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SUSTAINABLE

Green MV switchgear advances Renault Group's goal of a more sustainable future

RENAULT GROUP - Flins, France

How green and digital MV technology boosts the Flins factory's sustainable operations

se.com/sf6free-renault

Life

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A circular economy is at the heart of Renault Group's green ambitions

Renault Group, a multinational automobile manufacturer, is a pioneer in the automotive sector's circular economy. In 2000, Renault Group began incorporating the circular economy approach into organization-wide activities with the aim of turning the company's waste into resources. Guided by circular economy principles, Renault Group is examining the entire lifecycle of its operations to identify sustainability opportunities, keep materials in use when possible, and extend the life of vehicles and components.

The French automaker is part of the Nissan Mitsubishi Alliance, which has over 150,000 employees and in 2021 produced 2.7 million vehicles at production sites worldwide. The Alliance is aligned with Renault Group's commitment to sustainability and has the shared mission to make mobility sustainable and accessible to everyone, everywhere in the world.

Goal

Transform Renault Group's Flins, France factory into the first European circular economy plant dedicated to mobility and achieve a negative CO_2 balance at the plant by 2030.

Story

Schneider Electric partnered with Renault Group to help the automaker reach its ambitious sustainability goals. Together, we focused on how greener switchgear and digitization would help meet the factory's circular economy targets.

Solution

Innovative pure air and vacuum medium voltage technology eliminates the need for SF_6, a potent greenhouse gas, in MV switchgear. The solution also addresses cybersecurity, reliability, and maintenance concerns. It uses digital innovations that allow remote monitoring, improve safety, and reduce outage worries.

Results

- Solutions are green and digital, and support the plant's circular economy targets.
- Installation, dismantling, and handling are easier and more cost-efficient, while pure air use eliminates the need for gas recycling altogether.
- Digital innovations support remote equipment monitoring and installation management, production monitoring, forecasting, maintenance planning, and remote training on advanced technologies.
- Cybersecurity is more robust because protection is integrated into the technical solutions.

Flins factory aims for a negative carbon balance by 2030

Renault Group has elevated its circular economy ambitions by transforming an existing factory into Refactory, Europe's first circular economy factory dedicated to mobility. At the Refactory, located in Flins, France, Renault Group seeks to develop accessible, sustainable, carbon-free mobility solutions. "This project is based on our pioneering commitment to the circular economy, on our values, on our know-how and fully meets our ambition to positively transform our industry." said Jean-Dominique Senard, Chairman of the Board of Directors of Renault[1].

To reach Refactory's goal of a negative carbon balance by 2030, it is examining all areas of the site – from electrical distribution systems to materials recycling – for potential to reduce CO_2 emissions, as well as to find other sustainability opportunities. This ambitious aim supports Renault Group's European goal of zero impact by 2040 and by 2050 in the rest of the world.

Sustainability improvements have to also address the site's reliability and cybersecurity challenges

Going green was just one of Refactory's goals. Its sustainability solutions needed to also address Refactory's wider challenges such as power reliability and cybersecurity. According to Nicolas Feve, Head of Maintenance at the Flins factory, power reliability is a huge concern for the site because any power supply failure can "cause a major critical event that can have serious consequences for the site's activity."

An outage can cause safety risks, halt the manufacturing process, which can lead to vehicle damage, cause financial losses due to the vehicle damage, and result in late deliveries to customers. In addition, Renault Group must focus on improving cybersecurity because a cyber breach could be devastating to the Flins factory's operations.

"In three words, SM AirSeT means digitalization, sustainable development, and circular economy."

— Nicolas Feve
Head of Maintenance
Renault Group Flins Factory

"SM AirSeT has two major advantages: a technology that respects the environment, which is in line with the site's circular economy, and connectivity that allows us to remotely monitor our equipment."

— Nicolas Feve
Head of Maintenance
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1 Source: https://media.renaultgroup.com/groupe-renault-creates-the-first-european-factory-dedicated-to-the-circular-economy-of-mobility-in-flins/?lang=eng

The solution: Using innovative SF_6-free MV switchgear for a greener, digitized electrical system

Green, digital medium-voltage switchgear is helping Refactory address some of these challenges while still reducing its carbon footprint. Renault Group chose SM AirSeT MV switchgear as one way to decrease the greenhouse gas inventory in Refactory. The switchgear is an innovative technology that combines Shunt Vacuum Interruption (SVI), pure air insulation, and digital technology for optimal environmental gains and maximum operational efficiency.

SM AirSeT is installed in Refactory's emergency backup network power supply loop, which mainly supplies two industrial buildings and a tertiary building. Besides the environmental benefits of avoiding greenhouse or alternative gases in Refactory's electrical network, SM AirSeT simplifies the dismantling of its installations and facilitates cost-effective handling. The use of pure air completely removes the need for costly and complex gas recycling at the end of life of the MV equipment and thus lowers the total cost of ownership of the installation.

"SM AirSeT has two major advantages: it's a technology that respects the environment, which is in line with the site's circular economy, and connectivity that allows us to remotely monitor our equipment," Feve says.

These connected, digitized features help prevent devastating outages. For example, 24/7 connectivity allows the integrated smart sensors to remotely monitor all operating parameters. "As a maintenance manager, digital is a very important axis that allows me to manage installations remotely, monitor the means of production, plan and anticipate interventions, and train remotely on advanced technologies," says Feve. Because digitization can also increase cyber risks, cybersecurity is integrated into the factory's overall strategy of choosing technical solutions offered by our suppliers.

"Renault Group and Schneider Electric have worked closely for many years so it was natural that we would work together to find a sustainable switchgear solution," said Nadia Cheraitia, Strategic Account Executive for Renault-Nissan at Schneider Electric. "Like Renault Group, sustainability is at the heart of our mission and we have a broad portfolio of solutions and services that support our partners in reaching their goals of a greener future."

"The elimination of SF_6 gas simplifies the dismantling of installations, facilitates handling and recycling while reducing costs. The integrated smart sensors will allow us to remotely monitor all operating parameters."

— Nicolas Feve
Head of Maintenance
Renault Group Flins Factory

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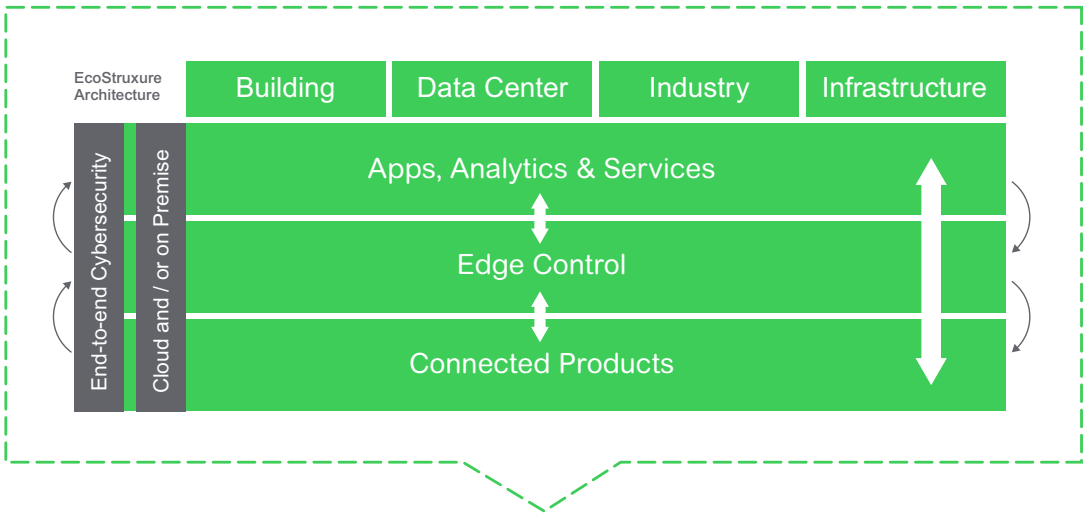

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