NET ZERO AT POWER SYSTEMS

A Rolls-Royce solution

OUR WAY TO NET ZERO

The biggest threat to humanity is climate change. It is our mission to join the fight against it. That is why we are clearly committed to the Paris Climate Agreement and its goal of reducing global warming to well below two degrees Celsius with efforts to limit it to 1.5 degrees Celsius compared to the pre-industrial era through climate action. To that end, we have not only established ‚Sustainable Power Solutions', our new business division tasked with building a sustainable future in the field of energy, drives and marine propulsion, but have also launched an ambitious new program - ‚Net Zero at Power Systems'. In this program, one focus is gearing our product portfolio towards greater sustainability, since the biggest potential for reducing greenhouse gas emissions lies with our products. In total, the Power Systems products sold in 2019 will generate some 109 million tons of greenhouse gases over their service life in the field – almost double that emitted by the Greater London region every year. Our goal is to achieve a 35% decrease compared to 2019 in the greenhouse gases emitted by newly sold products. Our ultimate goal is climate-neutrality by 2050. With the same spirit we are also setting milestones for gearing our production and value chain to long-term climate neutrality. To accomplish these missions, we will be working closely with our parent company Rolls-Royce and will let ourselves be guided by the ‚Science-Based-Targets' initiative.

Our mission is climate neutrality by 2050.
‚Net Zero at Power Systems' plots the way ahead.

On the way to Net Zero: We recognize in all our products great potential for reducing greenhouse gas emissions – be it by means of electrification, hybridization, system integration or alternative fuels.

Sustainable fuels make combustion engines cleaner

One key to the transformation of off-highway mobility and on-site power generation lies in fuels. Modern Power-to-X technologies use green electrical power in electrolysis to produce hydrogen. Taking CO_2 derived from the air or biomass, this hydrogen is synthesized into E-fuels such as e-methane, e-methanol or e-diesel. Power-to-X technology makes the CO_2-neutral cycle possible. By 2023, our leading Series 2000 and Series 4000, which account for 85% of engine sales, will be able to run on sustainable fuels such as e- and second-generation biofuels. Some of our engines for industrial applications and for power generation can already run on e-diesel or second-generation biofuels such as HVO. In parallel, our developers are working on hydrogen and methanol engines.

Zero emissions: Fuel cells for CO_2-free energy and driving power

From 2025, CO_2-free fuel cell systems will form a central pillar of product strategy at Rolls-Royce Power Systems. Our first demonstration unit is soon to be commissioned on our site in Friedrichshafen. We are planning to develop complete, scalable, integrated solutions in the megawatt range in cooperation with a cooperation partner. Fuel cells will be initially deployed to feed balancing energy into the public grid to compensate fluctuations, as well to generate continuous power and provide emergency power in hospitals, airports and data centers. Subsequent extension of our fuel cell portfolio to cover marine propulsion applications is also planned.

Foundation laid by Green and High-Tech program

Our point of departure into a climate-neutral future was the Green and High-Tech Program which we launched back in 2015. To create the solutions of tomorrow, we are concentrating on alternative fuels, electrification, efficiency enhancement, system integration and digitalization. In conjunction with this program, we are investing some 500 million euros in developing sustainable technologies to build a future without fossil fuels.

Our goal: sustainable production

Not only our products are becoming more sustainable, but also our production and our value creation chain. This year, we will also plot milestones for gearing both towards long-term climate neutrality. Since 2014, for example, we have already cut CO_2 emissions by 20 percent at our six largest sites worldwide – through the expansion of photovoltaic systems, the increased use of combined heat and power plants, e-mobility and energy efficiency projects. But this is just the beginning. Overall, we see a CO_2 savings potential of 97,000 metric tons per year. To do so will involve scrutinizing not only our own production processes and test stands, but also the unfinished products we buy, and the deployment of our products on customer sites.

We‘re ready to go – join us on the journey

There was never a more exciting time in the field of energy, drives and marine propulsion. Climate-neutral mobility and power generation is possible, and will come. Even today, we offer products that generate significantly lower or virtually zero CO_2 emissions – mtu Hybrid PowerPacks for rail applications, for example. We are also working on mtu hybrid propulsion for marine applications. In 2018, we began producing mtu battery energy storage systems that do not generate CO_2 emissions during operation. Installed in microgrids, we can intelligently combine these with renewable energies as well as diesel or gas gensets so that a sustainable and off-grid energy supply is possible. The future has already begun. From now on, it‘s all about pulling together and continuing on this path. We look forward to working not only with our customers and partners, but with policymakers to create the conditions that will make the energy-turnaround reality.

2023

From 2023, our main engine series will be ready for sustainable fuels.

2025

From 2025 onwards, we will provide our customers with CO_2-free energy supply with fuel cells.

2030

By 2030, we aim to reduce the CO_2 emissions of our new products and solutions sold by 35% compared to 2019.

2050

By 2050, the entire Rolls-Royce Group will be carbon neutral.

netzero @PowerSystems

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