mtu EnergyPack QX

POWER UP EFFICIENCY, REDUCE COSTS AND BUILD RESILIENCE

Energy storage solutions for commercial and industrial applications

A Rolls-Royce solution

ROLLS-ROYCE, YOUR STRONG AND RELIABLE PARTNER FOR C&I PROJECTS

At Rolls-Royce, we provide world-class power generation and energy storage solutions, including life-cycle services under our product and solution brand ***mtu***.

Through digitalization and electrification, we strive to develop climate-neutral drive and power generation solutions that are even cleaner and smarter, providing answers to the challenges posed by climate change and the rapidly growing societal demands for energy and mobility.

Our comprehensive portfolio includes diesel and gas generator sets, combined heat and power (CHP) systems, energy storage solutions, and advanced microgrid automation and control. These technologies enable independent and decentralized energy supply, ensuring a stable and resilient energy infrastructure.

As a global leader in mission-critical applications, we provide highly complex, integrated power systems that meet the toughest performance and safety standards. Our solutions power hospitals, data centers, and industrial facilities, ensuring uncompromising reliability where it matters most.

The increasing integration of renewable energy sources (RES), electrification, and advancements in energy storage are driving a transformation in the energy landscape. Our systems contribute to this transition by ensuring grid stability and energy security.

With over 115 years of expertise and a proven track record in gigawatt-scale power installations, our customers know they can rely on us. We are committed to delivering sustainable, intelligent, and resilient power systems—ensuring reliable and efficient energy today and into the future.

World-class technology company
with over 115 years of history, 41,000+ employees and more than £17 bn in revenue in 2024

Proven track record of executing mulit-MWh
BESS projects and GW-scale power plant installations

Global leader in mission-critical applications
delivering integrated solutions that meet the toughest requirements and highest complexity

Global service network
of more than 1,200 partners with 24/7 customer access

OPTIMIZER. ENABLER. INTEGRATOR.

Storage creates opportunities.

Energy storage is transforming the way businesses manage power – enabling more efficient production, improved grid stability, and greater energy availability.

The ***mtu*** EnergyPack QX is our latest-generation energy storage solution, purpose-built for commercial and industrial (C&I) applications. As the direct successor to our proven QS and QL systems, it delivers reliable performance for peak shaving, load shifting, and demand charge reduction.

Designed for grid-connected environments, the ***mtu*** EnergyPack QX seamlessly integrates with renewable energy sources, helping operators enhance system flexibility, reduce costs, and meet the demands of a rapidly evolving energy landscape.

PROVIDING YOU WITH EVERYTHING YOU NEED

We offer end-to-end, high-performance solutions tailored to your needs—reducing project complexity and thus your risk. At a glance, our offering includes:

Complete BESS Solution

We deliver a complete Battery Energy Storage System (Battery and MVPS) built for maximum performance and efficiency. Our cutting-edge technology ensures low Levelized Cost of Storage (LCOS) with top-tier safety, reliability, and a long life-cycle. Factory-tested modules reduce installation time, costs, and risks, while high energy density and an optimized system layout minimize land use. With high round-trip efficiency, slow degradation, and ultrafast response, our solution is ideal for the most demanding C&I applications.

Intelligent Control System with *mtu* EnergetIQ

Our in-house developed system ensures seamless integration, control, and optimization of energy assets. It offers reliable operation, cloud-based monitoring, data management and visualization, all with robust cybersecurity safeguards.

Reliable Service and Maintenance

We reduce operational risks with long-term performance and availability guarantees, long service intervals, and life-cycle support. Our market-leading components feature a liquid-cooling system for low cell temperature deviations, ensuring high lifetime. The latest battery generation offers zero degradation over the first five years and a life-cycle of more than 15,000 hours.

Optional:
Comprehensive EPC Services

Simplify your project with our full turnkey BESS offering, including civil works and complete EPC responsibility. As your end-to-end partner, we support you throughout the entire project life-cycle—from breaking ground to full power.

mtu ENERGYPACK QX CONFIGURATIONS

Flexible, reliable storage for C&I applications.

The ***mtu*** EnergyPack QX is designed as a dedicated solution for commercial and industrial energy storage needs.
With standardized, pre-configured systems, it is quick to specify, easy to deploy, and competitively priced.
Drawing on the same proven components used in our grid-scale ***mtu*** EnergyPack QG, the ***mtu*** EnergyPack QX benefits from economies of scale, ensuring both outstanding technical reliability and strong commercial value.
The ***mtu*** EnergyPack QX makes the advantages of grid-scale ***mtu*** EnergyPack QG accessible to C&I customers.

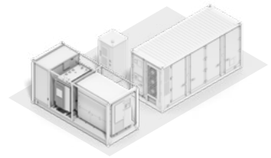
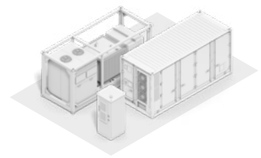
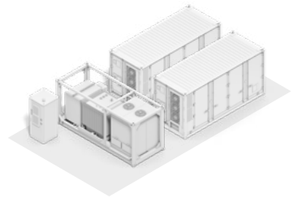
Modular, serialized design integrating all essential components.

Battery Energy Storage (Container)
We partner with leading suppliers such as CATL, the world's largest battery manufacturer, renowned for advanced technology, exceptional quality, and proven performance. Our systems are engineered for reliable operation across diverse environments, with a standard operating temperature range of -20°C to +40°C, and an optional extended range of -30°C to +55°C.

MV Power Station Modules
Our medium-voltage skid solutions from European PCS suppliers, designed for output voltages from 10 to 33 kV, ensure seamless integration and robust performance — delivering reliable connectivity for a wide range of applications.

In-house Control System
The ***mtu*** **EnergetIQ BESS Controller** is a core element of every EnergyPack, providing precise control, intelligent data management, and real-time monitoring. It ensures safe, reliable operation and efficiently manages setpoint controls for optimized system performance.

STANDARDIZED SETS OF ***mtu*** ENERGYPACK QX CONFIGURATIONS

mtu EnergyPack QX	***mtu*** EnergyPack QX 6.0 (SMA)	***mtu*** EnergyPack QX 6.0 (Nidec)	***mtu*** EnergyPack QX 12.0
			
Power / Capacity	2.67 MW / 5.37 MWh	2.65 MW / 5.41 MWh	5.30 MW / 10.83 MWh
Battery	1 x CATL TenerS	1 x CATL TenerS	2 x CATL TenerS
PCS	1 x SMA Medium Voltage Power Station	1 x Nidec Medium Voltage Power Station	1 x Nidec Medium Voltage Power Station
Automation	1 x ***mtu*** EnergetIQ BESS Controller	1 x ***mtu*** EnergetIQ BESS Controller	1 x ***mtu*** EnergetIQ BESS Controller

This is perfectly combined with:

mtu **EnergetIQ Manager**
For enhanced functionality, the optional ***mtu*** EnergetIQ Manager provides advanced control capabilities and enables the coordination and optimization of multiple energy assets within a microgrid, ensuring seamless and efficient system operation. It supports a wide range of applications — including peak shaving, increased self-consumption, scheduled energy time-shifting and backup power.

mtu **Diesel or Gas Genset**
For enhanced reliability, ***mtu*** diesel or gas gensets can be paired with the ***mtu*** EnergyPack QX.
This combination provides uninterrupted power, supports peak shaving, load balancing and backup applications, and enables hybrid microgrid operation when an additional power source is required.

SERVING A WIDE RANGE OF INDUSTRIES

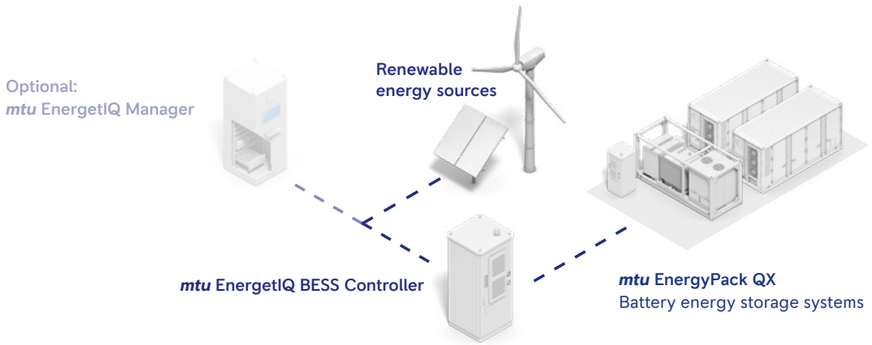
From reducing costs and increasing self-consumption to ensuring reliable backup—how the ***mtu*** EnergyPack QX creates value for our customers across a wide range of industries:

Industries	Challenges in terms of Energy	Customer Drivers	Assets
Commercial	Dependence on grid power, limited use of onsite generation, exposure to time-of-day tariffs	Cost efficiency, Energy security, Sustainability	BESS standalone, RES + BESS
Industry	High fuel costs for off-grid diesel operations, rising grid power costs, need to meet environmental standards	Cost efficiency, Compliance, Sustainability	RES + BESS, BESS + genset
Community	Vulnerability to grid outages, lack of grid access in remote areas, limited renewable integration	Energy security, Sustainability, Local self-sufficiency	RES + BESS, BESS standalone, BESS + genset
Public Sector	Unreliable grid connection, dependence on fossil fuels, need for stable supply for critical infrastructure	Energy security, Cost efficiency, Sustainability	RES + BESS, BESS standalone
Mining	Continuous high energy demand, high operating costs, heavy reliance on utility power or diesel generation	Cost efficiency, Sustainability, Energy security	RES + BESS, BESS + genset

Power up efficiency, reduce costs, and build resilience
mtu EnergyPack QX

mtu ENERGETIQ: THE BRAIN OF YOUR POWER PLANT

The ***mtu*** EnergetIQ platform is the brain of your power system, optimizing performance through seamless control and integration of all equipment. The ***mtu*** EnergetIQ BESS Controller ensures safe and efficient operation of your EnergyPack QX, manages primary control functions, and handles battery data for warranty compliance and advanced analytics—delivering reliability, performance, and actionable insights.



Always included in our offer: *mtu* EnergetIQ BESS Controller

Control Functions	— Controls subcomponents (Inverter, BMS, AVR, Engine, etc.) — Internal control loops to enhance asset performance
Protection Functions	— Asset protection — Grid protection for individual assets
Data Management	— Warranty and performance data management — Local and cloud-based battery analytics — SQL database with web-based query access — Correlation with external data
Visualization	— Operator HMI and Engineering/Service HMI — Modular dashboards and interactive reporting (Jasper) — Predefined and configurable layouts for trending and reporting
System-wide Services	— One common interface for all connected assets — Easy SCADA system integration — User management with audit trail — IT security according to project-specific analysis

HOW BESS CAN TRANSFORM YOUR BUSINESS CASE THROUGH MULTIPLE, COMBINABLE APPLICATIONS

mtu EnergetIQ BESS Controller

Ensures safe and efficient operation of the ***mtu*** EnergyPack QX, managing all primary control functions and safeguarding system performance.

Peak shaving:
Reduces demand charges, which are often a significant part of the electricity bill for C&I.

Load shifting:
Takes advantage of time-of-use (TOU) rates to lower energy costs.

Backup power and resilience:
Ensures business continuity during grid outages or power quality issues.

Optional: *mtu* EnergetIQ Manager

Manages BESS and hybrid plants of any scale with centralized control, monitoring, and optimization. Integrates SCADA for data, analysis, reporting, and power distribution, ensuring coordinated, efficient, and reliable system performance.

Frequency regulation and grid services:
Support grid stability.

Renewable energy sources (RES) integration and optimization: Maximizes the use of on-site renewable energy and reduces grid dependency.

Energy resilience and microgrid support:
Enhances facility resilience and flexibility by forming a microgrid capable of operating independently from the main grid.

Electric vehicle (EV) charging support:
Manages the additional load from EV charging stations and mitigates demand spikes.

mtu SERVICE SOLUTIONS – A LIFETIME OF VALUE

Our service solutions for energy storage systems are designed to maximize performance, extend life and guarantee smooth operation. These solutions are categorized into three main value propositions: **Secure, Sustain and Support.**

Enjoy peace of mind with maximizing asset performance and reducing operational risks
- Performance Guarantees*
- *mtu* ValueCare Agreements
- Digital Solutions*

Extending equipment life and reducing costs while protecting the environment
- Recycling
- Upgrades & Augmentation

Expert service from a reliable partner to keep operations running smoothly
- Customer Support
- Training
- Maintenance*

Scan the QR code to learn more about our *mtu* Service Solutions.

Performance Guarantees*
For maximum investment security and complete peace of mind, we offer performance guarantees tailored to your specific business requirements.

***mtu* ValueCare Agreements**
Our Long-Term Service Agreements (LTSA) provide extended support and services throughout your system's lifecycle. This allows you to focus on your core business while we manage your equipment needs and support system operations.

Digital Solutions*
Our connectivity solution is the backbone of our comprehensive, fleet-wide monitoring service, enabling rapid response to any irregularities. With alarm lists, dashboards, and advanced analytics tools, we can quickly evaluate system data, identify critical actions, and plan proactively—ensuring your system consistently runs at peak performance.

Recycling
We work closely with our suppliers—including battery and inverter manufacturers—to promote responsible recycling practices throughout the product lifecycle.

Upgrades & Augmentation
As your business grows, our upgrade and augmentation solutions help you adapt with ease and maintain a competitive edge.

Customer Support
With a global network of over 350 service locations—supported by regional Parts Logistics Centers and our Customer Assistance Center—you can rely on us as your trusted partner.

Maintenance*
Our preventive and corrective maintenance services are tailored to your specific requirements, helping you operate your system efficiently throughout its entire lifecycle.

Training
We employ highly trained staff to perform our services. In addition, we offer training programs for customers with their own pre-qualified service personnel. Whether you're learning to operate the equipment effectively or building your own on-site maintenance capabilities, you can count on our experience and expertise.

* Services are exclusively available as part of a VCA/LTSA.

OUR GLOBAL IMPACT

Our expertise and experience have enabled us to achieve a proud track record and to continuously improve product performance.

6 CONTINENTS

45 COUNTRIES

>150 PROJECTS

>1.5 GWh SOLD CAPACITY

Featured Projects

Industry: Utility
Location: Norway
Application: Backup Power

Industry: IPP
Location: Germany
Application: Energy Trading and Arbitrage

Industry: IPP
Location: Phillippines
Application: PV and Wind Park Integration

Inudtry: Utility
Location: Nicaragua
Application: Off-grid Energy Supply

Industry: Utility
Location: Australia
Application: Off-grid Energy Supply

Industry: Government
Location: Cook Islands
Application: Off-grid Energy Supply

DO YOU NEED SUPPORT?

Your All-in-One Energy Solution
From design to operation, we deliver a fully integrated energy storage solution for seamless performance.
- Planning and Design—Feasibility analysis, permitting support and optimized system integration
- Execution—Procurement, installation and commissioning
- Operation—LTSAs, warranty extensions and performance optimization
- Sustainability—Battery recycling and responsible disposal

Expert Support at Every Stage
Our specialists work closely with you to design a solution that meets your goals and maximizes your site's performance.

Ready to optimize your energy storage solution?

Contact us today to get started!
www.mtu-solutions.com/contact

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