HOWMET AEROSPACE

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

2022

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Forward-Looking Statements: This report contains, in addition to historical information, statements concerning Howmet Aerospace's expectations, goals, targets, strategies or future performance. These "forward-looking statements" include such words as "anticipates," "believes," "estimates," "expects," "should," "will," or other words of similar meaning and are subject to a number of known and unknown risks and uncertainties. Some of the factors that may cause Howmet Aerospace's actual results to differ materially from those expressed or implied in the forward-looking statements include uncertainty of the duration, extent and impact of the COVID-19 pandemic on Howmet Aerospace's operations and financial condition; deterioration in global economic or financial market conditions generally or in the markets served by Howmet Aerospace. including as a result of COVID-19 and its effects; the impact of potential cyberattacks and information technology or data security breaches; factors affecting Howmet Aerospace's operations, such as manufacturing difficulties, supply chain disruptions, natural disasters or other unexpected events; the loss of significant customers or adverse changes in customers' business or financial conditions; changes in the regulatory environment; the outcome of contingencies, including legal proceedings, government or regulatory investigations, and environmental remediation; the inability to achieve the level of revenue growth, cash generation, cost reductions, improvement in profitability, or strengthening of competitiveness and operations anticipated or targeted; and the other risk factors summarized in Howmet Aerospace's Form 10-K for the year ended December 31, 2022, and other SEC reports.

WHO WE ARE

OUR VISION

We are a company of innovators and makers. We are transforming the future with high-performance engineered solutions that are paired with advanced manufacturing expertise.

OUR MISSION

Leverage our differentiated technologies to reduce the carbon footprint of our customers by delivering products that enable lighter, more fuel-efficient aircraft and commercial vehicles and enable sustainable power generation.

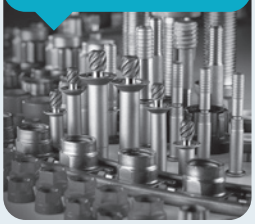
WHAT WE DO

We are a manufacturer of high-performance advanced engineered solutions for the aerospace, defense and transportation markets.

ENGINE PRODUCTS

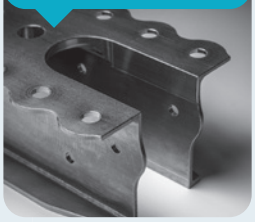
Produce components enabling quieter, cleaner and more fuel-efficient aerospace engines and industrial gas turbines.

FASTENING SYSTEMS



Make aerospace and industrial fasteners to hold together aircraft, jet engines, commercial trucks, wind turbines, solar panels and more.

ENGINEERED STRUCTURES



Manufacture advanced, multi-material parts that make aircraft and vehicles lighter and more fuel efficient.

FORGED WHEELS

Forge strong aluminum wheels that allow commercial trucks to run lighter and more fuel efficiently.

HOW WE OPERATE

As one team, with one direction, using one plan.

Value Our People

- Emphasize health and safety.
- Foster a “speak up” culture.
- Embrace a diverse and inclusive work environment.
- Support the communities where we operate.

Drive Operational Excellence

- Lead with integrity.
- Continuously improve operations.
- Focus on the few things that matter.
- Align to win together.
- Deliver value to shareholders.

Win with Our Customers

- Collaborate to solve customer challenges.
- Innovate for our customers’ success.
- Deliver with quality.
- Act with our customers in mind.

CEO STATEMENT

During a year of recovery for our company, we remained dedicated to reducing our environmental footprint and that of our customers, providing workplaces where our employees can excel, investing in the communities where we operate and adhering to good governance practices.

Strong growth, primarily in the commercial aerospace market, boosted our revenue by 14 percent in 2022. With a healthy market and strong demand, we focused on safely increasing production while addressing the challenges of retaining talent and managing our energy consumption and environmental impacts. We also increased our workforce by 1,500 people and invested nearly US$200 million during the year to support the significant production ramp-up.

We continue to leverage our differentiated technologies to help our customers manufacture lighter, more fuel-efficient aircraft and commercial trucks with lower carbon footprints. We showcased our engineered solutions, which have nearly 1,150 granted and pending patents, during our Technology Day in May 2022.

Within our own operations, we progressed against our 2024 greenhouse gas (GHG) emission goal by implementing more than 40 projects that avoid a combined 18,800 metric tons of GHG emissions annually. This helped us achieve a 20.0 percent reduction in total GHG emissions through 2022 from the 2019 baseline, approaching the 2024 goal of a 21.5 percent reduction. Our GHG emission intensity, which is based on revenue, declined 6.7 percent from prior year with the help of a 9.0 percent improvement in our energy intensity.

Throughout our production ramp-up, we maintained a safe and healthy workspace for our employees, contractors and visitors. All of our safety metrics improved over prior year and remained well below industry averages. Sadly, this performance was overshadowed by a physical altercation over a domestic dispute that resulted in a fatality at one of our U.S. facilities.

We focused our 2022 diversity, equity and inclusion (DEI) activities on cultivating an inclusive talent pipeline by improving our ability to source and attract a diverse range of qualified candidates. Our efforts resulted in an 8.3 percent increase in female employees globally and an 8.5 percent increase in minority employees in our U.S. workforce compared to 2021.

Howmet Aerospace Foundation disbursed more than US$3.9 million in grants for STEM education opportunities for underrepresented individuals during the year. It also provided US$3.1 million in grants focused on DEI.

We again advanced our Ethics and Compliance (E&C) Program in 2022, helping further ensure our employees are conducting business ethically and in compliance with all applicable laws all around the world.

As this report shows, we continue to work on our environmental, social and governance (ESG) challenges with transparency and dedication. We have made significant strides in reducing hazardous waste, optimizing our water use, progressing on our GHG emission goal, keeping our sites safe and working with suppliers who share our values. This progress would not be possible without the hard work and commitment of every employee.

John C. Plant
Chairman and Chief Executive Officer

ESG APPROACH

CLIMATE CHANGE AND SUPPLY CHAIN DECARBONIZATION HAVE MOVED TO THE FOREFRONT OF OUR ESG FOCUS. OUR BUSINESS STRATEGY IS TO REDUCE THE FOOTPRINT OF OUR PRODUCTS, FROM WHEN WE RESPONSIBLY SOURCE RAW MATERIALS TO WHEN THE PRODUCTS ARE MANUFACTURED AND ULTIMATELY USED BY OUR CUSTOMERS.

Our position as a manufacturer of high-performance multi-materials comes with a responsibility to manage these decarbonization ambitions throughout our complex and global supply chain. Advancement toward our decarbonization goals is described in this report's Climate Change, Energy and Supply Chain sections.

Wherever we operate, it is our goal to have a positive impact on our stakeholders and surrounding communities. We believe that truly sustainable organizations shape the future. By fulfilling the needs of society now, we can expand opportunities for generations to come.

We believe that through our fundamentals and values, which are specified in our Code of Conduct, we hold ourselves to the highest levels of integrity and compliance. This strengthens our three-lever ESG approach and navigates us through the challenges.

ESG APPROACH

Customer

Through our sustainable product development and innovations, enable our customers to achieve their sustainability goals. It is here where we make a substantial impact with our products, which reduce fuel consumption and improve efficiencies.

Operational

Reduce our environmental footprint by enhancing efficiency, act on our social responsibility and keep our people safe, empowered and engaged.

Supply Chain

Drive sustainability into our suppliers' processes and practices and leverage their expertise to achieve our sustainability goals.

GOVERNANCE APPROACH

Our commitment to ESG starts at the top of our organization with our Board of Directors. Our board is committed to our ESG goals and maintains oversight for ESG matters at the full board level and through various board committees. The full board reviews our comprehensive ESG program at least annually.

Our board and CEO also review our talent in key positions across our company, update our succession strategy and leadership pipeline for key roles, including CEO, and assess the adequacy of our workforce to meet business challenges and future growth required for our long-term corporate strategy. In addition, the board receives updates and presentations on key topics, including diversity, equity and inclusion and employee development, succession and retention.

To help guide our actions, we developed several ESG goals and associated performance metrics to address material issues for our company and stakeholders. Key metrics can be found throughout this report, with comprehensive metrics located in the ESG Performance Metrics section.

In addition to providing information on key ESG topics, this report also includes insight to our priorities and initiatives. Case studies highlighted in several sections exemplify our approach and culture.

2022 ANNUAL PERFORMANCE

- ▲14% revenue
- 1 fatality
- ▼31.8% days away, restricted and transfer rate
- ▲5.3% direct and indirect greenhouse gas emissions
- ▼6.7% greenhouse gas emission intensity
- ▼3.8% emissions of metallic hazardous air pollutants
- ▲3.2% energy consumption
- ▼6.8% freshwater withdrawal intensity
- ▲18.6% landfilled waste
- ▼1.5% hazardous waste generated

REPORTING AND MATERIALITY

THE 2022 HOWMET AEROSPACE ESG REPORT WAS DEVELOPED IN ACCORDANCE WITH THE GRI STANDARDS AND THE SASB AEROSPACE AND DEFENSE SUSTAINABILITY ACCOUNTING STANDARD. OUR REPORTING IS ALSO ALIGNED WITH THE TCFD FRAMEWORK.

Together with our Form 10-K and Proxy Statement, this ESG report is part of our collective ESG-related disclosures.

We believe that standardization of ESG disclosures allows for better peer-company comparison and transparency on the risks and opportunities that we face.

We periodically identify and assess our ESG impacts and review our material topics to match our report content with internal and external expectations to ensure a balanced approach between relevancy and transparency. Materiality input is obtained from various sources, including:

External:

- Stakeholders and providers of capital;
- Customers and suppliers;
- Industry associations and peer companies;
- ESG standards and frameworks, such as the SASB standard;
- Legislators and regulators;
- Sustainability surveys from ratings organizations and proxy advisor policies;
- Legal advisors;
- Communities in which we operate;
- Non-governmental organizations; and
- Media coverage of Howmet Aerospace.

Internal:

- Our leadership;
- Our enterprise risk management process; and
- Our employees and their representatives.

We sought third-party assurance of our 2021 Scope 1 and Scope 2 emissions. The accuracy and completeness of all other information is verified by our internal experts and processes, which include our EHS and Ethics and Compliance audit and assessment processes.

MATERIAL TOPICS

TOPIC	BOUNDARIES
Energy	Global operations
Water	Global operations
Climate Change	Global operations
Air Emissions	Global operations
Waste	Global operations
Legal Compliance	Global operations
Health and Safety	Global operations
Diversity and Equal Opportunity	Global operations
Data Security	Global operations
Business Ethics	Global operations
Product Safety	Global operations

In addition to the material topics, this report contains information on other topics of relevant interest to our stakeholders.

PRODUCTS

WORKING IN CLOSE PARTNERSHIP WITH OUR CUSTOMERS, WE SOLVE COMPLEX ENGINEERING CHALLENGES TO ENABLE THE NEXT GENERATION OF AIR TRAVEL THAT IS MORE FUEL–EFFICIENT, QUIETER AND CLEANER AND GROUND TRANSPORTATION THAT IS MORE SUSTAINABLE.

The challenges of climate change, resource scarcity and more are increasingly driving the global markets in which we compete. Our next-generation innovations are enabling our customers to achieve significant fuel economies, reduced emissions and maintenance efficiencies. Made from our advanced materials and technologies, these products are strong, efficient and durable.

Through our innovations, we are advancing the sustainability of our customers and the markets that we serve.

AEROSPACE

Airlines and aircraft manufacturers have a clear need – more efficient engines and lighter aircraft that deliver fuel efficiency and reduce emissions. Both will be essential for the industry to meet its goal of achieving net-zero carbon emissions by 2050, which was set in late 2021 by the International Air Transport Association (IATA). The International Civil Aviation Organization's Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), which established a goal of stabilizing international emissions at 2019 levels, will be a key framework for meeting the industry's long-term goal.

Our products and technologies are well positioned to support the industry drive to increase the use of sustainable aviation fuels (SAFs) and emerging engine technologies, such as hydrogen engines, open fan concepts and ultra-high-efficiency engine concepts. These advancements are fully aligned with our core capabilities of developing lighter aerospace engine and structure products and materials that are capable of operating at extremely high temperatures.

Aero engine blades

We engage in concurrent engineering with our customers to optimize producible designs for commercial, defense and land-based turbine engine components. Coming out of the COVID-19 pandemic, we are reinforcing our engineering and manufacturing expertise to

produce compliant products at an exceptionally high rate. This minimizes scrap as well as the footprint and resources needed to produce our products. We are also expanding our suite of technical capabilities and solutions, including process modeling, to help our customers achieve significant fuel economies, reduced emissions and maintenance efficiencies.

Materials and cooling techniques that we developed enable aero engines to run hotter and under higher pressures, increasing fuel efficiency. For aerospace and defense engines, our single crystal airfoils with advanced cooling schemes operate in environments 200° C (392° F) above the melting point of the metals. That is like keeping an ice cube from melting in a hot oven.

Our Howmet-THOR® advanced titanium alloy is designed for higher temperature applications in next-generation aero engines and adjacent structures. The alloy is 50 percent lighter than incumbent nickel-based superalloys, which drives increased cost savings and fuel efficiency for our customers. It also operates at service temperatures higher than other conventional titanium alloys available on the market.

We recycle and purchase scrap material to use in our alloy systems. Approximately 60 percent of the alloy content we use is made from recycled materials, minimizing the need to mine virgin elementals. Some alloys contain up to 100 percent reverted or recycled materials.

Other Howmet Aerospace solutions that enable an engine to withstand higher temperatures and pressures include:

- A technique for growing single crystal turbine airfoils, which is a grain structure that aligns better to centrifugal force inside the engine, resists deformation, and increases blade temperature capability and product life;
- Complex ceramic shapes that form internal passages in the turbine airfoils to increase the efficiency of cooling air flowing across the metal surfaces;
- Advanced coatings that protect metal engine parts from extreme temperatures and the damaging effects of oxidation and corrosion;
- Extensive process modeling to reduce the number of iterations required for physical process development;
- Rapid prototyping techniques that enable timely evaluation of iterative part configurations; and
- The first-ever aluminum-lithium front fan blade forging developed with Pratt & Whitney that improves fuel efficiency.

We also have developed new materials and product forms that enable our customers to reduce material and energy usage in their processes. These include titanium sheet products with improved formability that enable temperature differences of up to 110° C or 200° F during superplastic forming compared to current processes. This reduces energy usage and improves tool life for complex formed parts.

Our titanium extrusions capabilities enable us to provide our customers with lean and hot stretch formed extrusions that provide significant buy-to-fly improvements, reducing material usage and machining time.

Hot stretch formed extrusion

Lighter aircraft use less fuel and emit fewer greenhouse gases, and our solutions are helping the industry lighten up. New generation aircraft like the Boeing 787 and Airbus A350 make extensive use of carbon fiber reinforced plastic (CFRP) composite materials for the majority of their structure. The extensive use of composites requires titanium for key structural components, which we are providing to both of these lightweight aircraft. For example, our lightweight titanium seat rail for the Boeing 787 airframe is up to 20 percent lighter than its predecessor.

Titanium seat rail

Our Flite-Tite® fasteners help enable large-scale, aerodynamic, lightweight and more fuel-efficient composite airframes by controlling the flow of energy in both the structure and fasteners, thereby protecting against lightning strike damage. In addition, our Ergo-Tech® blind bolt fasteners, which are designed to be installed from one side of a structure, enable the efficient production of more aerodynamic wing structures and extensive use of robotic automation for aircraft structural assembly.

Learn more. ➔ go

COMMERCIAL TRANSPORTATION

Aerodynamics, electric vehicles, decarbonization initiatives, emissions regulations and other emerging issues are impacting how commercial fleets operate. Vehicles are also getting heavier due to the technologies required to meet new standards, with every increase in weight having a negative impact on fuel consumption and related emissions.

The global trend of commercial vehicle electrification, for example, presents the challenge of reducing the impact of higher battery weight and possible loss of payload capacity in some applications. The use of new fuels, such as compressed natural gas and hydrogen, and new hardware to treat the gas generated from combustion to meet new regulations also could increase vehicle weight.

According to the American Trucking Associations and Driving Mobility for Europe, commercial vehicles are responsible for more than 70 percent of cargo transported over land in the United States and Europe. To support the trucking industry's expansion and sustainability, new technologies that allow greater efficiency with less environmental impact must be developed.

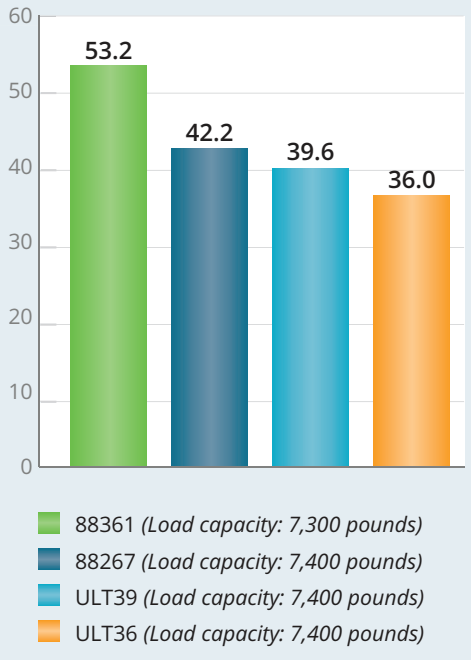
In 2022, we launched our 16.3-kilogram (36-pound) Alcoa® Ultra ONE® wheel. Through its use, a truck and trailer combination could shed 253 kilograms (558 pounds). Weight savings can be maximized

up to 635 kilograms (1,400 pounds) with replacement wheels and single tires. Field tests also indicated a reduction in fuel consumption of up to 3.4 liters (0.89 gallons) per 1,609 kilometers (1,000 miles) driven.

The weight of Alcoa® wheels has decreased due to various innovations, including a proprietary alloy that maintained load capacity. A 35 percent reduction in mass from the 1996 wheel to today's version means we use less metal for each wheel while achieving the same load capacity. Less mass means less fuel needed to move a truck on the road.

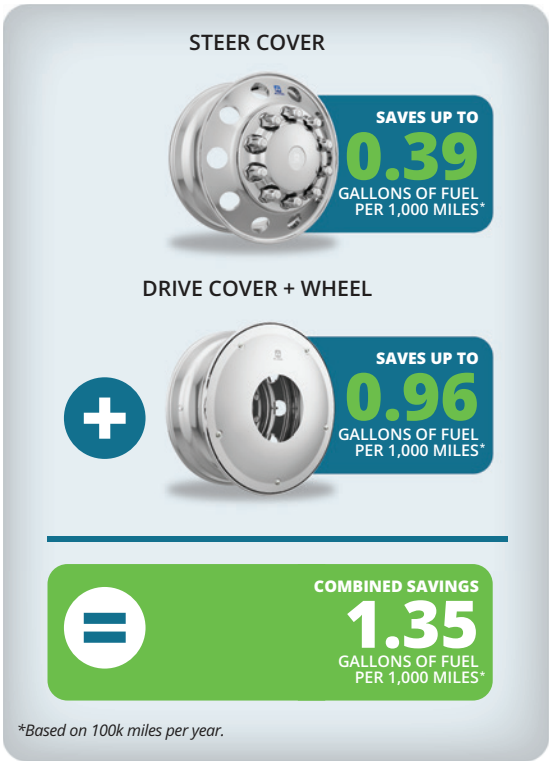
In addition to the fuel benefits gained when our wheels are used on trucks, we also have improved the wheels' manufacturing and sourcing footprint.

ALCOA® WHEELS PRODUCT WEIGHT EVOLUTION
Pounds



Another way to increase a commercial vehicle's energy efficiency is to improve aerodynamics by reducing the negative effect of air drag. Projects for new cabins with different formats, bold design and driver comfort seek to deliver this result.

In line with this demand, we developed the easily installed Alcoa® Wheels Aerodynamic Drive Wheel Cover for drive axles. Testing indicates the cover can generate savings of up to 3.63 liters (0.96 gallons) per 1,609 kilometers (1,000 miles) driven. If used with the Alcoa® Wheels Steer Aerodynamic Drive Cover, the savings can reach up to 5.1 liters (1.35 gallons).



Our fastening systems also enable lighter weight and more efficient aerodynamics on electric medium- and heavy-duty trucks. We have fastening solutions for securing battery covers, aerodynamic wheel covers, electrical groundings and trailer assemblies. Our fasteners for the latter are up to 10 percent lighter than other options without sacrificing joint strength.

Our products and technologies will continue to help fleet owners achieve their goals in an increasingly efficient and sustainable manner.

Learn more. ➔ go

DEFENSE AND SPACE

Security and defense providers are experiencing broader requirements in response to continued and new threats. Defense aircraft must fly farther and carry more payloads. Land vehicles must carry multiple communication and weapon systems. These needs are challenging the industrial base to respond with material solutions that provide higher performance while using less fuel.

We have been listening and innovating. Our solution systems are lighter, stronger, faster and sustainable across the air, land, sea and space defense domains.

Our advanced single crystal airfoils enable improved thrust, efficiency and loiter capability for defense engines. We are supporting the latest F135 engine technology with the world's most complex airfoils to achieve engine performance, reliability and durability.

F-35 Joint Strike Fighter

Our monolithic forged aluminum bulkheads on the F-35 Joint Strike Fighter reduce total material volume, saving 136 to 181 kilograms (300 to 400 pounds) per jet. This allows the jets to use less fuel to stay on station longer, carry more critical payload and offer flexibility to counter any number of threats from a single platform.

The F-35 also features more than 48,000 of our Eddie-Bolt® 2 fasteners, which enable assembly of the aircraft's lightweight composite structure.

Learn more. ➔ go

ENERGY

Our fasteners are used to assemble the structures in solar panel fields to improve structure reliability and reduce assembly costs. Our applications in the industry also include robust, maintenance-free electrical connections in direct current combiner boxes, which are critical components in getting solar power from the field to the grid.

During 2022, we delivered BOBTAIL® lockbolts and BOM® blind fasteners to support the installation of 6.0 gigawatts of solar panel fields. Our battery-powered Makita®[1] BV17 installation tool, which we launched in 2022, increases the productivity of contractors installing our BOBTAIL® and BOMTAIL® fasteners in solar fields by more than 20 percent.

In the wind power market, our fastening systems for wind turbines provide superior joining and fatigue strength in even the most extreme loading and corrosion-prone environments. These attributes reduce maintenance requirements, cost and the safety risks associated with our customers' employees accessing these structures.

[1] Makita is a registered trademark of Makita Corporation, Japan.

In 2022, we expanded our capacity and capability to support the wind power market with larger parts and specialty designs, such as lockstuds. We also expanded into broader global markets, including China.

BOBTAIL® lockstud

Gas-fired power generation reduces carbon dioxide emissions by 50 percent compared to coal-fired power generation. Our airfoils for industrial gas turbines (IGTs) support higher engine operating temperatures and pressures to maximize base load efficiency and reduce nitrogen oxide emissions by 40 percent. We are supporting a drive by OEMs to increase operational efficiency, such as fast starts and fuel flexibility, and turbine availability and reliability through longer-life components.

We supply the world's largest IGT blades, which are more than one meter in length. This enables combined cycle power generation of nearly 900 megawatts and pushes turbine efficiency toward 64 percent.

IGT blade

CASE STUDY

BATTERY POWER ENABLES SOLAR POWER

The combination of a new battery-powered installation tool and specially designed Howmet fasteners is supporting the global transition to solar power by increasing installation productivity by up to 20 percent, reducing costs, eliminating environmental impacts and improving ergonomics.

Contractors building solar panel fields typically use an 8.6-kilogram (19-pound) hydraulic tool tethered to a diesel-powered hydraulic rig to install fasteners that secure the solar panel structure. In addition to being cumbersome, the tool requires changeouts of its nose assembly to accommodate different fasteners.

Recognizing the need for a more streamlined solution, our product designers collaborated with Makita to develop a battery-powered tool that could accommodate different fasteners. The resulting 5.4-kilogram (12-pound) Makita® BV17 battery-powered tool and specially designed BOBTAIL® and BOMTAIL® fasteners create a tooling system that eliminates the need for changeouts. During field testing of the system, a market-leading construction contractor realized a 20 percent increase in productivity.

Additional benefits to the new system include:

- Battery power rather than diesel-generated power, which saves fuel and eliminates emissions and noise;
- A 37 percent reduction in tool weight and the elimination of a tethering line, improving installer ergonomics, flexibility and mobility;
- Reduced costs due to higher productivity and fuel savings; and
- Increased access to remote locations since a power source no longer needs to be hauled to the installation site.

The Makita® BV17 battery-powered tool can work with other Howmet fasteners, opening the door to additional applications beyond solar that could benefit from the system's improvements in productivity, ergonomics and flexibility.

CLIMATE CHANGE

"CLIMATE CHANGE IS THE DEFINING ISSUE OF OUR TIME, AND WE ARE AT A DEFINING MOMENT," ACCORDING TO THE UNITED NATIONS. WITHOUT DRASTIC ACTION TO KEEP TEMPERATURE RISES WITHIN 1.5° C, ADAPTING TO THESE IMPACTS IN THE FUTURE WILL BE MORE DIFFICULT AND COSTLY.

We see the challenges associated with climate change as an opportunity for positive change. We are addressing them with proactive mitigation and an expanding product portfolio that minimizes carbon usage for our customers. (See the Products section.)

We see regulatory changes in the key countries where we operate. Our customers and suppliers are also responding to a world transitioning to a lower-carbon economy with enhanced transparency on carbon risk management.

In response to these developments, we published our first disclosure on our carbon strategy in 2021 following the Task Force on Climate-related Financial Disclosures (TCFD) framework. Since then, we annually update our disclosure as we progress.

To prepare our most recent disclosure, we reviewed all aspects of our climate change management, including governance, strategy, risk management, metrics and targets for this maturing topic. Our updated TCFD disclosure is available on our website.

CLIMATE GOALS

We believe that our role in the transition to a lower-carbon economy is aligning our direct and indirect emissions with the goals of the Paris Agreement. This means that our target framework, pace of emission contraction and ultimate goal of net zero will be based on science and proven technologies.

Our objective is to manage a credible and realistic transition plan that we have divided into near-, medium- and long-term phases focusing on 2024, 2030 and 2050, respectively. Our near-term target is focused on our own operations.

We have identified more than 100 energy-saving projects that represent an investment of US$28.3 million. These projects are forecasted to significantly improve our energy intensity and reduce the GHG footprint of our operations by 21.5 percent by 2024 from our 2019 baseline.

NEAR-TERM GOAL

21.5 percent combined Scope 1 and Scope 2 GHG emissions contraction by 2024 from a 2019 baseline.

All the identified projects will reduce energy consumption, which in turn will reduce GHG emissions either directly or indirectly. We will achieve the 21.5 percent reduction target by implementing lower-carbon and energy-efficient technologies that allow us to reduce energy demand while maintaining product specifications.

In the medium term (2025 to 2030), we believe that a further reduction of carbon emissions is achievable but represents a more significant challenge. This is because we will be dependent on technological developments that we can apply in our facilities and improvement in the energy infrastructure in the communities where we operate.

Our Transition Technology Workgroup, which consists of our segment leads on energy and technology, leads our reduction initiative for the medium term. The workgroup is studying strategies that will uncover opportunities to both reduce our GHG emissions per unit produced and replace fuels with renewable alternatives where technically and economically feasible. As the cost of carbon is expected to rise, we will include this aspect in the evaluations of new projects and capital expenditures to ensure our investments are sustainable.

In 2022, we made progress in quantifying carbon emissions in our supply chain, both upstream and downstream, and achieved greater insight on the relevance of the 15 categories in Scope 3. We have yet to set a Scope 3 target.

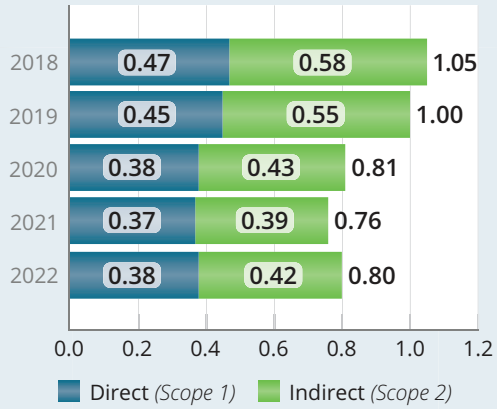
PERFORMANCE

Our GHG emissions are strongly correlated with our consumption of natural gas and electricity, which comprise our most significant sources of energy. We have a solid history of deploying strategic energy-intensity improvements, which have resulted in GHG intensity improvements and even reduced total GHG emissions while our production volumes increased. In 2022, our implementation of energy-reduction projects avoided a combined 18,800 metric tons of GHG emissions. (See the Energy section.)

Our 2022 Scope 1 and Scope 2 GHG emissions equaled 0.8 million metric tons, which was a 20.0 percent reduction from the 2019 baseline and a 5.3 percent increase from 2021. Although energy reduction projects achieved solid GHG savings, a sales increase and significant increases in grid intensities more than offset the achieved reductions.

In 2022, our GHG emission intensity improved 6.7 percent over 2021 due to reduced energy consumption per dollar of revenue. Our revenue increased 14.1 percent while our GHG emissions increased 5.3 percent.

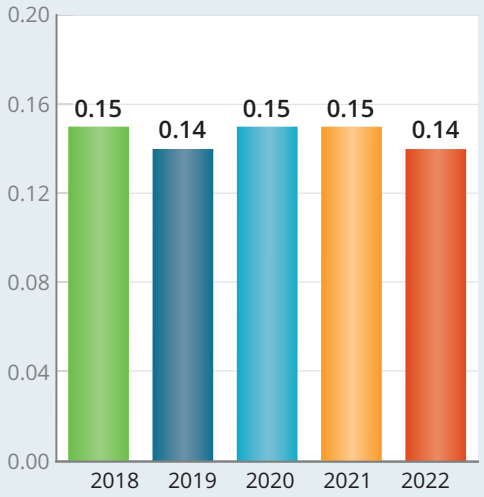
GREENHOUSE GAS EMISSIONS
Million metric tons of carbon dioxide equivalents



Gases included in the calculations are carbon dioxide, methane, nitrous oxide, and CFC and HFC from refrigerant releases (since 2020). Releases of SF6 and NF3 are not considered a significant source of GHG emissions for our operations. We had zero biogenic emissions in 2022. We used the World Resources Institute's GHG protocol methodology based on operational control; regional or country Scope 1 and 2 emission factors; and 4th IPCC Assessment GWP factors. Data change from prior reporting is due to estimated data being updated with actual data.

GREENHOUSE GAS EMISSION INTENSITY

Million metric tons of carbon dioxide equivalents per billion dollars in third-party revenue



Since our most significant Scope 3 GHG emissions are related to the purchase of primary metals, it is important that we use suppliers that are focused on energy efficiency, renewable energy and advanced technologies to minimize their GHG impact and, in turn, our Scope 3 emissions.

Through our Global Supplier Sustainability Program, we engage with our suppliers to obtain a better understanding of the carbon intensity of the materials and products that they provide to us. (See the Supply Chain section.)

Our Scope 3 GHG emissions totaled 2.06 million metric tons in 2022, with purchased metals accounting for approximately 66 percent of the total. The 6.2 percent increase over 2021 was the result of several factors.

We continued our efforts to refine our Scope 3 emission estimates in 2022 by quantifying emissions from employee commuting and leased properties, which are categories that we previously had considered immaterial and not quantified. The impact of this change was a 2.9 percent increase in Scope 3 emissions compared to 2021.

We also updated our calculations for several other Scope 3 emission categories, including non-metal purchased goods, capital goods, fuel- and energy-related activities, upstream transportation and logistics, and waste from operations. The impact of these changes was an increase in GHG emissions of 303,000 metric tons in these categories compared to our prior methodology, with most of the increase from the quantification of emissions from non-metal purchased goods coupled with reductions in emissions from capital goods and upstream transportation and logistics.

The estimate refinements and calculation updates are geared toward seeking third-party verification of our Scope 3 emissions, which we hope to initiate in 2023.

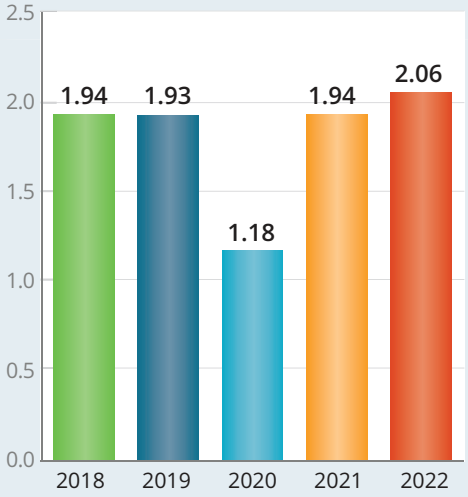
Through an improved understanding of our purchased metals mix of recycled versus primary metals and the use of some supplier-provided carbon intensities, we achieved a 15.2 percent decrease in GHG emissions of purchased metals compared to 2021. This was despite a 3.6 percent increase in purchased metal tons.

Increased use of primary metals has become a recent concern, as these metals carry a significantly higher GHG footprint than recycled metal. Due to the geopolitical situation, some recycled metals may become less available, necessitating more primary consumption that results in higher Scope 3 emissions. We will continue to focus on this area.

Particularly affected is our Forged Wheels segment, where growing demand for our lightweight wheels has increased metal procurement from our billet suppliers. Our truck wheels avoid at least seven times

more GHG emissions during their lifetime than consumed during their production. This beneficial environmental impact is not reflected in our Scope 3 emissions.

SCOPE 3 GREENHOUSE GAS EMISSIONS
Million metric tons of carbon dioxide equivalents



These values are based on WRI Scope 3 methodology for purchased goods (expanded in 2022 to include non-metals), capital goods (since 2020), fuel and energy-related activities, upstream and downstream transportation, waste generated from operations (since 2020), business travel (since 2021), employee commuting (new for 2022), upstream leased properties (new for 2022) and end-of-life treatment of sold products.

Our climate change management efforts and performance received a CDP climate change score of B in 2022. Our activities around business strategy, financial planning and scenario analysis as well as for Scope 1 and 2 emissions (including verification) were recognized with the maximum score of A, or "Leadership." Our risk management processes received a score of A minus. Additional details on our 2022 CDP scores can be found in our CDP Score Results – Climate Change 2022 report.

In 2022, we had our global 2021 Scope 1 and 2 GHG emissions reviewed and verified by an independent third party. This outside verification continued an effort that was started with our 2020 emissions, and we expect that we will continue to have our GHG emissions verified on an annual basis.

ENERGY

ENERGY EFFICIENCY AND CONSERVATION ARE ESSENTIAL PILLARS IN OUR DECARBONIZATION JOURNEY.

The amount and type of energy that we consume in our operations have a direct impact on our GHG emissions. As such, we are committed to evaluating and implementing energy-reduction strategies and exploring the use of renewable and low-carbon fuels where feasible.

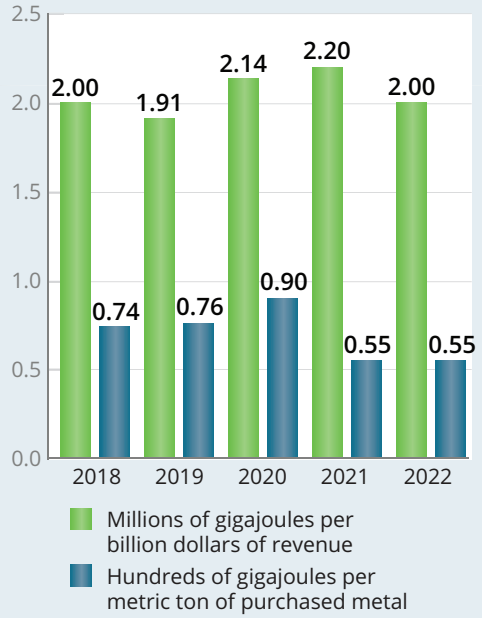
Our energy sources are predominately natural gas, electricity and small amounts of diesel, propane and other fuels. Conserving these resources and making our operations more energy efficient is both good business and the right thing to do.

In 2022, we set energy-saving targets at the segment level to serve as our foundation for achieving our near-term climate goal. Each business segment also annually reviews energy-saving opportunities and sets goals for their implementation. From process changes to upgraded equipment, we implemented more than 40 projects in 2022 that we anticipate will save approximately 300 million megajoules annually.

To track progress against our goals, we monitor natural gas and electricity use and energy-saving project implementation throughout the year. Each business segment has a designated person that communicates the status of existing and new energy-saving initiatives through our Howmet Energy and GHG Projection Tool. We use this tool to forecast energy and GHG emissions using historical energy consumption rates, anticipated changes in energy use and projected economic changes.

Our overall energy consumption was 11.33 million gigajoules in 2022, which was a 3.2 percent increase over 2021. The increase was driven by the recovery of business following the COVID pandemic. Energy intensity based on revenue declined 9.0 percent from prior year.

ENERGY INTENSITY



GLOBAL ENERGY CONSUMPTION

Millions of gigajoules

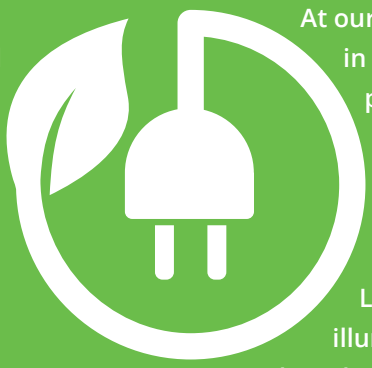
	DIRECT	INDIRECT		TOTAL
		Sourced from Grid	*Generated On-Site*	
2018	8.69	4.90	0	**13.59**
2019	8.83	4.77	0	**13.61**
2020	7.22	4.05	0	**11.27**
2021	7.07	3.91	0	**10.98**
2022	7.29	4.04	0	**11.33**

For some locations, the December 2022 electricity and natural gas consumption was estimated due to final invoices not yet having been received. Data changes from prior reporting are due to minor conversion adjustments and estimated data being updated with actual data.

CASE STUDY

EFFICIENCY PROJECTS SPARK ENERGY, EMISSIONS REDUCTIONS

Through a surge of energy-efficiency projects implemented in 2022, our Engineered Structures segment is saving approximately 68 million megajoules of energy and avoiding almost 5,000 metric tons of related GHG emissions annually.



One of the segment's 17 projects was upgrading the main boiler condensate return system at our location in Cleveland, Ohio. Prior to the upgrade, the facility sent around 90 percent of the system's hot treated water to the city sewer. Approximately 50 percent of the hot water is now returned to the boiler, saving an estimated 9.6 million megajoules of energy and 500 metric tons of GHG emissions each year.

At our Engineered Structures location in Tamworth, U.K., almost 60 percent of the facility's annual power consumption was for fluorescent lighting. A 2022 upgrade to the latest generation of motion-detecting LED lights not only increased illumination levels by 50 percent but also reduced annual energy consumption by approximately 160,000 kilowatt hours.

Other 2022 projects at Engineered Structures locations around the world included insulating heated process lines and turning off equipment when not required. In total, the segment accounted for 46 percent of our implemented energy-efficiency projects during the year.

AIR EMISSIONS

DEPENDING UPON THE MANUFACTURING PROCESS, OUR OPERATIONS PRODUCE DIFFERENT TYPES OF AIR EMISSIONS.

In addition to greenhouse gases, other emissions that often are significant to specific operations or regions include nitrogen oxides and sulfur oxides, volatile organic compounds, particulate matter and specific toxic air pollutants, such as heavy metals. Major processes contributing to our emissions include fuel combustion for process heating; metal casting, forging, grinding and machining; and cleaning and coating of our products.

Our approach to controlling and minimizing these emissions from our operations is driven by our internal air management standard and the regulatory requirements in the areas where we operate. In regions of the world where there are no regulations, we still impose controls consistent with our management standard to minimize emissions that could have an impact on human health and the environment.

Our efforts to minimize or eliminate air emissions include add-on pollution control equipment, changes in work practices, material substitutions or a combination of these strategies. Collectively, these efforts further our long-term goal for clean and healthy air surrounding the communities where we operate.

We measure our performance by collecting a standardized set of air emissions data from our operating locations to support alignment with external disclosure standards, such as the GRI Standards.

In 2022, our efforts to reduce air emissions focused on turning down combustion equipment when demand is lower, improving the effectiveness of local exhaust ventilation systems to capture and control emissions, and conducting emissions testing at locations to improve the methodology for quantifying emissions.

AIR EMISSIONS

Metric tons

	NITROGEN OXIDES	PARTICULATE MATTER	SULFUR OXIDES	VOLATILE ORGANIC COMPOUNDS
2018	405.57	360.41	3.77	213.68
2019	391.28	375.30	3.57	199.34
2020	316.10	289.90	2.78	174.39
2021	280.90	239.44	3.03	206.19
2022	318.89	260.61	2.97	205.79

Data changes from prior reporting are due to estimated data being updated with actual data.

WATER

WATER IS SIGNIFICANTLY VALUABLE – TO HOWMET AEROSPACE AND THE COMMUNITIES WHERE WE ARE LOCATED AROUND THE WORLD.

In 2021, we set a goal to improve our revenue-based water intensity by 9.4 percent by 2024 from a 2019 baseline. The goal focused on our largest water-consuming sites, which accounted for 88 percent of our total water withdrawn in 2019. After closer review, we decided to expand the goal and include all locations that withdraw water. This resulted in a new revenue-based target of an 8.6 percent reduction.

Our 2022 water withdrawal intensity increased 1.7 percent from the 2019 baseline but declined 6.8 percent from 2021 due to the implementation of various water-saving projects.

We withdrew 3,936 megaliters (1.0 billion gallons) of fresh water during the year. The 5.7 percent increase over 2021 was mainly due to inefficiencies with cooling system equipment at a few locations. We started necessary repairs in the third quarter of 2022 and expect them to be completed by mid-2023.

Our facilities use water primarily for cooling, plating and rinsing processes, as well as potable and sanitary uses. Our larger forging facilities are our biggest users of water, followed by our casting plants. We also have facilities that are less water-intensive but located in areas that can be prone to water stress, primarily in the U.S. states of California and Texas. Most of our operations are in industrialized areas, with 99 percent of our water sourced from municipal supplies.

We lessen our impact on local water supplies by consuming and discharging as little water as possible. Where feasible, we use technologies like cooling towers and reverse osmosis to reuse water to further reduce our withdrawal volumes.

At our location in Washington, Missouri, for example, we replaced once-through, non-contact cooling water with recirculated glycol-based fluid to control the temperature of heated hydraulic press fluids. This process change is saving more than 20,700 cubic meters (5.5 million gallons) of fresh water annually.

We assess if our locations are in areas with water stress using publicly available tools, including the World Resources Institute's Aqueduct, and/or input from local governments or other stakeholders. A location identified as a larger water user and located in a water-stress area is further evaluated for opportunities to reduce its water withdrawal. We use the definition of water stress as defined by Aqueduct.

Each of our locations maintains an updated water-flow diagram that maps water intake, use and discharge. During the planning phase for equipment or process changes, a location uses its diagram to identify opportunities to eliminate, minimize or reuse water. Our locations also use proper housekeeping and best management practices to minimize impacts caused by stormwater runoff.

In 2022, we again analyzed our total water withdrawal to identify the sources from which we withdrew water; capture the total water withdrawal in regions identified as having water stress; and break down our water withdrawal between fresh water and other water.

TOTAL WATER WITHDRAWAL

	MEGALITERS WITHDRAWN	WITHDRAWAL INTENSITY *(megaliters withdrawn per billion dollars of revenue)*
2018	4,367.45	642.46
2019	4,846.94	682.19
2020	4,146.44	788.75
2021	3,724.39	744.88
2022	3,935.67	694.12

Rainwater not included. Some fourth quarter or December data has been estimated. Data changes from prior reporting are due to estimated data being updated with actual data.

WASTEWATER

In 2022, we began tracking the water discharged at all locations that use water rather than just the largest users. As with water withdrawal, we obtain discharge information from utility invoices, discharge monitoring reports, metering or estimation.

Our internal standard for water and wastewater management requires that locations characterize their wastewater to assess the potential environmental impact associated with their discharge and identify any regulatory requirements that may apply because of water quality standards, pre-treatment standards and effluent limitation guidelines. Our primary goal is compliance with location-specific water discharge permit limits.

Most of our operations discharge to local wastewater treatment plants, with many conducting onsite pretreatment prior to discharge. As such, we operate within the stringent requirements in our discharge permits and consents with oversight from various stakeholders. We have no facilities that operate in locations without local discharge requirements.

WASTE AND SPILLS

OUR RESPONSIBILITY AS ENVIRONMENTAL STEWARDS IS TO ELIMINATE OR MINIMIZE OUR MANUFACTURING WASTE, FIND ALTERNATIVE USES AND RECYCLING OPTIONS FOR WHAT WE DO GENERATE, AND EFFECTIVELY MANAGE THE SAFE DISPOSAL OF WHAT REMAINS.

We give priority to higher-volume waste and waste that has the potential to significantly impact the environment. We recycle 100 percent of the dross from our two aluminum casthouses and send salt cake, which is slag generated during the recovery of aluminum from rotary furnaces, for recycling rather than landfilling. Some locations are also finding alternatives to landfilling polishing dust and sludge, grit blast and nickel sludge. Other types of waste that we continue to evaluate for reuse and recycling opportunities include garnet, aluminum hydroxide sludge, caustic and limestone.

We consider all of our metals as valuable materials from both an economic and environmental footprint perspective and believe they require careful handling and processing to avoid waste. We have a detailed program to recycle scrap metal from our processes either in-house through our casthouses and melt shops in a closed recycling loop or externally through scrap handlers and processors. We landfill zero scrap metal.

In 2022, we formed a team to evaluate our largest hazardous waste streams, which account for 77 percent of our total hazardous waste generated, to determine the feasibility of reducing the volume generated through recycling, reuse or other means. Several identified and implemented projects resulted in a reduction of 2,513 metric tons of hazardous waste annually. The team will work to identify additional reduction opportunities in 2023.

We also aligned our waste-tracking system in 2022 to track both hazardous and non-hazardous waste diverted from disposal and directed to disposal.

In 2022, we generated 26,199 metric tons of hazardous waste and diverted 40.9 percent from disposal. For non-hazardous waste, we generated 67,579 metric tons and diverted 38.3 percent from disposal. Our landfilled waste intensity increased 4.7 percent, mainly because we lost recycling options for a few waste streams due to factors beyond our control.

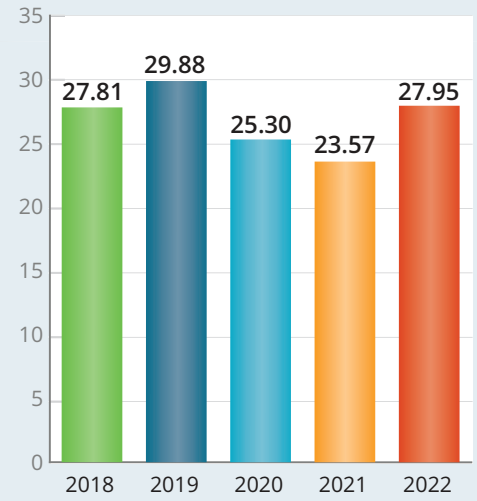
2022 WASTE

Thousand metric tons

	TOTAL GENERATED	DIVERTED FROM DISPOSAL	DIRECTED TO DISPOSAL
Hazardous	26.20	10.73	15.47
Non-Hazardous	67.58	25.89	41.69

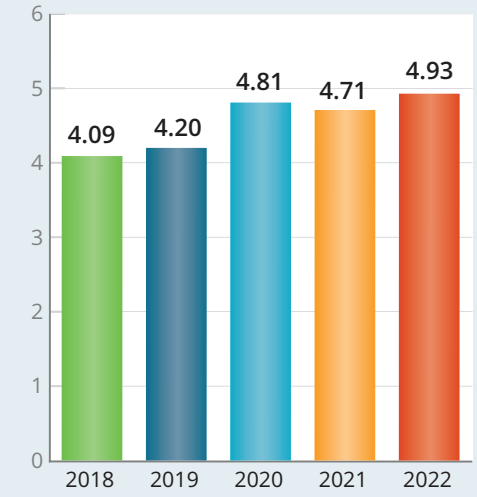
Diverted includes preparation for reuse, recycling and other recovery operations. Disposal includes landfilled, incinerated with and without energy recovery, and other disposal methods. We revised our 2021 hazardous waste generated from 24.95 to 26.59 thousand metric tons based on updated information.

LANDFILLED WASTE
Thousand metric tons



Some fourth quarter or December data has been estimated.

LANDFILLED WASTE INTENSITY
Thousand metric tons of waste per billion dollars of revenue



Some fourth quarter or December data has been estimated.

SPILLS

We use internal standards, safeguards and processes to prevent spills and then respond quickly and effectively to minimize the impact when one does occur.

We require our locations to have a spill prevention control and countermeasure or similar plan in place if they meet specific volume thresholds for oil or oil products. This plan includes employee training on spill prevention and response that is provided upon hiring and annually thereafter. Every manufacturing location and warehouse exceeding specified volume thresholds must follow our spill-related engineering standards and audit guidelines and have a spill response plan in place.

Our internal incident management program drives an analysis of a spill's root cause and contributing factors, and it also ensures corrective measures are put in place to prevent a reoccurrence. Our very stringent reporting threshold increases the visibility of spills to our leadership to facilitate information sharing across facilities and enhancing incident awareness.

We define a significant spill as one that is in excess of 1,893 liters (500 gallons) and/or meets our definition of a major environmental incident, which includes CERCLA reportable releases. We had two spills that met this criteria in 2022.

REMEDIATION

We are involved in ongoing and long-term assessment, cleanup and monitoring of contamination resulting from historic releases and disposal practices at current, former, divested and third-party properties.

In 2022, our payments for these activities were approximately US$4 million. Our remediation reserve balance, which reflects the most probable costs to remediate identified environmental conditions for which costs can be reasonably estimated, was approximately US$16 million on December 31, 2022.

CASE STUDY

WASTE NOT: INITIATIVES REDUCE HAZARDOUS WASTE

Treating oily wastewater on-site at two locations in Hungary and Mexico rather than relying on off-site vendors has reduced the amount of hazardous waste disposed by more than 2,600 metric tons and increased the use of recycled water by nearly 364,000 cubic meters annually.

In 2022, our Forged Wheels business researched cost-effective ways to reduce the volume of hazardous waste shipped off-site for treatment and disposal. Of particular focus were our Székesfehérvár, Hungary, and Monterrey, Mexico, locations, which were our top generators of hazardous waste in 2021. Both locations used off-site treatment and disposal for oily waters from their forging coolant processes.

The transition for the Hungary site involved recovering the oily water generated at a new press complex and sending it to the on-site wastewater treatment system for demulsification. The Mexico project was more involved, requiring a 16-fold increase in on-site wastewater treatment capacity and simplification of treatment steps.

At both locations, oils and other contaminants are now separated from the water, which is reintroduced to the production process. The remaining sludge is shipped off-site for further treatment and safe disposal as a hazardous waste.

The initiatives achieved a combined 31.5 percent reduction in off-site hazardous waste disposal and reduced disposal costs by 40.5 percent.

Székesfehérvár employee Ildiko Bagi displays wastewater before and after treatment.

CHEMICAL MANAGEMENT

OUR CHEMICAL MANAGEMENT PROGRAM IS FOCUSED ON THREE KEY AREAS – AVOIDING SUPPLY CHAIN DISRUPTIONS LINKED TO CHEMICAL MANAGEMENT REGULATIONS, REDUCING THE USE OF HAZARDOUS SUBSTANCES AND MIXTURES IN OUR OPERATIONS, AND ENSURING COMPLIANCE WITH CHEMICAL REGULATIONS.

Our global chemical compliance team ensures we maximize internal synergies and coordination and cover all relevant regulations and market/customer initiatives. Team members also work to provide the information our customers need for their own compliance programs.

While we do not manufacture chemicals, we use them in our production processes either directly or as ingredients in other products that we use. Our chemical compliance team works with each of our businesses to ensure we are adhering to all requirements and actively seeking substitutions for chemicals that various regulations deem substances of very high concern. This can be challenging, as substitute substances ideally should not impact our process efficiency or product quality and properties. That is why we work closely with our customers to validate a new substance before making a permanent substitution.

We have been successful in finding material substitutions for various applications, but others will require more time and effort. Until targeted chemicals are eliminated from our manufacturing processes, we will continue to enforce our stringent requirements for their safe handling and use.

Key actions undertaken through our chemical management program in 2022 were:

- Conducting trials to identify suitable alternatives to chromium trioxide in chemical conversion coating after ion vapor deposition of aluminum. This process deposits a thin layer of pure aluminum on the product's surface, which is then protected against corrosion by a chromated chemical treatment;
- Undertaking trials on alternatives to chromium trioxide in passivation, which is when a corrosion protection layer is created at the surface, after cadmium plating;
- Collaborating with customers to substitute the use of sodium dichromate in stainless steel passivation;
- Setting a goal to abandon the use of chlorinated solvents in operations in non-laboratory settings by 2025, where technically and economically feasible;
- Working on identifying a substitute for phthalate; and
- Reviewing our use of per- and polyfluoroalkyl substances (PFAS).

In support of our aerospace customers, we are an active member of the International Aerospace Environmental Group. Formed by the major aerospace companies, the group addresses the complexity and variability of global laws and regulations impacting health and the environment, including REACH.

By serving on the IAEG board of directors, committees and working groups, our employees are contributing to the development of tools and voluntary consensus standards to address key chemical management and environmental issues. They are also acquiring valuable insight into the needs of the aerospace industry as well as gaining access to useful tools and knowledge.

HUMAN CAPITAL

OUR SUCCESS DEPENDS ON OUR ABILITY TO CREATE INNOVATIVE SOLUTIONS THAT EXCEED OUR CUSTOMERS' GOALS. WE CAN ACHIEVE THIS BY FOSTERING INCLUSIVE WORK ENVIRONMENTS THAT LEVERAGE THE DIVERSITY OF BACKGROUNDS, EXPERIENCE AND THOUGHT WITHIN OUR ORGANIZATION.

RECRUITMENT TRANSFORMATION

As a result of the economic and supply chain issues following the pandemic, workforce planning, increased hiring efficiency and effective onboarding have been our priorities. We also recognize that cultivating an inclusive talent pipeline lays the groundwork for a more diverse workforce.

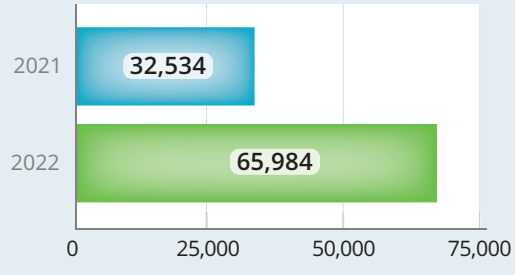
By investing in a new applicant tracking system (ATS), we have set up an end-to-end review of systems, processes, attitudes and outcomes to improve our ability to source and attract a diverse range of qualified candidates.

The ATS supports the dissemination of our job vacancies to a wider range of diverse partners. For example, our campus recruitment platform has a large and diverse talent network and is the system of record for more than 9.2 million students and 1,300 schools across the United States. This includes more than 195 minority-serving institutes and 1.2 million organizations focused on diversity and inclusion.

With the system, our hiring teams are enabled to proactively message and engage qualified segments of students (including minority or specialist groups); tell our brand story through content and authentic engagement; host virtual company events; and attend virtual career fairs hosted by schools.

Moving a candidate through the journey from first contact to start date needs to be completed with a high level of communication, involvement and personal attention, as it is easy to lose a top candidate if we have slow response times or poor engagement. An immediate impact of the ATS has been increased ease of use for applicants, which led to our total number of job applicants more than doubling in 2022 compared to the prior year.

U.S. CANDIDATE APPLICATIONS

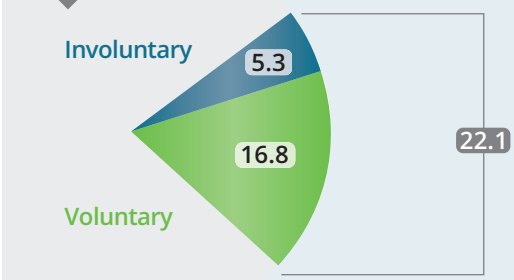


As we evolve our hiring programs in line with our DEI strategy, we aim to implement lasting change across the organization. We will continue to further strengthen

existing practices and partnerships, such as collaboration with colleges, universities, and veteran and other minority partners.

All employees engaged in the hiring and onboarding processes contribute to creating a diverse and inclusive ecosystem of talent. The ATS automatically provides behavioral interview e-learning when a new requisition is raised to ensure consistency of approach and improve quality of hire.

2022 TURNOVER RATE
Percent



Data excludes Germany.

Our turnover rate was at similar levels to 2021. The impacts from the COVID pandemic, the labor shortage and the associated turnover were challenges that we addressed by developing companywide and site-specific retention plans. We have invested in providing an onboarding journey to develop a sense of belonging, teamwork and productivity that is uniform across the organization. Retaining new talent also requires significant support as employees join the company. Other initiatives include developing career path remapping for our skilled labor and offering extensive training and development opportunities.

2022 EMPLOYEES

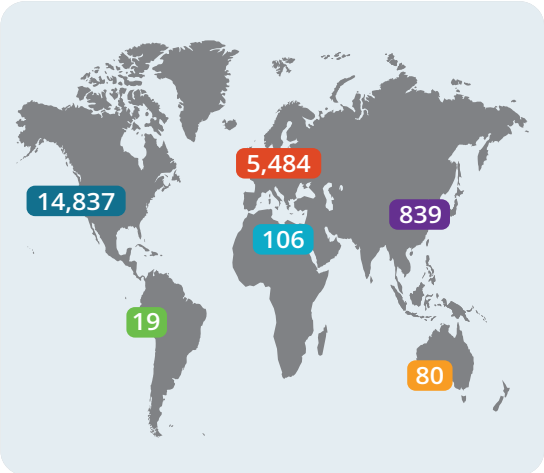
	CONTRACT		TYPE	
	Permanent	*Temporary*	*Full-Time*	*Part-Time*
Male	14,637	123	14,702	58
Female	5,490	46	5,444	92
Not Specified	57	6	62	1
Total	**20,184**	**175**	**20,208**	**151**

Data does not include employees in Germany.

2022 EMPLOYEES BY REGION

	PERMANENT	TEMPORARY	TOTAL
Asia	771	68	839
Australia	80	0	80
Europe	5,398	86	5,484
Middle East and Africa	105	1	106
North America	14,817	20	14,837
South America	19	0	19

Data includes employees in Germany.

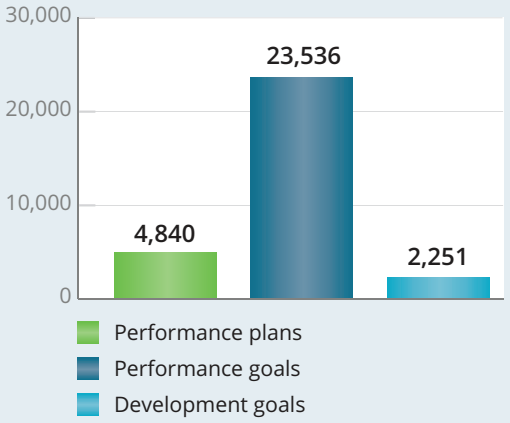


PERFORMANCE MANAGEMENT

Our strong performance management process continues to create the links between company strategy, individual performance, succession planning and future career progression.

To strengthen conversations between our leaders and employees, we launched our Better Goals Workshop in 2022. The workshop is focused on goal setting aligned to business priorities that enable individual impact. It also covers understanding how implicit bias can undermine individual and company success as well as guidance on ongoing coaching conversations and end-year performance discussions.

2022 PERFORMANCE MANAGEMENT



LABOR RELATIONS

Where we have a union, we respect and engage the union in candid discussions regarding the needs of the business and its impact on employees.

Our business and human resources leaders work directly with union representatives to negotiate our collective bargaining agreements and comply with those agreements. Continual collaboration at the local level has resulted in improved effectiveness of our dispute resolution processes. We believe relations between our employees and their union representatives generally are good.

We have collective bargaining agreements with varying expiration dates in Europe, North America, South America and Asia.

In Europe, our business and human resources leaders engage intensively with unions and works councils at local, country and regional levels on employment-related matters. Most of our European locations have a local works council, and we have works councils at the national level in France and Germany. With a presence in the European Union and European Economic Area, we engage periodically with Euroforum, which is the European works council. This engagement focuses on information and consultation processes relating to transnational matters that concern the region's workforce.

We have eight collective bargaining agreements in the U.S. with varying expiration dates. The largest agreement is with the United Autoworkers (UAW) at our Whitehall, Michigan, location. This agreement covers approximately 1,300 employees and expires on March 31, 2023.

Approximately 1,700 other U.S. employees are represented by labor unions.

2022 UNION REPRESENTATION
Percent of employees

No information is collected for other countries due to data privacy considerations.

INCLUSION STANDARDS

Inclusion is about creating an environment where all of our people feel – and are – valued; where they can bring their differences to work each day; and where they can contribute their personal best in every encounter to achieve better business results.

To achieve this, we have embedded inclusive behavior training into our leadership development programs. This is supported by implicit bias and microaggression awareness training that is aimed at seeking out and paying attention to new perspectives. In addition, our new Inclusive Leadership e-learning program provides nine e-learning sessions. Nearly 1,000 employees participated in the program on a voluntary basis in 2022.

Our Board of Directors and Executive Lead Team review our DEI activity on a regular basis and were actively involved in Meet the Leader sessions with our employees throughout 2022.

EMPLOYEE RESOURCE GROUPS

Our seven employee resource groups (ERGs) work strategically on behalf of our employees. They provide African heritage, women, Hispanic, LGBTQ+, veteran, next generation and European employees with learning, support, networking, mentoring, volunteering, outreach and more.

Along with our people and ERGs, we are invested in cultivating and maintaining an inclusive culture through companywide DEI training to help employees and leaders deepen their understanding of the complex issues facing today's workforce and marginalized communities.

During 2022, our Women's ERG hosted a range of events. These included virtual workshops that attracted more than 900 participants each. The ERG also hosted a quarterly book club for its global members to review a range of leadership books.

Our European ERG facilitated a diversity summit in Hungary with more than 50 delegates, and our Hispanic ERG sponsored a quiz for Cinco de Mayo that attracted global interest. The work of our LGBTQ+ ERG was recognized with a ranking in the 2022 Human Rights Campaign Foundation's Corporate Equality Index.

Our Next-Generation ERG kicked off its Leadership Link mentoring program in 2022, with mentees assigned a mentor from our senior leadership. This program will provide participants with the opportunity to interact one-on-one with assigned executive leaders and get valuable career feedback.

We ask our ERGs to nominate organizations for consideration by the Howmet Foundation for grants to address community challenges, such as mental health and food security. Upon the referral of two chapters of our Veterans ERG, for example, Howmet Foundation made a grant to sponsor a service dog that was trained to support a veteran struggling with mental health challenges. The ERG also conducted an awareness campaign across the company on veterans' concerns and support options.

2022 EMPLOYEE DIVERSITY

	GENDER			AGE		
	Male	*Female*	*Not Specified*	*Under 30*	*30-50*	*Over 50*
Board of Directors	6	4	0	0	1	9
Officers and Assistant Officers	4	4	0	0	4	4
Employees	14,760	5,536	63	3,295	9,766	7,298

Data does not include employees in Germany.

TALENT DEVELOPMENT

Talent mobility is a key tenet of ensuring we have the right people with the right skills in the right role.

Within our Runways career and performance talent programs, we prioritize our people's continuous development and growth. Automation now ensures our employees can identify their skills and aspirations, access more career and development opportunities, and use development to boost their ability to demonstrate proficiency to current and future managers.

Building leaders through job movement and formal training is a constant focus, with an expanded suite of leadership offerings in 2022. These included the addition of Inclusive Leadership, Developing Others and Coaching to Move People Forward to our range of training interventions.

The success of our formal leadership program has led us to shift our focus to our extended pipeline candidates and emerging leader population due to significant program completion among our current senior leaders.

We remain committed to supporting all employees as they develop and expand upon their technical, management and leadership skills. We plan to extend access to our learning platform to our hourly workforce, evolve our training portfolio, introduce a global mentoring program and scale our efforts overall to align career tracks and succession planning with growth and equitable compensation.

We offer leadership and awareness training to provide a strong foundation for building a diverse, equitable and inclusive organization. In 2022, we increased the number of employees who participated in our leadership training programs, continuing to ensure both women and diverse employees were included. We also facilitated multiple diversity awareness training events and sponsored

TALENT DEVELOPMENT

	LEADERSHIP CAREER MOBILITY	EMPLOYEE CAREER MOBILITY	EMPLOYEE TALENT PROFILES	EMPLOYEE SUCCESSION PLANS
2021	10%	7,453	–	255
2022	31%	6,488	1,425	421

Leadership career mobility represents our leaders at director level and above. Career mobility refers to a transfer or promotion during the specified time period. We did not track employee talent profiles in 2021.

more than 30 placements at conferences focused on developing women and ethnic minority employees.

Through these and other focused efforts, we have maintained the diversity of our leadership with increases within our professional and overall workforce, specifically in the representation of women and diverse employees.

CULTURE AND ENGAGEMENT

In recognition of our many initiatives and commitment to diversity and employee engagement, we were recognized with several awards during 2022. These include 50/50 3+ Women on Boards, Diversity Jobs Top Employer, Corporate Equality Index Best Places to Work for LGBTQ+ Equality, Forbes World's Best Employers and the Pittsburgh Vibrant Index 3.0.

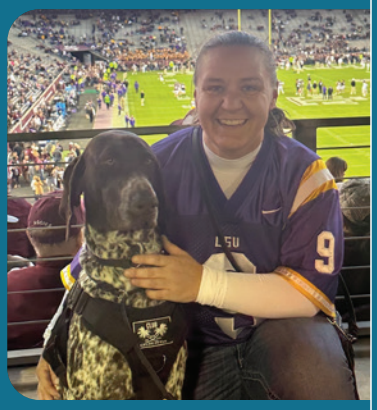
In celebration of International Women's Day, our employees around the world struck the #BreaktheBias pose to show their support for breaking biases, stereotypes and discrimination.

CASE STUDY

A WARRIOR FINDS HER WAY

After 12 years of combat and humanitarian missions in Afghanistan and other parts of the world while serving in the U.S. Army, Monique faced mental health issues upon reentry into civilian life. Through a $35,000 Howmet Aerospace Foundation grant to K9s for Warriors that was sponsored by our Waco, Texas, and Minnesota Machining and Integrated Structures chapters of our Veterans ERG, Monique received a service dog named Chinook. Here, she shares their story.

I was struggling in lots of areas in my life and had been in counseling for more than five years. I was still struggling on top of being put on multiple medications (which I fought to not be on for more than three years). Due to my thoughts and self-isolation, my therapist had me seeing her twice a week plus monthly visits to my psychiatrist. I was tired and felt I had tried everything to get past things that I did, saw and been through on my multiple deployments.



I saw on Facebook that one of my battle buddies went through a program to get a service dog, and it appeared that he was doing better in his struggles. I figured I would try it before I gave up hope on overcoming my mental health issues. I found K9s for Warriors, spoke with an individual about its program and eventually applied. I got Chinook in October 2022.

Chinook made me laugh more in the first 60 days that I had him than I had laughed in all the time after my second deployment. He has given me confidence to be more social but also confidence within myself that I had lost a long time ago.

I'm definitely more active having Chinook. His high energy level forces me to get out of the house, which helps when I'm struggling with my own thoughts. I've committed to eating at a restaurant once a week versus going through a drive thru or not eating at all if I don't feel like cooking at home. He and I also have gone to major events, including a concert and a college football game, which is something that I had not done in more than 15 years.

Several friends had seen my post about working with Chinook and called me to ask questions and share how they're still struggling. This helps me in two ways. I'm learning to value myself, which I lost years ago. I also now know that I'm not alone in still struggling with some of my deployments.

HEALTH AND SAFETY

OUR STRONG HEALTH AND SAFETY CULTURE EMPOWERS ALL EMPLOYEES AND CONTRACTORS TO TAKE PERSONAL RESPONSIBILITY FOR THEIR ACTIONS AND THE SAFETY OF THEIR COWORKERS. THIS CULTURE IS SUPPORTED BY INTERNAL POLICIES, STANDARDS, RULES AND PROCEDURES THAT CLEARLY ARTICULATE OUR STRINGENT REQUIREMENTS FOR WORKING SAFELY IN ALL OF OUR FACILITIES WORLDWIDE.

Our Environment, Health and Safety Policy sets requirements against which our businesses and locations are held accountable and measured. Our leaders, from our CEO through line management, are expected to communicate the policy to all employees and third parties, such as contractors, suppliers and visitors. The policy is also signed by each location leader, posted in strategic and visible areas, and audited to demonstrate our value of health and safety.

We incorporate annual health and safety goals and objectives into our operating plans to aim for our ultimate goal of zero incidents. The planning process addresses issues related to audit findings and non-compliances against internal and external standards and regulations. The plan is linked to our EHS management system and reviewed on a regular basis, including quarterly updates with our Executive Lead Team. Our employees also have access to the plan, requirements and results to ensure transparency and accountability.

Health and safety programs can only be truly effective if they include employee input and feedback. Ensuring broad engagement – both formally and informally – is at the center of our program deployment. Formal engagement may occur locally, such as through works councils in many of our European locations and employee EHS committees, to receive ideas and feedback for improvement. Locations have a variety of communication and reporting avenues at their disposal to share observations of any ideas for improvement, as well as results of actions to address concerns.

Our EHS management system is key to the successful implementation of our EHS Policy. The system aligns with the ISO 45001 (occupational health and safety) and ISO 14001-2015 (environmental) management systems standards. The standards' requirements are incorporated into our site-specific EHS management systems, which cover all of our production and largest office sites and applies to all employees, contractors and visitors.

We support a safety culture in which employees feel comfortable communicating health and safety questions and concerns. They are encouraged to express their views and opinions so we can proactively identify and mitigate actual and potential risks.

Employees can report any EHS or other concern via our Integrity Line (see the Ethics, Compliance and Human Rights section for additional information). Our Code of Conduct prohibits retaliation against employees who report a concern in good faith.

Additional information on our health and safety programs can be found on our website.

SAFETY

We had one work-related employee fatality and zero contractor fatalities in 2022.

The fatality involved a Howmet colleague at our Hampton, Virginia, facility who was fatally injured following a physical altercation over a domestic dispute. This incident of workplace violence led us to launch a campaign aligned with our Code of Conduct training to ensure employees are aware of avenues to report potential threats in the workplace. This campaign included an assessment of a site's physical security as well as training for each employee. The training is ongoing for all new employees and refreshed every two years.

Prevention of fatal and serious injuries remains a core program area. We require each business to review its operations annually and identify key EHS risk areas for improvement at least once per quarter. We prioritize fatal and serious injury risks that have the potential for life-altering outcomes, with mobile equipment remaining the highest fatality risk within our global operations.

Under our fatality prevention program, we require each site to have a fatality prevention process that is audited as part of our corporate EHS standard as well as a multidisciplinary team that is chaired by the location manager. The team proactively identifies safety risks, looks for root causes, ensures competent support, addresses gaps and reduces risk. Unacceptable or marginal risks must be eliminated or reduced in a timely manner, and the metrics documenting risk reductions are reviewed by management.

In 2022, we increased our identification of fatality risks by 18.7 percent and our closed risks by 20.7 percent compared to the prior year.

In 2022, our key employee safety rates improved compared to our 2021 performance, and we remained significantly below the most recent U.S. industry averages. Compared to 2021, our days away, restricted and transfer (DART) rate was 31.8 percent lower, and our total recordable incident rate (TRIR) declined 7.0 percent. Our lost workday rate (LWD), which is a subset of the DART cases, decreased 40.0 percent. Our DART and TRIR were below our 2022 targets of 0.28 and 1.01, respectively.

At the end of 2022, 76.7 percent of our locations globally had worked 12 consecutive months without a DART incident, 86.0 percent without a lost workday and 46.5 percent without a total recordable incident.

We experienced a few contractor injuries in 2022. Although our contractor injury rates are comparatively low and incidents are infrequent, we launched a six-hour training module for people responsible for managing contracted projects to refresh their knowledge and awareness of our requirements. This training includes development of a scope of work for a contracted project, EHS risk assessments, requirements for job-specific safety plans and audits of both contractors and subcontractors.

In 2022, contractors spent 2.3 million hours on Howmet Aerospace projects with a DART rate of 0.25 and TRIR of 0.77. We have set 2023 DART and TRIR targets for contractors that are equivalent to our employee targets.

INCIDENT RATES – EMPLOYEES AND SUPERVISED WORKERS

	FATALITIES	DAYS AWAY, RESTRICTED AND TRANSFER		LOST WORKDAY	TOTAL RECORDABLE INCIDENT	
2018	0	0.35		0.20	1.08	
2019	0	0.25		0.12	0.90	
2020	0	0.24		0.12	0.71	
2021	0	0.22		0.15	0.71	
2022	1	0.15	Target: 0.28	0.09	0.66	Target: 1.01

Lost workday rate represents the number of injuries and illnesses resulting in one or more days away from work per 100 full-time workers. Days away, restricted and transfer rate includes lost workday cases plus cases that involve days of restricted duty and job transfer per 100 full-time workers. Total recordable incident rate represents the number of injuries and illnesses resulting in days away from work, job transfer or restriction, medical treatment or other recordables per 100 full-time workers.

INCIDENT RATES – CONTRACTORS AND CONTRACTED SERVICES

	FATALITIES	DAYS AWAY, RESTRICTED AND TRANSFER		LOST WORKDAY	TOTAL RECORDABLE INCIDENT	
2018	0	0.36		0.31	1.04	
2019	0	0.36		0.24	0.84	
2020	0	0.11		0.11	0.50	
2021	0	0.34		0.23	0.45	
2022	0	0.25	Target: 0.28	0.17	0.77	Target: 1.01

Incident Investigation

We have incident reporting and investigation requirements embedded in our policies and standards. When an incident occurs, the location must follow a pre-defined process to ensure root causes are identified and eliminated. Depending on the severity of an incident, management awareness and involvement is escalated.

We attempt to identify where there are systemic improvements that we can make in our processes and equipment to reduce, improve or eliminate incident causal factors. We also share corrective actions across the company to determine if other locations can benefit from the same actions.

Our incident performance is reviewed by our Executive Lead Team each quarter and once per year by the our Board of Directors.

Audits

Depending on a location's inherent and controlled risks, we periodically conduct an audit to assess the location's implementation of the EHS management system and conformance with regulatory and Howmet Aerospace requirements.

In 2022, we restarted these audits as we returned from COVID-19 travel restrictions. During the year, we conducted 10 health and safety and 10 environmental audits that covered a subset of our global locations.

STOP Coin

Our employees have the authority to refuse or stop unsafe work. We expect them to exercise this authority, and we reward them through our STOP for Safety Coin Campaign. Our aim is to motivate employees to be vigilant in their work and always stop and seek help when presented with a potential safety hazard. This philosophy extends to health, environmental and other production observations.

Employees who refuse or stop unsafe work for themselves or their colleagues are awarded an aluminum STOP coin and receive local and, in some cases, global recognition. We have distributed thousands of STOP coins to these safety advocates since the program's launch in 2016.

Our business segments also may reward employees who stop work. Howmet Wheel Systems, for example, honors the Stop of the Month, which is selected by the business segment president. These employees are also honored by the location and recognized in a quarterly business segment webinar.

Training

It is important to inform and educate our employees, contractors and visitors about workplace health and safety.

Our training programs are based on a needs assessment that includes input on an individual's exposure, workplace hazards and other requirements. Single points of accountability (SPAs) at the plant, EHS professionals and third-party consultants deliver the training to ensure the latest updates are captured and shared with the required employees.

In 2022, we continued implementation of EHS e-learning by providing hourly employees with this digital option in addition to classroom training. We had 4,500 EHS course launches using e-learning during the year. We will expand our EHS professionals' access to our training platform for courses such as Contractor Responsible Persons.

Our global EHS committees continued to conduct skill development training webinars for our EHS professionals during the year. In addition to EHS compliance, topics included machine safeguarding and risk assessments, ergonomics, and hand and finger injury prevention, which continues to be one our leading injury categories.

CASE STUDY

DEVELOPMENT PROGRAM BOLSTERS EHS TALENT PIPELINE

After graduating college with a degree in environmental and ecological engineering, Jonah Ross knew that he still had a lot to learn as a young EHS professional.

"On-the-job training is where you get the vast majority of practical experience that you need to be successful in your career," he said.

That is what attracted him to our EHS Development Program, which we relaunched in 2022 to attract and develop entry-level professionals to bolster our EHS talent pipeline. Participants are based at an operating location for 12 to 18 months to learn our EHS management systems and how to apply EHS practices in a manufacturing facility. They also undergo a series of development projects and activities and may be offered a permanent position at one of our locations upon program completion.

"Being able to work alongside EHS professionals and operators who have been doing their jobs a long time –some for even longer than I've been alive – has been invaluable," said Jonah, who is based at our Niles, Ohio, location. "It would be very hard to start a position right out of college without being able to consult with these experts on a daily basis."

Participant Taylor Robinson stumbled upon a career in occupational safety and health after she took an elective course on the topic while pursuing a degree in human resources. She soon switched her major and joined the EHS Development Program one month after receiving her degree.

"The program has given me the opportunity to experience what life would be like as an EHS professional," said Taylor, who is at our Wichita Falls, Texas, facility. "I have opportunities to learn about various activities and then work on them. I also get extra help and resources that I might not have received if I went into my first EHS professional role right out of college."

Jonah Ross

Taylor Robinson

Facility and Operational Risk

In addition to protecting the health and safety of our employees, we also focus on the safety of our facilities and operations.

Our locations continue to invest in reducing fire and natural disaster and other business operational risks. In 2022, we completed 126 facility risk-reduction projects that reduced overall loss expectancy by US$5.5 billion. This will be an ongoing focus in 2023 to minimize risk.

OCCUPATIONAL HEALTH

Our employees and select embedded contractors have access to occupational medicine services to optimize their health and well-being. These services include regulatory-required or Howmet Aerospace risk-based chemical surveillance evaluations, fitness-for-duty assessments, hearing evaluations, lung-function testing, work-related injury and illness evaluation, substance abuse testing and job-related immunizations.

The occupational medical services that we provide agree with internal standards that establish expectations for confidentiality, qualifications, quality and regulatory requirements. Where we involve third-party services, the providers must abide by our internal standards, at a minimum.

All levels of our departmental management and employees participate in anticipating, identifying, evaluating and controlling occupational health risks.

Prior to the addition of new processes or changes to existing ones, cross-functional teams collaborate to eliminate or control any potential health risks. If these risks cannot be eliminated, we use industrial hygiene sampling, job task observations and loss data to further quantify risk and measure future improvements against baseline values. Using qualitative and quantitative data enables us to prioritize resources and maintain continuous improvement as new controls are implemented and any new risks are introduced.

Key health risks within our operations are exposure to industrial noise, working with chemical substances and tasks involving ergonomic risk factors.

Industrial noise is a common exposure within the metals industry. To manage it, we deploy a comprehensive hearing conservation program that focuses on the elimination or reduction of noise levels through process changes and engineering controls. We provide hearing protection where engineering controls are not feasible in reducing noise levels below 80 decibels.

Prevention of workplace exposure to a chemical substance begins with an initial risk assessment prior to the chemical being approved for use on-site. Following this review, site management continues to assess workplace risk and implement control strategies.

We manage ergonomic risk through our management of change process, which aids in identifying and controlling ergonomic risk factors prior to new operational systems being introduced or existing operational systems being changed. As part of our ergonomics program, we periodically evaluate tasks to determine whether significant ergonomic risks exist and whether further controls are needed to eliminate or reduce exposure.

In 2022, we continued focusing our efforts and resources on these three key health risks. For industrial noise, we implemented several engineering projects to reduce noise levels below 80 decibels. For example, we relocated the shift manager offices in our Glossop,

United Kingdom, location, which resulted in the elimination of noise exposures exceeding 80 decibels for 10 employees.

Use of engineering controls in conjunction with hearing conversation programs throughout our company led to employee workplace-diagnosed hearing impairments of less than 2.5 percent (based upon medical data available) in 2022.

We also continued finalizing our multi-year effort to enhance controls around ventilation and extraction systems. A key element of this plan was providing in-house training for our professionals and maintenance technicians to assess and maintain control equipment inventories for reducing chemical substance exposures.

Outcomes of this effort include the addition of local exhaust ventilation systems at our Niles and Cleveland facilities in Ohio that reduced chemical exposures from welding operations. We also installed a high-efficiency central oil mist collector system at our Székesfehérvár, Hungary, location to reduce exposure to fugitive oil mist.

At the end of 2022, 71.1 percent of our sites had completed the full multi-year initiative, with the remaining sites targeted for completion in 2023.

In ergonomics, we eliminated an additional 41 significant ergonomic risks in 2022 as a result of applying worksite assessment and management of change principals. Controls implemented in 2022 in addition to those sustained over the previous years have resulted in decreased occupational disease and musculo-skeletal disorder (MSD) injuries over the last five years.

HEALTH PROMOTION

As part of our responsibilities as an employer, we work to ensure our employees and their dependents have access to quality healthcare.

Subject to location, country and union contract, we have a broad range of healthcare coverage arrangements. The following address the majority of our employees:

- **Canada, France, Germany, Hungary and the United Kingdom:** Employees have state-regulated access to high-quality and accessible health services. Depending on the plan, we may contribute financially to state or private insurance funds as part of the labor premiums. Depending on the country, we provide additional coverage related to health and welfare for some populations.
- **Mexico:** Employees have required government-provided healthcare, and we also provide additional coverage depending on union or non-union status.
- **U.S.:** Employees have access to company-sponsored health and welfare plans, including medical, prescription, dental, vision, life and disability coverage. These plans are administered by large and well-known third-party insurance providers.

To complement access to quality healthcare, various sites executed wellness campaigns in 2022 to further promote healthy work environments and lifestyles. Our Monterrey, Mexico, facility, for example, launched a women's health campaign for breast and cervical cancer screening and men's screening for prostate, diabetes and hypertension.

Individual employee results from any company health promotion are treated confidentially. We analyze only aggregated and anonymized information to evaluate the efficacy of our activities.

CASE STUDY

BRINGING CANCER SCREENINGS TO THE WORKSITE

Marina Campos never underwent a breast cancer screening. After participating in an on-site clinic at our Forged Wheels location in Monterrey, Mexico, she now performs a self-exam every month.

"I learned that it's very easy to examine yourself at home to detect any anomaly and then get checked further if you detect something," said Marina, who is in logistics support. "I don't want to be ill or gone because I was ignorant on this matter. My family still needs me."

Nearly 30 percent of the site's female employees participated in the breast and cervical cancer screening conducted during Breast Cancer Awareness Month in October 2022. In addition to conducting breast exams and pap smears on-site, a trained healthcare practitioner educated the women on how to properly perform a breast exam and the importance of regular screening.

"Although I examined myself regularly, I learned that I wasn't using the correct technique," said Sandy Hierros, project engineer. "Early detection is an important factor in treatment and a patient's quality of life."

The site's doctor extended that message to all employees during Breast Cancer Awareness Month through a talk on the importance of regular self-exams.

COVID-19

COVID-19 remained a health challenge throughout 2022, impacting our employees, their families and our operations.

Our pandemic programs evolved with the risk profile of the virus. In 2020, we focused on understanding the risk, building health controls and deploying programs to break the chain of transmission. In 2021, we encouraged vaccination and expanded our testing program. We experienced a high number of COVID-19 cases in 2022 due to the Omicron variant peaking in the first quarter in Europe and North America. In December, our facilities in China experienced an increase in infections. The majority of these cases had relatively low severity and impact.

Our programs closely followed the guidance provided by the U.S. Center for Disease Control and Prevention (CDC). This included COVID-19 testing for unvaccinated individuals as well as testing for contagiousness before individuals returned to work. To make testing accessible, we distributed more than 75,000 test kits at our U.S. facilities alone. With this approach, we were able to make informed decisions on the need for isolation and quarantine to protect our employees and the workplace.

COVID-19 controls like social distancing and the use of masks remained in place for the first months of 2022. We followed the CDC community transmission levels to guide our facilities to normalization. At sites with a designated high transmission level, we required employees to use masks until the local area transmission slipped below that level.

During 2022, 6,862 employees reported a confirmed case of COVID-19, with most having minor symptoms. A few had to be hospitalized, but this was significantly less than in prior years. Severe COVID-19 cases resulted in five of our employees passing away during the year.

We will continue following the dynamics and risk profile of the virus and mitigate the impact at our operations. Our approach will be reflected in ongoing enhancements to our programs to keep our employees and visitors safe and ensure business continuity with the best available tools and measures.

COVID-19 OUTCOMES

	CONFIRMED CASES	DEATHS
2020	1,169	14
2021	2,722	10
2022	6,682	5

STAKEHOLDER AND COMMUNITY ENGAGEMENT

THROUGH OPEN DIALOGUE WITH A BROAD RANGE OF STAKEHOLDERS IN AN ATMOSPHERE OF RESPECT AND TRUST AND WITH THE HIGHEST REGARD FOR HUMAN RIGHTS, ECONOMIC OPPORTUNITY AND THE NATURAL ENVIRONMENT, WE EARN OUR SOCIAL LICENSE TO OPERATE.

Our stakeholders include our customers, suppliers and employees; the people who live in the communities where we operate; shareholders and lenders who provide our financial capital; the public agencies that regulate our businesses; government representatives; and the non-governmental organizations (NGOs) that are interested in what we are doing.

Each of our locations defines the stakeholder groups with which to engage and – taking into account the nature of our facilities – identifies tools and approaches to ensure that collaborations with these stakeholders are robust, effective and transparent.

Howmet Aerospace Foundation is an independently endowed private foundation with assets of approximately US$175 million in 2022. The foundation directs a significant portion of its grantmaking each year to nonprofit organizations in communities around the world to develop partnerships and strategies that address specific community needs and interests where Howmet Aerospace has operating facilities.

Through collaboration with our nonprofit partners, our initiatives make quality STEM educational opportunities available to students; support engineering and technical skills training through community colleges, technical schools and universities around the world; and help create access for underrepresented individuals to the STEM fields.

In 2022, Howmet Aerospace Foundation disbursed more than US$3.9 million in STEM-focused grants. These included US$350,000 to the Society for Science for its International Science and Engineering Fair and US$50,000 to Club FACE Val d'Oise in France for the FABRIK 21 education program.

The foundation also disbursed US$3.1 million in grants focused on diversity, equity and inclusion. Grants included US$25,000 to Reuben's Retreat in the United Kingdom; US$20,000 to Association Hanvol in France; US$20,000 to Asociación Regiomontana de Niños Autistas ABP in Nuévo Leon, Mexico; and US$50,000 to the It Gets Better Project in the U.S.

Other supported initiatives during the year addressed a variety of local needs in the communities where we operate. Grants included:

- US$250,000 to the American Red Cross Los Angeles Region in Los Angeles, California;
- US$50,000 to Gymnasium der Stadt Meschede in Meschede, Germany;

- US$75,000 to Hamblen County Foundation for Educational Excellence and Achievement in Morristown, Tennessee;
- US$25,000 to Canadian Association for Girls in Science in Mississauga, Canada;
- US$65,000 to Pittsburgh Public Schools in Pittsburgh, Pennsylvania;
- US$53,000 to Kanazawa Izumigaoka High School in Kanazawa, Japan;
- US$50,000 to New Jersey Institute of Technology Foundation in Newark, New Jersey;
- US$40,000 to Saint George Teaching Hospital of Fejer County in Székesfehérvár, Hungary; and
- US$20,000 to 1st Matchborough Scout Group in Redditch, United Kingdom.

In addition to grants, our employees volunteer their time, energy and skills to community programs and projects to help local nonprofit organizations.

PRODUCT SAFETY

PRODUCT SAFETY IS AN INTEGRAL PART OF OUR BUSINESS MODEL AND STRATEGY FOR GROWTH AND VALUE CREATION. WE ARE COMMITTED TO OFFERING PRODUCTS THAT MEET OR EXCEED THE HIGHEST SAFETY STANDARDS, APPLICABLE REGULATIONS, AND INDUSTRY AND MARKET REQUIREMENTS THROUGHOUT THEIR ENTIRE LIFE CYCLE.

We constantly strive to evaluate and improve our products to ensure that they are as safe as possible. Every employee, regardless of job assignment, title or location, plays an important role in this endeavor.

Our Product Safety Management System (PSMS) and policy provide the foundation of product safety and quality. This systematic approach guides our planning, implementation and control of the processes needed to assure product safety during all stages of the manufacturing process. It is supported by ongoing employee training with an emphasis on new hire orientation and the employee's role relative to product integrity.

We identify and minimize risks related to, or in direct support of, product manufacturing throughout the product life cycle. We continuously improve and mitigate product risk through risk identification, data collection and analysis, and continuous risk assessment associated with product recalls, counterfeit parts, number of airworthiness directives and monetary losses. Our senior management regularly reviews these metrics.

Through our PSMS, we seek to proactively assess and control risks before they result in manufacturing system incidents. We also communicate risks to affected stakeholders for mitigation and resolution.

We conduct internal audits on a risk-based frequency to assure adherence to quality management system expectations, with the internal audits supported by third-party audits and certifications. Independent audits are conducted to further assure compliance with our product integrity expectations. These audits and associated actions continue to minimize product integrity risk.

We also engage third parties to conduct annual audits to ensure product safety as part of AS9100D, IATF 16949 (ISO/TS 16949) certification and other relevant product safety and quality standards.

Our enterprise risk management (ERM) process consists of monitoring and reviewing the risk levels of already-identified enterprise risks, such as product quality and safety, and identifying any new enterprise risks we might have. All identified key risks have a mitigating action plan to manage the risk, and we present the status of key enterprise risks to our Board of Directors annually.

We had no product safety-related recalls in 2022.

PRODUCT SAFETY-RELATED RECALLS

	VOLUNTARY	INVOLUNTARY
2018	0	0
2019	0	0
2020	0	0
2021	1	0
2022	0	0

Consistent with the definition in the U.S. Consumer Product Safety Commission's Recall Handbook, a recall is any repair, replacement, refund or notice/warning program intended to protect consumers from products that present a safety risk.

Like other manufacturers, we and our subsidiaries have been named as defendants in legal proceedings relating to product safety in which third parties have alleged that products manufactured by us or our subsidiaries are defective and have contributed to incidents that caused injuries to people and/or damage to property. The precise nature of these proceedings is varied, but rare.

ETHICS, COMPLIANCE AND HUMAN RIGHTS

IN EVERY PART OF THE WORLD, WE ARE COMMITTED TO CONDUCT BUSINESS ETHICALLY AND IN COMPLIANCE WITH ALL APPLICABLE LAWS.

Guiding our actions are our values, Code of Conduct and key corporate policies, including our Anti-Corruption, Human Rights, Anti-Harassment, Anti-Retaliation, and Environment, Health and Safety policies.

Our Integrity Line is available 24/7 via phone, email and our website for all employees and external stakeholders who wish to seek advice or raise a concern. In 2022, we received 395 new concerns, questions and comments through this hotline and ensured that each was investigated appropriately and addressed. As a result of issues raised, we implemented more than 40 corrective actions during the year that included discipline, training, coaching and process improvements.

Our Ethics and Compliance (E&C) Program is designed to effectively:

- Foster an organizational culture of integrity, ethical decision-making and compliance with our Values;
- Assure that our directors, officers and employees conduct business with the highest standards of ethics and integrity and in compliance with all applicable laws and regulations; and
- Prevent and detect unlawful or unethical conduct through risk assessments and due diligence.

Consistent with our commitment to the highest ethical standards, the program is designed to be global, sustainable and continuously improving to identify and address our existing and emerging ethical, legal and regulatory risks. Our Board of Directors and senior management support and oversee the program.

Our E&C Program advanced our ongoing initiatives in 2022, including:

- Training employees on various topics covered in our Code of Conduct, including conflicts of interest, anti-harassment, reporting concerns and anti-corruption. We track all training, with the goal of 100 percent completion. Each employee also certifies adherence to our Code of Conduct and anti-corruption policies after completing the annual training;
- Partnering with our global learning management team to improve training administration and completion reporting;
- Implementing a third-party solution that provides oversight of third-party intermediary relationships, including risk-based reviews, due diligence, annual certification tracking and ongoing monitoring;
- Reviewing and reassessing the business need for all intermediaries;

- Receiving certification from all employees that any conflicts of interests will be reported;
- Continually assessing the program through our bi-annual Enterprise Risk Management process; and
- Expanding the program in the areas of trade compliance and anti-trust.

We had no monetary losses as a result of legal proceedings associated with incidents of corruption, bribery or illicit international trade in 2022.

Additional information on our ethics and compliance program can be found on our website.

SUPPLY CHAIN

THROUGH A RECIPROCAL RELATIONSHIP, OUR SUPPLIERS HELP US ACHIEVE OUR SUSTAINABILITY GOALS AND WE HELP THEM DRIVE SUSTAINABILITY INTO THEIR PROCESSES AND PRACTICES.

As a global company, we conduct business with more than 12,000 suppliers around the world. We expect each to demonstrate responsible and sustainable conduct by following our Supplier Code of Conduct and our corporate Code of Conduct.

In 2022, we revamped our supplier standards to align them with the model supplier code of the International Forum on Business Ethical Conduct (IFBEC) and renamed them our Supplier Code of Conduct.

Our interactions with suppliers are based on the highest standards of integrity and compliance with all relevant laws and regulations. (See the Ethics and Compliance section of our website for additional information.)

Before considering any potential new supplier, we perform due diligence to ensure the supplier is not in the consolidated database of the U.S. Department of Commerce International Trade Commission's denied and restricted parties and/or in the Uighur Forced Labour Prevention Act Entity List. We do not partner with any suppliers who appear on these lists.

To manage risks associated with suppliers that provide critical materials and services, we are leveraging master agreements with our preferred vendors where possible to secure pricing and negotiated terms and conditions. When needed, we engage with these vendors on potential supply chain disruptions and what actions can be taken to mitigate that risk.

We are committed to the responsible sourcing of materials and components necessary for the production and functionality of the products we manufacture. Additional information is available in our most current Specialized Disclosure Report on Conflict Minerals and Conflict Minerals Policy Statement.

In 2022, we conducted the first survey of our cobalt suppliers using the conflict minerals reporting template from the Responsible Cobalt Initiative.

GLOBAL SUPPLIER SUSTAINABILITY PROGRAM

In 2022, we again measured the sustainability of key suppliers – those that receive more than US$1 million of our annual spend – through our Global Supplier Sustainability Program.

The program consists of four components:

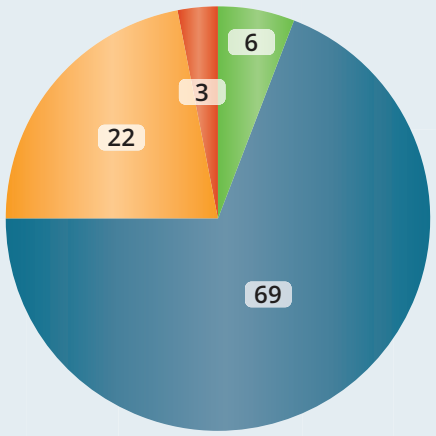
- **Communicate expectations:** Our Supplier Code of Conduct outlines our expectations regarding supplier sustainability.
- **Assess suppliers:** We conduct assessments of the key suppliers to evaluate the maturity of their sustainability programs and determine where improvement may be advisable.

- **Develop and educate:** We may share our perspective of a supplier's sustainability questionnaire results with the supplier and discuss opportunities for improvement.
- **Monitor:** We periodically reassess our suppliers to evaluate if any changes have occurred that would influence a supplier's maturity level rating. It is our expectation that supplier sustainability should improve over time.

We also requested that suppliers of aluminum, cobalt, titanium alloys and titanium sponge provide their carbon footprint as measured by carbon dioxide equivalents per ton of products sold to Howmet.

The 2022 assessment found that 75 percent of key suppliers that responded to the survey had sustainability programs considered leading or active. The survey response rate was 57 percent, which was lower than the prior year's rate of 65 percent. We attribute the lower rate to survey fatigue and plan to revamp the assessment in 2023.

2022 KEY SUPPLIER ASSESSMENT RESULTS
Percent of key suppliers



IAEG SUPPLY CHAIN ESG STANDARD

As a member of the International Aerospace Environmental Group (IAEG), we have been involved in the association's efforts to develop and maintain a voluntary standard for assessing ESG practices in the aerospace industry's supply chain. This standard will enable informed business decisions, duty of care compliance obligations, sustainability reporting and positive change in environmental and social topics.

The objectives of the standard, which is expected to be launched in 2023, are:

- Developing an entity ESG assessment that includes risk-based validation of assessment results for voluntary and unilateral consideration and use by aerospace companies;
- Driving continuous improvement of aerospace industry ESG performance through awareness campaigns;
- Reducing costs and minimizing the administrative burden through a voluntary sectorial aerospace approach; and
- Upskilling the industry in ESG acumen.

As part of its supplier outreach and upskilling efforts, the association conducted two initial webinars in 2022 that focused on the why of ESG, the importance of stakeholder engagement and ESG regulatory obligations.

CYBERSECURITY

IT IS PARAMOUNT THAT WE ENSURE OUR SYSTEMS AND OPERATIONS ARE PROTECTED FROM CYBER THREATS AND DATA SECURITY BREACHES.

We continuously evaluate our cyber defenses and procedures with the understanding that adversaries frequently adjust their methods of attack. We adapt our capabilities accordingly to maintain readiness.

Incident response and other security metrics ensure our performance against our mature standards is measured continuously. These security metrics capture quantifiable improvements to our overall cybersecurity program. We also have operational targets regarding the urgency and frequency of patching systems to remediate vulnerabilities.

Other objectives of our cybersecurity program include securing and hardening critical business industrial control systems; developing and maintaining incident reporting programs; and providing guidance and recommendations to our businesses while maintaining appropriate cyber hygiene.

We use an array of technologies and processes to protect and secure our computing platforms, assets and data, including:

- Perimeter protection and intrusion prevention;
- Continuous environmental monitoring and alerting;
- Operating/application system security, configuration, baselining and hardening;
- Endpoint detection and protection tools, such as antimalware and remote forensics;
- Continual compliance assessments supplemented with internal and external audits;
- Security standards and policies based on industry-leading cybersecurity frameworks;
- A data governance and protection program involving both technical and procedural controls; and
- Physical (video surveillance, locks, etc.) and technical safeguards at our facilities. Many of the technical safeguards are derived from the National Institute of Standards and Technology (NIST) Special Publication 800-53 and NIST Special Publication 800-171.

We also subscribe to managed security service providers (MSSPs) that offer continuous monitoring. Vital to our cybersecurity program, MSSPs assist with early threat detection and protection and escalate issues to our corporate cybersecurity team. We carry cybersecurity insurance to help protect the company in the event of a cyberattack.

Our cybersecurity program includes benchmarking with key customers, suppliers and other third parties to identify best practices. When evaluating third parties that will serve as business resources, we evaluate their cybersecurity practices to ensure their standards meet or exceed our expectations. This is achieved by confirming certain industry certifications are in place and having the third party attest to the controls through a cybersecurity questionnaire.

STRUCTURE

Our chief information security officer (CISO) is responsible for overseeing our cybersecurity program across the corporation and supervises our corporate information security team.

The CISO reports directly to the chief information officer (CIO), who is responsible for the usability, implementation and management of our information and computing systems. On a quarterly basis, the CIO and CISO bring cybersecurity improvements and challenges to the attention of the Cybersecurity Committee of our Board of Directors. This committee oversees the company's management of cybersecurity, ensuring that appropriate enterprise cyber risk mitigations and strategies are in place.

Our employees also play an important role in ensuring strong cybersecurity. We have a robust program of user testing, training and education that is focused on improving user engagement in cyber defense through safe behavior. We perform monthly cyber assessments and training of all computer users across the company and an annual assessment that we use to benchmark our program against others in the industry.

RISK AND VULNERABILITY ASSESSMENTS

To assess our cybersecurity risks, we use the following three-pronged approach that is focused on technology, policy and people:

- Compilation of a global inventory of systems and resources;
- Identification of critical assets to prioritize time-sensitive work, such as patches; and
- Identification of potential weaknesses and threats while developing solutions to close them.

We conduct internal vulnerability assessments on a frequent basis in addition to performing external cybersecurity penetration tests at least annually. We also conduct regular internal audits, with all significant controls tested.

The array of technologies and processes that we use for assessing threats and vulnerabilities include:

- Performing vulnerability scans;
- Monitoring vulnerability intelligence services to stay aware of emerging threats and exposures;
- Ensuring vulnerability tools are updated on a constant basis; and
- Ensuring software and applications are patched regularly.

Our information technology infrastructure, applications and network connectivity standards are governed by a set of requirements. We test these controls to assess the current state of our solutions relative to these standards. The results of each assessment are documented and reported, and we execute remediation strategies where gaps exist.

INCIDENT RESPONSE

Our response to a cybersecurity incident is based on an industry standard framework developed by NIST. It consists of four phases:

- Preparation;
- Detection and analysis;
- Containment, eradication and recovery; and
- Post-incident activity.

We use a "kill chain" to evaluate the ability of each security control to detect, deny, disrupt, degrade and contain an attack aimed at disabling IT services, disrupting computing or data communications, or exfiltrating data.

In 2022, we had 15 data events and two data breaches. This number increased compared to the prior year due to improved monitoring.

No customer data was involved in these events and breaches. We investigated each data event and identified and addressed root causes to avoid reoccurrence.

DATA PRIVACY

We have a company-wide data program to protect personally identifiable information. The program complies with applicable privacy laws around the world, including:

- European Union General Data Protection Regulation (GDPR);
- UK General Data Protection Regulation (UK GDPR);
- Personal Information Protection Law (PIPL):
- California Consumer Privacy Act (CCPA):
- Personal Information Protection and Electronic Documents Act (PIPEDA); and
- Act on the Protection of Personal Information (APPI).

Our Privacy Office ensures we comply with these laws by using GDPR as the benchmark, analyzing the different laws, evaluating the impact to our company and implementing the required changes.

The office's other responsibilities include:

- Advising on data privacy and how to reduce the risk;
- Assisting in deploying privacy standards;
- Serving as the liaison with data protection authorities;
- Deploying annual privacy training globally;
- Maintaining a register of processing activities in which we process personally identifiable information (PII);
- Ensuring we have the appropriate safeguards in place for our internal and external international data transfers;
- Processing data subject (person to whom the PII relates) requests;
- Handling data events that involve PII in conjunction with the corporate information security team; and
- Analyzing high-risk processing activities.

Our data protection officer, who reports directly to our CIO, is responsible for our privacy program and supervises our Privacy Office. This office is responsible for our compliance with worldwide privacy laws and regulations that are designed to protect individuals' personal data.

More information on our privacy policies and programs can be found on our website.

DATA EVENTS AND BREACHES

	DATA EVENTS	DATA BREACHES	INVOLVING CONFIDENTIAL DATA	NET EXPENSES INCURRED FROM SECURITY BREACHES
2020	6	0	0	Immaterial
2021	5	0	0	Immaterial
2022	15	2	2	Immaterial

A data event is the possible misuse or mishandling of sensitive company information. Per the U.S. National Initiative for Cybersecurity Careers and Studies, a data breach is the unauthorized movement or disclosure of sensitive information to a party that is usually outside the organization and is not authorized to have or see the information.

ENVIRONMENTAL COMPLIANCE

OUR TRUE NORTH IS DEFINED IN OUR GLOBAL EHS POLICY – HOWMET AEROSPACE IS COMMITTED TO OPERATING IN A WAY THAT RESPECTS AND PROTECTS THE ENVIRONMENT WHEREVER WE ARE LOCATED.

This means we will not compromise our environmental values for profit or production. We will respond truthfully and responsibly to questions and concerns about our environmental actions and the impact of our operations on the environment.

We use an environmental compliance process and environmental management system. Both provide our management and employees, particularly our environmental professionals, with the information, tools and verification they need to ensure our continued compliance with environmental laws, our internal standards and requirements across the globe.

We identify incidents through several mechanisms, such as internal EHS audits, corporate environmental compliance reviews, self-assessments, external agency reviews, and periodic monitoring and testing of pollution control facilities. Typical incidents include administrative oversight and exceedances of emission limits.

When an environmental incident occurs, our environmental compliance process helps ensure that we undertake an appropriate technical and legal review. We identify root causes, associated risks and corrective actions necessary to achieve sustainable compliance.

We keep our senior management informed of our environmental compliance record and maintain an ongoing dialogue with them. In return, they provide the resources and ensure the open-door culture that affirms environmental compliance as a top priority for the company.

In 2022, we recorded 63 environmental incidents. Through our environmental compliance process, we were able to complete corrective actions and review and close 41 incidents during the year, including 16 that originated in prior years.

We settled an emission-exceedance issue at our Engineered Structures facility in Cleveland, Ohio, during 2022. We paid a civil penalty of US$17,000 and also provided US$10,900 to fund a municipal rebate program for residents to replace existing gas-powered lawn equipment with electrical equipment to assist in improving the local air quality.

As part of the settlement, we completed corrective actions to improve the operation and emissions capture of our equipment. We completed stack testing that confirmed compliance with established particulate matter emission limits. We also agreed to more frequent monitoring for visible emissions, which have shown no exceedances of the opacity limits. We expect to complete the remaining corrective actions in 2023.

ENVIRONMENTAL NON-COMPLIANCE PERFORMANCE

	SIGNIFICANT FINES *(US$)*	NUMBER OF SIGNIFICANT NON-MONETARY SANCTIONS	NUMBER OF DISPUTE RESOLUTIONS
2018	59,000	0	0
2019	0	0	0
2020	0	0	1
2021	46,083	0	0
2022	27,900	1	0

Non-monetary sanctions include actions that we are ordered to take to ensure our operations return to, or remain in, compliance. Significant refers to sanctions that we consider high risk based on the costs required to address the issue. Dispute resolutions refer to cases brought through dispute resolution mechanisms. The 2022 fine included US$10,900 that was paid as remittance to a supplemental environmental program in lieu of penalty.

AWARDS AND RECOGNITION

FORBES® WORLD'S BEST EMPLOYERS 2022

We rose 116 spots on the Forbes World's Best Employers list in 2022, coming in at number 485. The rankings are determined from a survey of 150,000 full-time and part-time workers from 57 countries working for multinational companies and institutions to determine which ones excel in corporate impact and image, talent development, gender equality and social responsibility.

CORPORATE EQUALITY INDEX™ BEST PLACES TO WORK FOR LGBTQ+ EQUALITY

We again received a 100 percent score on the Human Rights Campaign Foundation's Corporate Equality Index (CEI) in 2022, earning the designation of a 2022 "Best Place to Work for LGBTQ+ Equality." The index is the foremost U.S. benchmarking survey and report measuring corporate policies and practices related to LGBTQ+ workplace equality.

50/50 3+ WOMEN ON BOARDS™

With four female members making up 40 percent of our Board of Directors in 2022, 50/50 Women on Boards again bestowed us with its "3+" designation. 50/50 Women on Boards is the leading global education and advocacy campaign driving the movement toward diverse, gender-balanced corporate boards.

2022 TOP DIVERSITY EMPLOYER

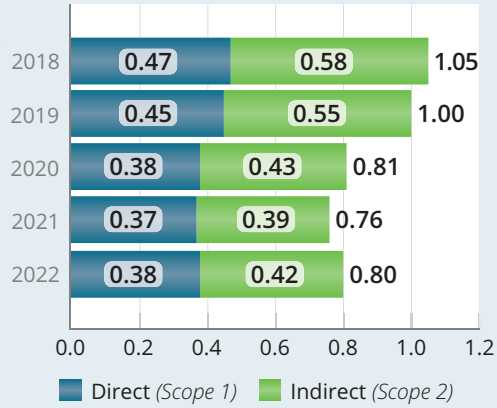
We were included in the list of 2022 Top Diversity Employers in the aerospace industry by DiversityJobs.com. The list reflects organizations that are taking active steps to build a diverse workforce and inclusive culture.

FRAUNHOFER IGP AWARD

German-based Fraunhofer Institute awarded our Telford Fastening Systems location its 2021 Fraunhofer IGP Award. The award recognizes "significant progression and success in lockbolt and blind rivet technology development."

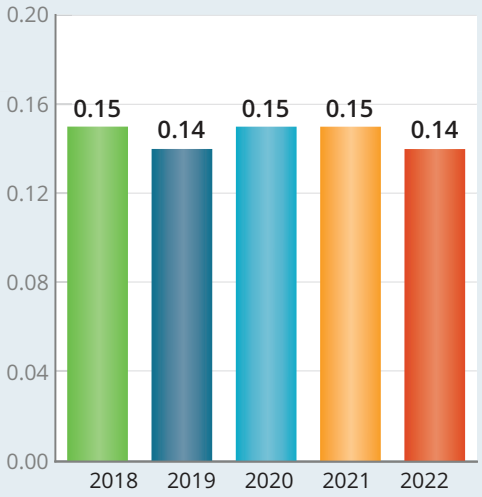
ENVIRONMENTAL
Climate Change

GREENHOUSE GAS EMISSIONS
Million metric tons of carbon dioxide equivalents

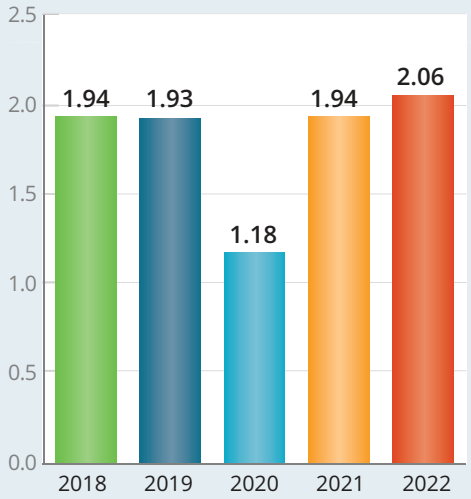


Gases included in the calculations are carbon dioxide, methane, nitrous oxide, and CFC and HFC from refrigerant releases (since 2020). Releases of SF6 and NF3 are not considered a significant source of GHG emissions for our operations. We had zero biogenic emissions in 2022. We used the World Resources Institute's GHG protocol methodology based on operational control; regional or country Scope 1 and 2 emission factors; and 4th IPCC Assessment GWP factors. Data change from prior reporting is due to estimated data being updated with actual data.

GREENHOUSE GAS EMISSION INTENSITY
Million metric tons of carbon dioxide equivalents per billion dollars in third-party revenue



SCOPE 3 GREENHOUSE GAS EMISSIONS
Million metric tons of carbon dioxide equivalents



These values are based on WRI Scope 3 methodology for purchased goods (expanded in 2022 to include non-metals), capital goods (since 2020), fuel and energy-related activities, upstream and downstream transportation, waste generated from operations (since 2020), business travel (since 2021), employee commuting (new for 2022), upstream leased properties (new for 2022) and end-of-life treatment of sold products.

SCOPE 3 GREENHOUSE GAS EMISSIONS BY CATEGORY

Metric tons of carbon dioxide equivalents

CATEGORY	2019	2020	2021	2022
1: Purchased Goods & Services	1,771,588	896,529	1,595,882	1,714,180
2: Capital Goods		125,486	141,974	93,313
3: Fuel- and Energy-Related Activities	43,000	97,693	96,356	96,300
4: Upstream Transportation	35,587	36,194	57,551	28,144
5: Waste from Operations		7,639	7,117	28,239
6: Business Travel			1,162	1,962
7: Employee Commuting				56,848
8: Upstream Leased Assets				3,564
9: Downstream Transportation	17,830	12,961	20,609	21,203
10: Processing of Sold Goods				
11: Use of Sold Goods				
12: End-of-Life Treatment of Sold Products	58,719	6,590	16,724	17,326
13: Downstream Leased Assets				Not applicable
14: Franchises				Not applicable
15: Investments				Not applicable
Total Scope 3 Emissions	**1,926,725**	**1,183,091**	**1,937,374**	**2,061,079**
Number of Categories Reported	5	7	8	10

Energy

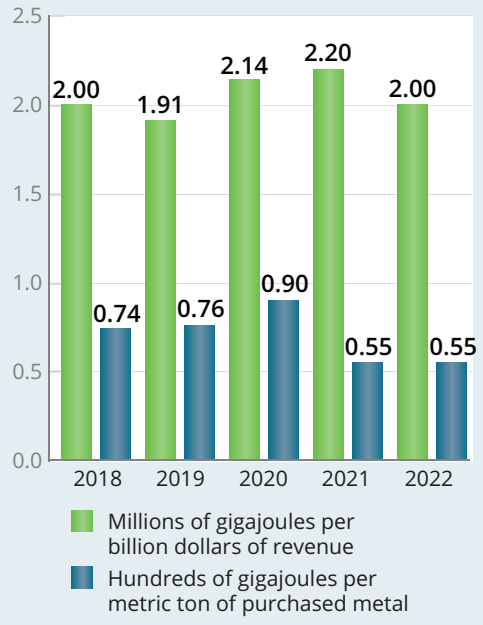
GLOBAL ENERGY CONSUMPTION

Millions of gigajoules

	DIRECT	INDIRECT		TOTAL
		Sourced from Grid	*Generated On-Site*	
2018	8.69	4.90	0	**13.59**
2019	8.83	4.77	0	**13.61**
2020	7.22	4.05	0	**11.27**
2021	7.07	3.91	0	**10.98**
2022	7.29	4.04	0	**11.33**

For some locations, the December 2022 electricity and natural gas consumption was estimated due to final invoices not yet having been received. Data changes from prior reporting are due to minor conversion adjustments and estimated data being updated with actual data.

ENERGY INTENSITY



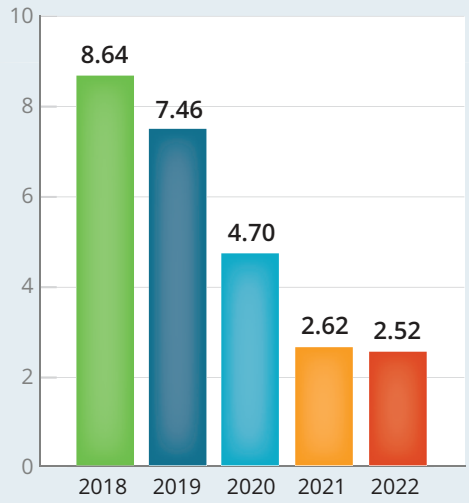
Air Emissions

AIR EMISSIONS
Metric tons

	NITROGEN OXIDES	PARTICULATE MATTER	SULFUR OXIDES	VOLATILE ORGANIC COMPOUNDS
2018	405.57	360.41	3.77	213.68
2019	391.28	375.30	3.57	199.34
2020	316.10	289.90	2.78	174.39
2021	280.90	239.44	3.03	206.19
2022	318.89	260.61	2.97	205.79

Data changes from prior reporting are due to estimated data being updated with actual data.

METALLIC HAZARDOUS AIR POLLUTANTS
Metric tons



Metallic hazardous air pollutants include chromium (total), cobalt, cadmium and nickel.

Water

2022 WATER WITHDRAWAL BY SOURCE

Megaliters

SOURCE	ALL AREAS	AREAS WITH WATER STRESS
Surface Water	0	0
Fresh Water	0	0
Other Water	0	0
Groundwater	30.20	0
Fresh Water	30.20	0
Other Water	0	0
Seawater	0	0
Fresh Water	0	0
Other Water	0	0
Produced Water	0	0
Fresh Water	0	0
Other Water	0	0
Third-Party Water	3,905.47	425.58
Fresh Water	3,905.47	425.58
Other Water	0	0
Third-Party Water Withdrawal by Withdrawal Source		
Total Water Withdrawal	3,935.67	425.58

Fresh water contains 1,000 milligrams of total dissolved solids per liter or less. Other water contains more than 1,000 milligrams of total dissolved solids per liter.

TOTAL WATER WITHDRAWAL

	MEGALITERS WITHDRAWN	WITHDRAWAL INTENSITY *(megaliters withdrawn per billion dollars of revenue)*
2018	4,367.45	642.46
2019	4,846.94	682.19
2020	4,146.44	788.75
2021	3,724.39	744.88
2022	3,935.67	694.12

Rainwater not included. Some fourth quarter or December data has been estimated. Data changes from prior reporting are due to estimated data being updated with actual data.

WATER DISCHARGE

Megaliters

DESTINATION	ALL AREAS	AREAS WITH WATER STRESS
Water Discharge by Destination		
Surface Water	595.68	140.06
Groundwater	0	0
Seawater	0	0
Third-party Water (total)	2,079.69	273.40
Third-party water sent for use to other organizations	0	0
Total Water Discharge		
Surface water + groundwater + third-party water (total)	2,675.37	413.46
Water Discharge by Fresh Water and Other Water		
Fresh Water	2,675.37	413.46
Other Water	0	0

Fresh water contains 1,000 milligrams of total dissolved solids per liter or less. Other water contains more than 1,000 milligrams of total dissolved solids per liter.

Waste and Spills

2022 WASTE

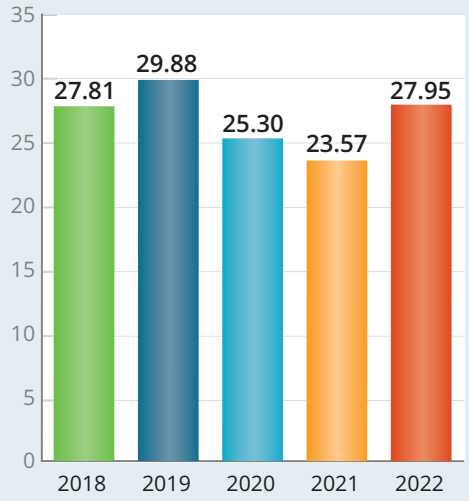
Thousand metric tons

	TOTAL GENERATED	DIVERTED FROM DISPOSAL	DIRECTED TO DISPOSAL
Hazardous	26.20	10.73	15.47
Non-Hazardous	67.58	25.89	41.69

Diverted includes preparation for reuse, recycling and other recovery operations. Disposal includes landfilled, incinerated with and without energy recovery, and other disposal methods. We revised our 2021 hazardous waste generated from 24.95 to 26.59 thousand metric tons based on updated information.

LANDFILLED WASTE

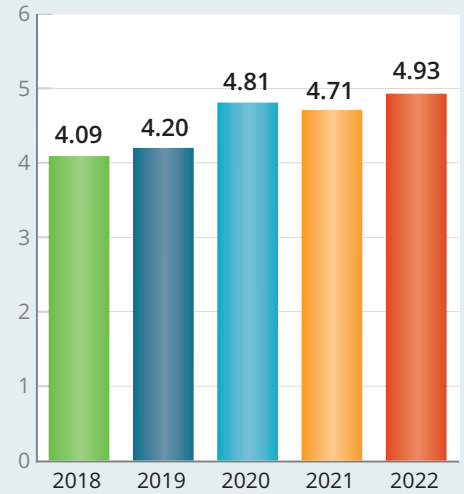
Thousand metric tons



Some fourth quarter or December data has been estimated.

LANDFILLED WASTE INTENSITY

Thousand metric tons of waste per billion dollars of revenue

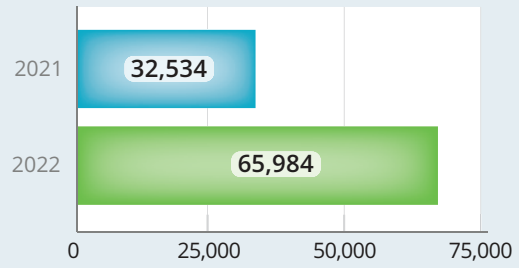


Some fourth quarter or December data has been estimated.

SOCIAL

Human Capital

U.S. CANDIDATE APPLICATIONS

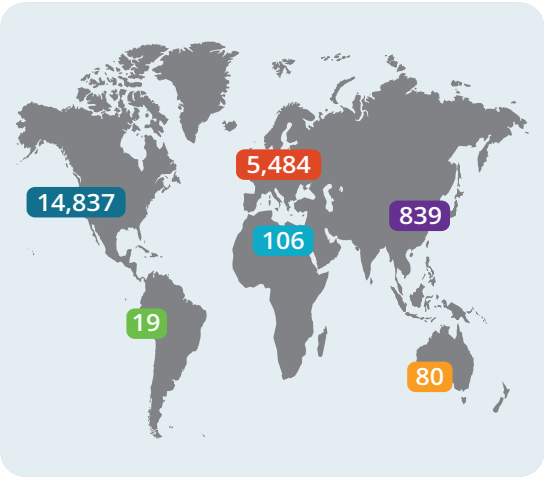


2022 EMPLOYEES

	CONTRACT		TYPE	
	Permanent	*Temporary*	*Full-Time*	*Part-Time*
Male	14,637	123	14,702	58
Female	5,490	46	5,444	92
Not Specified	57	6	62	1
Total	**20,184**	**175**	**20,208**	**151**

2022 EMPLOYEES BY REGION

	PERMANENT	TEMPORARY	TOTAL
Asia	771	68	839
Australia	80	0	80
Europe	5,398	86	5,484
Middle East and Africa	105	1	106
North America	14,817	20	14,837
South America	19	0	19



Data includes employees in Germany.

2022 NEW EMPLOYEE HIRES BY AGE

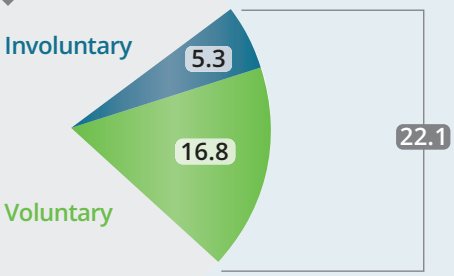
	MALE	FEMALE	NOT SPECIFIED	TOTAL
Under 30	1,638	688	24	**2,350**
30-50	1,613	772	28	**2,413**
Over 50	530	260	5	**795**

2022 NEW EMPLOYEE HIRES BY REGION

	MALE	FEMALE	NOT SPECIFIED	TOTAL
Asia	101	12	11	**124**
Australia	7	3	5	**15**
Europe	566	183	18	**767**
Middle East and Africa	12	1	2	**15**
North America	3,092	1,521	20	**4,633**
South America	3	0	1	**4**

2022 TURNOVER RATE

Percent



Data excludes Germany.

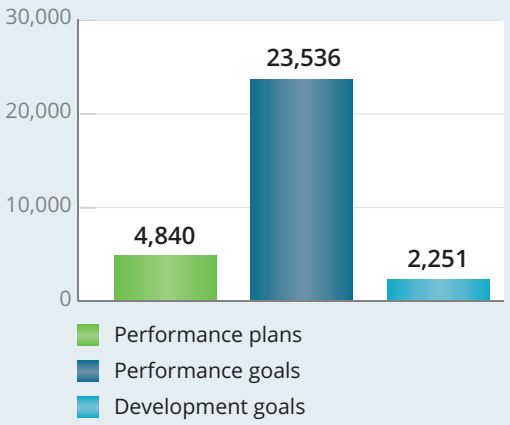
2022 EMPLOYEE TURNOVER BY AGE

	MALE	FEMALE	NOT SPECIFIED	TOTAL
Under 30	927	416	4	**1,347**
30-50	1,255	526	7	**1,788**
Over 50	878	386	0	**1,264**

2022 EMPLOYEE TURNOVER BY REGION

	MALE	FEMALE	NOT SPECIFIED	TOTAL
Asia	75	9	4	**88**
Australia	4	6	0	**10**
Europe	524	135	1	**660**
Middle East and Africa	10	6	0	**16**
North America	2,446	1,172	6	**3,624**
South America	1	0	0	**1**

2022 PERFORMANCE MANAGEMENT



2022 UNION REPRESENTATION

Percent of employees

No information is collected for other countries due to data privacy considerations.

2022 EMPLOYEE DIVERSITY

	GENDER			AGE		
	Male	*Female*	*Not Specified*	*Under 30*	*30-50*	*Over 50*
Board of Directors	6	4	0	0	1	9
Officers and Assistant Officers	4	4	0	0	4	4
Employees	14,760	5,536	63	3,295	9,766	7,298

Data does not include employees in Germany.

2022 WOMEN AND U.S. MINORITY REPRESENTATION

Global Women

22% Female executives and mid-management

27% Female professionals

27% Female employees overall

U.S. Minorities

14% Minority executives and mid-management

25% Minority professionals

44% Minority employees overall

Minorities represent employees who identify as Asian, African American, Alaska Native, American Indian, Black, Hispanic, Latino, Native Hawaiian, Pacific Islander, or two or more races.

RATIO OF BASIC SALARY AND REMUNERATION OF WOMEN TO MEN

COUNTRY	NUMBER OF EMPLOYEES	MID-LEVEL MANAGEMENT *(percent)*	PROFESSIONAL *(percent)*
Canada	110	91	86
China	134	80	107
France	311	106	93
Hungary	457	106	91
Japan	163	Not applicable	97
Mexico	254	144	111
United Kingdom	362	94	89
United States	2,581	97	98
Total	**4,372**	**97**	**96**

The data represents the female/male salary ratio for salaried employees. It includes countries with more than 100 employees and represents 96.6% of all salaried employees (4,372 out of 4,528).

TALENT DEVELOPMENT

	LEADERSHIP CAREER MOBILITY	EMPLOYEE CAREER MOBILITY	EMPLOYEE TALENT PROFILES	EMPLOYEE SUCCESSION PLANS
2021	10%	7,453	–	255
2022	31%	6,488	1,425	421

Leadership career mobility represents our leaders at director level and above. Career mobility refers to a transfer or promotion during the specified time period. We did not track employee talent profiles in 2021.

HOWMET LEADERSHIP DEVELOPMENT PROGRAMS

TOTAL PROGRAM ATTENDANCE
All Levels

HOWMET BUSINESS ESSENTIALS
Targets Emerging Leaders

HOWMET MANAGEMENT ESSENTIALS
Develops People Leaders

HOWMET ORGANIZATIONAL LEADER DEVELOPMENT
Develops Organizational Leaders – Senior and Executive

	2021	2022	2021	2022	2021	2022	2021	2022
Total Participants	164	195	60	137	80	34	24	24
Diverse	–	–	27%	19%	28%	18%	4%	4%
Women	–	–	44%	36%	36%	41%	24%	17%

Health and Safety

FATALITY RISK PREVENTION

Not all identified risks are closed in the same calendar year.

INCIDENT RATES – EMPLOYEES AND SUPERVISED WORKERS

	FATALITIES	DAYS AWAY, RESTRICTED AND TRANSFER		LOST WORKDAY	TOTAL RECORDABLE INCIDENT	
2018	0	0.35		0.20	1.08	
2019	0	0.25		0.12	0.90	
2020	0	0.24		0.12	0.71	
2021	0	0.22		0.15	0.71	
2022	1	0.15	Target: 0.28	0.09	0.66	Target: 1.01

Lost workday rate represents the number of injuries and illnesses resulting in one or more days away from work per 100 full-time workers. Days away, restricted and transfer rate includes lost workday cases plus cases that involve days of restricted duty and job transfer per 100 full-time workers. Total recordable incident rate represents the number of injuries and illnesses resulting in days away from work, job transfer or restriction, medical treatment or other recordables per 100 full-time workers.

INCIDENT RATES – CONTRACTORS AND CONTRACTED SERVICES

	FATALITIES	DAYS AWAY, RESTRICTED AND TRANSFER		LOST WORKDAY	TOTAL RECORDABLE INCIDENT	
2018	0	0.36		0.31	1.04	
2019	0	0.36		0.24	0.84	
2020	0	0.11		0.11	0.50	
2021	0	0.34		0.23	0.45	
2022	0	0.25	Target: 0.28	0.17	0.77	Target: 1.01

OCCUPATIONAL HEALTH RATES

	OCCUPATIONAL DISEASE RECORDABLE RATE	MUSCULOSKELETAL DISORDER RECORDABLE RATE	OCCUPATIONAL DISEASE DART RATE	MUSCULOSKELETAL DISORDER DART RATE
2018	0.08	0.26	0.00	0.16
2019	0.07	0.18	0.01	0.08
2020	0.03	0.17	0.01	0.09
2021	0.08	0.10	0.00	0.05
2022	0.04	0.09	0.00	0.03

Some country medical providers limit access to occupational disease classifications, which may affect the occupational disease recordable and DART rates.

COVID-19 OUTCOMES

	CONFIRMED CASES	DEATHS
2020	1,169	14
2021	2,722	10
2022	6,682	5

Product Safety

PRODUCT SAFETY-RELATED RECALLS

	VOLUNTARY	INVOLUNTARY
2018	0	0
2019	0	0
2020	0	0
2021	1	0
2022	0	0

Consistent with the definition in the U.S. Consumer Product Safety Commission's Recall Handbook, a recall is any repair, replacement, refund or notice/warning program intended to protect consumers from products that present a safety risk.

DETECTED OR SUSPECTED COUNTERFEIT PARTS IN HOWMET AEROSPACE OPERATIONS

	ACTUAL	SUSPECTED
2018	0	0
2019	0	0
2020	0	0
2021	0	0
2022	0	0

Counterfeit parts and suspected counterfeit parts are defined according to definitions contained in U.S. 48 CFR Part 252.246–7007, Contractor Counterfeit Electronic Part Detection and Avoidance System. Counterfeit parts may increase the risk of safety incidents due to low product quality.

AIRWORTHINESS DIRECTIVES

	NUMBER
2018	0
2019	0
2020	0
2021	0
2022	0

An airworthiness directive is a legally enforceable rule issued by the Federal Aviation Administration (FAA), the Department of Defense (DoD) or non-U.S. equivalent that applies to aircraft, aircraft engines, propellers and appliances.

PRODUCT SAFETY MONETARY LOSSES

	U.S. DOLLARS
2018	Not disclosed
2019	0
2020	0
2021	0
2022	0

Losses are from legal proceedings associated with product safety, including but not limited to the enforcement of relevant industry regulations, such as the U.S. Consumer Product Safety Act, U.S. Federal Aviation Act and U.S. National Electrical Code.

GOVERNANCE

Ethics, Compliance and Human Rights

REVENUE IN COUNTRIES RANKED E OR F ON TRANSPARENCY INTERNATIONAL'S GOVERNMENT DEFENSE ANTI-CORRUPTION INDEX

	REVENUE *(US$ million)*	PERCENTAGE OF REVENUE BY COUNTRY
2020	94.0	80%: China 13%: Brazil Remaining 7%: Morocco, United Arab Emirates, Republic of Cote d'Ivoire, Jordan, Qatar, Bahrain, Pakistan and Sri Lanka. Our Engine Products and Fastening Systems segments generated the majority of this revenue.
2021	94.6	76%: China 17%: Brazil Remaining 7%: Morocco, Thailand, United Arab Emirates, Kuwait, Republic of Cote d'Ivoire, Jordan, Qatar, Bahrain, Sri Lanka and Saudi Arabia. Our Engine Products and Fastening Systems segments generated the majority of this revenue.
2022	140.0	79%: China 15%: Brazil Remaining 6%: Morocco, United Arab Emirates, Thailand, Republic of Cote d'Ivoire, Jordan, Qatar, Azerbaijan, Sri Lanka, Saudi Arabia, Bahrain and Kuwait. Our Engine Products and Fastening Systems segments generated the majority of this revenue.

MONETARY LOSSES ASSOCIATED WITH BUSINESS ETHICS

2020	0
2021	0
2022	0

Includes monetary losses as a result of legal proceedings associated with incidents of corruption, bribery and/or illicit international trade.

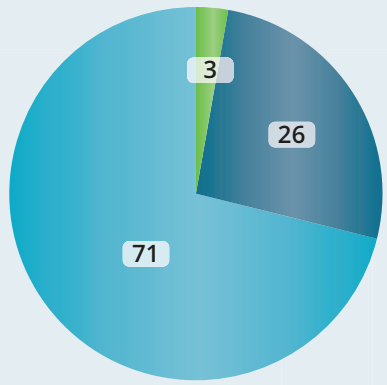
SIGNIFICANT INSTANCES OF NON-COMPLIANCE

	ENVIRONMENTAL		SOCIAL	
	Fines (US$)	Instances	Fines (US$)	Instances
2018	59,000	1	*(See footnote)*	1
2019	0	0	0	0
2020	0	0	61,477	1
2021	46,083	1	0	0
2022	27,900	1	0	0

Significant instances include those that result in fines in excess of $25,000. In 2018, we settled LeBlanc, et al. v. Howmet et al., which was a matter arising out of a helicopter accident in the Gulf of Mexico. We resolved the case for an undisclosed payment. In 2020 in LaPorte, Indiana, we reached a settlement with two terminated employees in response to a charge filed with the National Labor Relations Board. The 2021 fine involved a settlement on emission-limit exceedances for carbon monoxide and particulate matter at our Bestwig, Germany, facility. The 2022 fine – US$10,900 of which was paid as remittance to a supplemental environmental program in lieu of penalty – was for an emission-exceedance issue at our Cleveland, Ohio, facility.

Supply Chain

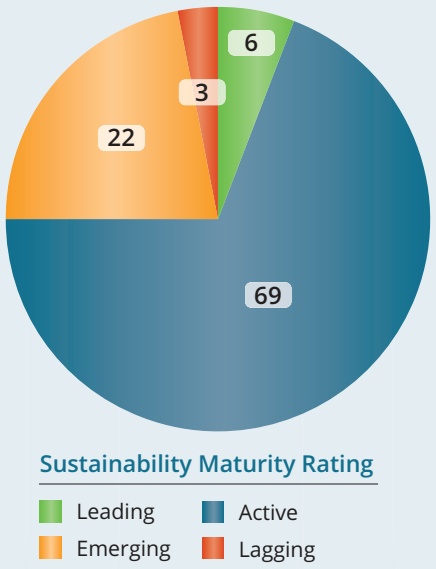
2022 SPEND BY REGION
Percent



2022 SUPPLIERS BY MAJOR CATEGORY
Number

2022 KEY SUPPLIER ASSESSMENT RESULTS

Percent of key suppliers



Cybersecurity

DATA EVENTS AND BREACHES

	DATA EVENTS	DATA BREACHES	INVOLVING CONFIDENTIAL DATA	NET EXPENSES INCURRED FROM SECURITY BREACHES
2020	6	0	0	Immaterial
2021	5	0	0	Immaterial
2022	15	2	2	Immaterial

A data event is the possible misuse or mishandling of sensitive company information. Per the U.S. National Initiative for Cybersecurity Careers and Studies, a data breach is the unauthorized movement or disclosure of sensitive information to a party that is usually outside the organization and is not authorized to have or see the information.

2022 CYBERSECURITY TRAINING

TRAINING	COMPUTER USER PARTICIPATION
Cybersecurity Awareness	>95%
Data Privacy Awareness	>95%

Environmental Compliance

ENVIRONMENTAL NON-COMPLIANCE PERFORMANCE

	SIGNIFICANT FINES *(US$)*	NUMBER OF SIGNIFICANT NON-MONETARY SANCTIONS	NUMBER OF DISPUTE RESOLUTIONS
2018	59,000	0	0
2019	0	0	0
2020	0	0	1
2021	46,083	0	0
2022	27,900	1	0

Non-monetary sanctions include actions that we are ordered to take to ensure our operations return to, or remain in, compliance. Significant refers to sanctions that we consider high risk based on the costs required to address the issue. Dispute resolutions refer to cases brought through dispute resolution mechanisms. The 2022 fine included US$10,900 that was paid as remittance to a supplemental environmental program in lieu of penalty.

GLOBAL REPORTING INITIATIVE INDEX

Howmet Aerospace has reported in accordance with the GRI Standards for the period Jan. 1, 2022, through Dec. 31, 2022. This index helps readers compare the information from our ESG report, annual report and website with the GRI Standards. General Disclosures 2021

DISCLOSURE	LOCATION	OMISSION		
		Requirement(s) Omitted	*Reason*	*Explanation*
Organization and Reporting Practices				
2-1: Organizational details	Headquartered in Pittsburgh, Pennsylvania, Howmet Aerospace Inc. is a publicly traded company listed on the New York Stock Exchange (NYSE: HWM). Countries of operation			
2-2: Entities included in the organization's sustainability reporting	Form 10-K (pages 1 to 8)			
2-3: Reporting period, frequency and contact point	2022 Annual Marcel van der Velden Director, Environment, Health and Safety and Sustainability			
2-4: Restatements of information	Found throughout the report.			
2-5: External assurance	Reporting and Materiality			
Activities and Workers				
2-6: Activities, value chain and other business relationships	About Us Markets and Product Lines Supply Chain			
2-7: Employees	Human Capital			
2-8: Workers who are not employees	Human Capital			
Governance				
2-9: Governance structure and composition	Corporate Governance Form 10-K (page 82) Proxy Statement (page 27)			

DISCLOSURE	LOCATION	OMISSION		
		Requirement(s) Omitted	*Reason*	*Explanation*
2-10: Nomination and selection of the highest governance body	Proxy Statement (pages 6 to 18 and 36) Certificate of Incorporation Bylaws Governance and Nominating Committee Charter			
2-11: Chair of the highest governance body	Form 10-K (page 82)			
2-12: Role of the highest governance body in overseeing the management of impacts	Proxy Statement (page 27) Audit Committee Charter Finance Committee Charter Corporate Governance Guidelines (Corporate Citizenship section)			
2-13: Delegation of responsibility for managing impacts	Proxy Statement (page 29) describes the role of management in risk management.)			
2-14: Role of the highest governance body in sustainability reporting	Corporate Governance Guidelines (Corporate Citizenship section) Proxy Statement (pages 23 to 25)			
2-15: Conflicts of interest	Form 10-K (page 83) Governance and Nominating Committee Charter			
2-16: Communication of critical concerns	Form 10-K (pages 9 to 15) Proxy Statement (pages 34 to 35 and 48 to 49) Corporate Governance Guidelines Compensation and Benefits Committee Charter			
2-17: Collective knowledge of the highest governance body	Proxy Statement (pages 8 to 14)			
2-18: Evaluation of the performance of the highest governance body	Proxy Statement (pages 33 to 34) Governance and Nominating Committee Charter			

DISCLOSURE	LOCATION	OMISSION		
		Requirement(s) Omitted	*Reason*	*Explanation*
2-19: Remuneration policies	Form 10-K (page 83) Proxy Statement (pages 19 to 21 and 46 to 75) Corporate Governance Guidelines Compensation and Benefits Committee Charter			
2-20: Process to determine remuneration	Form 10-K (page 83) Proxy Statement (pages 50 and 51) Corporate Governance Guidelines Compensation and Benefits Committee Charter			
2-21: Annual total compensation ratio	Form 10-K (page 83) Proxy Statement (page 69)			
Strategy, Policies and Practices				
2-22: Statement on sustainable development strategy	ESG Approach			
2-23: Policy commitments	Howmet Policies Human Rights Policy			
2-24: Embedding policy commitments	Ethics, Compliance and Human Rights Supply Chain			
2-25: Processes to remediate negative impacts	Ethics and Compliance Waste and Spills			
2-26: Mechanisms for seeking advice and raising concerns	Integrity Line			
2-27: Compliance with laws and regulations	Compliance			
2-28: Membership associations	International Titanium Association International Aerospace Environmental Group Aerospace Industries Association U.S. Chamber of Commerce, Europe Program			

DISCLOSURE	LOCATION	OMISSION		
		Requirement(s) Omitted	*Reason*	*Explanation*
Stakeholder Engagement				
2-29: Approach to stakeholder engagement	Stakeholder Engagement			
2-30: Collective bargaining agreements	Human Capital			
GRI 3: Material Topics 2021				
3-1: Process to determine material topics	Reporting and Materiality			
3-2: List of material topics	Reporting and Materiality			
GRI 201: Economic Performance 2016				
3-3: Management of material topic	Each material section of this report	Limited disclosure on 3-3	Limited data	Breadth of assessments are limited to comprehen-sively address disclosure.
201-1: Direct economic value generated and distributed	Form 10-K			
201-2: Financial implications and other risks and opportunities due to climate change	Climate Change			
201-3: Defined benefit plan obligations and other retirement plans	Form 10-K (Item 8: Financial Statements and Supplementary Data)			
201-4: Financial assistance received from government	Form 10-K (pages 26 and 68)			
GRI 205: Anti-Corruption 2016				
3-3: Management of material topic	Ethics, Compliance and Human Rights			
205-1: Operations assessed for risks related to corruption	Ethics, Compliance and Human Rights			
205-2: Communication and training about anti-corruption policies and procedures	Ethics, Compliance and Human Rights			

DISCLOSURE	LOCATION	OMISSION		
		Requirement(s) Omitted	*Reason*	*Explanation*
205-3: Confirmed incidents of corruption and actions taken	Ethics, Compliance and Human Rights			
GRI 302: Energy 2016				
3-3: Management of material topic	Energy			
302-1: Energy consumption within the organization	Energy			
302-2: Energy consumption outside of the organization	Energy			
302-3: Energy intensity	Energy			
302-4: Reduction of energy consumption	Energy			
302-5: Reductions in energy requirements of products and services	Products			
GRI 303: Water and Effluents 2018				
3-3: Management of material topic	Water			
303-1: Interactions with water as a shared resource	Water			
303-2: Management of water discharge-related impacts	Water			
303-3: Water withdrawal	Water			
303-4: Water discharge	ESG Performance Metrics			
303-5: Water consumption	Water			
GRI 305: Emissions 2016				
3-3: Management of material topic	Climate Change			
305-1: Direct (Scope 1) GHG emissions	Climate Change			
305-2: Energy indirect (Scope 2) GHG emissions	Climate Change			
305-3: Other indirect (Scope 3) GHG emissions	Climate Change			
305-4: GHG emissions intensity	Climate Change			

DISCLOSURE	LOCATION	OMISSION		
		Requirement(s) Omitted	*Reason*	*Explanation*
305-5: Reduction of GHG emissions	Climate Change			
305-6: Emissions of ozone-depleting substances (ODS)	Air Emissions			
305-7: Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	Air Emissions			
GRI 306: Waste 2020				
3-3: Management of material topic	Waste and Spills			
306-1: Waste generation and significant waste-related impacts	Waste and Spills			
306-2: Management of significant waste-related impacts	Waste and Spills			
306-3: Waste generated	Waste and Spills			
306-4: Waste diverted from disposal	Waste and Spills			
306-5: Waste directed to disposal	Waste and Spills			
GRI 403: Occupational Health and Safety 2018				
3-3: Management of material topic	Health and Safety			
403-1: Occupational health and safety management system	Health and Safety			
403-2: Hazard identification, risk assessment, and incident investigation	Health and Safety			
403-3: Occupational health services	Health and Safety			
403-4: Worker participation, consultation, and communication on occupational health and safety	Health and Safety			
403-5: Worker training on occupational health and safety	Health and Safety			
403-6: Promotion of worker health	Health and Safety			

DISCLOSURE	LOCATION	OMISSION		
		Requirement(s) Omitted	*Reason*	*Explanation*
403-7: Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Health and Safety			
403-8: Workers covered by an occupational health and safety management system	Health and Safety			
403-9: Work-related injuries	Health and Safety			
403-10: Work-related ill health	ESG Performance Metrics			
GRI 405: Diversity and Equal Opportunity 2016				
3-3: Management of material topic	Human Capital			
405-1: Diversity of governance bodies and employees	Leadership Human Capital			
405-2: Ratio of basic salary and remuneration of women to men	ESG Performance Metrics			
GRI 416: Customer Health and Safety 2016				
3-3: Management of material topic	Product Safety Chemical Management			
416-1: Assessment of the health and safety impacts of product and service categories	Product Safety Chemical Management			
416-2: Incidents of non-compliance concerning the health and safety impacts of products and services	Product Safety			
GRI 418: Customer Privacy 2016				
3-3: Management of material topic	Cybersecurity			
418-1: Substantiated complaints concerning breaches of customer privacy and losses of customer data	Cybersecurity			

SUSTAINABILITY ACCOUNTING STANDARDS BOARD INDEX

Howmet Aerospace is committed to reporting against the aerospace and defense sustainability accounting standard from SASB. This index provides a guide to our reporting against this standard.

TOPIC	ACCOUNTING METRIC	CATEGORY	CODE	REPORT LOCATION
Energy Management	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable	Quantitative	RT-AE-130a.1	Energy
Hazardous Waste Management	Amount of hazardous waste generated, percentage recycled	Quantitative	RT-AE-150a.1	Waste and Spills
	Number and aggregate quantity of reportable spills, quantity recovered	Quantitative	RT-AE-150a.2	Waste and Spills
Data Security	(1) Number of data breaches, (2) percentage involving confidential information	Quantitative	RT-AE-230a.1	Cybersecurity
	Description of approach to identifying and addressing data security risks in (1) company operations and (2) products	Discussion and Analysis	RT-AE-230a.2	Cybersecurity
Product Safety	Number of recalls issued, total units recalled	Quantitative	RT-AE-250a.1	Product Safety
	Number of counterfeit parts detected, percentage avoided	Quantitative	RT-AE-250a.2	ESG Performance Metrics
	Number of Airworthiness Directives received, total units affected	Quantitative	RT-AE-250a.3	ESG Performance Metrics
	Total amount of monetary losses as a result of legal proceedings associated with product safety	Quantitative	RT-AE-250a.4	ESG Performance Metrics
Fuel Economy & Emissions in Use Phase	Revenue from alternative energy-related products	Quantitative	RT-AE-410a.1	Not reported
	Description of approach and discussion of strategy to address fuel economy and greenhouse gas (GHG) emissions of products	Discussion and Analysis	RT-AE-410a.2	Products

TOPIC	ACCOUNTING METRIC	CATEGORY	CODE	REPORT LOCATION
Materials Sourcing	Description of the management of risks associated with the use of critical materials	Discussion and Analysis	RT-AE-440a.1	Supply Chain
Business Ethics	Total amount of monetary losses as a result of legal proceedings associated with incidents of corruption, bribery, and/or illicit international trade	Quantitative	RT-AE-510a.1	Ethics, Compliance and Human Rights
	Revenue from countries ranked in the "E" or "F" Band of Transparency International's Government Defence Anti-Corruption Index	Quantitative	RT-AE-510a.2	ESG Performance Metrics
	Discussion of processes to manage business ethics risks throughout the value chain	Discussion and Analysis	RT-AE-510a.3	Ethics, Compliance and Human Rights Supply Chain