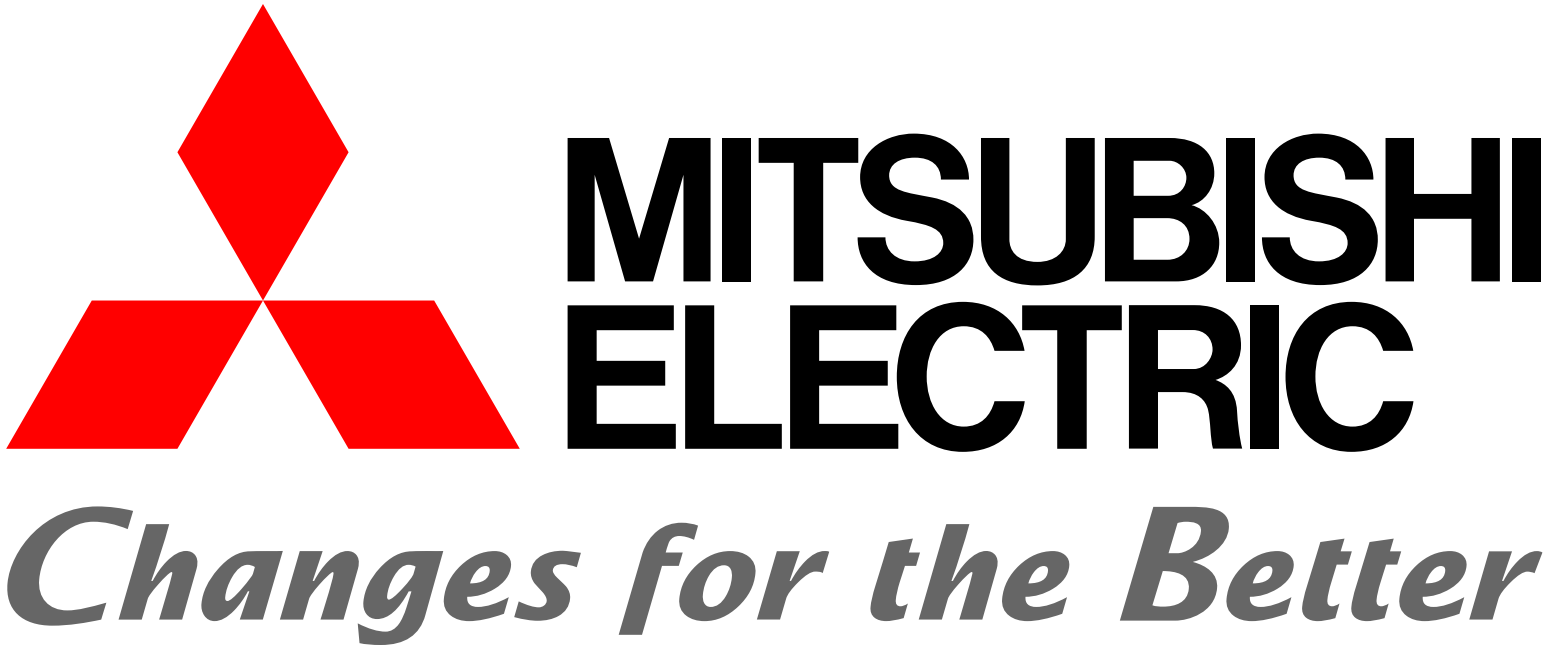
New Energy Storage module & SiC Power module



Visualize, Manage, Predict and Plan



Regional Micro Grid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