Sustainability: The Center of the Equation

2022–2023 SUSTAINABILITY REPORT
Celanese: Sustainable Solutions for a World in Transition

For over a century, Celanese has improved the world through the power of chemistry.

The expertise of our talented teams is the driving force behind the high-performing products that are an integral part of many items commonly used in daily life. We believe in caring for those around us, improving the communities we serve, and providing products to help build a more sustainable world.

We deliver key products and solutions to address some of the most difficult challenges—from making electric vehicles lighter to increasing the durability of medical devices. Our customers depend on Celanese to help them accelerate product development and deliver new solutions to their end customers, and ultimately, the people around the world who use their products.

ABOUT THIS REPORT

This report covers the operations and activities of Celanese Corporation for the calendar year 2022 (January 1 to December 31) and key activities in the first half of 2023. However, it excludes quantitative data associated with the recent acquisition of the Mobility and Materials (M&M) business from DuPont due to the different methods of data collection and reporting between M&M and Celanese, unless otherwise noted. The numbers and percentages contained in this report are for the full year or as of year-end 2022, unless otherwise stated. In some cases, quantitative data may reflect estimates or approximations and rely on assumptions. Together with our Sustainability Index (Index), they align with the Sustainability Accounting Standards Board (SASB) Chemicals Sector Standard, the Task Force on Climate-Related Financial Disclosure (TCFD), and the United Nations (UN) Sustainable Development Goals (SDGs). Our disclosures are informed by the GRI Standards, and we consider our impacts on the economy, environment, and people as part of our management approach. This report also contains statements regarding targets, plans, strategies, and objectives that are “forward-looking” and aspirational in nature. Please review the “Important Information About Disclosures” for more information about the nature, scope, and limitations of the statements provided in this report. Statements, where indicated, have received limited assurance from Environmental Resources Management Certification and Verification Services (ERM CVS). Learn more in our Index.
TWO LEADING BUSINESSES

Our Acetyl Chain and Engineered Materials businesses design, develop, and manufacture materials that meet a wide range of critical needs across most major industries. Our sustainable solutions are also designed to help customers to address their own sustainability targets without compromising quality or performance. Both business segments hold leading positions in the industries we serve worldwide and are complemented by a large, global production capacity which has uniquely positioned us to capture ~$2 billion in adjusted EBITDA value.

Acetyl Chain

Paints and Coatings, Adhesives, Textiles, Packaging, and Pharma

$5.7 billion in net sales

Engineered Materials

Automotive, Medical, Electronics and Electrical, Industrial, Appliances, and Food Ingredients

$6.9 billion in net sales[1]

GLOBAL FOOTPRINT

While we call Dallas, Texas, home, we produce our differentiated chemistry solutions and specialty materials across the Americas, Europe, Middle East, Africa, and Asia, with European headquarters in Amsterdam and Asian headquarters in Shanghai.

Celanese is an S&P 500, New York Stock Exchange (NYSE)-traded company.

 Amsterdam, Netherlands
 Europe Headquarters

 Dallas, Texas
 Corporate Headquarters

 Shanghai, China
 Asia Headquarters

~13,000 employees worldwide

35% U.S.

22% Asia

36% Europe, Middle East, and Africa

7% Americas (excluding U.S.)

50 owned and operated manufacturing locations; operating in 27 countries worldwide[2]


A Message From Our Chair and CEO

Sustainability is at the center of our business. We create a range of products essential to many aspects of daily life and designed to safely support a world in transition. Enabled by the passion of our people and the power of chemistry, we are focused on expanding our differentiated chemistry and specialty materials solutions that help our customers lower the carbon footprints of their products and move toward a circular economy. We made significant investments this past year in environmentally conscious applications and enterprise-level process integration. In this 2022–2023 report, Sustainability: The Center of the Equation, we highlight our progress as we balance our exciting growth and our commitment to a more sustainable future in a challenging macro-economic environment.

EXPANDING OUR VALUE CHAIN

Celanese offers more sustainable solutions than ever before, accelerated by our strategic investments and product innovation.

We welcomed over 4,500 new employees to the Celanese family this past year, driven largely by our acquisition of the DuPont M&M business. Our growth brought new expertise, energy, and excitement to our teams, not only increasing our production capabilities, but also enabling a new level of innovation. Our expanded international footprint allows us to deliver products with increased recycled content and biocontent, while also leveraging carbon capture and enabler solutions to help us meet our sustainability ambitions.

Understanding the environmental impacts of a product’s life cycle is also important to our customers. Through our acquisition of the M&M business, we were able to strengthen our internal Life Cycle Assessment (LCA) capabilities and processes, helping to expand our LCA support to customers. We continue to collaborate closely with our customers on product development, yielding exciting solutions for recycling performance apparel, food packaging, consumer goods, and vehicle parts—all with the end-user in mind. In the near future, we plan to launch a suite of lower-carbon footprint solutions made from captured carbon dioxide (CO₂) emissions to further support our customers’ sustainability goals.
**CELEBRATING OUR CULTURE**

While sustainability is central to our business, people continue to be the essential element to our success.

This year, we reaffirmed our commitment for a culture that is rich with diverse talent and focused on employee success. We increased training opportunities, improved communications, and sought greater understanding of our employees’ perspectives. These efforts not only improved the employee experience, but also led to notable external awards for our Diversity, Equity, and Inclusion (DE&I) initiatives, environmental and manufacturing leadership, and overall sustainability performance. We are particularly proud to receive an America’s Most Responsible Companies 2023 award from Newsweek.

The benefits of diversity have a positive impact on every level of our business. Women make up half of our Board of Directors and nearly half of the senior leadership team. As a four-year recipient of “Best Place to Work for LGBTQ+” recognition from the Human Rights Campaign Corporate Equality Index, we strive to ensure that everyone feels they can bring their most authentic selves to work. In addition, we have publicly committed to increase Celanese procurement spend with minority business enterprises.

**STRENGTHENING OUR COMMITMENT**

As we continue to grow our business, we remain steadfast in our commitment to strategic sustainability priorities and reducing our environmental impact.

We remain focused on our environmental goals, including a 30% intensity reduction in Scope 1 and Scope 2 market-based greenhouse gas (GHG) emissions, a 10% intensity reduction in net energy and water consumption, and a 15% intensity reduction in waste disposal based on production—all by 2030—compared to a 2021 baseline. This past year, we made significant progress on our Scope 3 emissions inventory, developed a corresponding transition plan, and refined our strategies for energy, waste, and water.

To further demonstrate our continuing commitment to the United Nations (UN) Global Compact and its Ten Principles, Celanese formally became a Signatory in 2023, reaffirming our commitment to important initiatives regarding human rights, labor, the environment, and anti-corruption. Additionally, for the second consecutive year, we engaged ERM CVS to complete limited assurance of our environmental data and 2023 CDP Climate Change and Water Security questionnaire responses.

We are proud to share our journey and achievements from this past year with you. With sustainability at the center of the equation, we will continue accelerating solutions to improve the world through our people, chemistry, and innovation.

Warm regards,

**LORI J. RYERKERK**  
Chair, Chief Executive Officer, and President
Looking Ahead

We are pleased to share in this report our recent progress and to highlight some of the important strategies we are focused on in the coming years. Our transition journey continues to center on growing our portfolio of sustainable product offerings to help our customers in their increasing desire to improve the environmental impact of their products. We have a rich history of partnering with customers to create tailored solutions and, with the addition of M&M products, we are uniquely positioned across our value chain of Engineered Materials and Acetyl to accelerate expanded product offerings with reduced carbon footprints.

Lowering our own environmental impact through increasing the use of renewable energy will further our efforts, and we will continue to explore new potential transformative technologies, such as hydrogen, as they become scalable for our industry. We will leverage the analytics from the digitalization of our flagship acetyl plant in Clear Lake, Texas, which will enhance our ability to make informed and timely decisions to improve our operations. This knowledge will be used across our enterprise to identify other opportunities as well.

Evaluating raw materials with lower carbon footprints is becoming an essential part of our sustainability strategy. This will be informed by our continuing work to understand and reduce the Scope 3 impact of our combined Celanese and M&M operations.

Additionally, we plan to continue to collaborate with our key trade associations, the American Chemistry Council (ACC) and the European Chemical Industry Council (Cefic), which are helping drive our industry toward improved sustainable operations. We will also evaluate the potential to leverage governmental programs that encourage sustainable products and operations in both the U.S. and Europe.

I continue to be proud of our progress and dedication that you will read about in this report. Our future efforts will help accelerate our ability to meet the growing needs of our customers and the increased interest from our employees and other external stakeholders to drive us towards a more sustainable future for all of us.

A. LYNNE PUCKETT
Senior Vice President, General Counsel, and Sustainability Executive Sponsor
Sustainability Highlights

ADVANCING SAFE AND SUSTAINABLE CUSTOMER SOLUTIONS

- Expanded our Acetyl and Engineered Materials portfolios to now offer more sustainable options across approximately 60% of our product lines.
- Prepared for the early 2024 launch of our Carbon Capture and Utilization (CCU) Project using recycled CO₂ to make methanol that can be used to lower the carbon footprint for most of our Acetyl Chain product options.
- Provided customers with increased transparency on product sustainability benefits, using mass balance methodology, external certifications, and increased LCA capabilities.
- Set a supply chain management goal to assess key suppliers, representing more than 90% of our 2022 global procurement raw material spend, on sustainability criteria by 2025.

INVESTING IN OUR PEOPLE AND COMMUNITIES

- Volunteered nearly 123,000 employee hours to benefit local communities.
- Conducted a culture survey of our workforce and optimized our talent management and development strategies to support the integration of M&M employees.
- Invited 4,500 new M&M team members to initiate local chapters of Employee Resource Groups (ERGs), one of our key DE&I program initiatives, at their respective facilities.
- Implemented a robust contractor safety management program, yielding performance improvements in contractor Total Recordable Incident Rate (TRIR) year over year, and zero Days Away from Work (DAFW) related incidents for contractors in 2022.

PRESERVING THE ENVIRONMENT

- Improved our 2022 CDP Climate Change response score to a “B” for taking coordinated action on climate issues. The “B” rating is higher than CDP’s chemicals sector average of “B-,” and higher than CDP’s global average of “C.”
- Developed an integrated environmental and sustainability reporting standard to harmonize Celanese and M&M reporting approaches on metrics, definitions, boundaries, and methodologies.
- Refreshed our transition plan to support our 2030 target goals for energy, Scope 1 and Scope 2 GHG emissions, waste, and water.
- Advanced our Scope 3 inventory efforts in anticipation of disclosing future company-wide metrics.
- Continued our engagement with ERM CVS to include a limited assurance of our calendar year 2022 environmental sustainability metrics and associated 2023 CDP Climate Change and Water Security disclosures.

OPERATING WITH INTEGRITY

- Allocated sustainability oversight responsibilities to our full Board and Committees based on their respective areas of focus, with regular review as our business and stakeholder perspectives evolve.
- Expanded our risk definitions to include risks related to our recent M&M acquisition during our sustainability-focused enterprise risk management workshop.
- Reported no material cybersecurity breaches to our knowledge in the preceding three years as of June 30, 2023.
- Published a Cyber and Information Security statement highlighting program training, third-party assessment, and Board oversight.

For a full list of our Sustainability Highlights, visit our Index.
Awards and Recognition

Three M&M products (Zytel® PA612, Crastin® PBT, and Vamac® AEM) received awards at the 51st Annual Society of Plastics Engineers Automotive Innovation Awards Competition and Gala in November 2022.

2023 ACC Responsible Care Energy Efficiency Award recipient for the third consecutive year.

ACC recognition in 2022 and 2023 as a leader in the chemical industry for exceptional environmental, health, safety, and security performance and commitment to sustainability.

Shenzhen Green Company and Environmental Integrity Enterprise designation in 2022.

Perfect Corporate Equality Index score from the Human Rights Campaign Foundation for the fourth consecutive year.

Our Celanese Budapest facility recognized as a Three Princes, Three Princesses Movement Family Friendly Company 2022 for the sixth consecutive year.

Best Midsize Employer 2022 by Forbes America.

Best-In-State Employer 2022 by Forbes America for Texas.
Expanding Our Portfolio

Celanese continues to invest in solutions to meet the growing demand for reduced carbon footprint products.

Our efforts include increasing the use of renewable feedstocks through our ECO-B (biocontent) and ECO-R (recycled content) products by leveraging our uniquely integrated value chain, further enabling our unparalleled product optionality. These products display the “A Celanese Sustainable Product” icon to indicate that they contain renewable feedstocks or are manufactured using a production method with a lower carbon footprint than traditional production methods. In addition, Celanese provides detailed product data on life cycle impacts and renewable content across our sustainable product lines, assisting our customers in increasing the carbon impact transparency of their products. Lastly, we enhanced our product categories to include ECO-CC (carbon capture) in anticipation of providing products with a lower carbon footprint made through our CCU unit scheduled to begin operation in early 2024.

Through our approach to product development and foundational sustainable product categories, including a supporting enabler category, we have grown and developed our Acetyl and Engineered Materials portfolios to now offer more sustainable options across approximately 60% of our product lines. Select our sustainable options below to learn more.
Mass Balance: Enabling Our Growing Portfolio of ECO Products

Mass balance is a valuable tool that helps give our customers the confidence of knowing the sustainability content in their end-product as they transition to lower carbon footprint solutions. In production, renewable feedstocks are mixed with traditional fossil-fuel derived feedstocks. Mass balance accounting traces the amounts of renewable products in the comingled production more easily allowing for integration into large-scale production ecosystems.

Celanese predominantly uses mass balance attribution with International Sustainability and Carbon Certification (ISCC) PLUS certification to provide third-party validation of sustainable content impact. We also use RedCert as a secondary certification vehicle as needed.

Formalized Product Life Cycle Analysis Methodology

LCAs are another key scientific tool to increase transparency by measuring the environmental impacts associated with the life cycle of a product or process. Through our acquisition of the M&M business, we were able to expand our LCA capabilities. An estimated 80% of the products acquired had existing LCAs developed internally by a dedicated LCA team. The M&M team’s expertise, coupled with our established and externally peer-reviewed LCA process, has strengthened our ability to communicate product impacts to our customers. Our robust process includes providing data on over 20 environmental indicators, including water consumption, land use, and ozone depletion in addition to climate change and is conducted in accordance with ISO 14040 and ISO 14044 standards.

WHAT IS IT?
• A methodology that documents and tracks the amount of sustainable feedstock in a product.
• A process that separately traces the amount of renewable content and non-renewable content that become mixed during the complex manufacturing and shipping processes.

THE BENEFITS
• Preserves the ability for large-scale production economies and avoids additional product requalification costs or increased emissions that could result if segregated production facilities were necessary for sustainable product production.
• Does not require large capital investment, making the switch to lower carbon footprint products faster for many customers.
• Provides transparency for our customers across our value chain around the sustainable content of our lower carbon footprint options tailored to their needs (ECO-R, ECO-B, and soon-to-be-launched ECO-CC).
Turning CO₂ Into Customer Solutions

As a leading innovator in CCU, Celanese is uniquely positioned to deliver a wide range of lower-carbon solutions across our Acetyl and Engineered Materials value chain. With plans to become operational in early 2024, our CCU project, in conjunction with the Fairway Methanol joint venture, uses recycled CO₂ to make methanol and has the potential to lower the carbon footprint of most Acetyl Chain products. These products will be launched under the ECO-CC name and will also be transparently supported through our mass balance tracking and LCA processes.

HOW CCU WORKS
Our Clear Lake, Texas, facility is ideally situated for this project because we have access to vented CO₂ industrial emissions onsite. This enables us to capture waste CO₂ that would otherwise be released into the atmosphere from both Celanese and third-party sources. The CCU project uses lower-carbon intensity hydrogen to chemically convert the captured CO₂ into lower-carbon footprint methanol, which is then used to replace fossil-derived inputs. Unlike carbon capture and sequestration, where captured CO₂ emissions are injected into and stored in the ground, CCU uses CO₂ emissions as a feedstock to create products and replaces the need for fossil fuels. For this project, third-party sources are expected to provide more than 80% of CO₂ emissions captured and used.

When fully operational, the project is anticipated to utilize 180,000 metric tons of CO₂ per year of previously vented CO₂ to produce ~130,000 metric tons per year of lower-carbon footprint methanol that can then be converted into feedstock for many downstream Acetyl Chain and Engineered Materials products. Our ECO-CC products will deliver both renewable content as well as carbon footprint reductions for our customers.

Production of the lower-carbon footprint methanol will be commingled within the larger Fairway Methanol processing unit, and will represent approximately 8% of the joint venture’s total production. Additionally, the mass-balance approach will be used to separately account for materials produced from carbon capture to transfer benefits to downstream customers.

RENEWABLE PRODUCT SOLUTIONS
Our ECO-CC options turn CO₂ emissions into solutions for many end-markets, such as:

- Flexible Films Packaging: Incorporates carbon capture into EVA, PVOH, and EVOH flexible film chemistries;
- Printing Ink: Produces ink solvents such as ethyl acetate from captured carbon emissions;
- Paper Board Coatings: Increases recycled content in high-performance paper-based packaging through coatings made from carbon capture; and
- Adhesives: Enables most adhesive chemistries to contain captured carbon emissions via emulsions polymers, EVA, and other products.

Solvent-Free Spinning Process Helps Enable Performance Apparel Recycling
Celanese has developed a fiber made from a new solvent-free spinning process, which addresses a key sustainability challenge of recycling apparel containing spandex. The fiber is made from thermoplastic polymers that help unlock the potential for end-users to recycle apparel. Our solvent-free process eliminates potentially hazardous chemicals used in typical spandex production. The fiber also offers performance benefits over spandex that include improved stretching, wicking, and durability.
BioPolymer Solutions
Changing How We See Products

ANTI-FOG FILM FOR FREEZER DOORS

Celanese developed a family of biobased and biodegradable materials with energy and environmental benefits compared to traditional petroleum-based plastics. Our Clarifoil Cellulosic Anti-Fog Film can significantly reduce and potentially eliminate glass heat in grocery store freezers. Traditionally, grocery stores heat the glass of their freezers to prevent fog from forming and obscuring the visibility of the products inside, which is a process that consumes substantial amounts of energy. Our film is designed to allow the products to be seen while saving energy.

In 2022, more than 162,000 freezer doors used our Anti-Fog Film, facilitating an electrical energy reduction of approximately 85 million kilowatt-hours (kWh) per year, annual cost savings of approximately $11 million, and an estimated overall reduction of over 60,000 metric tons of CO₂ equivalent GHG emissions.

HOME-COMPOSTABLE FILM SOLUTIONS

We actively collaborate with prominent food brands and flexible packaging manufacturers to offer biopolymer solutions like Clarifoil Cellulosic Film. Our film is made from biobased, renewable wood pulp and can be composted to reduce plastic waste. It is an innovative sustainable solution in place of traditional plastic packaging, due to its flexibility and printability. Clarifoil Cellulosic Film is certified compostable and biodegradable in accordance with internationally recognized standards[1] and made from certified, sustainably sourced wood pulp.[2]


Santoprene® TPV Contributes to Europe’s First Carbon Neutral Garden Hose

Fitt Force garden hoses use highly flexible Santoprene thermoplastic vulcanizates (TPV) instead of typical plastic polyvinyl chloride (PVC) to help make their hoses carbon neutral. Using our TPV enables a ~43% reduction in our carbon footprint impact compared to traditional hoses and further enables the use of parts with an estimated 50% less material. TPV contributes significantly to its lightweight design, resulting in further carbon footprint reductions.[3] Additionally, Fitt Force carbon neutral hoses feature our TPV in distinct parts of the hose structure, making those components free of PVC, lead, phthalates, and other harmful chemicals.

We are currently extending our collaboration with Fitt Force to incorporate post-consumer waste into their garden hoses using our Santoprene TPV ECO-R offering.

[3] The remaining emissions that occur during the life cycle of the hose are compensated by Fitt and claims are supported by ISO 14040 and ISO 14044 international standards-based LCA.
VitalDose® Long-Dose Drug Delivery Solutions Improving Lives

Our work to transform drug delivery solutions is continuing to expand as we support our customers’ aim of improving health outcomes through affordable, innovative medicines with universal access. Our long-acting drug delivery team is actively engaging with stakeholders in the biopharmaceutical industry to demonstrate the VitalDose platform across a wide range of drug molecules and patient treatments including:

• Collaborating with leading partners to deliver peptides and important large molecules (i.e., monoclonal antibodies, antisense oligonucleotides, etc.) used widely in oncology, endocrinology, cardiology, and many other indications.

• Joining Johns Hopkins University in advancing sustained ocular drug delivery to the suprachoroidal space. A VitalDose EVA implant may provide months to years of continuous drug release that could reduce the treatment burden for patients suffering from chronic eye diseases.

• Partnering with Alessa Therapeutics to develop a localized and sustained-release drug delivery system for oncology patients that will potentially limit systemic side effects and improve overall treatment.

• Signing an agreement with Glaukos Corporation to supply our VitalDose drug delivery platform for Glaukos’ investigational iDose® TR Intraocular implant for glaucoma treatment.

Enabler Solutions

Our enabler solutions provide environmental benefits to customers through creative design and implementation. We work with designers and engineers to make parts lighter, stronger, and more durable in even the most demanding of circumstances to help reduce the environmental impact of products over their lifetime. Enabler solutions can help customers reach their product goals, such as increased recyclability and lower weight, or solve design challenges, such as requiring only one part versus the original design requiring two. This can make designs easier to recycle, by eliminating or reducing the need to separate two plastics in a potential recycling process.

FACILITATING ELECTRIC VEHICLE IMPROVEMENTS

Our Zytel HTN, Zytel PA, Hytrel TPC, and Santoprene TPV materials support vehicle electrification and the expansion of the electric vehicle (EV) market, including thermal management, battery assembly, and enhanced connectivity. These innovative materials also provide resistance, stability, conductivity, and tolerance to compose the subsystems of fuel cell EVs. We assist with material selection, component testing, design, and simulation to meet each customer’s unique challenges and objectives.

In one particular application, our Engineered Materials team developed an improved design for a critical component of a large U.S.-based automaker’s EV portfolio. Using Zytel LCPA, which contains recycled content, as a replacement for steel, we achieved an estimated 60% reduction in weight in addition to better chemical resistance and strength on multilayer cooling lines required to manage the heat in batteries. This cooling solution helps improve EV battery longevity and charging performance. In addition, three MR&M products (Zytel PA612, Crastin PBT, and Vamac AEM) won awards at the 51st Annual Society of Plastics Engineers Automotive Innovation Awards Competition and Gala in November 2022 for their automotive applications.
Chemical Safety Process Management

Effective chemical safety is essential for the health and well-being of our employees and customers alike. We continue to have robust safety management mechanisms in place, while also working to optimize processes across our expanded footprint. Prior to product development and inception, our safety approach begins by including a health and safety assessment of raw materials, product formulations, and likely downstream uses for the solutions we create. We work closely with our customers to answer their regulatory and technical questions while encouraging the safe handling and compliant use of our products. Celanese has collaborated with the ACC to write and publish Chemical Safety Facts in a non-technical and easy-to-understand manner. These resources increase access for our customers to chemical information beyond product Safety Data Sheets, Technical Data Sheets, Safe Handling Guides, and Regulatory Summaries.

Sustainable Procurement and Supplier Diversity

Refining our procurement process is a key aspect of our strategy to reduce our carbon footprint and support progress against our environmental goals. We increased our procurement of lower-carbon sources and continue to consider additional renewable and biobased energy sources where possible. Our investments and policy developments also extend to our supplier risk management strategy. Celanese strives to engage our key suppliers in understanding their sustainability strategies and how this translates into improving their carbon footprint.

SUSTAINABLE PROCUREMENT POLICY

In 2022, Celanese published a Sustainable Procurement Policy for our suppliers to complement our Third-Party Code of Conduct. The policy outlines our expectations of suppliers to adhere to applicable local legislation and regulations regarding human rights, modern slavery, diversity, the environment, and other sustainability-related topics. In addition, we expect our third-party suppliers to develop and implement strategies that will reduce their impact on the environment.
SUPPLIER ASSESSMENT

Celanese has a wide variety of suppliers across a complex and diverse global supply chain. We continue to enhance our annual supplier risk assessment process to support our strategic sourcing activities.

As an output of our efforts, we developed an annual ESG Supplier Risk Survey in 2021 to document the activities of our top suppliers, representing approximately 50% of our annual raw material spend. In 2022, Celanese expanded this survey to include our critical raw material suppliers in Asia.

In 2023, Celanese invested in a new software tool that will support our German Supply Chain Act risk assessment process. By 2025, we plan to leverage the capabilities of this software solution to assess key suppliers who represent more than 90% of our 2022 global procurement raw material spend on environmental and social sustainability-related criteria.

We plan to actively engage with suppliers of key raw material, identify opportunities, and develop pathways to reduce the carbon footprint of our procured goods and services. Additionally, we are encouraging our suppliers to contribute to external rating agencies such as CDP.

Please see our Climate in Action: Progress on Our Scope 3 Emissions Inventory for additional information.

SUPPLIER DIVERSITY

We continuously promote diversity in our operations, including our supply chain. Supplier diversity is a powerful catalyst for job creation, economic growth, and social progress. We recognize these as key contributors and drivers of value for Celanese. In 2022, we continued to make progress toward our goals of developing a supplier diversity program that increases the quantity of unique diverse suppliers in our supply chain and our level of spend with diverse suppliers.

Our CEO Lori Ryerkerk made a public commitment during the Dallas Fort Worth Minority Supplier Development Council’s ACCESS 2023 event to increase our company’s procurement spend with minority business enterprises.

In 2023, we launched new program activities that will help open pathways for diverse suppliers across the entire procurement organization. These include formal supplier diversity training for 100% of our targeted strategic buying workforce and quarterly learning forums aimed at bringing diverse suppliers and the buying organization together to raise awareness and create potential new partnerships. Both initiatives support the Supplier Diversity program’s goal of increasing internal engagement with its key stakeholders.
Progress Against Our Environmental Intensity Goals

Environmental performance enables us to realize synergies for our business, such as reducing our operational impacts and carbon footprint, while simultaneously increasing the sustainability of our products.

To leverage these synergies and further preserve our environment, in 2022, we established 2030 intensity-based targets for GHG, energy, water, and waste against a 2021 baseline. A 2021 baseline was established to coincide with our first year of undergoing limited external assurance of our target-related metrics. These intensity-based environmental targets are based on production for Celanese owned and operated assets and provide increased transparency around the impact of future organic and inorganic growth through mergers and acquisitions (M&A). Again, we engaged ERM CVS to provide limited assurance for our 2022 environmental target-related metrics to affirm our progress.

Intensity Metrics\(^{[1],[2]}\)

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<tr>
<th>Metric</th>
<th>2021 Baseline</th>
<th>2022</th>
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<tbody>
<tr>
<td>Scope 1 and Scope 2 GHG (MT CO(_2)e/MT)</td>
<td>0.406</td>
<td>0.412</td>
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<tr>
<td>Net Energy Use (MBTU/lbs.)</td>
<td>2.38</td>
<td>2.45</td>
</tr>
<tr>
<td>Water Consumption (m(^3)/MT)</td>
<td>1.95</td>
<td>2.04</td>
</tr>
<tr>
<td>Waste Disposal (MT/MT)</td>
<td>0.0079</td>
<td>0.0090</td>
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\(^{[1]}\) This report excludes environmental data associated with the acquisition of the M&M business from DuPont. Once the data from calendar years 2021 to 2022 is collected, synthesized, and assured according to Celanese reporting standards, we expect M&M data to be incorporated into these metrics, with an updated 2021 baseline for future metrics and progress for 2022 and 2023.

\(^{[2]}\) Throughout 2022, our intensity metrics increased slightly due to temporary inefficiencies and reduced production as a result of macro-economic demand declines.

Denotes that ERM CVS performed limited assurance of our 2021 environmental numbers, which serve as the bases for our 2030 GHG, Energy, Water, and Waste targets.
In 2022, several of our key manufacturing plants were temporarily shut down for extended maintenance outages, production curtailments, or facility-specific situations. As our production volumes decreased by about 7%, which stemmed from reduced plant activity, the absolute values of our sustainability metrics also decreased. We saw year-over-year reductions of 5.2% in GHG emissions, 3.6% in net energy use, 2.4% in water consumption, and 2.67% in solid waste generation on an absolute basis.

We are developing enterprise-level transition plans to accelerate environmental performance improvements. These plans will identify specific actions to help us achieve our 2030 environmental targets as we integrate the M&M business further into Celanese operations.

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Our Corporate Environmental Reporting Standard

The M&M integration presented an opportunity to re-examine and refine our environmental data collection and reporting approach across the company. Through our initial assurance process in 2022, we engaged a third party to identify best practices for improving our data management, calculation methodologies, and reporting systems.

In addition, we have taken significant steps to operationalize these initiatives by:

- Developing a corporate standard that clearly defines the metrics, boundaries, definitions, and methodologies for facility- and corporate-level sustainability data collection and reporting across the globe;
- Establishing and maintaining facility procedures that detail data collection, calculation, and facility roles and responsibilities, including elements to drive data quality year-over-year; and
- Conducting water balance analysis and preparing flow diagrams of water sources at key facilities.

Furthermore, we formed a dedicated corporate-level sustainability team that includes leaders within the business, procurement, and manufacturing functions. The purpose of this new team is to enable more effective communication throughout the business and help provide clear accountability and consistency for managing our environmental and sustainability data collection. Our new corporate standard also serves as our basis for reporting, internal audit, and external assurance activities, while outlining clear expectations to drive a consistent and unified data strategy throughout our integration activities and beyond.

2030 INTENSITY REDUCTION TARGETS\(^{(1, 2)}\)

<table>
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<th>Target</th>
<th>Reduction</th>
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<tbody>
<tr>
<td>Reduction in Scope 1 and Scope 2 GHG Emissions(^{(1)})</td>
<td>30%</td>
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<tr>
<td>Reduction in Net Energy</td>
<td>10%</td>
</tr>
<tr>
<td>Reduction in Water Consumption</td>
<td>10%</td>
</tr>
<tr>
<td>Reduction in Waste Disposal</td>
<td>15%</td>
</tr>
</tbody>
</table>

\(^{(1)}\) 2021 baseline.
\(^{(2)}\) Intensity based on metric tons of production.
\(^{(3)}\) See our Index for individual Scope 1 and Scope 2 metrics.
Refining Our Greenhouse Gas Reduction Strategy

As the focus on climate change increases, our ability to reduce the carbon impacts of our products and production processes is becoming more integral to our future planning. We recognize the importance of improving and analyzing our GHG emissions profile, while also making progress on our reduction target and continuing to develop our abatement strategy. We annually review and refine our low-carbon footprint transition plan based on growth and efficiency projects as well as energy reduction efforts. This year, we increased our focus on the procurement of renewable electricity and capital investment projects to reduce our Scope 1 and Scope 2 emissions. We are also enhancing our GHG reduction strategy to include sustainability impacts from five key areas. These pathways will help us integrate M&M operations and metrics back to our baseline year.

Looking forward, we will continue to leverage our partnerships with the U.S. Department of Energy (DOE) Better Plants Program, U.S. Environmental Protection Agency (EPA) ENERGY STAR Program, and peer-to-peer relationships with our joint ventures and other companies to explore the application of sustainable technologies. The Inflation Reduction Act (IRA) also enables Celanese to consider investment in new technologies, such as low-pressure steam energy and significant renewable power installations on existing greenfield and brownfield facilities. Until new technologies like hydrogen fuels and other lower-carbon resources become commercially scalable, we continue to pursue energy efficiency and reduction initiatives, and renewable electricity to reduce our carbon footprint.

2022 Gross Scope 1 and Market-Based Scope 2 Emissions (MT)

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<tbody>
<tr>
<td>2,311,481</td>
<td>1,282,231</td>
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</table>

[1] ERM CVS has provided assurance on total Scope 1 emissions of 2,311,480.51 MT CO$_2$e.
[2] ERM CVS has provided assurance on total market-based Scope 2 emissions of 1,282,231 MT CO$_2$e.
Progress on Our Scope 3 Emissions Inventory

Last year, Celanese committed to identifying and quantifying our Scope 3 emissions sources, while developing a robust process to reduce these emissions. For 2022, we have calculated and documented our methodology for Scope 3 GHG emissions for 7 of 12 relevant categories to Celanese operations. We plan to integrate the M&M business into this reporting process and refine our initial inventory throughout 2023. Evaluating additional Scope 3 GHG emission categories that are relevant to our operations will be an ongoing priority.

In 2023, Celanese increased critical procurement capabilities of the supplier engagement team. With these additional resources, the team will coordinate and lead the sustainability function within the procurement process, including engaging suppliers to define and implement both upstream and downstream emission reductions. By leveraging our larger multi-year strategy, we plan to collaborate with raw material suppliers, logistics service providers, and other third-party vendors to reduce Scope 3 GHG emissions in our supply chain.

In 2023, Celanese increased critical procurement capabilities of the supplier engagement team.

Creating the Digital Plant of the Future

In early 2022, Celanese embarked on a strategic initiative to integrate digital transformation across our value chain. Our first step was creating the digital plant of the future at our world-class acetyl plant in Clear Lake, Texas, enabling greater efficiency, agility, and informed decision-making through a comprehensive technological foundation.

Using a digitally integrated platform has allowed us to identify opportunities to reduce energy consumption, GHG emissions, and water usage through advanced analytics and direct responses to real-time data trends. This capability enhances the potential of our manufacturing processes and capacity for employees to focus on improvements and transformation of our operations.

By leveraging digital data when making real-time modifications to our operational strategy, we can increase our responsiveness and more effectively navigate geographic production challenges during natural disasters or other climate-related impacts. As we continue to manage the complexity of organic and acquisition growth, our digital transformation should allow us to react more quickly and with a higher degree of flexibility. We plan to build on the success of the Clear Lake project by expanding this platform to other facilities worldwide.

As a result of our efforts, we have been recognized by the Manufacturing Leadership Council and the National Association of Manufacturers with the 2023 Manufacturing Leadership Award for outstanding achievement in the Digital Network Connectivity category. Learn more about our digital manufacturing advancements.
Optimizing Our Energy Use

INCREASING RENEWABLE ENERGY CAPACITY

In 2022, we continued to secure approvals to build a solar farm at our Narrows, Virginia, complex. The scope of the initial phase is to provide power for our manufacturing facility, with a potential future phase of providing renewable energy to the grid.

We completed our first full year of solar energy generation, which provides approximately 30% of current electricity demand for our Clear Lake, Texas, facility and accounts for 5% of our total global electricity consumption. We continue to explore and evaluate other opportunities to expand the use of lower-carbon footprint energy sources, including onsite solar development at other Celanese facilities. We aim to have onsite renewables operating over the next two to three years at multiple locations.

2022 Total Purchased Energy (%)

- 0.5% Renewable Electricity
- 70.1% Fuels for Combustion
- 8.8% Grid Electricity
- 19.7% Steam
- 0.9% Other

Our Newport, Wales, facility receives approximately 15% of its power from wind turbines on the property and has enabled us to explore how we could expand our use of wind power in the future. Five additional facilities located in Switzerland, China, India, Luxembourg, and Germany also use renewable electricity from wind, hydro, and onsite rooftop solar sources.

Through the increased usage of renewable electricity, we are able to offset and reduce the amount of grid electricity we use to power our plants. In 2022, the use of renewable power offset approximately 31,800 metric tons of GHG emissions that would have otherwise been emitted from the electricity producers.

We anticipate that both renewable energy purchases and onsite renewable generation will become more significant contributors to our energy portfolio over the coming years.

Specific actions we are taking to enable this progress include:

- Modifying our organizational structure to support renewable energy procurement across our businesses;
- Investigating new renewable electricity options globally, as well as alternative fuel and biofuel procurement opportunities to increase renewable Scope 1 and Scope 2 energy sources;
- Harnessing the experience and learnings from solar energy use at our Clear Lake facility to accelerate future renewable energy purchases through power purchase agreements; and
- Leveraging the strategic use of green utility purchase agreements and Renewable Energy Certificates or Guarantees of Origins to enable the development of new products manufactured with renewable energy.
Celanese recognizes that effective water stewardship helps mitigate a complex set of risk factors specific to geographic regions, watersheds, and individual facilities. To improve operational water stewardship at our facilities, we are launching a training program on how to perform facility-level water balance assessments that will advance the identification of facility-specific needs and opportunities. This will reinforce facilities’ abilities to set meaningful water stewardship targets. Using the World Resources Institute Aqueduct tool, we apply SASB metrics to track our water consumption in geographic regions of high and extremely high baseline stress. The enhanced understanding of our facility-level water metrics will facilitate future progress toward achieving our water reduction target in the years to come.

Additionally, to improve our enterprise-level capabilities, we are piloting a digital platform at our Clear Lake, Texas, facility that offers real-time water balance monitoring through the use of a digital twin for optimization. In the coming years, these tools will help us identify opportunities for increased water use efficiency. For example, our Bishop, Texas, facility is evaluating a project to develop and replace an inefficient supply of surface water with local groundwater while eliminating the need for deep well injection. For water data, see our SASB Response.

**2022 Water Intake by Source**

- **73.4%** Surface Water
- **20.4%** Third Party
- **6.0%** Groundwater
- **0.2%** Other (Produced Water)
Innovating to Reduce Waste

Celanese understands the importance of waste reduction as a key enabler to preserving our environment, which is why we work to reuse and recycle materials throughout our operations. Through innovative product development, we contribute to a more circular economy while working to achieve our enterprise-level target of reducing total waste disposed intensity by 15% per unit of production by 2030. Our focus on raw material efficiency also reduces the quantity of waste we generate at the source. For additional waste data, see our SASB Response.

WASTE DISPOSAL PROGRAM

This past year, we implemented a global waste reduction strategy to actively identify opportunities to reduce waste and improve environmental outcomes through our Pollution Prevention Hierarchy evaluation process. Our Bay City and Clear Lake, Texas, facilities have been using this evaluation process to investigate new ways of managing and reducing their vinyl acetate monomer (VAM) heavy ends hazardous waste stream.

While waste streams like these have historically been sent offsite for disposal by incineration, we are exploring alternate waste management methods, such as:

- Filtering out impurities from the waste to increase the volume that can be used by customers for fuel;
- Identifying customers that can utilize this stream for its chemical contents or heat content;
- Recycling with a third party; and
- Using new technologies to neutralize the hazardous waste and render it non-hazardous.

At our Bishop, Texas, facility, Celanese initiated a project to explore alternative means of managing a wastewater stream that is sent for disposal to an injection well. The project proposed replacing the facility’s existing water source and adding a water treatment system to filter out impurities, which enables the wastewater to meet surface water permit discharge limits—facilitating discharge to the local river and eliminating the wastewater disposal stream via the injection well. At our office locations, we maintain recycling bins in our break and relaxation areas, offer shredding bins for used paper, and encourage the use of electronic copies instead of paper.

We contribute to a more circular economy while working to achieve our enterprise-level target of reducing total waste disposed intensity by 15% per unit of production by 2030.

Total Amount of Waste Generated (metric tons)\(^{(1)}\)

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<tr>
<th>Hazardous Waste (ACC 10) (SASB RT-CH-150a.1)</th>
<th>Non-Hazardous Waste</th>
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<td>0.2 (&lt;1%)</td>
<td>9.3 (&lt;1%)</td>
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<td>4,007.9 (8%)</td>
<td>20,847.4 (26%)</td>
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<td>25,739.7 (48%)</td>
<td>5,187.4 (6%)</td>
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<td>1,938.7 (4%)</td>
<td>50,155.6 (62%)</td>
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<td>19,966.8 (37%)</td>
<td>1,603.4 (2%)</td>
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<tr>
<td>1,751.6 (3%)</td>
<td>2,879.5 (4%)</td>
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\(1\) Exclusive of waste generated from remediation activities, see Index for more information.
Our People-First Culture

The chemistry of our people bonds us together through three key elements—Values, Culture, and Vision. Our people are the driving force behind the success of our growing sustainable product offerings to improve everyday life.

We have a dynamic global team that seeks to attract and retain the best available talent to deliver strong performance while maximizing employee engagement and strengthening occupational health and safety. Our employees and contractors receive safety training to prepare them to achieve optimal operational performance while adhering to our internal protocols. Celanese employees are also members of the communities that enable our success, which helps us be a leader in public safety and stakeholder empowerment in the communities where we operate.

Celanese is known for delivering results and creating value, even during times of change. In fall 2022, we administered an employee culture survey in advance of the integration of several thousand new team members joining through the pending M&M acquisition. Employees were asked to select phrases that best described their workplace experience: 57% of participants chose “Diverse and Inclusive.” After closing the acquisition, we surveyed our new colleagues to harness the full potential of our combined organization. Based on our survey insights into how our employees function and perform, the enterprise has selected five aspirational traits and corresponding critical behaviors to drive employee success and business goals. Additionally, a culture goal was added to leadership objectives to help guide the adoption of critical behaviors within their function.
In 2022, we continued to recruit skilled talent with diverse backgrounds and experiences to help contribute to our success. As part of this effort, we partnered with premier executive search firms to staff senior roles to attain a high level of access to top diverse talent worldwide. In addition, we maintained a diverse pipeline of early career talent through our global university and vocational recruiting strategy, which includes several Historically Black Colleges and Universities (HBCUs), technical schools, and local universities. We also continued to leverage technology and strategic partnerships with organizations such as the National Society of Black Engineers, the Society of Women Engineers, and the American Institute of Chemical Engineers (AIChE) to broaden our reach to potential candidates. In China, we introduced a targeted early pipeline recruiting program and expanded branding globally to increase campus hiring for key facilities.

Prior to the M&M acquisition, we designed and launched a comprehensive communications campaign, including detailed onboarding materials. Leadership sessions helped prepare both Celanese and newly integrated M&M leaders to manage employee engagement through a time of change.
Our Talent Development

All active Celanese employees are expected to participate in our annual performance review process. Using our Leading@Celanese framework, this process consists of structured, meaningful goal setting and steers performance and development conversations. Throughout the year, managers and employees are expected to hold regular check-ins to align on expectations and discuss performance feedback, development progress, and support needed. In addition to formalized development, we believe in empowering employees to dedicate time to sharpening skills needed for their current roles and interests as well as exploring new topics. Workshops, eLearnings, and self-directed training options are readily available to employees based on their roles and interests.

Empowering Our Employees Through DE&I

We are proud of our work to foster an inclusive approach that allows our employees to bring their fully authentic selves to work. When all employees feel accepted and included, we believe that we will grow stronger and deliver on our mission of improving everyday life through the power of chemistry.
We believe that maintaining our competitive advantage depends on enabling a culture that values DE&I. Our talent management strategy incorporates DE&I principles at all levels to guide how we attract, develop, engage, and retain our global workforce. Members of our Executive Leadership Team (ELT) oversee our global DE&I strategy and have strategic goals tied to various DE&I objectives. Our global DE&I team also partners with functions, teams, and employees across our enterprise to drive initiatives across our DE&I strategic pillars: talent, inclusion, and community.

Employee Resource Groups (ERGs) serve as non-partisan communities of employees organized around a common underrepresented dimension where they can network, raise cultural awareness, and expand the company's talent network to help achieve business goals. All employees are encouraged to participate in ERGs that provide inclusive spaces to connect and discuss Celanese DE&I initiatives. In 2023, we invited 4,500 newly integrated M&M team members to initiate local chapters of ERGs at their respective facilities.

- Our partnership with AIChE helps to empower the next generation of science, technology, engineering, and mathematics (STEM) leaders by providing funds to the Future of STEM Scholars Initiative (FOSSI). This national program gives scholarships to students pursuing STEM degrees at HBCUs and connects students to internship and leadership development opportunities.

- Members of our Blacks Organized for Leadership and Development (BOLD) ERG actively participate as mentors for the students we sponsor.
Women in Manufacturing Conference

In October 2022 during Global Diversity Awareness Month, Celanese hosted our second annual Women in Manufacturing (WiM) Conference. Organized by our Diversity in Manufacturing HR Imperative team, this unique event brought together employees from around the globe to celebrate our female manufacturing colleagues and to demonstrate they are supported, empowered, and valued. More than 300 male and female employees joined the virtual event to discuss why DE&I, specifically gender diversity, is crucial for the continued operations and success of Celanese. Our CEO Lori Ryerkerk and attendees explored topics such as the challenges women face in manufacturing, safeguarding equal opportunities for success for everyone, and effectively building and nurturing relationships. Employees also participated in breakout sessions to identify actions to implement learnings from the conference to build upon our DE&I strategy.
Employee Well-Being

To further support our workforce, Celanese offers relevant health and welfare benefits across the globe to employees and their families, to promote physical, mental, and financial health. In addition to the benefits offered within each country, we believe in supporting the whole person through a variety of programs to support their emotional and social well-being, such as:

• **24/7 access to free mental health care** through a confidential employee assistance program, plus a targeted vendor solution that connects employees with qualified clinicians more quickly and helps them cope with stress, anxiety, grief, and depression.

• **Paid time off for every full-time employee.** Additionally, each employee is provided two paid days off per year for volunteering in their community.

• **WorkABILITY**, which is a hybrid work approach that designates onsite collaboration days and optional work from home days for eligible employees.

• **Generous parental leave for moms and dads** in the U.S. and the Netherlands who have welcomed a child to their family through birth or adoption.

• **Private, onsite nursing rooms** at most locations and free access to a service that helps them ship breast milk when they are traveling for business. Our employee assistance program provides additional support with parenting and relationship challenges and finding childcare.

• **Mindfulness coaching programs** that build resilience and inner strength for employees and support leaders in helping their teams manage stress.

• **Our People Care Program**, which aids employees affected by a disaster by helping with safety and immediate needs and providing access to resources necessary to recover.

Celanese also strives to enhance employee well-being through competitive compensation and benefits based on local markets and job descriptions. That said, we understand that pay is only one component of well-being, and we support our employees in other ways, such as:

• **A 401(k)-retirement plan** in the U.S. that includes a match on employee contributions;

• **A separate annual retirement contribution** for every eligible U.S. employee;

• **Backup child or adult care** paid for by Celanese for times when employees need help immediately;

• **Adoption assistance** that helps defray agency fees, court costs, and legal fees for employees adopting a child; and

• **Voluntary coverage** that helps employees locate attorneys and pay for legal support.

People and Communities
Our values and guiding principles serve as the foundation of our stewardship program—steering our actions and decision-making to promote a safe, healthy, and environmentally responsible workplace for all. Our management, employees, and contractors work to adhere to the following guiding principles:

- Take Leadership Actions
- Operate in Compliance
- Develop Effective Management Systems and Procedures
- Operate Safely and Reliably
- Manage Risk

**PEOPLE SAFETY**

Through our people safety management systems, we promote a culture of stewardship excellence and maintain work processes and procedures to detail responsibilities and requirements to help prevent injuries, illnesses, and life-altering events. We work to consistently identify and manage risks associated with our operations to prevent incidents. Our workforce has the opportunity to engage in stewardship programs, providing them with available support and resources they can use to create a collaborative learning environment. We also set measurable objectives and targets and implement improvements to enhance our management systems and practices.
OUR SAFETY PERFORMANCE

Celanese is committed to consistently being a top performer among our peers in relation to stewardship and people safety performance. While we maintained an employee TRIR of 0.28 in 2022, we did experience a deterioration of performance compared to previous trends. The increase in recordable incident rate was attributed to significant transformational change experienced during the second half of the year following the M&M acquisition. As a result, we have defined a comprehensive integration strategy to aid in the management of risk posed by change.

We have also begun to introduce Human and Organizational Performance (HOP) principles into the leadership culture as part of a long-term comprehensive improvement strategy for stewardship. The early phases of our integration strategy enabled us to successfully prepare the global M&M facilities for day one through adoption of foundational management systems associated with incident and crisis management, health services integration, and distribution safety. We also successfully redesigned our Global Stewardship function to account for the acquisition. Each of these management system components, along with functional redesign, were critical to avoid business disruption.

In 2022, we demonstrated a relatively flat performance trend with an employee Days Away from Work Incident Rate (DAWIR) of 0.07. Our integration strategy along with including targeted improvements planned in 2023 is designed to begin to drive a shift-change in our stewardship performance to help drive this metric lower.

CONTRACTOR SAFETY

We achieved performance improvements with contractor-related incidents with a continued reduction trend for TRIR year-over-year. We also achieved zero fatalities and DAWIR for contractors in 2022. Our performance in this area has been attributed to the implementation of a robust contractor safety management program. Improvements have been achieved by establishing global requirements for all our facilities that require 100% of our contractors to be pre-qualified to safely perform work at our facilities that is consistent with our expectations. In addition, all our manufacturing facilities have implemented contractor orientation and work permitting programs to train contractors on expected safe work practices. Risks associated with contractor work activities are also carefully evaluated before work begins. Partnerships at a leadership and facility level with key strategic contractors have allowed us to build alignment on opportunities and plans to further improve our stewardship performance.

CRISIS MANAGEMENT AND EMERGENCY RESPONSE

The mission of the Celanese Crisis Management and Emergency Response Program is to maintain enterprise value, create a stable environment, and maximize the resiliency of the company.

The program seeks to protect:

- The well-being of people at all company locations and communities;
- The environment from harm including through compliance with regulatory requirements;
- Celanese assets, including information and operations; and
- The Celanese brand, reputation, and shareholder value.

The program has processes in place to connect the ELT with the business line leaders and facilities so they can work together to define the priority action items to resolve the crisis and return to normal operations promptly. The emergency response process can also include access to community response trailers that can be transported to those locations where additional resources would be needed to support the facilities, employees, and the nearby community.

DISTRIBUTION AND TRANSPORTATION INCIDENT RESPONSE

In 2022, we continued to improve our distribution and transportation incident response processes, enhancing our ability to respond to transportation events. Celanese partners with external emergency response service providers to promptly respond to emergencies at any company facilities.

We had zero employee and contractor fatalities in 2022.
We strategically approach safety by evaluating how management systems can drive continuous performance improvement to help us strive for zero occupational injuries and zero process safety incidents. Process safety management at Celanese starts with sound design but also requires robust systems for operation, maintenance, and inspection. However, competency development is just as important for effective hazard identification and risk mitigation. We demonstrate our commitment and accountability to process safety by providing governance at the highest levels of leadership. Understanding process safety and the management of hazards and risks supports our goal of continuous improvement in operational control while safeguarding our employees, contractors, and communities.

Industry Comparison—Tier 1 LOPC Rate

In 2022, we demonstrated a 20% improvement in our global API RP-754 Tier 1 Loss of Primary Containment (LOPC) events compared to the previous three-year baseline average, yielding a rate that was 50% lower than the ACC membership average and in the top quartile of performance.

Responsible Care (American Chemistry Council)

We continue to align with the ACC’s Responsible Care philosophy to bolster our internal safety practices. Our CEO oversees this partnership and helps implement elements of the program, such as leveraging leadership and accountability to drive safety performance and continuous improvement. Through the program, we collect and report data on employee, product, and process safety, as well as other topics related to supply-chain security, product stewardship, and the environment. Responsible Care also requires a management system approach and includes three specific codes for process safety, product safety, and security.

In May 2023, Celanese received the 2023 Best Responsible Care Company Award in Chongqing, China, from the Association of International Chemical Manufacturers (AICM) based on our excellent Responsible Care performance in 2022. This award is given every two years to recognize leaders promoting Responsible Care in China through evaluations of EHS performance, commitment, contribution to AICM, and leadership.

In 2022, our Global Process Safety Competency leader, who chairs the ACC Process Safety Committee, led the effort to revise the Process Safety Code and was a key driver in its implementation across our operations. This demonstrates our leadership in driving continuous improvement to reduce process safety incidents for all Responsible Care members, and we actively leverage the Responsible Care approach to enhance our performance in environmental protection, health, safety, and security.
Engaging Our Communities

Celanese is dedicated to improving the quality of life for people around the world by identifying ways to maximize our resources and working with local partners and nonprofits to create meaningful and sustainable change. Through the Celanese Foundation, we seek to empower communities through our four focus areas including: thriving families, quality education, safe places, and environmental preservation. Our employees guide the work of the Celanese Foundation by raising money and contributing volunteer hours that directly benefit the charities they believe in and support. In addition, our commitment to our people and our neighbors does not stop at the Foundation. Our sustainability initiatives, ERGs, and DE&I programs are aligned to our core values and the unique needs of our surrounding communities.

VOLUNTEERING

As part of the Foundation, we established a Global Citizens Network (GCN) to embody our commitment and passion for volunteer work through a group of like-minded employees. GCN leaders are responsible for facilitating a local volunteer committee at each facility, and in turn, engaging employees and organizing events customized to their communities. We provide 16 hours of paid time off each year for every employee to volunteer in ways that are meaningful to them, while our charitable donation matching program allows them to double the impact of their personal engagement. While volunteerism is a year-round effort, we dedicate September as Global Impact Month to further emphasize these efforts.

A FOCUS ON COMMUNITY COMMITMENT

As a member of ACC’s Responsible Care program, we understand the fundamental value of engaging communities and working together to address local topics of concern where we operate. We remain connected with our community stakeholders through engagement activities that foster open dialogue, facilitated through our longstanding community advisory panels at many facilities. We continue to maintain profiles of our neighboring communities for each of our 19 U.S. facilities that identify key categories like environmental stressors, demographic identity, community leaders, and opportunities for investment and engagement. Led by facility leadership and their teams, these profiles help shape our ongoing work on issues that matter most in our local communities.

In 2022, the Foundation supported more than 1,000 nonprofits, contributing approximately $2.2 million to charitable organizations globally.

Helping in Our Headquarters Community

The Celanese Foundation works closely with our ERGs to align and maximize impact around our People and Community values. Each year, we provide ERGs with grants that our local chapters then use to donate to or benefit nonprofits in the community that help serve an underrepresented population aligned with their goals.

In 2022, our Dallas-based ERGs made grants totaling $270,000 to local charities and nonprofits to further amplify the fundraising and volunteer hours they dedicated to supporting many of the same organizations in the community. For example, our Veterans’ ERG partnered with Attitudes & Attire to help with its “Boots to Heals” program, which addresses the unique needs of women in the military community (Active, Guard, Reserve, Veteran, Spouses of Veterans, and First Responders) who are transitioning from service into the workforce. Celanese was honored as Attitude & Attire’s 2022 Company of the Year for the ERG’s efforts.

SUPPORTING COMMUNITIES IN ACTION

Our teams gave more than 123,000 hours of their time to serve their communities through local organizations in 2022.

People and Communities

Celanese 2022–2023 Sustainability Report
Prioritizing Effective Leadership

Our stakeholders, which include investors, customers, employees, and local communities, play a significant role in our success as a business.

We address and acknowledge each stakeholder through our sustainability efforts to advance safe and sustainable customer solutions, invest in our people and communities, and help preserve the environment. To increase the efficacy and transparency of our sustainability program, we continue to build on our policies, practices, and due diligence. We strive to consistently conduct business in a transparent and responsible manner.

Our Board of Directors oversees our sustainability programs and related policies, including climate policy and strategy. Board Committees have primary oversight responsibility for different initiatives and Priority Topics in addition to receiving regular updates from the associated internal teams. EHS and social issues receive review by applicable Committees quarterly. Each Committee reports to the Board at least quarterly, with the following responsibilities:

- **The Nominating and Corporate Governance (NCG) Committee** reviews corporate governance policies, oversees reporting on ESG metrics—which includes oversight of reporting frameworks such as SASB and TCFD—and recommends improvements to Board committee structure, leadership, and membership.

- **The Environmental, Health, Safety, Quality, and Public Policy (EHSQPP) Committee** oversees certain operational issues such as the development, implementation, and monitoring of GHG reduction and sustainability in manufacturing and production processes, workforce safety, cybersecurity, and reputational risks associated with these topics.

- **The Compensation and Management Development (CMD) Committee** oversees human capital efforts, including compensation practices, DE&I, and talent development.

- **The Audit Committee** oversees financial risk management, disclosure controls and procedures, internal audits, and our compliance program with respect to legal and regulatory requirements.
BOARD OF DIRECTORS

Public Policy
Climate Policy and Strategy
Charitable Giving and Volunteerism

ESG COUNCIL

Business and Functional Experts

EXECUTIVE MANAGEMENT

ESG COUNCIL

BUSINESS AND FUNCTIONAL EXPERTS

EHSQPP COMMITTEE[1]
Workforce, Process, and Chemical Safety
Greenhouse Gas Reduction and Sustainability in Manufacturing
Supply Chain Risk Cybersecurity

CMD COMMITTEE[2]
Talent Management and Development
Executive Compensation
Diversity, Equity, and Inclusion
Pay Equity

NCG COMMITTEE[3]
Board Composition, Independence, and Continuous Improvement
ESG Oversight Approach
Reporting on ESG Metrics
Political Engagement

AUDIT COMMITTEE

Business Conduct Policy
Financial Risk
Corporate Integrity

BOARD OVERSIGHT, DIVERSITY, AND EXPERIENCE

To best serve our customers, employees, and shareholders, our Board is made of a collection of talented, highly experienced, diverse, and strategic leaders, with different perspectives, skill sets, and experiences that bring value to our long-term strategy. Incorporating new perspectives and innovative ideas is not only critical to a forward-looking and strategic Board, but also complements the valuable experience and familiarity with the complexities of our business that longer-serving directors bring. The Board and the NCG Committee regularly evaluate the skills represented on the Board to support a thoughtful, long-term approach of optimizing Board composition. Below is an overview of the skills and experience represented by our current directors. Additional details on the qualifications of individual directors are provided in the Governance section of our Investor Relations website.

Gender and Racial Diversity

10 Directors
5 Women
1 Racially or Ethnically Diverse

Four Women Directors hold Board Leadership roles

Female
Chair & CEO
Celanese Corporation Board of Directors

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<td>Relevant senior leadership/ C-Suite experience</td>
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<td>Global business experience</td>
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<td>Extensive knowledge of the company’s business and chemical industry</td>
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<td>Experience in innovation-focused businesses</td>
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<td>Experience in customer-driven businesses</td>
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<td>Government/regulatory/ geopolitical exposure</td>
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For more information, please see our 2023 Proxy Statement.
Major risks, including those related to sustainability, are reviewed and monitored by both our ELT and the full Board of Directors at least annually through our enterprise risk management program. Our risk analysis begins each year with a series of workshops held with the leadership teams of key functional areas and led by our Internal Audit (IA) team. Risks are methodically evaluated based on exposure, likelihood, and financial or reputational risk magnitude. These risks are then compiled with guidance and direction from the ELT into our risk framework for the year. Major risks identified are assigned to risk owners, who develop and execute remediation plans that account for short-, medium-, and long-term. The ELT also tracks risks and remediations throughout the year, with quarterly certifications by risk owners for major enterprise-level risks.

ASSURING TRANSPARENT REPORTING

We engaged ERM CVS to provide a limited assurance review of our 2022 environmental metrics that are associated with our 2030 targets or otherwise disclosed in our external reporting. Our IA function also validated various metrics provided in this report. In particular, IA focused on data related to the areas of community relations, human resources, process safety, workforce health and safety, and supplier diversity. The validation methodology included tracing the numbers provided back to the respective source systems. IA has also reviewed the environmental metrics of 29 out of 35 of our manufacturing locations over the last three years for accuracy and completeness of submitted data.

Priority Topics and Stakeholder Input

We use both formal and informal processes to maintain a list of Priority Topics for Celanese, which we use to help shape our sustainability strategy and framework. Building upon extensive and ongoing research by our ESG Council, we consider sector-specific SASB and GRI standards, customer survey feedback from the ACC, priority initiatives from Cefic, investor feedback, input from key rating agencies, and peer benchmarking. Annually, we gather both internal and external feedback through multiple avenues, including sustainability-related questions submitted into our ESG mailbox and investor feedback received during spring and fall outreach, to review and refine the Priority Topics list. In further support of this process, our leadership engaged ACC’s Sustainability Board Committee, where our CEO is an active member.

Additionally, we gathered feedback through our participation in Cefic initiatives to broaden our global perspective. Since 2021, Celanese has held a sustainability-specific workshop as part of our enterprise risk management processes. Our cross-functional ESG Council participates in the workshop, allowing for an in-depth discussion of sustainability risks such as climate, energy, and interdependencies. For further information on our ESG Council, see The ESG Council Members and Responsibilities in our Index.

Mitigation activities for risks are identified, reviewed, and monitored throughout the year. In 2022, we enhanced our risk definitions to include risks related to our recent M&M acquisition. Celanese aligns our sustainability initiatives with the UN SDGs, SASB, and TCFD. For more information, please see our disclosures in our Index.

For more information on our UN SDGs, visit our Index.
Culture of Compliance

Celanese endeavors to operate with high ethical standards at all times. We are committed to complying with applicable laws and regulations and empowering our employees to be accountable for our core values. Celanese strives to foster a respectful and ethical environment in which employees understand their responsibility to act with integrity and to work to make our workplace a positive, inclusive, and collaborative environment, where employees feel comfortable seeking advice and raising concerns.

We also have a set of compliance policies and corresponding trainings covering expectations on topics such as a respectful workplace/non-discrimination, anti-corruption, conflicts of interest, competition law, insider trading, sanctions, political donations, human rights, and modern slavery. Our Compliance Department, led by the Chief Compliance Officer, takes steps to explain the Business Conduct Policy through annual training and other internal communications. In addition to the Business Conduct Policy, our Chief Executive Officer, Chief Financial Officer, and Chief Accounting Officer/Controller are also subject to a Financial Code of Ethics. Our Third-Party Code of Conduct outlines the ethical, safety, environmental, and social expectations for those with whom we do business. We continuously update our policies and develop new policies according to emerging topics or risks as they arise.

For additional information on our compliance policies and programs, including Business Conduct, Anti-Corruption, Competition Law, Human Rights, and Modern Slavery Statement, please see our Index.

LEGAL AND REGULATORY COMPLIANCE

We are committed to contributing to the betterment of the communities in which we operate and strive to get ahead of emerging regulations and guidance. Celanese has well-established policies like our Business Conduct and Equal Employment Opportunity (EEO) Policies that, among other things, expressly prohibit discrimination, harassment, and retaliation.

We continuously strive to operate in a safe and responsible manner across the globe and align with evolving international guidance on topics such as forced labor, human rights, and environmental sustainability.

To safeguard those who raise concerns, Celanese routinely reminds employees about our no-tolerance policy toward retaliation, of any kind.

Celanese makes multiple reporting channels available globally for employees to report concerns, including potential violations of our policies or the law.
Our compliance program is designed to drive social responsibility and further responsible business practices, including ethical sourcing and the protection of human rights within our supply chain. In particular, Celanese is committed to not knowingly purchasing raw materials containing cassiterite, columbite-tantalite, gold, tantalum, tin, tungsten, or wolframite that directly or indirectly finance or benefit armed groups in the Democratic Republic of the Congo and adjoining countries, including other conflict-affected and high-risk areas. Our supply chain due diligence procedures help identify and reduce the risk of products incorporating conflict minerals sourced from covered countries. This helps to provide assurance to our customers that we are striving to source minerals responsibly and do not support conflict or human rights abuses in the covered countries.

For more information on our Human Rights and Equality Policy, please see our Index.

WHISTLEBLOWING PRACTICES

At Celanese, our policies provide that improper business practice or unethical conduct by any employee, contractor, or third party is not tolerated. We encourage employees to speak up if they have concerns about a potential violation of a company policy or the law. We provide and promote reporting channels where employees can alert a manager, human resources business partner, or any member of the legal or compliance departments of potential concerns.

The Compliance Department is responsible for monitoring reports coming into the whistleblower hotline, which may include topics such as human rights and discrimination, fraud, health and safety, employee misconduct, conflicts of interest, and other compliance-related concerns. We actively investigate claims and use this information to help inform our risks and future compliance training focus areas. An overview of each matter investigated is presented quarterly to the Audit Committee of the Board of Directors.

As described in our Business Conduct Policy, Celanese prohibits retaliation against those who raise a concern, investigates allegations that retaliation has occurred, and takes steps to appropriately remediate any issues.
Cybersecurity and Protecting Our IT Infrastructure

Cybersecurity is at the forefront of our operations and risk mitigation processes and was recently added as a Priority Sustainability Topic. We believe our employees are our best line of defense and must remain vigilant as the front line against cyberattacks.

CYBER AND INFORMATION SECURITY STATEMENT

In 2022, we published our new Cyber and Information Security Statement, which outlines methods of protecting against the risks of cyber threats through training and education, third-party assessment, and other key controls and oversight. Maintaining security of information and mitigating against the risk of cyber threats are key to protecting our proprietary information; safeguarding information about our employees, customers, and suppliers; and preserving the trust of parties with whom we do business.

TRAINING AND EDUCATION

Our “Keep Cyber Safe” global cybersecurity awareness training program includes 12 modules, covering key risk topics such as laptop security, phishing, unsecured networks, and malware. In 2022, approximately 9,000 employees participated in these trainings. October is Cybersecurity Awareness Month at Celanese, and in 2021, we launched the next chapter in our cybersecurity awareness program with a new comprehensive cybersecurity awareness course in our learning management system, which was assigned to all employees. Our global Code of Conduct training, which is assigned annually to all employees, reinforces key information security concepts and policies. This course covers topics such as identifying workplace cyber hazards and attacks. We also have an ongoing rigorous phishing awareness program that is administered regularly to all employees.

THIRD-PARTY ASSESSMENT AND OTHER KEY CONTROLS

The Celanese cybersecurity program is designed to align to National Institute of Standards and Technology’s (NIST) Cybersecurity Framework (CSF) standards and is assessed annually by a third party. Through an independent registered public accounting firm and internal audit, we validate the information security internal controls over financial reporting as part of Sarbanes-Oxley Act compliance. The company also prepares security vulnerability assessments as required by laws and regulations applicable to chemical manufacturing facilities.

We perform information security risk assessments of third parties we do business with, and we have a formal Incident Response Plan that includes measures to protect third-party data from unauthorized access or disclosure.

OVERSIGHT

Our information security efforts are led by our Chief Information Security Officer and overseen by our Chief Information Officer, the rest of our ELT, our Board Committees, and our Board of Directors. The Board and its EHSQPP Committee receive annual updates that include information about cybersecurity governance processes, the status of projects to strengthen internal cybersecurity, and the results of security breach simulations. Process and protocols exist for timely updates on cybersecurity and data incidents to management and the Board. Through June 30, 2023, we had not experienced any material information security breaches to our knowledge, including incurred material expenses or assessed fines from data protection authorities, in the preceding three years.
Internal Audit Data Validation: The company’s Internal Audit (IA) function validated various metrics provided in this Sustainability Report. Specifically, IA focused on data related to the areas of Community, Health, Safety, and Environmental. For these areas, the validation methodology included tracing the numbers provided back to the respective source systems (e.g., the company’s environmental tracking system or other applicable system). IA did not reconcile metrics with the underlying source data. For environmental metrics, the validation also included a review of submitted supporting documentation with subsequent reconciliation to the reported metrics.

Forward-Looking Statements and Other Important Information: Statements in this Sustainability Report that are not historical facts or information are “forward-looking statements” within the meaning of the United States federal securities laws. These forward-looking statements include information and opinions concerning the company’s beliefs, expectations, plans, forecasts, objectives, goals, strategies, and other estimates regarding future events. These statements can generally be identified by words such as “believes,” “expects,” “intends,” “estimates,” “anticipates,” “projects,” “will,” “can,” “may,” “assumes,” “seeks,” “targets,” “sees,” “goals,” “objective,” “pledges,” “may,” “can,” “would,” “might,” “will,” and similar expressions. All forward-looking statements, including those related to the standards and measurement of progress against our sustainability goals are aspirational and are based upon current expectations and beliefs and various assumptions and are not guarantees of future performance or that targets or goals will be met or will not change. Additionally, as described above, statements related to our sustainability metrics or progress may be based on standards that are still developing, internal controls and processes that continue to evolve, and assumptions that are subject to change in the future. These are a number of risks and uncertainties that could cause actual results and events to differ materially from those reflected in the forward-looking statements contained in this report, and all forward-looking statements should be evaluated with consideration of those risks. Any forward-looking statement speaks only as of the date of this report, and the company undertakes no obligation to update any forward-looking statement to reflect events or circumstances occurring or information learned after the date of this report, whether to reflect our information, future events, changes in our expectations, or other occurrence of anticipated or unanticipated events or circumstances. However, any future public statements or disclosures by Celanese that modify or impact any of the forward-looking statements in this report shall modify or supersede such applicable statements in this report. We provide this Sustainability Report for informational purposes only. Topics and information in this report shall be solely as set forth in, the sales contract or invoice documentation applicable to the sale of such product(s), and all representations, guarantees, or warranties regarding such product(s) shall be construed as an amendment to or modification of any terms and conditions of sale under any contract in place between Celanese and any third party, or any representation, guarantee, or warranty regarding any product(s) described herein or such product(s)’ characteristics, uses, suitability, safety, efficacy, hazards, or health effects. Any liability or responsibility for such product(s) shall be governed solely by, and any and all representations, warranties, covenants regarding such product(s) shall be solely as set forth in, the sales contract or invoice documentation applicable to the sale of such product(s).