

## Key operational improvements to reduce energy consumption and emissions in 2021

The businesses take an appropriately tailored approach to implementing climate-related initiatives that are most relevant and impactful to improving their business activities and requirements, and their operational and market environments. Each business is at a different stage in their climate strategy depending on their maturity in this area, but all have implemented or are in the process of implementing a wide range of positive actions as outlined in the following table.

Action	 GKN AEROSPACE	 GKN AUTOMOTIVE	 GKN POWDER METALLURGY	ergotron <sup>®</sup>
<b>Manufacturing processes</b>	GKN Aerospace has implemented multiple improvements on manufacturing efficiencies across various sites, including the installation of new machines, reduction of compressed air production through the elimination of leaks, and refurbishing existing equipment to reduce electrical consumption. New close down procedures paired with a variety of timers, insulation and sensors led to reductions in the electrical consumption of machinery at the Portsmouth, UK site.	GKN Automotive has implemented a number of process improvements with the aim of reducing energy and emissions. For example, reduction of compressed air production through the elimination of leakages, furnace stand by temperature reduction, and introduction of standby mode in washing machinery.	GKN Powder Metallurgy has implemented energy efficient hydraulic valves on hydraulic presses. This project started in 2021, with completion planned during 2022.	–
<b>Lighting retrofits</b>	Most sites now operate with LED systems. Examples from 2021 include the Hoogeveen, Netherlands site, which has retrofitted the paint spray and dry cabins, resulting in a reduction in electrical consumption. The sites in Phoenix, US and Cromwell, US have also installed sensors to further reduce lighting consumption when areas are not being used.	There has been ongoing replacement of LED lighting across global sites. For example, at the Olesnica, Poland site, gradual replacement of fluorescent lamps with LED lighting has resulted in a saving of 53 MWh, and at the Tochigi, Japan site, a saving of 150 MWh has been achieved.	Most of the sites in Europe have already turned to LED lighting systems as part of extensive energy efficiency programmes within the region.	The business spent US\$31,600 in upgrades to light fixtures for LED lighting in office areas within the US. At the China sites, 550 fluorescent lights were replaced with LED lights.
<b>Efficient air conditioning and heating systems</b>	Ongoing maintenance, calibration and new technology upgrades have resulted in incremental improvements. For example, the replacement of an air conditioning system to a high efficiency ductless system in Amityville, US, the tuning and installation of timers to boilers and space heaters in El Cajon, US, and the construction of a 3,000 sq.ft. site in Phoenix, US using a high efficiency and programmable climate control system.	Improvements in building ventilation systems has led to a number of energy savings. For example, 150 MWh at Köping, Sweden and 130 MWh at Bruneck, Italy.	Installation of more efficient systems is being implemented on a site-by-site basis. For example, new energy efficient systems have been installed at the sites in China.	The installation of additional fans to reduce the cooled air loss in the workshops at the sites in China was completed in 2021. Other activities include the installation of new energy efficient air conditioning units at the Netherlands site.
<b>Renewable energy installations</b>	In 2021, the Hoogeveen, Netherlands site recorded a total solar energy production of 486,436 kWh. Other sites note similar plans for the near future.	Installation of rooftop solar system in Pune, India has resulted in an annual energy saving of 575 MWh.	–	–
<b>Improvements to building insulation and its design</b>	Improvements have been made to buildings through improved insulation or the installation of novel cooling systems. For example, the Filton, UK site employed heat recovery systems on two of their ventilation systems. The El Cajon, US site installed piping insulation for their rooftop steam lines, and the Mexicali, Mexico site renewed the external painting and protection of the facility.	–	–	The business has installed ceiling insulation at the Dongguan, China site, applied insulation on the windows in the workshop to block sunshine and reduce heat, and applied sealant to the exterior walls of the Netherlands site to reduce energy loss due to air flow through the building envelope and utility loads.
<b>Investment in energy efficient equipment</b>	Various facilities have taken action to invest in and use more efficient equipment. These range from upgrading milling tools to more energy efficient alternatives, the use of low-ink printers, and undertaking maintenance works to electric panels and motion sensors.	At the Newton, US plant, reducing the idle temperature of the furnaces from 850°C to 450°C, as well as shutting off completely over weekends and holidays, has resulted in a saving of 7,300 MWh per year.	A key focus area of 2021 was the sintering furnaces, with a team working on re-evaluating options for process and design that can further optimise energy efficiency. For new equipment, energy efficiency is part of the procurement strategy, with a strong focus on replacing old and less efficient equipment.	–
<b>Reducing the impact of employee transportation</b>	Multiple solutions have been employed to reduce the footprint of employees. The impact of commuting has reduced through increased working from home, as well as encouragement to use public transport and carpooling. The Mexicali, Mexico site utilises highly efficient buses for employee transportation, and the Kongsberg, Norway site has made e-bikes available for employees. The Filton, UK site has also renewed its membership to the North Bristol Suscom (which is a sustainable commuting group).	Some sites have designated areas with bike racks and sheds to encourage employees to cycle to work. The business is working with a lease provider in the UK to offer employees the option to opt for an electric or hybrid car via a salary sacrifice scheme.	Current initiatives in the concept phase include projects for generating green energy, adding charging stations for e-bikes, together with benefits for employees to acquire e-bikes for the purposes of commuting.	–