



Energizing the future

Samsung SDI – South Korea

Together, Samsung SDI and Schneider Electric are creating next-generation manufacturing

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Life Is On

Schneider
Electric

EcoStruxure™

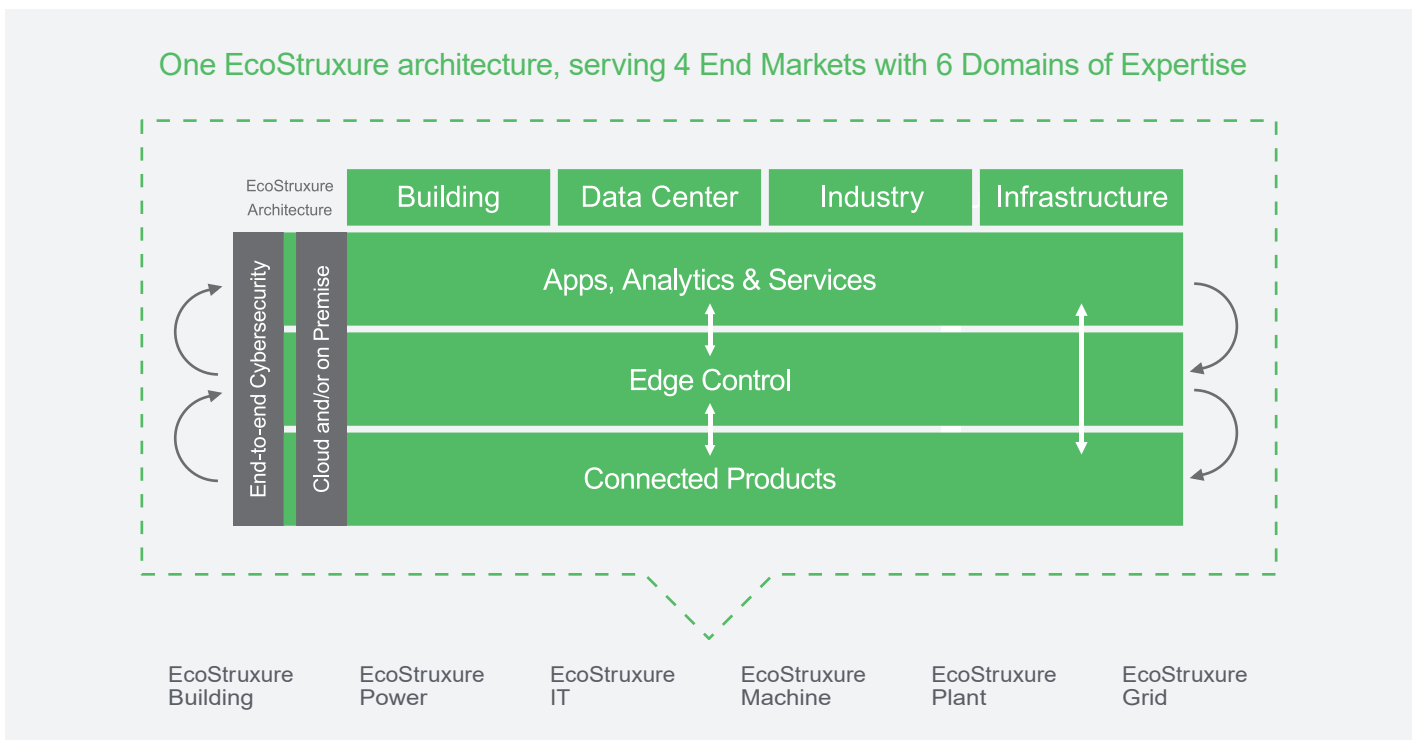
Innovation At Every Level

IoT-enabled solutions that drive operational and energy efficiency

EcoStruxure is Schneider Electric's open, interoperable, IoT-enabled system architecture and platform.

EcoStruxure delivers enhanced value around safety, reliability, efficiency, sustainability, and connectivity for our customers.

EcoStruxure leverages advancements in IoT, mobility, sensing, cloud, analytics, and cybersecurity to deliver Innovation at Every Level including Connected Products, Edge Control, and Apps, Analytics & Services. EcoStruxure has been deployed in 450,000+ installations, with the support of 9,000 system integrators, connecting over 1 billion devices.



Connected Products

The Internet of Things starts with the best things. Our IoT-enabled best-in-class connected products include breakers, drives, UPSs, relays, sensors, and more. Devices with embedded intelligence drive better decision-making throughout operations.

Edge Control

Mission-critical scenarios can be unpredictable, so control of devices at the edge of the IoT network is a must. This essential capability provides real-time solutions that enable local control at the edge, protecting safety and uptime.

Apps, Analysis & Services

Interoperability is imperative to supporting the diverse hardware and systems in building, data center, industry, and grid environments. EcoStruxure enables a breadth of agnostic Applications, Analytics, & Services for seamless enterprise integration.

Find out more about EcoStruxure

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Energy specialists meet for better safety and reliability

Samsung SDI, a global leader in the energy industry, has pursued manufacturing high-quality products with excellent safety since its foundation in 1970.

The main reason why Samsung SDI chose UPS of Schneider Electric, a world-leading energy management- and automation-specialized company, is its exceptional safety and reliability. Samsung SDI's factory in Cheonan has shown 50% of reduction in accidents due to defective electronic equipment or improper machine operation since it has introduced Schneider Electric's UPS. In addition, Schneider Electric, a global UPS market leader that has proven its product reliability, while outperforming its competitors in terms of price, safety, follow-up management, service, etc., has been a good partner of Samsung SDI, helping Samsung SDI's growth.

The partnership of the two energy specialists is moving toward technological innovation that helps shape the future for all mankind.

Samsung SDI, total energy solution provider driving toward smaller and more powerful batteries

Since its foundation in 1970, Samsung SDI has grown into a creative leader in Korea's energy and advanced materials sectors. Starting from a Braun tube manufacturer, it has been expanding its business into flat TVs, small cells, medium and large batteries, and it is currently producing secondary batteries for IT, ESS and vehicles, and advanced materials for semiconductors, display and solar energy. With the goal of becoming a global No. 1 brand, the company has realized the vision and technology to further enrich human lives and shape a new future through constant innovation. In particular, Samsung SDI's first priority is "safety". Under the motto of 'safety battery', it manufactures easy-to-use lithium-ion batteries with no risk of explosion. Through its quality-first business philosophy and continued technology innovation, Samsung SDI has been recognized as one of the leading companies in the global lithium-ion battery industry since 2010. Development of next-generation technology such as the flexible battery which the company released for the first time in the world has positioned it to lead the small battery market. The Samsung SDI's Cheonan plant using Schneider Electric's solution has been a workplace of around 3,500 employees since it began manufacture in 1996.

Challenge

#1 Reliable power supply

For industrial power, South Korea uses centralized power supply systems, and due to its geographical nature, long-distance transmission is inevitable. In addition, in the event of worsening of weather conditions such as a lightning storm or typhoon, voltage drop causes factory shutdown which happens about 3 to 4 times in a year. Power outage suspends running of manufacturing facilities, which can be critical to supply lines of various hazardous materials such as chemicals. It not only takes considerable amount of time to recover the situation but interrupts manufacturing; that was why they needed to have equipment that enables reliable power supply.

Goal

When it comes to running businesses, Samsung SDI is proactively responding to current global trend, focusing on producing products with high efficiency and high safety.

Story

Creating a safe environment is essential to current facilities and asset management. Using Schneider Electric's UPS products, Samsung SDI Cheonan factory has never reported any critical case due to UPS failure. Rather, it could significantly reduce costs with Schneider Electric's PQ meters that help get accurate information.

Solution

Samsung SDI Cheonan factory has about 60 units of uninterruptible power supply (UPS) systems, 4 units of power quality (PQ) meters for power monitoring, 3 units of DC circuit breakers of energy storage system (ESS), and various types of switches of Schneider Electric.

Results

- UPS applied for reliable power supply
- Power quality checked by 24-hour monitoring
- Abnormality check allowed through remote surveillance system and data history feature

50%

Reduced accidents caused by defective electronic equipment or improper machine operation by around 50%.

#2 Need for cost reduction

An input voltage of 154,000 V at a production facility causes an instantaneous voltage drop for 10 ms to 50 ms. Most of the machines that read data within 50 ms cost about tens of millions to tens of billions of dollars. Providing accurate information at a relatively reasonable price, Schneider Electric's PQ meter has brought about significant cost reduction. Also, it enabled local companies to use low-end DC circuit breakers which are hard to get in South Korea.

#3 Installing an UPS with high flexibility

UPS needs to be transformed according to on-site conditions. However, sometimes these requirements are not met as mostly standard type products are allowed. Samsung SDI was in need of a UPS that is flexibly-transformable based on on-site conditions, installable into a limited space, and scalable. Schneider Electric could provide highly flexible UPS products through its customer-centric product design.



“The greatest advantage of working with Schneider Electric, I think, is remarkably fast after-sales management and service feedback.”

Solution

Efficiency and Reliability with EcoStruxure

Connected products:
Symmetra PX UPS, Galaxy UPS, Pro-face HMIs, PowerLogic ION7650, EasyLogic PM1200

#1 Applying UPS for reliable power supply

In Samsung SDI Cheonan plant, Schneider Electric's Symmetra PX UPS and Galaxy UPS were installed. In particular, it is the first case where such systems are applied to lithium-ion battery production facility, and the UPS systems have greatly contributed to protecting sensitive manufacturing facility by supplying stable power against external environmental and geographical factors.

#2 Controlling power peak, providing power supply efficiently

To record errors for the 154,000 V lines supplied to Samsung SDI Cheonan factory, and monitor power quality below 22,900 V line in real-time, Schneider Electric has installed PQ meters such as PowerLogic ION7650 that keeps the highest accuracy among its energy and power quality meters. In particular, HMI remote monitoring system is used for remote monitoring quality of ultra-high

voltage power line which is difficult for facilities manager to control, as well as for history management.

In addition, ESS system for Samsung SDI has 3 DC circuit breakers. Most ESS systems use AC circuit breakers, but only limited types are available making an optimized DC circuit breaker rather difficult to be found. However, Samsung SDI was able to effectively apply a DC circuit breaker of the Schneider Electric product portfolio in its facilities.

#3 Providing immediate service 24/7

With its superior products and differentiated advantage, Schneider Electric provides immediate service anytime anywhere. Schneider Electric's expert engineers have promptly responded to issues on site or requirements of Samsung SDI, providing reports on detailed solutions through close cooperation with the main office.



Results

#1 Stabilized facilities with consistent and efficient power supply

Since the introduction of Schneider Electric's UPS products, Samsung SDI has reduced the effects of power outage that used to happen 3-4 times yearly due to external environmental factors. Also, accidents caused by defective electronic equipment or improper machine operation fell by around 50%. Flexible equipment installation and prompt after-sales service of Schneider Electric enabled stability of facilities.

#2 Reduced energy consumption through integrated power system

Using the remotely-controllable integrated wattmeter with Schneider Electric's solution has cut operation cost down and utilizing the reasonably-priced PQ meter has considerably saved expenses for Samsung SDI. In addition, reduction in energy consumption can be expected by monitoring the power quality of facilities in real-time.

#3 Prepared for sustainable growth driver

Samsung SDI, through the partnership with Schneider Electric, is going to unwaveringly keep its No. 1 position. The partnership between Schneider Electric, the global leader in UPS manufacturing, and Samsung SDI, the world's best lithium-ion battery maker, enables development of solutions that ensure eco-friendly, high-quality and excellent performance. Cooperation with Schneider Electric which has led the growth of Korea with the Samsung group is expected to lead continued growth power.

"Samsung SDI has complied with global standards such as ISO(International Organization for standardization) and OHSAS(Occupational Health and Safety Assessment-Series). I'm certain that safety is getting essential to business operation."

— Sangbum Lee, head of Infra Innovation Group,
Safe Environment Infrastructure Team, Samsung SDI

"We have never had a breakdown since we used Schneider Electric's UPS. It means UPS product defect has not inflicted critical impact on the factory."

— Safe Environment Infrastructure Team, Samsung SDI



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