



Smarter, safer and more sustainable

Sustainability is one of the main priorities in the world today, and environmental impact can be dramatically reduced if the right decisions are made around how power is sourced and supplied. One challenge is that the power generated can by many sustainable energy sources be somewhat inconsistent, leading to potential issues with reliability. With its Power Management System, Bosch Rexroth provides the smart solution to providing sustainable, consistent power.

Every industry is looking at ways to reduce carbon footprints while maintaining the levels of efficiency needed. Some are even starting to generate their own green energy through solar and wind power, and others are looking to use fossil fuels more efficiently. However, when implementing this changes, it's essential to invest in a solution which ensures that the power supply remains consistent and safe while being more sustainable.

Bosch Rexroth has developed an innovative solution to ensure that choosing a more sustainable way to power your business doesn't lead to any compromises.

The PMS, or Power Management System, is a smart solution which ensures that the right amount of power is supplied at the right time.

"The PMS is a vital link between energy source and energy consumer," says Gerard Swagten, Sales Technical Support at Bosch Rexroth. "It's useful in a wide range of applications, and can be used in any combination of sustainable energy sources, as well as being effective in making energy from fossil fuels more efficient."

EXPERTS IN ENERGY

The Bosch Rexroth PMS solution is useful across a wide range of industries, especially those where power is needed in remote locations. With expertise in developing innovative solutions which combine class-leading hardware and software, Bosch Rexroth first developed the PMS for Fjord Maritime in Norway. Rexroth works alongside Fjord Maritime to provide fish farms with a solution to consistent, more sustainable off shore energy.



“We worked together with Fjord Maritime to find a better way to provide power to salmon farms, and that’s how the PMS was born,” explains Swagten. “These farms are mainly powered by diesel generators as they’re not connected to the shore, which is not the best solution with regards to emissions and the environments. With our PMS, in conjunction with battery cells, it’s now possible to only use the diesel generator for 4 hours per day, just to charge the batteries. Then the PMS supplies energy from the batteries as needed, and the farms reduce the amount of fuel they use every year by about 50,000 litres. This is better for the environment, and cuts expenses significantly too.”

A SOLUTION FIT FOR ALL NEEDS

Following this successful implementation, it was clear that the PMS would be useful across a variety of applications and industries, so Bosch Rexroth is continuously working to explore how the system can adapt and evolve according to specific needs.

“We have around 60 PMS systems in operation or in production, and we’re still expanding” says Swagten. “Our system can combine sources for optimal operation, so supply solar energy when weather data says it will be sunny, or likewise for wind. We can adjust the energy strategy and algorithms used in the PMS based on specific needs, which allows us to optimize energy use regardless of how and where the system is used. In collaboration with Bosch, we also are exploring the use of techniques like ‘machine learning’ and ‘artificial intelligence’ which can improve energy efficiency even more.”

The need for solutions like the Bosch Rexroth PMS are only going to increase in the years to come, as more industries switch to sustainable energy, and rely increasingly on decentralised power grids. As sustainable energy supplies depend more on conditions that can’t be controlled, PMS ensures that the energy is managed properly and available as needed. This means it’s an optimal, more efficient solution.

THE FUTURE OF POWER MANAGEMENT

There are many sustainable sources of energy which are growing rapidly, and many industries which are expanding alongside this. Batteries are in higher demand than ever before, and data centres will continue to pop up around the world and will always demand significant amounts of energy to operate. Optimization of energy use will be essential across all industries, and the PMS from Bosch Rexroth is in the ideal position to solve these future problems.

“We see a lot of potential, particularly for sectors where remote power is required,” says Swagten. “Data centres tend to be in remote locations, and then there are civil applications and construction projects. These may have their own local power sources, sustainable or not, and our technology enables efficient use of them. Battery energy is used to flatten power surges and to provide a temporary backup in case of power failures. Using actively balanced batteries our system provides a consistent, efficient and reliable power supply.”

More sustainable approaches to powering businesses are essential, as it helps to preserve and protect the planet.

