



Four **mtu** Kinetic PowerPacks generate a total of 10,000 kVA

4x



Success Story | Malaysia Semiconductor manufacturing

The benefits you can leverage with an **mtu** Kinetic PowerPack:



Reliable power and power conditioning



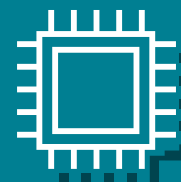
Lower emissions



Over 20 years of optimal availability

Over 1,400 employees

Semiconductor wafers for automotive, industrial and medical applications



SECURE POWER FOR SEMICONDUCTOR MANUFACTURER

mtu Kinetic PowerPacks provide immediate response without batteries

Executive summary

X-FAB is the world's leading foundry group for the production of semiconductors. A manufacturing site in Malaysia, operated by the local division X-FAB Sarawak, needed secure, reliable power. To do this, they chose to install four new **mtu** Kinetic PowerPacks, which take over this task at the plant. With an equipment lifespan of more than 20 years, protected by an **mtu** ValueCare Agreement, they are well-positioned for a future free of interruption.

What

Secure power supply with dynamic UPS

Where

Kuching, Sarawak, Malaysia

Why

Reliable operation of the plant, regardless of external factors

Main benefits

- Reliable power in the event of fluctuations
- Free from cost and space requirements of batteries
- Maximum system availability thanks to an **mtu** ValueCare Agreement



A Rolls-Royce solution



BATTERY-FREE: DYNAMIC, UNINTERRUPTIBLE POWER SUPPLY

Previous UPS systems from other suppliers did not provide the desired degree of safety for the uninterrupted operation of the plant. With **mtu** Kinetic PowerPacks, X-FAB ensures a reliable power supply in every situation.

Initial Situation

Maximum reliability when it comes to the supply of power is a top priority for critical infrastructure and production facilities on which large parts of the economy depend. Semiconductors belong to this category of critical industrial materials.

X-FAB Sarawak, the Malaysian arm of X-FAB, the world's leading foundry group for specialty semiconductor applications, manufactures these semiconductors at its plant in Kuching which is home to more than 1,400 employees. Its products are used in automotive, industrial and medical applications. In the past, dynamic uninterruptible power supply solutions from another manufacturer were already in use at the plant. However, as these regularly dropped critical load from the mains, a new solution had to be found.

Solution

mtu Kinetic PowerPacks provide the solution to protect X-Fab's operations in the event of power fluctuations or outages. Our dynamic uninterruptible power supply technology not only balances out fluctuations in the grid for optimum power quality. In the event of an outage, it can also take over the power supply within seconds until backup generators are fully ramped up to ensure continued supply.

Four **mtu** Kinetic PowerPacks were installed in Kuching, featuring a medium voltage, with a parallel system configuration, each delivering 2,000 kVA (1,600 kW), 6,600 V in 50 Hz. With their battery-free design, **mtu** Kinetic PowerPacks are space-saving and reduce the chemical waste associated with batteries, both in their production and at the end of their useful life. Approved to run on HVO, **mtu** Kinetic PowerPack emissions can be reduced by up to 90% when running on this sustainable fuel.



mtu VALUECARE ENSURES SMOOTH OPERATIONS FOR OVER 20 YEARS

Installation in the shortest possible time was made possible by the close cooperation with the X-FAB team. An **mtu** ValueCare Agreement ensures optimum availability of the entire system for its complete lifespan.

Result

The four **mtu** Kinetic PowerPacks have now gone into service at the plant. The challenges associated with the project were overcome thanks to the close cooperation with X-FAB Sarawak, according to Bryan Foo, Project Manager at Rolls-Royce Solutions Asia: "This was a challenging project due to an extremely tight timeline and the critical production needs of the customer. Thanks to the strong project management and technical knowledge of our team, plus the unwavering support of X-FAB's project and facility team, we were able to deliver and commission the units on time, resulting in a satisfied customer."

Our **mtu** Kinetic PowerPacks have an equipment life of over 20 years. To ensure that they achieve optimum performance during this time, X-FAB also opted for an **mtu** ValueCare Agreement. This provides preventive maintenance at regular intervals over the service life of the systems as well as technical support for optimum reliability. Coupled with the smaller emissions footprint of the system, including the ability to use sustainable HVO fuel, X-FAB Sarawak is ready for the future.



DISCOVER THE BENEFITS OF KINETIC ENERGY

Answering your specific power, footprint, and sustainability needs, **mtu** Kinetic PowerPacks provide a competitive alternative compared to static UPS systems. The dynamic UPS technology is based on kinetic energy and consists of a diesel engine coupled to a kinetic energy accumulator via an electromagnetic clutch.



The **mtu** Kinetic PowerPack KP7

1 mtu diesel engine

Complies with the latest emissions standards; preheated; quick start and not running during conditioning mode pre-lubricated. Approved for use with HVO fuel.

3 Kinetic energy module

Patented accumulator provides stored kinetic energy to ride through mains interruptions; designed for a 10-year bearing life.

5 Power panel

Comprises input, output and automatic bypass circuits; additional upstream, downstream or tie-breakers can be added, if required.

7 Electromagnetic clutch

The prime starter system consists of standard engine starting motors. The maintenance-free clutch guarantees diesel engine start at all times thanks to the redundant start feature.

2 Synchronous machine

Four-pole synchronous machines from world-renowned manufacturers designed not to exceed Class F temperature rise; right-sized for your application and to absorb load harmonics.

4 Vibration isolation

Thanks to the solid base frame with isolators between frame and equipment and direct floor installation, vibrations are reduced >97%.

6 Control system

KS Vision HMI control system; class-leading electrical and mechanical monitoring, including load level, mains failures, input and output voltage, frequencies and power factor. The data logging feature records all historic events.

Put the benefits of kinetic energy to use in your operations



Are you curious about how our **mtu** Kinetic PowerPacks could work in your operation? Visit our [configurator](#) to get your customized recommendation. Or contact us as shown below.

Contact us today at

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Rolls-Royce Group

www.mtu-solutions.com