



## Health, Safety, and Environmental Affairs (HSE)

Barnes Group is committed to promoting and maintaining a safe workplace for our employees and strives to ensure that all aspects of our operations are conducted in conformance with applicable laws and regulations, as well as with all of our corporate policies pertaining to workplace safety and protection of the environment. At the corporate level, BGI maintains a global Health, Safety, and Environmental Affairs (HSE) program which focuses on promoting employee safety throughout the enterprise. In certain cases, the Company or its strategic business units (SBUs) may establish more stringent requirements as policies, procedures, or directives. At the corporate level, these requirements are documented as BGI HSE Standards.

The BGI HSE Standards are consistent with our commitment to worker health and safety and to environmental protection, as well as prevailing regulatory frameworks in place around the globe. All locations are required to meet local laws and regulations, or the BGI HSE Standards, whichever are more stringent. Furthermore, our internal corporate HSE audit program measures and monitors progress using standard protocols, ensuring that actions are tracked to closure and results are communicated to Senior Leadership.

Our past and present business operations require the use and handling of chemicals and hazardous products that are subject to extensive environmental laws and regulations pertaining to the discharge of materials into the environment, the disposal of wastes, and the use, shipping, labeling, and storage of chemicals and hazardous materials. We closely monitor hazardous waste management and environmental permitting and reporting requirements to ensure compliance with applicable laws while striving to minimize the environmental impact of our operations through our management systems approach to HSE.

Barnes Group did not pay any fines or penalties for HSE non-conformance in 2020. Our operations utilize standard work and online compliance calendars to manage regulatory compliance requirements, and our goal continues to be to eliminate HSE non-compliance.

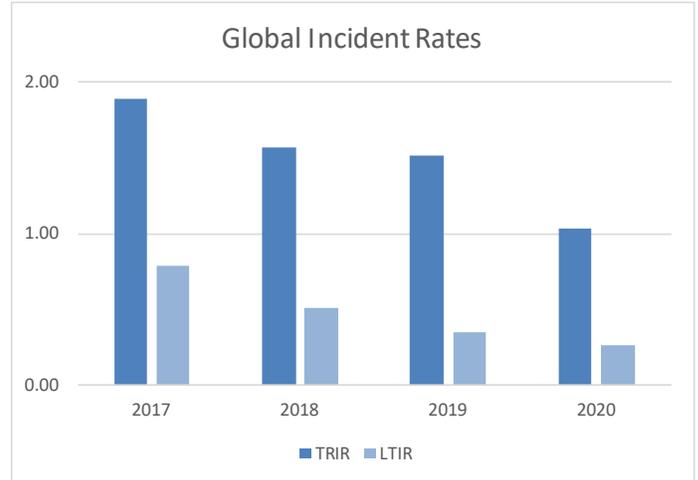
HSE Regulatory Compliance		
2020	None Reported	\$0
2019	Air Compliance	\$4,918

# Safety

We have ambitious goals when it comes to identifying and controlling hazards in the workplace to ensure our employees' safe return to their homes and families at the end of their workday. With the onset of the COVID pandemic in early 2020, employee health and safety took center stage as we implemented preventive measures and controls to protect our employees and keep our operations running. These efforts were consistent with our "safety first" mindset, in which we strive to integrate safe practices in everything we do.

This "safety first" mindset starts with our leadership. Through the implementation of the BGI HSE standards, initiatives such as the critical risk mitigation program and HSE Zone Leadership, and by leveraging tools such as job safety analyses (JSAs) and risk assessments, non-routine pre-job reviews, and management of change (MOC) and other activities, Barnes Group aims to identify and mitigate hazards in the workplace before injuries occur. Year after year, our operations teams proactively address risk, and we share the successful risk mitigation stories across our strategic business units so we can learn from one another. The most common work-related injuries include lacerations and strains/sprains, and our Zone Leaders and Safety Committees are actively engaged in addressing both the physical hazards that may cause injury, as well as reinforcing safe behaviors and correcting unsafe behaviors through our behavior observation programs. We also engage with employees who perform critical risk tasks – those tasks that we determined may contribute to high-consequence injuries – such as lockout/tagout, working at heights, and confined space entry in "practicing safety." Our operations and HSE leaders work directly with these employees to review or "practice" the correct steps to safely complete these tasks to ensure the employees know how to protect themselves and execute the task safely every time.

Collectively, these efforts have helped us prevent serious injuries and reduce recordable and lost time injuries over time. In 2020, as our President and CEO and our Segment Presidents continued to emphasize safety as a core value, we achieved an additional 23% reduction in lost time injury rate and an additional 31% reduction in recordable injury rate versus the prior year. Safety incidents from across our operations are reported in accordance with our corporate standard for incident management, and incident rates are calculated based on 200,000 hours worked. Barnes Group remains committed to the execution and implementation of our BGI HSE Standards and critical risk mitigation program, which once again helped us achieve a year with zero serious injuries\* and zero work-related fatalities with over 8.9 million hours worked. We are confident in our HSE Management system and strategy and continue to empower and encourage employees to proactively identify and mitigate potential safety issues through Safety Committees, HSE Inspections, Gemba Walks, and our near miss program.



*\*Barnes Group defines a serious injury as any work-related incident resulting in amputation, partial amputation, multiple fractures, or loss of consciousness.*

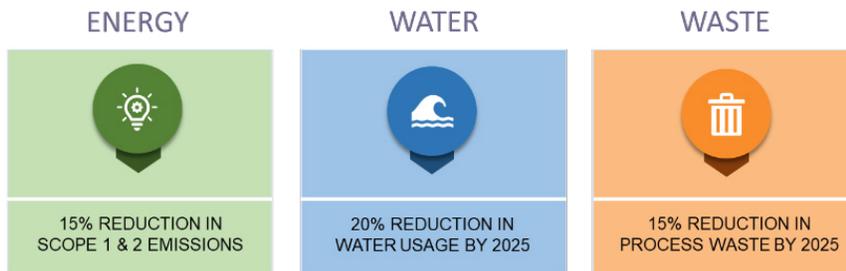


## Preventing Serious Injuries

Barnes Group has not experienced any work-related employee fatality or serious injury in the past 3 years.

# Environment

In 2020, Barnes Group established environmental targets for 2025 – specific goals for reducing the energy and water we use and the waste we generate – normalized against our production hours. As a Company, we will work to reduce the energy we use in our factories – as measured in carbon dioxide equivalents (CO2e) – by 15%, the amount of water we use by 20%, and the amount of industrial process waste we generate from our manufacturing operations by 15%.



The BGI HSE Standards define water usage, process waste and energy usage that must be reported using our centralized HSE information system. The standards require that all non-office locations greater than 20,000 ft2 report their data. Local HSE managers report these metrics and provide supporting documentation from which their data is derived. To ensure accuracy in reporting, we are establishing validation standard work and internal processes to review the data, and identify and correct any reporting errors. For example, select data is spot checked by our Internal Audit Department (IAD) as part of regular accounting and financial reviews. In addition, environmental data is also reviewed periodically as part of the Corporate HSE Audit program. At the present time, we are working to establish additional controls to further validate our data and plan to publish additional details in future reports.

Of course, establishing targets is merely the first step in our journey to reduce our environmental footprint. In order to achieve our 2025 targets, we are analyzing water and energy usage as well as process waste streams at our manufacturing divisions to determine which strategic business units are the greatest contributors to our footprint. This will allow us to identify strategic investments to achieve our goals and reduce our environmental footprint in the most cost-effective manner.



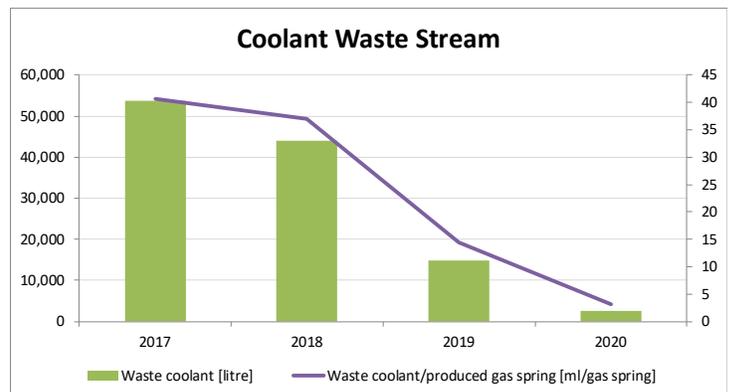
# Waste Management

At Barnes Group, our operations track and report waste generation data using a common online system, according to the framework established in our corporate environmental standards. Centralized reporting of both non-recycled and recycled industrial process wastes began in 2014 and enables us to identify pollution prevention and waste minimization opportunities, as well as to drive towards recycling a greater percentage of our industrial waste streams. While recycling is good, we recognize that waste reduction at the source is even better, which is why we set a target to reduce the amount of industrial process waste we generate from our manufacturing operations by 15% by 2025. This year, a number of our divisions took steps to minimize waste generation at the process level, increase resource efficiency, and reduce single-use waste.



Our Barnes Aerospace location in West Chester, Ohio uses a common solvent for numerous cleaning processes. After researching recycling options with suppliers and the regulatory requirements with Ohio Environmental Protection Agency, the site invested in solvent distillation and recycling equipment early in 2020. The self-contained, intrinsically-safe system is capable of recycling the used solvents to 99.9% virgin quality, and the recycled solvent is reused on site. In addition to reducing the spent solvent waste stream by over 90%, the recycling program also resulted in cost savings by eliminating waste disposal costs and the need to purchase new solvent.

Early on in the Company's efforts to reduce waste from our operations, our Force & Motion Control, Strömsholmen location in Trånas, Sweden conceptualized and installed a centralized coolant processing system. The system processes water-based coolants from machining operations and is paired with an evaporator to reclaim and reuse the water. This investment has successfully reduced the volume of their coolant waste stream by more than 90% over the past 4 years. The aqueous portion of the coolant is recycled and returned to the machines as new coolant, and less than 10% of the total volume generated ends up as waste oil shipped offsite for proper disposal.



Our Engineered Components, Associated Spring location in Singapore reduced the usage of pallet stretch film in the shipping area by replacing the manual process with automatic mobile pallet stretch equipment. Based on 2019 data, the shipping department had been using 72 rolls per year with manual wrapping. After automation, the usage decreased by more than 75%, reducing plastic waste and generating savings in purchased materials.



### Sustainability News

EcoVadis, the worldwide Sustainability Ratings Provider, re-evaluated our Automation, Gimatic business. EcoVadis increased its rating of Gimatic and awarded it a Silver EcoVadis Medal, placing Gimatic among the top 25% of companies assessed. The EcoVadis rating is a common tool used globally for supplier evaluation.

## Recycling

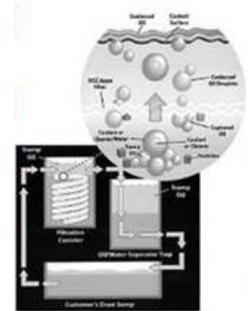
Our Molding Solutions, Männer location in Bahlingen, Germany operates a Validation Center where customers conduct mold trials for new and modified products. Since the test pieces from these trials are not used for production, Männer collects these parts, together with any unused granules, and partners with a recycling company that is committed to 100% material recycling of the residual plastics. The plastics are sorted on a granulator, finely ground, packed in bulk containers and marketed to new end users. The primary field of application for the reprocessed materials are plastic profile producers for the construction industry. In 2020, this partnership enabled Männer to revert more than 70 tons of plastic to the marketplace, preventing the material from being landfilled and supporting the circular economy.



# Water Conservation

Barnes Group has committed to reducing the amount of water we use in our manufacturing operations by 20% by 2025. Our operations have been tracking water usage data for several years, and we are pleased to report that our divisions continued to implement water conservation projects in 2020 to further reduce water consumption. Some of the water conservation initiatives implemented include:

- Our Barnes Aerospace location in West Chester, Ohio prides itself on providing a clean and safe workplace for its employees. In an effort to reduce the amount of water used to keep the facility looking its best, the site invested in an aqua filtration unit that filters mop water. The filtration system removes non-soluble oils and traps suspended particles, enabling the same water to be reused for cleaning floors up to seven times. The system has been a success and decreased the volume of water used for general cleaning.
- Our Engineered Components, Associated Spring location in Campinas, Brazil completed a process optimization project in its tumbling and finishing department. An automatic dosage system coupled with designated fresh water and chemical reservoirs were added to control water quality inside the vibratory bowls used in this department, while new touch screen control panels were introduced to program the process and allow employees to better monitor machine status. By upgrading these process controls and automating water and chemical additions, the team improved quality and productivity while reducing water consumption. Automation also decreased the amount of water additive required by more than 35% and the volume of process wastewater disposal by 230 m<sup>3</sup> per year.
- Our Engineered Components, Heinz Hänggi location in Bettlach, Switzerland invested in an evaporation/distillation system to mitigate its requirements for large volumes of water used in the deburring process – a key process required to meet the customer quality requirements. During the process, the water is also used for rinsing the parts to meet cleanliness requirements; therefore, the water quality must be within a certain specification. In the past, fresh water was used. In order to reduce the amount of fresh water consumed and to help achieve the Company's environmental goals, the evaporation/distillation system was installed. This system processes the used water and produces water of distillate quality. The distillate is enriched with additives and brought back into the cycle in a closed loop. Since all water for deburring is now recirculated, we anticipate that the fresh water consumption will be reduced by over 90%, saving over 8,000 m<sup>3</sup> of fresh water per year.



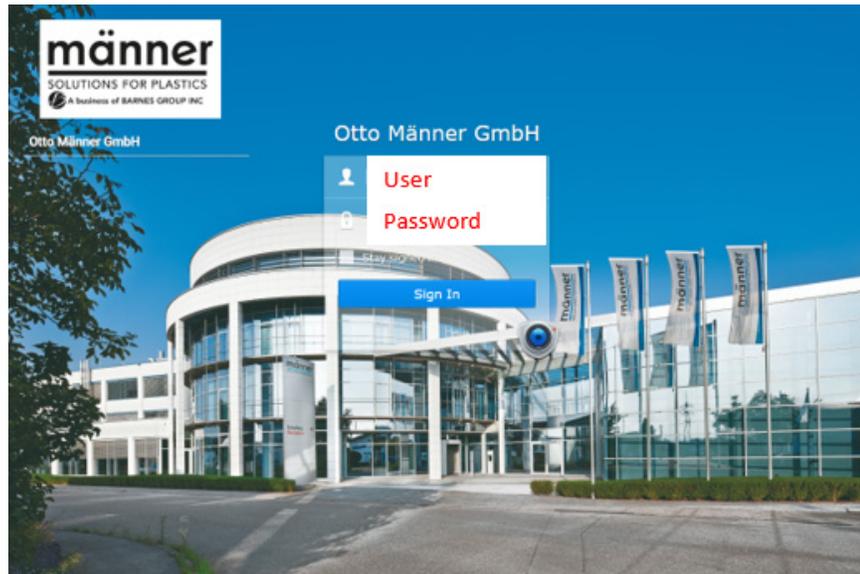
## Energy Conservation

Since we began requiring our operations to track and report energy usage in 2013, our divisions have continually demonstrated their commitment to energy conservation. As in previous years, our facilities continued to expand their use of energy-efficient LED lighting and motion sensors. In addition, select divisions have achieved climate-conscious energy reductions through different means to help move our Company towards our target of 15% reduction in energy usage by 2025.

- Our Molding Solutions, FOBOHA location in Haslach, Germany improved energy efficiency by connecting the deep hole drilling and milling machines to the site's chiller system. By doing so, less warm air is discharged into the production hall and is instead cooled by the water chiller. This has resulted in a reduction in air conditioning demand during the summer months. According to employees, the reduction of exhaust air in the production hall has also improved the general indoor air quality.
- Our Engineered Components, Associated Spring location in Bristol, Connecticut partnered with an engineering firm to complete an audit of its compressed air systems and usage. The team installed a data logger to measure actual, real-time compressed air being supplied into the facility. On a Sunday when there was minimum production activity occurring, baseline consumption was measured, and specific mechanical power presses were turned off in a controlled manner to obtain a comprehensive data set. After analyzing the data, the team signed a Letter of Agreement for Energy Efficiency Services with the local utility and installed new automatic ball valves and actuators wired to the servo motors to control the valving. The project was completed before year end and will yield an estimated annual energy savings of 60,000 kWh. In addition, the location expects to receive a one-time incentive rebate from the utility of over \$15,000.
- Our Engineered Components, Associated Spring location in Campinas, Brazil installed a solar water heater to supply hot water to the employee cafeteria. The previous hot water system was electric. The new solar system is expected to reduce energy consumption by approximately 40 Mwh/year and provide an annual cost savings of around \$2,500. Similarly, our Associated Spring location in Mexico City, Mexico installed a solar heater for the showers in employee locker rooms, replacing gas-fired heating sources. (Image: Mexico City)



- Our Barnes Aerospace location in Ogden, Utah partnered with the local energy company and an engineering firm to conduct a Compressed Air Leak Audit. More than 50 leaks were found, and an internal team of employees completed the necessary repairs as part of "6S Fridays." The engineering firm returned to verify the corrections, and the local utility issued the approximate energy and cost savings, as well as the financial incentive. The projected savings are estimated at ~150,000 kWh per month. Our Barnes Aerospace location in Lansing, Michigan completed a similar exercise and identified and fixed dozens of air leaks in their facility as well.
- Our Molding Solutions, Männer location in Bahlingen, Germany implemented a unique project with environmental benefits necessitated by the COVID-19 pandemic. When customers were unable to travel safely to our Validation Center, the team developed an online qualification process, offering virtual tool qualification services, including Factory Acceptance Tests, by leveraging high-resolution camera technology. Customers could be "live" for all the essential steps of the qualification process yet remain virtual. While travel restrictions were in place, the online qualification option saved our customers time and money, avoided the emissions associated with business travel, and enabled us to meet deadlines for time-critical projects. While the process was developed in response to the global pandemic, we anticipate that it will continue to be used by some customers after the pandemic due to the efficiencies and savings realized.



### Energy Audit

Our Engineered Components, Associated Spring location in Bristol, Connecticut identified and addressed a hidden source of energy waste: automated compressed air bursts are used to prevent chip buildup in a CNC machine. This automated blow off cycle was modified to ensure it is only enabled when the machine is in production mode.

# Renewable Energy at Barnes Group

- Our Force & Motion Control location in Tranås, Sweden gets its district heating from Tranås Energy's combined heat and power plant, which only burns renewable biomass. Tranås Energy also repurposes the leftover ash as a natural fertilizer.
- Our Molding Solutions, Synventive location in Bensheim, Germany purchases its energy from the GGEW AG, 55% of which is derived from a mix of solar, wind, and hydropower.
- Our Molding Solutions, Männer location in Bahlingen, Germany also derives more than 35% of its energy from renewable sources, and its Männer location in Au, Switzerland derives all of its energy from hydropower.
- Our Automation, Gimatic location in Bagnolo Mella, Italy generates a small portion of its energy from a rooftop solar panel system.
- Our Molding Solutions, Thermoplay location in Pont-Saint-Martin, Italy generates approximately 9% of its energy from a rooftop solar panel system.

