

GRI Disclosure Report – GRI Content Index

Universal Standards

GRI 1: Foundation 2021

GRI 2: General Disclosures 2021

Transparency & Reporting

3-3 Management approach

Key Impacts

- Following the purpose of the Global Reporting Initiative (GRI), Dow's sustainability reporting objective is to provide transparency on how it contributes to, or aims to contribute to, sustainable development. (positive)
- Dow delivers comprehensive, high-quality and consistent environmental, social and governance reporting, providing clarity and details about Dow's material sustainability topics for its customers, stockholders, employees and community members as a tool for communication and engagement and to drive progress. (positive)

Dow has led the industry in sustainability reporting and transparency since its first sustainability report in 2003. It aims to provide transparent disclosures as a tool for engagement with its customers, shareholders, employees and community members.

Building on the foundation of reporting in accordance with the GRI Standards and the Greenhouse Gas (GHG) Protocol, Dow has also included disclosures on its climate-related performance and strategies in accordance with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). Dow continues to reference its disclosures to the Sustainability Accounting Standards Board (SASB) Standards metrics for the Chemical Sector and the World Economic Forum's (WEF) Stakeholder Capitalism Metrics.

The disclosures included in Dow's 2022 Intersections Progress Report represent the period of January 1, 2022, through December 31, 2022. The GHG information is presented in accordance with the GHG Protocol Corporate Accounting and Reporting Standard (Revised Edition) published by the World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD) and for the Scope 3 disclosures. Dow also referenced the GHG Protocol: Corporate Value Chain Accounting and Reporting Standard.

Dow engaged Deloitte & Touche LLP to perform a review engagement on management's assertion related to the disclosures included in the GRI Content Index as of, and for the year ending, December 31, 2022, and the greenhouse gas disclosures in the GHG Protocol Disclosure Report for the year ending December 31, 2022.

Information outside of the disclosures referenced or included in the GRI Content Index and the GHG Protocol Disclosure Report, including linked information, was not subject to Deloitte & Touche LLP's review and, accordingly, Deloitte & Touche LLP does not express a conclusion or any form of assurance on such information. See [Deloitte's GRI](#) and [GHG Protocol](#) assurance statements as linked.

Management of Dow is responsible for the completeness, accuracy and validity of the disclosures referenced or included in the GRI Content Index as of, and for the year ending, December 31, 2022. Management is also responsible for the collection, quantification and presentation of the information included in the Intersections Report on Advancing Our Ambition and for the selection of the criteria, which management believes provide an objective basis for measuring and reporting on the disclosures.

Management of Dow asserts that the ESG disclosures referenced or included in the GRI Content Index as of, and for the year ended December 31, 2022, are presented in accordance with the Global Reporting Initiative Sustainability Reporting Standards. Additionally, Management of Dow asserts that the ESG disclosures referenced or included in the GHG Protocol Disclosure Report for the year ended December 31, 2022, are presented in accordance with GHG Protocol: A Corporate Accounting and Reporting Standard (Revised Edition), published by the World Resources Institute/World Business Council for Sustainable Development.

The overarching report includes all policies, commitments, actions and their effectiveness and stakeholders. Accordingly, please see associated details under each relative disclosure.



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2-1 Organizational details

The information in this report is presented on behalf of Dow Inc. and The Dow Chemical Company and its consolidated subsidiaries, (collectively, “Dow”). Dow Inc. was incorporated on August 30, 2018, under Delaware law, to serve as a holding company for The Dow Chemical Company and its consolidated subsidiaries (“TDCC” and together with Dow Inc., “Dow” or the “Company”). Dow Inc. operates all its businesses through TDCC, a wholly owned subsidiary, which was incorporated in 1947 under Delaware law and is the successor to a Michigan corporation, of the same name, organized in 1897. Dow Inc. is an independent, publicly traded company and Dow Inc. common stock is listed on the New York Stock Exchange (NYSE) under the symbol “DOW.” Dow Inc. common stock began regular-way trading on April 2, 2019.

The Company’s corporate headquarters are located in Midland, Michigan, USA. Collectively, the Company operates 104 manufacturing sites in 31 countries. Major manufacturing operations are in Argentina, Brazil, Canada, China, Germany, the Netherlands, Spain, Thailand, the United Kingdom and the United States.

For more information, see Properties, Item 2, on page 25 of the Dow Inc. Annual Report on Form [10-K~](#).

2-2 Entities included in the organization’s sustainability reporting

The Company’s sustainability reporting generally reflects the results of entities where Dow is the majority owner and exercises control. Joint ventures, or entities where Dow has a 20-50% ownership interest, are excluded from sustainability reporting unless the Company has operational control of the entity.

- More specifically, GHG emissions data included in the sustainability report is accounted for in accordance with the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) using the operational control approach. In cases where asset ownership is shared, a company has operational control over the asset if they have the full authority to introduce and implement operating policies at the facility.
- All financial; environmental, health and safety; inclusion, diversity and equity; and other social/community metrics generally follow the financial consolidation model (i.e., if Dow is the majority owner and exercises control, results for the entity are included in the reporting), with the following exceptions:
 - In certain cases, an entity is consolidated into Dow’s financial reporting due to Dow’s controlling financial interest or where Dow is deemed the primary beneficiary of the operation. However, if Dow does not have operational control of the entity, the sustainability results for these entities are excluded from reporting and metrics.
 - In some cases, Dow acts as a service provider for an asset it does not own and does not exercise operational control. In these cases, health and safety data related to these assets is included in Dow’s sustainability reporting due to Dow’s status as a service provider.
 - There are cases where Dow owns an asset but outsources the operation of the asset to a third party. In these cases, environmental data and certain non-employee-related health and safety data is included in the Company’s sustainability reporting due to the Company’s ownership of the asset. However, employee data is not reported as employees/operators are captured in reporting for the service provider.
 - Most charitable donations are made by the Dow Company Foundation, a separate, nonconsolidated entity and those donations are included in the Company’s community metrics.

For more information on the Company’s subsidiaries that form the basis for the majority of the sustainability metrics in this report, see Exhibit 21 on pages 149-153 of the Dow Inc. Annual Report on Form [10-K~](#).

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2-3 Reporting period, frequency and contact point

Dow conducts annual sustainability reporting. This current report covers the period of January 1, 2022, through December 31, 2022, which aligns to its annual financial reporting period. Dow's 2022 Sustainability Report was submitted to GRI on June 19, 2023.

You may contact any of the following senior leaders with your comments or questions at FESGRPT@dow.com:

- Andre Argenton, chief sustainability officer and vice president, Environment, Health, Safety & Sustainability
- Rebecca Bentley, vice president, Public Affairs
- Alveda Williams, chief inclusion officer
- Amy Wilson, general counsel and corporate secretary

2-4 Restatements of information

Restatements of data previously reported, both due to data corrections as well as methodology changes, are made to ensure consistency and enable comparability between reporting periods. Management determined that each of the revised amounts are immaterial to the INtersections Report as a whole, as well as the disclosure in which they are associated.

In the 2022 report, we have restatements documented within GRI 303 Water and Effluents, GRI 305 Emissions, GRI 306 Waste and 403-9 Work-related injuries sections.

2-5 External assurance

Limited assurance has been provided by Deloitte & Touche LLP. The Company's highest governance body and senior executives are responsible for its assertion. See [Independent Assurance Statement](#) for additional information.

Governance & Accountability

3-3 Management approach

Key Impacts

- Dow’s governance practices reflect its commitment to serve all stakeholders, cultivate a culture of trust and accountability, and create a business environment that ensures the long-term viability and vitality of its business. (positive)

For a full explanation of Dow’s governance and accountability material topics, see Corporate Governance (pages 23-38) in the [2023 Proxy Statement](#)⁷. Also see the [Corporate Governance](#) chapter in this report.

Policies

- Dow Code: [Dow Code of Conduct Policy | Public Policy | Dow Corporate](#)⁷ see 2-16 Communications of critical concerns for more information about this policy.
- Dow Corporate Governance Guidelines: [Corporate Governance | Dow Investor Relations](#)⁷. The Board re-adopted corporate governance guidelines designed to assist Dow and the Board in implementing effective corporate governance practices.

2022 Actions Taken

Board Responsibilities

Enhanced structural oversight and responsibility of the Board for environmental, social and governance performance and enterprise risk management.

- Outlined clear oversight responsibilities for our environmental, social and governance priorities and enterprise risk management directly in the Board Committee charters.
- Improved transparency and accountability with management reporting lines for engagement.

Stakeholders Engaged

- Board
- Executive leadership
- People leaders
- Stockholders

Long-Term Incentives

Reinforced accountability and strategic alignment by adding quantifiable carbon emission reduction metrics to financial performance as part of our long-term incentive program.

Maintained a clear link to pay for performance with long-term incentives aligned to Dow’s financial performance and its stated goal to achieve carbon neutrality by 2050.

Stakeholders Engaged

- Board
- Executive leadership
- People leaders
- Employees
- Stockholders
- Community members

Board Management

Continued focus on Board succession planning and refreshment, including the election of a new director, Jerri DeVard.

Continued to outpace Standard & Poor’s (S&P) 500 for board diversity, as 33% of our Board are women and 33% are U.S. ethnic minorities.

Stakeholders Engaged

- Board
- Executive leadership
- Stockholders

For additional 2022 actions to manage governance and accountability, see A Message from Our Independent Lead Director (page xii) in the [2023 Proxy Statement](#)⁷.



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2-6 Activities, value chain and other business relationships

Dow is a global company that operates within the chemical sector and conducts its worldwide operations through six global businesses organized into the following operating segments: Packaging & Specialty Plastics, Industrial Intermediates & Infrastructure and Performance Materials & Coatings.

Dow’s portfolio of plastics, industrial intermediates, coatings and silicones businesses delivers a broad range of differentiated, science-based products and solutions for its customers in high-growth market segments, such as packaging, infrastructure, mobility and consumer applications. The activities, products, services and markets include:

- Packaging & Specialty Plastics operating segment consists of two highly integrated global businesses: Hydrocarbons & Energy and Packaging and Specialty Plastics. The segment delivers reliable, durable, higher-performing solutions designed for recyclability and enhanced plastics circularity and sustainability. The segment key markets include food and specialty packaging; industrial and consumer packaging; health and hygiene; caps, closures and pipe applications; consumer durables; mobility and transportation; and infrastructure.
- The Industrial Intermediates & Infrastructure operating segment consists of two customer-centric global businesses – Industrial Solutions and Polyurethanes & Construction Chemicals – that develop important intermediate chemicals that are essential to manufacturing processes, as well as downstream, customized materials and formulations that use advanced development technologies. These businesses are aligned to market segments as diverse as appliances, coatings, furniture and bedding, construction, mobility and automotive, electronics, surfactants for cleaning and sanitization, infrastructure and oil and gas.
- The Performance Materials & Coatings operating segment includes industry-leading franchises that deliver a wide array of solutions into consumer, infrastructure and mobility end markets. The segment consists of two global businesses: Coatings & Performance Monomers and Consumer Solutions. These businesses serve the needs of customers in the areas of architectural and industrial coatings; home care and personal care; consumer and electronics; mobility and transportation; industrial and chemical processing; and building and infrastructure end markets.

For more information on Dow’s business segments or downstream entities, see Item 1. Business, on pages 5-13 of the Dow Inc. Annual Report on Form [10-K](#).

Dow’s supply chain extends to 155+ countries with a base of more than 32,000 vendors. Because of its global reach, Dow sees supply chain sustainability as a key enabler of its overall corporate sustainability strategy. For additional details, see [GRI 3-3 Management approach – Sustainable Procurement](#).

Suppliers by commercial area:

Commercial area	2022		2021	
	# of Suppliers	% Total Spend	# of Suppliers	% Total Spend
Corporate services	10,379	11.53%	10,374	11.69%
External manufacturing	216	1.77%	222	1.89%
Hydrocarbons & energy	887	38.48%	884	38.14%
Logistics	1,761	13.84%	1,821	13.65%
Maintenance, repair & operations (MRO) & capital	16,118	14.52%	15,364	14.13%
Packaging	888	1.43%	910	1.67%
Raw materials	2,226	18.43%	2,204	18.83%
Total	32,475	100%	31,779	100%



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Additional Approximated Supply Chain Metrics	Unit of Measure	2022	2021
Transportation service providers globally	Number	1,300	1,300
Warehouses & terminals	Number	340	300
Shipments per day	Number	4,300	4,500
Shipped volume per year	Million of Metric Tons	>50	>45
Delivery sites	Number	>39,500	>40,000
Countries (origins & destinations)	Number	155	150

Total vendor spend in 2022 was ~\$54 billion, which includes capital spending, raw materials and supplies, with spend by geographic area being: Asia Pacific (6%), Europe, Middle East, Africa (39%), Latin America (7%) and the United States & Canada (48%).

2-7 Employees

Employee Contract Type Definitions

- Permanent employee: A permanent employment contract is a contract with an employee, for full-time or part-time work, for an indeterminate period.
- Temporary employee: A temporary employee has an employment contract (can be written, verbal or implicit) that ends when a specific time period expires or when a specific task that has a time estimate attached is completed. A temporary employment contract is of limited duration and is terminated by a specific event, including the end of a project or work phase or return of replaced employees.

Total number of employees by employment contract (permanent and temporary), by gender.

Employee Type	2022				2021			2020		
	Men	Women	Not Disclosed	Total	Men	Women	Total	Men	Women	Total
Permanent	26,638	11,163	20	37,821	25,392	10,299	35,691	25,691	10,057	35,748
Temporary	748	387	0	1,135	710	352	1,062	696	323	1,019
Full-time	26,405	10,673	20	37,098	25,187	9,825	35,012	25,507	9,568	35,075
Part-time	233	490	0	723	208	474	682	184	489	673

Total number of employees by employment contract (permanent and temporary), by region.

Employee Type	Europe, Middle East, Africa, India	Latin America	United States & Canada	Asia Pacific	Total
Permanent	11,139	3,114	18,439	5,129	37,821
Temporary	596	197	339	3	1,135
Full-time	10,474	3,111	18,391	5,122	37,098
Part-time	665	3	48	7	723



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Dow’s workforce data is gathered through a centralized Human Resources management system database containing all employee information. The employee data is updated by employees, managers and Human Resources when employee information changes occur. The data represents the active global employee population as of December 31, 2022, and includes all permanent, full-time and part-time employees. Temporary employees and non-employee populations are excluded unless otherwise stated. Employees voluntarily self-identify their diversity demographics (e.g., gender and race/ethnicity data) and have the option to not disclose their data to Dow. These responses are listed as “Not Disclosed” in our reporting and are included for the first time in 2022. Throughout this report, disclosures exclude employees whose gender or race is unknown and percentages may not add up to 100% due to rounding.

Dow does not employ on-call workers/non-guaranteed-hours workers.

2-8 Workers who are not employees

Dow utilizes non-employee contractors in select roles to (1) enable flexibility with scaling resources to meet short term project staffing needs, (2) meet resource demands where fluctuations may occur more frequently, and/or (3) for work that is not core to Dow’s areas of expertise.

Most non-employee contractors are in manufacturing, research and development (R&D), supply chain, customer service and information technology. Many contractors in manufacturing are hired to meet short-term project staffing needs, such as planned maintenance turnarounds (e.g., project engineers, maintenance technicians, electricians, millwrights, etc.). Additionally, there are areas in manufacturing and supply chain that Dow does not consider to be core to the Company where work is outsourced. This work typically includes maintenance technicians (boilermakers, scaffold builders, welding, etc.), packagers and loaders and railcar maintenance. Contractors in R&D primarily work in project-based lab technician roles. Commodity Information Technology (IT) services are outsourced when introducing new technology, either through short-term project resources or augmenting our current staff size for the increase in workload. Dow also outsources work globally that is not core to Dow’s mission, such as janitorial, cafeteria services, facilities management and building maintenance. Lastly, Dow outsources for expertise in key areas, such as project consultation and during the implementation of new technologies.

The use of non-employee contractors at Dow is consistently applied for the reasons described above (flexibility for projects, demand fluctuations and outsourcing for expertise). Dow is also defining a Total Workforce Strategy to ensure a consistent approach to using non-employees is clear, well-understood and easy to implement and understand in the future.

There are no significant variations in contractor employment; however, based on economic fluctuations, employment may decline or increase.

OMISSION 2-8 a-b Reporting of non-employee workers

Information unavailable. Dow does not have complete information regarding the number of non-employee contractors. Dow will assess its ability to include this detail in future reporting.

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2-9 Governance structure and composition

The Board is responsible for broad corporate policy and overall performance of the Company, including the economic, environment and people strategic objectives and performance goals of the Company, through oversight of management and stewardship of the Company. The Board has four standing Committees (individually a “Committee” and collectively the “Committees”) with well-defined responsibilities for the Company’s impacts on economy, environment and people as stated in the bylaws and in their respective Committee charters. For additional information, see the Board Committees section starting on page 25 of the [2023 Proxy Statement](#) and the Committee charters posted on the Company’s website at [Corporate Governance | Dow Investor Relations](#).

In 2022, the Board and its Committees continued to improve transparency and accountability by outlining clear oversight responsibilities for Dow’s environmental, social and governance priorities directly in the Board Committee charters and aligned with management reporting lines as summarized in the table below.

BOARD OVERSIGHT	Environment, Health, Safety & Technology Committee		Compensation and Leadership Development Committee	Corporate Governance Committee	Audit Committee
<p>The Board actively oversees and engages with management in stewardship of the Company’s strategy, risk management and overall performance</p>	<p>Environmental performance, health, safety, community, corporate citizenship, social responsibility, public policy, sustainability, climate, science and technology</p>		<p>ID&E, work environment and culture, remuneration and incentives to drive accountability and progress on the Company’s financial and environmental, social and governance performance</p>	<p>Corporate governance framework, board composition and performance, governance best practices, compliance with legal and regulatory requirements and reporting frameworks</p>	<p>External reporting, risk management, internal controls, compliance with legal and regulatory requirements and reporting frameworks</p>
MANAGEMENT & ACCOUNTABILITY	Environmental Performance	Community	Inclusion, Diversity & Equity	Corporate Governance	
<p>Company executive management actively lead cross-functional efforts to set strategy, oversee the activities related to assessing and managing relevant risks/opportunities, and engage key stakeholders across our priorities</p>	<ul style="list-style-type: none"> • ESG Steering Team • Climate Steering Team • Circularity PMO • Science & Technology Advisory Council • Sustainability External Advisory Council 	<ul style="list-style-type: none"> • Global Citizenship Office • Community Action Panels • Dow Company Foundation Board 	<ul style="list-style-type: none"> • Office of Inclusion • President’s Inclusion Council • Senior Leaders’ Inclusion Council • Joint Inclusion Council • Executive Compensation 	<ul style="list-style-type: none"> • Office of the Corporate Secretary • Office of Ethics and Compliance 	<ul style="list-style-type: none"> • Annual Intersections Report, including limited assurance by the Company’s external auditing firm

The composition of the Board, including independence, tenure, Committee assignments, service on other public company boards, gender, ethnicity and qualifications, is summarized on page 40 of the [2023 Proxy Statement](#).

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2-10 Nomination and selection of the highest governance body

The Corporate Governance Committee has responsibility for reviewing and recommending director nominees for membership on the Board. This Committee also recommends to the Board guidelines to evaluate candidates for Board membership to provide for a diverse and highly qualified Board that reflects a broad range of viewpoints, experiences and expertise.

The Corporate Governance Committee requires the inclusion of diverse candidates in its initial director search list based on self-identified factors such as age, race, gender or sexual identity, ethnicity, culture and nationality. Minimum qualifications for any director candidates include strong values and discipline, high ethical standards, a commitment to full participation on the Board and its Committees, relevant career experience and a commitment to inclusion and diversity. Candidates should possess individual skills, experience and demonstrated abilities that help meet the current needs of the Board, such as experience or expertise in some of the following areas: the specific industries in which the Company operates; issues affecting global businesses, science and technology; finance and/or economics; corporate governance; public policy; government affairs and prior government service; environmental and/or social impact experience; and experience as chief executive officer (CEO), chief operating officer, chief financial officer (CFO) or other senior leader of a major company. Other factors that are considered are: independence of thought; willingness to comply with director stock ownership guidelines; meeting applicable director independence standards (where independence is desired); and absence of conflicts of interest. The slate of director nominees to be submitted for stockholder vote at the Annual Meeting of Stockholders and to fill any vacancies on the Board is to be determined in accordance with the Company's bylaws.

The Corporate Governance Committee reviews the annual Board and Committee self-evaluations to identify additional qualifications, skills, experience, attributes and diversity that would enhance overall Board effectiveness. Age-based retirement practices also help the Board prepare for turnover and engage in succession planning.

2-11 Chair of the highest governance body

Currently, the roles of the Board chair and CEO are combined, with Jim Fitterling serving as chair and CEO and Richard K. Davis serving as the independent Lead Director. Mr. Fitterling's 39-year tenure and multiple roles with the Company and in the industry make him uniquely suited to facilitate the Board's governance oversight of strategy and safe and effective business operations. Mr. Fitterling's familiarity with and knowledge of Dow's business are unmatched. Furthermore, he has a long history of leadership in reporting transparency and sustainability disclosures. Mr. Fitterling has also led the Company's extensive sustainability strategy, which includes robust public policy development on a national and international level, such as launching the Company's aggressive and ambitious targets to become carbon neutral by 2050 and to help eliminate plastic waste. Mr. Davis, the Company's independent Lead Director, has significant experience in corporate governance and public company management as a current and former director on other public company boards and a former CEO of a large public company.

The Board recognizes that the leadership structure and combination or separation of the CEO and Board chair roles are driven by the needs of the Company. As a result, no policy exists requiring combination or separation of leadership roles. This determination is made on an annual basis by the Board, which allows the Board the flexibility to make changes to Board leadership that are in the best interests of the Company and its stockholders. As a part of that process, the Board reviews whether the existing leadership structure provides strong independent oversight while balancing the need for extensive knowledge of business operations, risks and strategy implementation and accountability for Company performance. Regardless of the specific board leadership structure, the Company has always incorporated a strong, defined leadership role for an independent director.

The Board believes that its independence and effective oversight of management is enabled through the Company's strong corporate governance practices and safeguards currently in place, including the election of a separate independent Lead Director with significant responsibilities, the use of executive sessions, the Board's robust Committee structure with each Committee composed of independent directors and chaired by an independent director and annual review of the leadership structure.

For more information, see the Board Leadership Structure section starting on page 24 of the [2023 Proxy Statement](#)⁷. Also see the [Corporate Governance chapter within this report](#).

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2-12 Role of the highest governance body in overseeing the management of impacts

The Board is responsible for overseeing the Company’s impacts to the economy, environment and people, including the Company’s mission and values, operational and financial performance, sustainability targets and path to net zero, inclusion and diversity initiatives, and ensuring transparency and accountability. Each Committee is responsible for oversight of specific areas relevant to their respective Committee charters. Throughout the year and at every Board meeting, the Board and its Committees receive information and updates from management and actively engage with senior leaders with respect to management’s execution of the corporate and business plans. The Board and management review the Company’s short-term and long-term strategic priorities throughout the year and dedicate time at each Board meeting for appropriate discussion.

The Company regularly engages stakeholders and establishes collaborative partnerships to continue progress on Dow’s environmental, social and governance priorities and build a clearer understanding of the complex global challenges and local conditions in the countries where the Company does business. Stakeholders include customers, suppliers, current and prospective employees, community advisory panels, societal organizations, regulators, shareholders and investors. The Company also brings in diverse perspectives and guidance through the Sustainability External Advisory Council (SEAC) and Science and Technology Advisory Council. This feedback, as well as stockholder support at the last annual meeting, is carefully considered when reviewing business, financial, operational, governance and compensation profiles and practices.

2-13 Delegation of responsibility for managing impacts

The Board is responsible for broad corporate policy and overall performance of the Company through oversight of management and stewardship of the Company. The Board delegates the day-to-day management of the Company, including execution of the Company’s economic, environment and people strategic objectives and performance goals of the Company, to Dow’s CEO and other senior leaders through adoption of an authorization policy and delegation of authority framework. Throughout the year and at every Board meeting, the Board receives information and updates from management and actively engages with senior leaders with respect to management’s execution of the corporate and business plans, progress on environmental, social and governance priorities and enterprise risk management.

2-14 Role of the highest governance body in sustainability reporting

The Board and each of its Committees reviewed this report and approved, as applicable, topics in their respective areas of responsibility as set forth in the Committee charters ([Board Committees](#) | [Dow Investor Relations](#)). The Audit Committee, with management, reviewed the assurances provided on the assertion that the disclosures in this report are presented in accordance with the applicable reporting frameworks.

For additional information, see [GRI 3-3 Management approach – Transparency & Reporting](#)

2-15 Conflicts of interest

The Board adopted the [Dow Code of Conduct Policy | Public Policy | Dow Corporate](#), which guides behavior and sets expectations for ethical conduct by directors, officers and employees on matters ranging from health and safety in the workplace, to conflicts of interest, bribery, corruption, sustainability and citizenship (the “Code”). The Board also has adopted a Code of Financial Ethics for the principal executive officer, principal financial officer, principal accounting officer and controller.

All Dow directors, officers and employees are required to complete an annual ethics and compliance certification, which includes training on ethical standards and questions concerning potential conflicts of interest. All responses are reviewed by the Office of Ethics and Compliance (OEC). When an actual or apparent conflict is disclosed, action is taken to appropriately mitigate risk. Conflicts of interest are reviewed on a case-by-case basis and investigations are conducted into any alleged conflicts of interest that potentially violate the Code.

At least quarterly and more frequently as needed, the Audit Committee and the full Board receive updates from the OEC and actively engages with the chief compliance officer and other senior leaders regarding the effectiveness of the Company’s ethics and compliance programs, the ethical handling of conflicts of interest and reported concerns about potential misconduct. The Corporate Governance Committee reviews the relationships between the Company, directors and management at least annually and recommends to the Board whether each director qualifies as “independent” under the applicable rules of the NYSE and the Company’s Corporate Governance Guidelines.



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The Company discloses director independence, other public company board memberships, material supplier/purchaser relationships and related person transactions in relevant SEC filings, including the [2023 Proxy Statement](#)⁷ and the Forms [10-K](#)~ and [10-Q](#)~, as appropriate.

For additional information, see [GRI 2-26 Mechanisms for seeking advice and raising concerns](#).

2-16 Communication of critical concerns

Throughout the year and at every Board meeting, the Board receives information and updates from management and actively engages with senior leaders with respect to management’s execution of the corporate and business plans, progress on environmental, social and governance priorities and enterprise risk management.

At least quarterly and more frequently as needed, the Audit Committee and the full Board receive updates regarding critical concerns including but not limited to principal risks that may negatively impact the future results of the Company (a detailed discussion of which is included in the section titled “Risk Factors” in the Company’s Annual Report on Form [10-K](#)~ and subsequent Quarterly Reports on Form [10-Q](#)~), the effectiveness of the Company’s ethics and compliance programs, the ethical handling of conflicts of interest and reported concerns about potential misconduct, the effectiveness of the Company’s cybersecurity and information security framework and material incidents relating to information systems security, if any.

For information regarding concerns raised and followed up on, see [GRI 2-25 Processes to remediate negative impacts](#) and [GRI 2-26 Mechanisms for seeking advice and raising concerns](#).

OMISSION 2-16 Total number and nature of critical concerns communicated to the Board

Confidentiality Constraints. The Company does not publicly report the total number and nature of critical concerns that were communicated to the Board.

2-17 Collective knowledge of the highest governance body

All new directors participate in a robust orientation to familiarize with the Company’s strategic priorities, corporate and business plans, significant financial, accounting and risk management issues and governance policies and compliance processes, including the [Dow Code of Conduct Policy | Public Policy | Dow Corporate](#)⁷ and sustainability initiatives. On an ongoing basis, directors receive materials or briefing sessions regarding the operations of the Company, strategic priorities, and environmental, social and governance matters and risks including sustainability development.

For additional information, see the Director Orientation and Education section on page 35 of the [2023 Proxy Statement](#)⁷.

2-18 Evaluation of the performance of the highest governance body

As provided in the Corporate Governance Guidelines, Board Committee charters and the NYSE listing standards, the Board and each of its Committees are required to conduct an annual self-evaluation of its performance with a particular focus on overall effectiveness and oversight of the economic, environment and people strategic objectives and performance goals of the Company.

For additional information on the evaluation process and an example of action taken in response to the evaluations, see the Board and Committee Evaluation Process section on page 37 of the [2023 Proxy Statement](#)⁷.



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2-19 Remuneration policies

A detailed review of Dow’s independent Director remuneration policies can be found in the Director Compensation section starting on page 49 of the [2023 Proxy Statement](#)⁷. The Board determines Director compensation that is competitive and appropriate to attract and retain diverse and highly qualified Directors to oversee the economic, environment and people strategic objectives and performance goals of the Company.

A detailed review of Dow’s executive remuneration policies can be found in the Compensation Discussion and Analysis section starting on page 54 of the [2023 Proxy Statement](#)⁷. The executive remuneration policies are designed to meet the economic, environment and people strategic objectives and performance goals of the Company with various components, including:

- **Base salary:** A competitive fixed rate of pay recognizing different levels of responsibility and performance within the Company.
- **Performance Award:** Annual cash incentive program to reward employees for achieving the Company’s most critical financial and operational goals including certain customer, sustainability and inclusion and diversity metrics.
- **Long-term Incentives (LTI) awards:** Motivate and reward employees to deliver against the Company’s specified financial and sustainability performance goals, support the retention of top talent and create ownership alignment with stockholders.

2-20 Process to determine remuneration

The Compensation and Leadership Development Committee of the Board of Directors of Dow, with the advice and support of an independent compensation consultant and management, oversees the process for determining remuneration and determines the objectives of the Company’s short-term and long-term compensation programs. The compensation program is applied broadly across the Company’s employee population and executive officers are generally subject to the same compensation programs as other employees receiving short-term and long-term incentives.

The Committee is responsible for recommending compensation for the CEO for approval by the independent Directors and it is responsible for approving the compensation of all the other executive officers. As part of the evaluation of executive officer compensation, the Committee reviews median levels of compensation for similar jobs and job levels in the market, experience, knowledge, skills and personal contributions compared with the Compensation Peer Group, while considering advice provided and analysis performed by the independent compensation consultant. Director compensation is determined by the Board with assistance of the Compensation and Leadership Development Committee and the Corporate Governance Committee and is regularly benchmarked utilizing the Compensation Peer Group.

The Compensation and Leadership Development Committee annually reviews and evaluates the compensation program metrics. The Committee reviews the following factors, among others:

- **Company performance:** Measured against financial metrics and operational targets approved by the Committee, along with relative Total Shareholder Return (TSR) against the Relative TSR Peer Group.
- **Market landscape:** Business climate, economic conditions and other factors.

Annually, the Company asks stockholders for an advisory vote on executive compensation. At the 2023 Annual Meeting of Stockholders, approximately 91 percent of the votes cast by stockholders supported Dow’s advisory vote on executive compensation reported in the [2023 Proxy Statement](#)⁷. The Board and management carefully consider stockholder support for the advisory vote on executive compensation, as well as engagement with stakeholders throughout the year, when reviewing the business, corporate governance and executive compensation profiles and practices. For example, as a result of stakeholder engagement, the Board made the decision to continue to include quantifiable metrics regarding the Company’s ambition in its short-term and long-term incentive awards.

For additional information, see The Compensation Process section (Page 75) in the [2023 Proxy Statement](#)⁷.

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2-21 Annual total compensation ratio

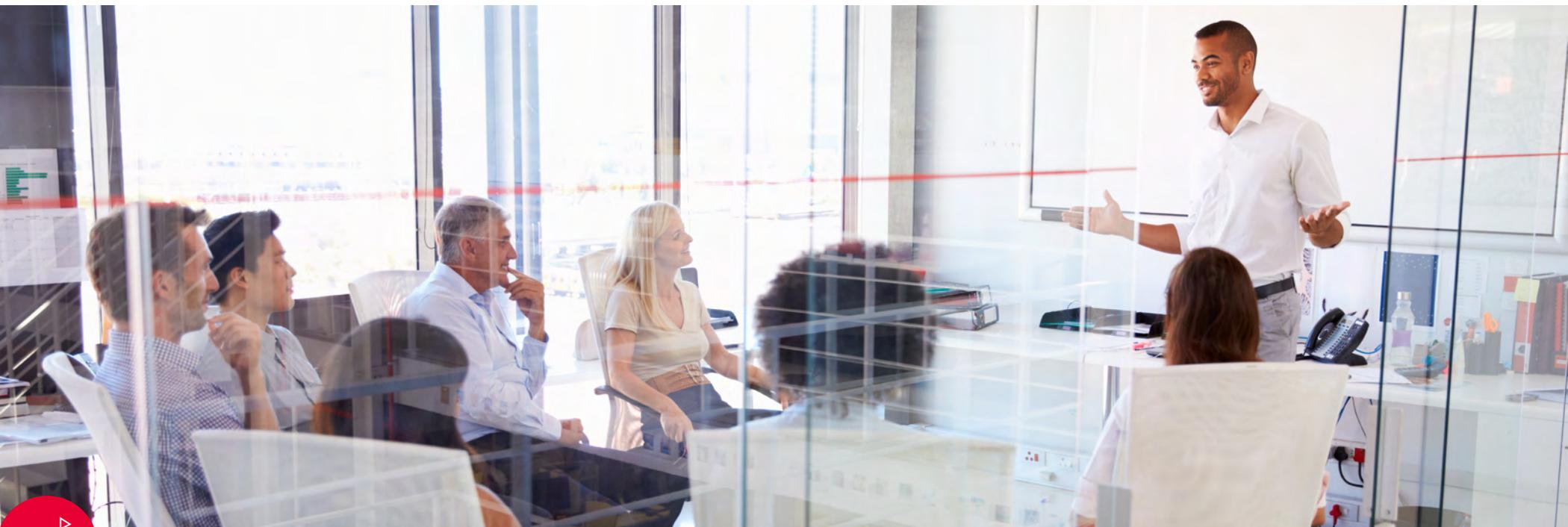
Based upon the calculation of compensation for both the CEO and the median employee, the ratio of CEO pay to median employee pay for 2022 was approximately 220:1. The median employee was selected from the Dow population worldwide, excluding the CEO, as of November 30, 2022, using base salary and Performance Award at target. The Company calculated annual base salary based on a reasonable estimate of hours worked during 2022 for hourly workers and upon salary level for the remaining employees. The Company used a statistical sampling methodology to identify all employees whom the Company expected to be paid within a 0.1 percent range of the median. The Company selected the representative employee from that group to calculate the ratio of CEO pay to median employee pay. The ratio of the percentage increase in CEO pay to the percentage increase in median employee pay was -21.7% : -7.5%.

The target total direct compensation of Mr. Fitterling increased 5.2% over 2021. Relative to 2021, Mr. Fitterling received a 0.0% increase to his target short-term incentive (STI) percent and an increase of 5.5% to his LTI target, based upon the Compensation and Leadership Development Committee’s review of comparable positions within the Compensation Peer Group.

See Base Salary Year Over Year Change (Page 64) in the [2023 Proxy Statement](#).

2-22 Statement of sustainable development strategy

See the [Message from the Chair and CEO](#).





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Sustainable Chemistry & Innovative Products

3-3 Management approach

Key Impacts

- Dow’s products and services are a key component of Dow’s climate strategy, as they provide an opportunity to enable the transition to a low-carbon economy. In order to reduce Dow’s carbon footprint while simultaneously increasing production volume, it must develop more innovative products and feedstock material production, which necessitates continuous enhancement of Dow’s high-performance research capabilities. (positive/negative)
- The emissions and carbon-footprint reductions from innovative improvements to both Dow’s feedstock production and delivery of better-performing, more sustainable products help drive less carbon across the entire value chain. (positive)

It is important to consider the entire value chain when evaluating Dow’s potential innovations and solutions. In some cases, Dow’s solution may have a negative impact when considered in isolation. For example, recycling of products requires additional energy input (a negative if viewed in isolation) but enables circularity and reuse of materials across a value chain (a positive when viewed at a value chain level). In other cases, transparency across the value chain is lacking and thus decisions are made based on the experience of experts and available data. Using life-cycle assessments (LCAs) is a way for Dow to ensure it considers the full value chain when evaluating product sustainability.

Commitments

- Dow is committed to using LCA analysis to guide innovation. LCAs are critical in preventing and addressing potential negative impacts.
- [Dow’s 2025 Sustainability Goal, Delivering Breakthrough Innovations](#)⁷: Dow will deliver breakthrough sustainable chemistry innovations that advance the well-being of humanity.

- [Dow’s Blueprint for Product Safety](#)⁷ was created to demonstrate its approach to developing safe and sustainable chemistry.

2022 Actions Taken

Conduct Life Cycle Assessments

The LCA allows an objective, scientifically based comparison between two options to inform decision-making.

A stage-gate process is used as projects mature. This includes checklists to assess sustainability attributes, with increasing rigor as the project matures. Projects do not graduate to the next stage if they do not pass the checklist criteria.

Stakeholders Engaged

- LCA Group
- Sustainability focal points
- Dow Marketing

R&D Assessments

Annually assess the alignment of Dow’s R&D portfolio to its sustainability goals.

Results are compared from year to year to show changes in the portfolio and accuracy of the process. A roll-up at the corporate level has provided incentives for individual business units to continuously improve the tracking of their projects.

Stakeholders Engaged

- LCA Group
- Sustainability focal points
- Dow R&D project leaders
- Dow R&D management





Government Relations

3-3 Management approach

Key Impacts

- The political process significantly impacts Dow through government policies, legislation and judicial and regulatory decisions. (positive/negative)
- Dow actively participates in the political process through legally authorized advocacy, grassroots efforts and financial contributions which can inform environmental, social and governance topics. (positive)
- New/changing laws can fundamentally impact Dow’s operations or markets in which it does business; therefore, advocacy efforts and policymaking are critical to long-term company success. (positive/negative)

Dow is committed to the highest standard of ethical conduct in its involvement in the political process. All financial contributions strictly adhere to federal and state laws regarding contribution limits on amount, source, criteria and reporting requirements. Contribution information is a matter of public record in the United States and is readily available to interested parties through the Federal Election Commission, Internal Revenue Service (IRS) and Secretaries of State.

Dow receives information from trade and business associations as well as civic leagues and social welfare organizations in the United States regarding the portion of its dues or contributions that are used for lobbying expenses and political expenditures. Dow includes this information in the aggregate in its quarterly lobbying activity reports filed with the U.S. Congress, as required by the Lobbying Disclosure Act (LDA), which can be viewed under the link named “Dow’s LDA filings” within the Trade Associations policy linked below.

Policies

- Dow provides lists of candidates who receive corporate political contributions for the previous five years online at: [Corporate Political Contributions | U.S. Public Policy | Dow Corporate](#) ↗.
- Dow provides a list of trade association memberships and discloses expenses above \$25,000 per year, for the previous five years, at: [Trade Associations | U.S. Public Policy | Dow Corporate](#) ↗.

Ethics & Compliance

3-3 Management approach

Key Impacts

- Dow has the reputation of operating with the highest ethical standards and lawful conduct, using it as a competitive advantage for doing business as well as attracting and retaining employees. (positive)
- Dow can be subject to anti-competitive activities, fraud and requests for bribery, kickbacks and facilitation of payments. Any misconduct can cause financial and reputational damage and consequently negatively impact Dow's financial results. (negative)
- Dow can be impacted by the business practices of its business partners (e.g., suppliers, distributors) where ethical and sustainable practices can positively impact Dow, while violations of the law and misconduct can cause Dow reputational harm. (positive/negative)

Dow complies with all applicable laws and has in place robust procedures to ensure compliance with applicable regulations. Certain countries where Dow operates may have higher levels of corruption risk¹, which can result in Dow's employees being exposed to practices not supported by Dow. Dow has over 35,000 employees from different cultures and backgrounds. Individual employees may decide to act in violation of Dow's policies. Dow's constant training and communication aims to prepare employees for those situations.

As part of Dow's operations, Dow may retain third parties to act on behalf of Dow. These third parties may not have robust ethics and compliance programs in place and may also be subject only to the laws and standards of a specific country, some of which may be less stringent than the laws and standards that apply to Dow.

Commitments

- Dow trains all full- and part-time employees on the content of [Dow Code of Conduct Policy | Public Policy | Dow Corporate](#) every year and provides supplemental training for targeted full- and part-time employees on Dow's policies, according to their job profiles and responsibilities.
- Dow investigates all reported potential misconduct and violations of applicable statutes or regulations, the Dow Code or any internal Dow policy.
- Dow strictly forbids and does not tolerate retaliatory treatment of any kind against a whistleblower who, in good faith, exercises his/her/their right to report potential misconduct, or who makes a complaint or cooperates in an investigation, even if the allegation cannot be substantiated. If a retaliation complaint is substantiated, disciplinary measures will be taken.
- Dow conducts due diligence on third parties based on risk profile.

¹ Based on Corruption Perception Index (CPI), published by Transparency International.

Ethics & Compliance

Policies

- The [Dow Code of Conduct Policy | Public Policy | Dow Corporate](#)⁷ sets expectations for ethical conduct on matters ranging from health and safety in the workplace, to conflicts of interest, bribery, corruption, sustainability and citizenship. The Code applies to all directors, officers, and full- and part-time employees of Dow and its wholly owned subsidiaries, as well as joint ventures that adopt the Code. The Code is public and has been made available in 16 languages. The OEC reviews the Code periodically and all suggested changes are submitted to the Board of Directors for approval.
- In 2022, Dow released the renewed version of its [Code of Business Conduct for Suppliers](#)⁷ which contains Dow's mandatory requirements and expectations that all suppliers (including independent contractors and suppliers providing contract labor) globally are compliant with applicable regulations and Dow's values. The Code of Business Conduct for Suppliers is reviewed periodically.
- Dow's [Code of Financial Ethics](#)⁷ applies to the principal executive officer, principal financial officer, principal accounting officer and controller, or people performing similar functions. The Code of Financial Ethics is reviewed periodically and the suggested changes are approved by the Board of Directors.
- Dow has detailed policies in many areas covered by the Code, such as anti-bribery and anti-corruption, antitrust, gifts and entertainment, respect and responsibility, insider trading, substance-free workplace, data protection, information handling and social media, among others.

2022 Actions Taken

Training

Dow provides supplemental training on Dow's policies to all full-time and part-time employees and officers in different formats (including video-conferencing, on-site and on-demand virtual platforms). For more information see [GRI 2-24 Embedding policy commitments](#).

Annually, the OEC reviews its training curriculum and makes changes that reflect changes in business risk to ensure that appropriate and timely training is provided to all audiences. Factors considered include input from stakeholders, changes in regulatory environment, noted gaps in compliance and cases reported to the OEC.

The OEC monitors the number of training sessions, audiences and how many online training modules and live training sessions have been completed within a year.

For additional information on the Code see [GRI 2-24 Embedding policy commitments](#).

Dow tracks completion of all required Code training and supplemental training activities to ensure both breadth and depth of training activities. Follow-up actions are taken for any employee who is assigned mandatory supplemental training and fails to complete it. Training completion rates are reported quarterly and annually to governing committees who may take additional actions as needed to ensure all training is completed in a timely manner.

Stakeholders Engaged

- Audit Committee
- Global Ethics and Compliance Committee (GECC)
- Regional Ethics and Compliance Committee (RECC)
- People leaders

Anti-Corruption Due Diligence

Dow has a robust global risk-based Anti-Corruption Due Diligence (ACDD) process established to identify potential risks associated with engaging with third parties to act on behalf of Dow. Comprehensive due diligence is mandatory for any third party acting on behalf of Dow who is assessed to be high risk based on Dow's risk-based program. For more information on the due diligence process, please see [GRI 205-1 Operations assessed for risks related to corruption](#).

Periodic audits are conducted by Dow Corporate Audit to identify ACDD in-scope third parties that require ACDD screening to ensure compliance with Dow's ACDD program.

Additionally, verification of adherence to the ACDD process is conducted every quarter and follow-up actions, including reminders, escalation to ethics and compliance governing bodies and remedial training, are provided to any Dow relationship manager who has demonstrated failure to complete the ACDD process.

Stakeholders Engaged

- Audit Committee
- GECC
- RECC
- People leaders

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2-23 Policy commitments

See policies section in [GRI 3-3 Management approach – Ethics & Compliance](#)

2-24 Embedding policy commitments

[Dow Code of Conduct Policy | Public Policy | Dow Corporate](#)⁷ (the “Code”) summarizes Dow’s ethical principles and policies intended to deter and prevent corrupt activity such as bribery and ensures that it holds itself to the highest ethical standards. It also provides Dow’s position on a wide array of topics, including equal employment opportunity, respect in the workplace and environment, health and safety. All Dow employees are expected to understand and comply with all company policies and applicable laws. As part of this expectation, Dow has a program to train all employees (including part-time employees) annually on the Code to ensure that they understand and abide by its requirements. The Code training is mandatory and presents content and expectations including but not limited to diversity, inclusion, discrimination, and harassment. In addition, in-depth training is provided to employees based on job profile, to provide more comprehensive knowledge of potential risks related to their individual job responsibilities. The Dow OEC also provides targeted anti-bribery training to employees who are gatekeepers of third party risk to increase awareness and compliance with the ACDD process. Dow also expects each contract labor supplier to ensure its employees understand Dow’s policies and applicable laws.

See [GRI 205-2 Communication and training about anti-corruption policies and procedures](#) to understand training on the Code of Conduct.

In addition to the commitments regarding bribery and corruption contained in the Code, Dow also maintains a stand-alone Anti-Bribery & Anti-Corruption (AB&AC) policy intended to provide further detail and guidance regarding Dow’s anti-bribery positions, policies and procedures. The AB&AC policy supports the ACDD process and provides guidelines related to Dow’s position on bribery as well as specific processes that must be followed when interacting with third parties and government officials.

Dow has an unwavering commitment to ethical behavior and stands in opposition to any form of sexism, racism, discrimination and harassment (sexual and non-sexual). Dow’s Respect and Responsibility policy sets expectations on how individuals interact with each other in the workplace to achieve Dow’s goals and maintain its high ethical standards. Dow commits to providing a work environment where everyone feels valued and can achieve their full potential.

Dow also maintains a Global Gifts & Entertainment policy that provides guidelines as to acceptable gifts given and received, as well as specific processes that must be followed when employees consider providing to, or are offered anything of value from, a government official.

Dow believes that respect for the dignity, rights and aspirations of all people is a cornerstone of business excellence. This position extends to every Dow employee and to all people who work at any of Dow’s facilities around the world. Dow also expects its business partners to commit to similar values and standards. This position ([Human Rights | Public Policy | Dow Corporate](#)⁷) is integral to Dow’s Values of Integrity, Respect for People and Protecting Our Planet and the Code, which guides behavior and sets expectations for ethical conduct.

2-25 Processes to remediate negative impacts

Dow investigates all reported misconduct and violations of the Code. In the event an investigation involves a third party conducting business with Dow and misconduct is substantiated, measures are implemented in accordance with existing contracts and applicable laws. Dow strictly forbids and does not tolerate retaliatory treatment of any kind against anyone, including a whistleblower who, in good faith, exercises his/her/their rights under this policy, makes a complaint or cooperates in an investigation, even if the allegation cannot be substantiated. If a retaliation complaint is substantiated, disciplinary measures will be taken.

Dow has five different Ethics and Compliance committees, one with global oversight and four with responsibility for each of Dow’s major geographic regions where Dow operates. Meetings occur at least quarterly and supplemental meetings are convened as needed. The Ethics and Compliance Committee structure improves awareness of global and local misconduct trends, changes in risk profile, regulatory changes and enhancements to Dow’s policies and internal controls. Each RECC also shares local challenges pertaining to the operation of each respective region.

Dow implements proactive and reactive actions (e.g., improvement of internal controls) based on global or local needs. Each RECC supports the OEC in implementing local actions to address specific needs or respond to region-specific risk and is involved in remediation of substantiated cases related to its respective region.

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2-26 Mechanisms for seeking advice and raising concerns

Dow’s employees are expected to behave in a way that protects Dow’s business interests, reputation and each other. This includes promptly reporting any conduct inconsistent with its [Dow Code of Conduct Policy | Public Policy | Dow Corporate](#)⁷, including discrimination or harassment, values or the law. The OEC is responsible for communicating to all stakeholders the mechanisms in place to seek advice and report potential misconduct. Employees and other interested parties who have a question or desire to make a report regarding any ethics and compliance matters can use the following confidential options:

- EthicsLine (third party managed service) – a safe, reliable and convenient method to report ethical concerns (by calling or via online form). It is available globally, with multilingual capabilities, 24 hours a day, seven days a week.
- Make a report via telephone.
- Make a report via online submission.
- Make a report of a concern to their supervisors or other leaders, Dow attorneys, HR personnel, GECC or RECC members, or directly to the OEC.

Dow respects and protects any reporter and/or whistleblower who escalates a concern about potential misconduct and it does not tolerate retaliation against anyone who reports a potential violation in good faith. Reports about alleged violations of the Code or the law are provided at least quarterly to the Audit Committee of the Dow Board. Types of issues: Conflicts of interest, Environmental Health & Safety, Human Resources, Misuse of Assets and Others. All issues that require corrective action are appropriately addressed. To summarize:

Matters by Year	2022	2021	2020 ⁷
# of matters reported that warranted investigation	338	316	314
# Substantiated	110	107	108

The three most common issue types for substantiated matters in 2022 were discrimination, privacy, and respect and responsibility. The four most common corrective or disciplinary actions for substantiated matters in 2022 were coaching, loss of remuneration, termination and written or verbal warning.

Environmental Compliance

3-3 Management approach

Key Impacts

- Environmental compliance grants the privilege to operate. Dow earns this privilege by complying with rules and regulations. Compliance and transparency allow us to build trust, which is foundational to being recognized as a company with integrity. (positive)
- With large, global operations even rare failures of environmental compliance may result in negative impacts to a company's reputation, the environment and society. As a chemical industry leader, cases of environmental non-compliance may negatively impact the industry as a whole and its economic performance. (negative)

Dow is working to deliver a sustainable future through its partnership with communities, regulatory agencies, industry and business associations, non-governmental organizations, etc. Upon discovery of potential negative impacts, Dow takes appropriate corrective actions that are consistent with its values and external standards, including regulatory and legal.

Dow subscribes to the American Chemistry Council's Responsible Care[®] program. This provides third party verification and transparent public reporting as cornerstones of world-class EH&S performance and building public trust. Numerous Dow sites in Europe, Latin America, Asia Pacific, and the United States and Canada have received third party verification of Dow's compliance with Responsible Care[®] and with outside specifications such as ISO-14001. Dow continues to be a global champion of Responsible Care[®] and has worked to broaden the application and impact of Responsible Care[®] around the world through engagement with suppliers, customers and joint venture partners.

Commitments

- Dow strives to comply with all laws and regulations in all regions where it operates.
- Its commitment to world-leading operations performance is key to the Company's success, history and privilege to operate in communities around the world.
- Dow is committed to world-class Environmental, Health & Safety (EH&S) performance, as demonstrated by industry-leading results, a long-standing commitment to Responsible Care[®] and the Company's commitment to achieving its 2025 Sustainability Goals and its new targets around advancing a circular economy and climate protection.

Policies

- [Environment, Health and Safety Policy | Dow Corporate](#)[↗]
- [Responsible Care[®] Initiative | Public Policy | Dow Corporate](#)[↗]

Environmental Compliance

2022 Actions Taken

Internal Reporting Systems and Management

Dow manages environmental data for reporting with a waste, water and emissions inventory system. All emitting manufacturing sites globally record their emissions and water use in the system annually. The data are reviewed at the facility level and then by global coordinators before being aggregated for corporate reporting.

Dow's EH&S Management System (EMS) defines the "who, what, when and how" needed for the businesses to implement the Company's policies and requirements, and meet performance objectives, leadership expectations and public commitments. To ensure effective utilization, the EMS is integrated into a companywide management system for EH&S, Operations, Quality and Human Resources.

Dow measures its annual progress through its Environmental Stewardship indices.

Dow conducts assessments of the effectiveness of its systems on a routine frequency.

Stakeholders Engaged

- Communities
- Regulators
- Executives
- Environment
- Economy

For additional information regarding environmental compliance actions, see Environmental Compliance on page 22 and Environmental Proceedings on page 26, of the Dow Inc. Annual Report on Form [10-K](#) for the year ending December 31, 2022, filed with the SEC on February 1, 2023.

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2-27 Compliance with laws and regulations

Dow is committed to complying with regulatory requirements including local laws. Dow defines significant non-compliance violations as any anticipated or known compliance violations that are likely to be greater than \$300,000. During 2022, Dow received no significant non-compliance violations.

Description	2022
Total number of significant instances for which fines were incurred	0
Total number of significant instances for which non-monetary sanctions were incurred	0

OMISSION 2-27 Fines paid for non-compliance instances

Information incomplete. Dow will continue to refine our processes and drive increased trackability of this data on an annual basis.

For additional information regarding significant environmental compliance proceedings and known violations, see Environmental Compliance on page 22 and Environmental Proceedings on page 26 of the Dow Inc. Annual Report on Form [10-K](#).

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2-28 Membership associations

Membership of associations include:

American Institute for Packaging and the Environment	Flexible Packaging Association	Texas Chemical Council
American Chemistry Council (ACC)	Green Chemistry & Commerce Council	U.S. Chamber of Commerce
American Coatings Association	International Council on Chemical Associations (ICCA)	WBCSD
American Fuel & Petrochemical Manufacturers	Louisiana Chemical Association	World Environment Center
American Petroleum Institute	National Association of Manufacturers	WEF
Business Roundtable	National Safety Council	
European Chemistry Industry Council (CEFIC)	Plastics Europe	

2-29 Approach to stakeholder engagement

The fundamental principles of Dow’s ongoing engagement strategy are:

- Information sharing; participating in active dialogue.
- Collaborating on issues of mutual interest.
- Acting on input provided by the stakeholders.

Stakeholder engagement is a regular component of Dow’s strategic business and ESG activities and, as such, is not typically undertaken specifically as part of the report preparation process. The categories of stakeholders, the identification, purpose and methods are described below.

Customer Engagement

Engaging with customers is a key element of how Dow conducts business. Dow appreciates that customer expectations and preferences are changing and that different customers may prefer to engage in different ways. For this reason, it uses a variety of channels and approaches that span across digital, in-person, one-on-one and one-to-many interactions. Particularly important to Dow is maintaining an open channel with all customers for collecting feedback about their experience with Dow at the many touchpoints they have along their journey. Dow uses that feedback to identify and implement improvements in its processes, products and services and to make every customer experience as easy, enjoyable and effective as possible.

Dow’s commitment is to ask for feedback from every customer contact at least once per year regarding all end-to-end interactions they have with Dow, including but not limited to product quality, performance of its account teams, supply reliability, digital experiences, development of new products and resolution of customer complaints. The responses Dow receives are used to generate a Customer Experience Index (CXi), which measures how easy, enjoyable and effective it is for customers to do business with Dow. CXi is one of the measures that determines the variable pay for all Dow employees.

Dow’s CXi performance in 2022 improved by 3 points compared with 2021, reflecting improvements in product supply reliability and to very positive customer feedback regarding Dow’s enhanced digitally enabled experiences.



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Supplier Engagement

Supplier outreach on sustainability commitment and improvements is important to ensure they are aligned with Dow's ambitions and following its [Code of Business Conduct for Suppliers | Public Policy | Dow Corporate](#)⁷. Supplier outreach is supported by CDP and EcoVadis, who help Dow understand its suppliers' sustainability strategies. In addition, Dow made a concerted effort to engage with diverse suppliers by attending conferences focused on supplier diversity; hosting events to encourage interaction; sharing tips on how to do business with Dow; and creating relationships for future activity. Finally, Dow expanded its influence by encouraging 200 additional suppliers to disclose their expenditures with diverse companies in the United States., increasing Dow's understanding of supplier diversity in its supply chain and encouraging suppliers to expand their efforts. For additional information on Dow's supplier engagement, see [GRI 3-3 Management approach – Sustainable Procurement](#).

Employee Engagement

Employee engagement is ingrained in the cultural fabric of Dow. Throughout the year, employees have opportunities to participate in surveys, internal online social platforms, intranet postings, town hall meetings, webinars and other mechanisms. Disciplined annual and quarterly Voice surveys are conducted to collect the "voice of the employees." This feedback is used to launch initiatives that improve the employee experience. Dow's 10 employee resource groups (ERGs) have over 57% of employees engaged, helping instill a sense of belonging in daily interactions. These ERGs offer programming that is meaningful and relevant to employees. See [Maximizing Engagement Through Our Employee Resource Groups \(ERGs\)](#).

In the recent past, some topics that have been influenced by direct employee feedback include the Company's work flexibility approach (Design Your Day), updates to leave policies (parental, ERG and volunteerism time-off) and wellness offerings. Dow also utilizes an inclusive hiring process that requires posting of open roles, diverse candidate slates, diverse interview panels and a structured interview format to help ensure fair and equitable hiring practices.

All leaders with direct reports, as well as influential leaders, are engaged on a regular basis through Dow's annual LEAD programming (an internal leadership conference). This program covers company strategy and priorities, and in-depth discussions with internal and external experts on key topics such as reliability, people and culture, and sustainability. Leaders attending this conference have the accountability to take the messaging to their respective work groups for engagement at all levels in the Company.

Employee Representation (including Trade Unions and Works Councils)

Dow strives to work cooperatively with duly chosen employee representatives in the common pursuit of the interests of its employees and the Company's objectives. Dow implements and adheres to its collective agreements with employee representation. Where Dow's employees are represented, it builds those relationships to drive positive business results, employee experience and customer experience. Dow has partnered with employee representation on critical priorities such as environmental, health and safety for many years. Common topics of discussion and/or negotiation between the Company and employee representation include wages, benefits and working conditions.

Dow drives its employee representation relationships locally, meaning these relationships are generally fostered at a site or country level. Communications between the Company and employee representation generally occur through meetings as well as phone calls and email exchanges. Negotiations and general discussion are driven locally with Company representatives and employee representation.

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Community/Society Engagement

Dow knows that by listening and collaborating, it can discover the solutions for what’s needed next. Whether partnering with Dow, working at Dow or experiencing Dow materials in your favorite brands, it is endlessly working to make the world and its communities a better place to live and work.

- Communities are engaged regularly through individual and group meetings, committees and other forms of communication. Wider communication with communities is through social media. Dow is committed to building resilient communities to address unmet needs while keeping its employees and communities safe. Across the Dow world, most Dow sites implement local community engagement programs.
- Dow employees work closely with anchor organizations and nonprofit partners to understand critical needs within the community. This information is used to guide Dow’s philanthropic giving and employee engagement opportunities.
- Data collected from the Community Opinion and Needs Assessments survey conducted in 2021 at 12 strategic Dow locations (defined as cities near large Dow manufacturing facilities) was used to develop 2022 community investment and engagement strategies.
- Community Advisory Committees (CACs) are active at key Dow sites to obtain community perceptions about Dow, share Dow product and technology information and understand how Dow can improve collaboration with community partners to address community needs.

Regulator Engagement

Dow engages with regulators as part of normal operations. These engagements range from standard sharing of information, public comments and reporting to more detailed conversations about specific regulatory issues of interest. Engagement with regulators globally throughout 2022 was primarily done via face-to-face meetings, virtual meetings and email communications. Where there is a topic of broader interest across companies, Dow also engages through trade associations or other coalitions. During 2022, many topics were covered in regulator interactions, including but not limited to: operating permits; environmental remediation projects; trade and customs regulations; product registrations; safe shipment, labeling, handling and use of its products; tax; data privacy; and labor and workforce matters.

Shareholder/Investor Engagement

See Stockholder Engagement (page 22) in the [2023 Proxy Statement](#).

2-30 Collective bargaining agreements

Approximately 15% of Dow’s workforce was covered by collective bargaining agreements in 2022. For the 85% of employees not covered under collective agreement, working conditions and terms of employment are based on local requirements and market-competitive practice in alignment with Dow’s core values. See GRI 2-23 Policy commitments for additional information on [Dow Code of Conduct Policy](#) | [Public Policy](#) | [Dow Corporate](#).

Within the Code, Dow puts measures in place to facilitate desired behavior regarding freedom of association and collective bargaining. Dow recognizes and respects all applicable labor and employment laws – including those addressing freedom of association, privacy and equal employment opportunity – wherever it operates.

Global labor relations principles include the following items:

- Dow implements and adheres to its agreements with employee representation.
- Labor Relations must communicate and manage stakeholders as outlined in regional governance.
- Dow treats employees and employee representation with respect aligned with its core values within the Code.

Processes for management of employee grievances are outlined in site or local handbook/policy documents. Site or local handbook/policies are available to employees either in print, electronically or via both channels. Any violation of the Code can be reported and addressed through the company EthicsLine (see [2-26 Mechanisms for seeking advice and raising concerns](#) for more information).



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GRI 3: Material topics 2021

3-1 Process to determine material topics

In 2022, Dow engaged a large public accounting firm to assist with a complete refresh of its Sustainability/ESG materiality assessment. This assessment helped validate the sustainability priorities for Dow and its stakeholders to inform its sustainability disclosures and strategies.

The process was holistic, starting by assessing the overall landscape using benchmarking across the industry to identify the most relevant topics, which were then assessed by approximately 70 stakeholders representing both internal and external viewpoints. Through meaningful stakeholder engagement, Dow prioritized the impacts that it has or can have from two perspectives: 1) The impact the material topic has on Dow’s business objectives, goals and strategies and 2) The external impact of Dow through the topic on people, planet, economy and human rights (double materiality view).

See 3-3 Management of Material Topics for specific impacts by topic.

Stakeholders

- Communities
- Functional leaders
- Executives
- Investors
- Customers
- Employees
- Finance
- Legal
- Business leaders
- ESG experts
- Governmental Affairs
- Suppliers

3-2 List of material topics

As captured in Dow’s purpose, to deliver a sustainable future for the world through materials science expertise and collaboration with partners, sustainability is at the core of what Dow does. Dow’s material topics align to its four strategic areas of action and highlight how Dow is working as a team to deliver solutions to global challenges and creating lasting value for its customers, communities, employees and businesses.

			
Environmental Performance	Inclusion, Diversity & Equity	Community	Corporate Governance
Biodiversity	Human Rights*	Citizenship	Climate & Operational Resilience
Circular Economy	Inclusion, Diversity & Equity	Health & Wellness	Cybersecurity & Privacy*
Emissions	Talent & Future Workforce	Safe & Reliable Operations	Ethics & Compliance*
Energy Management			Governance & Accountability
Environmental Compliance			Government Relations*
Safer Materials			Sustainable Procurement
Sustainable Chemistry & Innovative Products			Transparency & Reporting*
Waste Management			
Water Stewardship			

*New from 2019 Materiality Assessment



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Economic Performance was removed as a material topic during Dow’s 2022 assessment, as it aligns more directly with its financial material topics and financial reporting. Additionally, Dow has renamed or regrouped some topics for external alignment and comparability.

See also the [United Nations Sustainable Development Goals \(SDGs\)](#) to understand how each of the material topics align.

GRI 200 Economic standards 2021

GRI 204: Procurement Practices 2016

204-1 Proportion of spending on local suppliers

Dow recognizes the importance of supporting local suppliers and communities and strives to integrate this consideration into its procurement practices wherever feasible. While Dow does not have a specific policy for local procurement, it aims to balance the need for global supply chain efficiency with its commitment to supporting local economies and reducing Dow’s environmental footprint.

To achieve this balance, Dow actively seeks out local suppliers in significant locations of operation and evaluates their capacity to meet its quality, sustainability and cost requirements. Where feasible and mutually beneficial, Dow prioritizes procurement that supports local businesses and reduces transportation emissions.

The following summarizes *local supplier spend* in *significant location of operation*:

Procurement Spend	2022	2021 [↗]	2020 [↗]
% spend with local suppliers	96.5%	97.1%	96.6%

“Local supplier” is defined as a supplier located in the same region as the procuring company, evidenced by no transregional payments made to the supplier. Dow’s “significant location of operation” includes major manufacturing operations in Argentina, Brazil, Canada, China, Germany, the Netherlands, Spain, Thailand, the United Kingdom and the United States.

GRI 205: Anti-corruption 2016

205-1 Operations assessed for risks related to corruption

As previously mentioned in [3-3 Management approach – Ethics & Compliance](#), Dow has a commitment to ensure its operations, including employees, have access to robust ethics and compliance trainings, which also encompass anti-corruption and anti-bribery expectations. Dow also recognizes the potential compliance risks associated with the use of third party intermediaries. To mitigate risk to Dow, the Company has robust due diligence and risk mitigation programs in place. All third party intermediaries providing services on Dow’s behalf are assessed for compliance risk through Dow’s ACDD process. Higher-risk third parties are subject to periodic due diligence reviews to ensure compliance with applicable laws and Dow’s ethical standards. These due diligence reviews inform risk mitigation strategies, including providing training and oversight, to ensure that all Dow intermediaries are acting in a manner that is consistent with all applicable laws and Dow’s core values. This due diligence is mandatory for all high-risk third parties and must be completed both prior to establishing a business relationship and throughout Dow’s relationship to the third party. The results of the ACDD process are used to determine risk-mitigation strategies and may include termination of the business relationship.

Dow employees managing relationships with third parties that are determined to be higher risk pursuant to the ACDD process are required to submit information regarding the third party to the OEC to facilitate an in-depth due diligence review. Periodic audits of the ACDD process are conducted by Dow Corporate Audit to identify in-scope third parties that require ACDD screening and to ensure compliance with Dow’s ACDD process. Identified gaps, including non-compliance, and required follow-up actions and deadlines are documented and completed.

The GECC and RECC have been established at the direction of the CEO of Dow Inc. The OEC meets with the GECC and RECCs quarterly to discuss local and global misconduct trends, substantiated reports of misconduct, risks in region, regulatory changes, enhancements to Dow’s policies and internal controls, and third parties pending completion of due diligence. The GECC and RECCs support the OEC with the implementation of actions required to address each need.



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Dow maintains multiple reporting channels, including anonymous reporting, that may be used by Dow employees or third parties to report allegations of misconduct by Dow’s employees or third parties that have business relationships with Dow. Dow investigates every complaint received. Dow strictly forbids and does not tolerate retaliatory treatment of any kind against a whistleblower who, in good faith, exercises his/her/their rights under this policy, makes a complaint or cooperates in an investigation, even if the allegation cannot be substantiated. If a retaliation complaint is substantiated, disciplinary measures will be taken.

205-2 Communication and training about anti-corruption policies and procedures

See [GRI 2-24 Embedding policy commitments](#), which describes Dow’s Code that includes anti-corruption. All Dow directors, officers and employees are required to complete an annual ethics and compliance certification, which includes questions concerning the Code, anti-trust, bribery, gifts and entertainment and potential conflicts of interest. In 2022, the certification process was rolled out to global employees during the second quarter. Instances of non-compliance were escalated to leaders and considered in the employee’s annual performance evaluation. For information on the communication of the anti-corruption policies to business partners, see [GRI 308: Supplier Environmental Assessment](#).

In addition to prohibitions on bribery and corrupt actions contained in the Code, Dow also has a stand-alone AB&AC policy. The AB&AC policy supports the ACDD process and provides guidelines related to Dow’s position on bribery as well as specific processes that must be followed when interacting with third parties and government officials.

Dow also maintains a Global Gifts & Entertainment Policy that provides guidelines as to acceptable gifts given and received, as well as specific processes that must be followed when employees consider providing to, or are offered anything of value from, a government official.

205-3 Confirmed incidents of corruption and actions taken

There were zero confirmed incidents or cases of corruption in 2022.

GRI 206: Anti-competitive Behavior 2016

206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices

In 2022, there were two pending cases in which Dow is alleged as being involved in anti-competitive behavior. The first case is in the discovery stage, but the U.S. Department of Justice, along with other state and international agencies, have found there to be no anti-competitive behavior to support the allegations. The second remains open but has not been actively pursued since January 2022, and is expected to close without further developments.

GRI 207: Tax 2019

207-1 Approach to tax

Dow’s tax strategy is to be lawful, ethical and socially responsible in all business practices. Dow’s global tax policy reflects those same principles and can be found here: [Corporate Taxation Policy | Dow](#)⁷. To understand more about its tax governance, see [GRI 207-2 Tax governance, control, and risk management](#).



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Dow's obligations to stockholders, employees and the communities in which it operates are critical to its success and therefore Dow is guided by the following principles:

- **Economic Substance:** Dow's customers and market demands determine where it operates and consequently where it pays taxes. Dow undertakes transactions for commercial and business purposes only. Dow does not use so-called tax havens, nor does it transfer value to low-tax jurisdictions for tax avoidance purposes. Dow transfer pricing policies reflect the economic substance of its global footprint and the activities being performed in each jurisdiction. Dow engages outside consultants to assist with benchmarking to determine appropriate intercompany rates. Dow regularly reviews local requirements to ensure ongoing compliance and analyzes the tax laws and regulations as part of its robust compliance process.
- **Compliance and Reporting:** Dow, together with its subsidiaries, files thousands of tax returns, multiple statutory financial statements and supplemental disclosures in the countries around the world in which it operates. Dow tax compliance efforts focus on ensuring payment of required amount of tax, to the right tax authority, at the right time and involves disclosing relevant facts and circumstances to the tax authorities and claiming relief and incentives when appropriate. Tax filings are examined by tax authorities and, as such, could inherently result in a different interpretation of applicable laws and regulations resulting in uncertainties on the amounts of taxes owed. In certain cases, the ultimate resolution of any such uncertainties can take several years. In such situations the Company evaluates the uncertainty according to the relevant accounting standards and adjusts its financial statements to properly reflect the risk. See Dow's consolidated financial statements for discourse around its accounting policies and relevant financial reporting ([Financial Reporting | Dow Investor Relations](#)).
- **Approach Toward Tax Planning:** Tax planning is an important element of Dow's overall business strategy. Dow's tax planning team works closely with the businesses and functions to support reasoned and compliant structures that complement Dow's global operations. Dow's global tax organization provides critical jurisdictional perspective into all planning decisions, giving Dow a strategic advantage compared with a more centralized tax organization. To support Dow in complying with its tax policy, advice from external service providers and experts may be sought in relation to tax planning or complex circumstances. In cases where the tax guidance is unclear or Dow does not feel it has the necessary internal expert knowledge to assess the tax consequences adequately, external advice may be sought to support Dow's decision-making process. Dow acts in accordance with the international guidelines (such as Organization for Economic Co-operation and Development (OECD) guidelines) in its application of transfer pricing and aligns with the arm's-length principle on intercompany transactions.

207-2 Tax governance, control, and risk management

Dow's tax policy, emerging risks and controversy items are reviewed at least annually by the Board of Directors with oversight of the Audit Committee.

Through the [Corporate Taxation Policy](#), [Code](#) and [Code of Financial Ethics](#), Dow's control framework establishes high ethical standards for all its employees. Employees can raise concerns about Dow business conduct through the ethics reporting processes described in [GRI 2-26 Mechanisms for seeking advice and raising concerns](#). For additional information of Dow's control framework, see [GRI 3-3 Management approach – Ethics & Compliance](#).

Dow has strong internal controls and procedures that govern its tax processes and lower its risk profile. Dow's approach to managing tax risk is formalized in a Global Risk Management Framework, reviewed and approved by the chief tax officer and the tax leadership team. The framework is the guide to consistent review and documentation of the following areas:

- Acquisitions, dispositions, joint ventures, restructurings and other transactions resulting in a gain or loss.
- Significant changes in transfer pricing practices or operating profile.
- Changes in tax accounting methods or policies.
- Audit adjustments or unfavorable decisions in tax administrative appeals or litigation.
- Other significant events that could negatively affect the reputation of Dow or its Board.

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Given the size and complexity of its business and the volume of tax obligations, tax risk arises relative to the interpretation of tax laws. Dow analyzes the tax consequences of transactions and events before they are undertaken and determines proper reporting required in tax filings. When necessary, Dow seeks the advice and counsel of tax experts around the world.

For a description of the assurance process, including the external assurance report, see Report of Independent Registered Public Accounting Firm beginning on page 60 of the Dow Inc. Annual Report on Form [10-K](#).

207-3 Stakeholder engagement and management of concerns related to tax

Dow engages tax authorities with honesty, integrity, respect and fairness, and in a spirit of cooperative compliance. Dow seeks to resolve disputed matters through proactive and transparent discussion and negotiation, but is prepared to litigate or exercise alternative rights to defend its position. Where Dow disagrees with a ruling or decision of a tax authority, its aim is to be professional, constructive and maintain transparent disclosure in its relationships with tax authorities, recognizing that early resolution of risks is in the best interests of Dow and the tax authorities. Dow makes its tax returns as clear as possible and it tries to raise important issues proactively so that tax authorities can focus its resources effectively. If it is unclear how a tax law should be applied, Dow may engage with tax authorities in advance of undertaking transactions to confirm the correct application of such tax law. Tax laws are highly complex and, if Dow’s interpretation of the law differs from that of the tax authority, it seeks to resolve the differences in a professional, timely manner or pursue dispute resolution, if appropriate.

Dow believes that good tax policy fosters economic stability and better lives for people around the world. Dow advocates for pro-growth tax policies that establish and maintain competitive tax rates with a focus toward simplifying and harmonizing tax laws around the world. Dow’s engagement with trade organizations and policymakers is based on the drive to implement sustainable tax policies that avoid disadvantaging certain taxpayers to the benefit of others. Dow’s overriding goal is a level playing field for all taxpayers, no matter the jurisdiction or taxpayer size.

For more information on how Dow engages stakeholders, see [2-29 Approach to stakeholder engagement](#).

207-4 Country-by-country reporting

Beginning in 2022, Dow has included customs and duties, excise taxes and payroll taxes paid by the Company, in the payments-to-governments data.

For comparability, the following table includes taxes paid by region, excluding custom and duties, excise taxes and payroll taxes for all years reported.

Area	2022 (\$MM)
Europe, Middle East, Africa and India	\$771
Asia Pacific	\$373
United States and Canada	\$513
Latin America	\$555
Total	\$2,212

Area	2022 (\$MM)	2021 (\$MM)	2020 (\$MM)
Europe, Middle East, Africa and India	\$467	\$493	\$380
Asia Pacific	\$252	\$278	\$216
United States and Canada	\$217	\$271	\$376
Latin America	\$410	\$165	\$39
Total	\$1,346	\$1,207	\$1,011

OMISSION 207-4 Country-by-country reporting

Confidentiality constraints. Dow will continue to assess if additional disclosures are warranted on an annual basis.



Climate & Operational Resilience

3-3 Management approach

Key Impacts

- Climate change-related risks and uncertainties, legal or regulatory responses to climate change, and failure to meet the Company's climate change commitments could negatively impact the Company's results of operations, financial condition and/or reputation. (negative)
- Public and political attention continues to be placed on the protection of critical infrastructure, including the chemical industry, from security threats. Sabotage, terrorism, war, natural disasters and cyber incidents have increased global concerns about the security and safety of chemical production and distribution. (negative)

Dow is driving governance practices to create long-term value for shareholders, strengthen accountability and build an agile company that can adapt and respond to changing conditions. Resilience crosses many areas of management within Dow, with primary operational oversight handled by Dow's **Executive Sustainability Team**. The Executive Sustainability Team provides both sponsorship as well as acts as a point of escalation for Dow's operational and climate resilience activities. There are several key teams involved in Dow's risk management to effectively remediate or mitigate climate, operational events and security risks. These teams work both proactively and reactively across the globe to manage operational and climate challenges.

- The **Climate Steering Team (CST)** includes executives from our businesses and functions. They oversee the Climate Program Management Office, which is responsible for assessing and managing climate-related risks and opportunities, including reducing Scopes 1+2+3 emissions; improving metric tracking and reporting; developing products, technologies and business models to address customers' climate-related needs; and developing and executing actions to deliver committed targets.
- The **Sustainability Governance Process Team for Operations (SGPTO)** is responsible for driving accountability throughout Operations with a focus on EH&S performance, work process, standard and policy direction and oversight, environmental permit and regulatory compliance and reviews of corporate EH&S audit results. The team's scope includes all operational facilities and contract manufacturing arrangements. They also manage the Priority Facility process, which uses a data-based

analysis to identify facilities with higher levels of risk within the Company and then formally review and validate that strong risk mitigation plans are in place.

- **Supply Chain Sustainability Governance Team** is responsible for protecting and evolving Dow's supply chain through distribution risk management (both safety and security), functional and business management system reviews (MSRs), supply chain risk reviews and significant event reviews, along with other critical compliance risk management. Their scope is primarily outside the gate, but they partner very closely with the SGPTO and the Product Governance team in support of end-to-end resilience risk management.
- The **Product Governance Team (PSGT)** is responsible for reviewing product regulatory and sustainability risks and associated risk management plans. This team reviews proposed product stewardship initiatives, provides oversight to Dow's Corporate EH&S policies, standards and requirements, reviews business risk reviews, reviews results of internal product stewardship audits and conducts an annual Management System Review to determine the effectiveness of the processes and team. The team also helps drive collaboration and alignment between businesses and functions to effectively manage EH&S risks related to Dow products.
- The **Global Security Operations Center (GSOC)** plays an important role in enterprise risk management by monitoring and responding to potential threats and risks that may impact Dow's operations, assets and reputation. The GSOC is responsible for collecting, analyzing and disseminating intelligence about potential threats to Dow's employees and physical assets, such as acts of violence, insider threats, natural disasters and other emergencies. It uses advanced technology and monitoring tools to identify and respond to potential threats in real time. The above teams use the information provided by this team as an input to their risk management activities.

For specifics on policies and commitments, see the following Management approaches: [Energy & Emissions Management](#); [Safe & Reliable Operations](#); [Cybersecurity & Privacy](#); [Safer Materials](#); and [Sustainable Procurement](#). Also see the detailed description of Dow's Enterprise Risk Management within the TCFD Governance named [Describe the board's oversight of climate-related risks and opportunities section](#).



Climate & Operational Resilience

2022 Actions Taken

Risk Reviews and Assessments	Stakeholders Engaged
Completed distribution risk reviews (DRRs) for products most hazardous while in transport with a goal to continue to improve transportation safety and decrease supply chain risks.	<ul style="list-style-type: none"> • Supply chain governance team • Business supply chain director • Product stewardship leaders • Business functional leaders (as warranted) • Supply chain modal focal points
Completed MSRs with a goal to improve safety, product and environmental compliance.	<ul style="list-style-type: none"> • SGPTO • Business functional leaders • External contract manufacturing
Completed site risk assessments (SRAs) including reviews of process safety, physical security and cybersecurity to ensure risks are maintained at acceptable levels.	<ul style="list-style-type: none"> • Chief security officer • Chief information security officer • Site leadership teams • Process safety director and technology leaders • Dow's internal IT and functional teams including its cybersecurity teams
Completed business risk reviews (BRRs), which are used to review risks associated with the introduction of new products, applications, markets, regulations, or changes in Dow's supply chain to identify, minimize or eliminate product risks.	<ul style="list-style-type: none"> • Product stewardship leaders • Business leaders • Other functional leaders (as warranted)
Used the Priority Facility assessment process to review the activities to manage down the risk profile of the facilities across Dow deemed as having higher levels of risk.	<ul style="list-style-type: none"> • SGPTO • Business leaders • Facility leadership • Process safety director and technology leaders • Site leadership teams

The BRR, DRR, MSR, SRA and Priority Facility review processes are operational control mechanisms to validate policies, standards and procedures are being followed.

Any deficiencies identified are managed and tracked to completion.

These risk reviews drive continuous improvement, continued education and compliance.

Additionally, in 4Q22 an internal audit of the DRR and functional and business MSR processes were completed, with strong controls being observed.

Event Management

Additionally, Dow managed several events in 2022 (e.g., events tied to COVID-19 response, the Russian/Ukraine situation and chemical releases by an industrial park tenant). Some key responsibilities of the crisis management team include the monitoring of events, management of internal and external communications, and ensuring employee safety by providing tracking and evacuation support.

Large-scale drills are conducted that allow for continual learning and process improvements. Due to Dow's success in managing crisis events, Dow is often asked by peers or external agencies to share its processes, practices and technologies that improve industry crisis capabilities and support communities.

Stakeholders Engaged

- GSOC
- Executive leadership team – CEO, CFO, VP of Mfg & M&E, corporate secretary
- Regional and country leaders
- Site leaders
- Business and functional leaders
- Community leaders
- Local safety and security teams

Circular Economy

3-3 Management approach

Key Impacts

- As one of the world's largest plastics producers, Dow's products provide societal benefits; however, there is often a lack of waste management infrastructure to bring back end-of-life plastics into a circular economy. This can contribute to environmental pollution and leakage into the environment. (negative)
- Moving toward a more circular world for the products Dow consumes every day is important not only to stop increasing environmental pollution but also to address climate change. Plastics are an essential part of the world's journey toward a lower-carbon future. (positive)
- Developing circular economy solutions creates new jobs, new businesses and new business models. (positive)

Dow is one of the world's largest plastics producers and sells products that enable increasing quality and standards of living. For instance, Dow's products that are intended for food packaging applications are designed to be high-performing, lightweight and are essential to extend the shelf life of food. These applications are projected to have strong demand patterns, as the food ecosystem and infrastructure expands to support a growing world population and the increasing need to deliver food to areas suffering from climate impacts, such as floods and droughts without food going to waste. Certain single-use plastics are also essential in many critical applications, such as healthcare, that are without viable alternatives for the foreseeable future.

Given these trends, global polyethylene demand growth is expected to continue given the sustainability benefits of polyethylene packaging compared with other alternatives. On a lifecycle basis, plastics designed to be used once in applications such as medical and food often offer significant GHG reductions compared with alternatives and are thus critical to ensure the world's journey toward a lower-carbon future.

In order to maintain the benefits of plastics and end plastic pollution, growing ecosystems to collect, sort and recycle these plastics is critical to capture these materials back into the circular

economy and diversify the industrial feedstock base to include alternatives to fossil-based sources. Dow will partner to build industrial ecosystems to collect, reuse or recycle waste and expand its portfolio to meet rapidly growing demand for circular solutions.

Even though the volume base is fairly small today, circular polyethylene is seeing increasing promise with commercially attractive growth rates, and Dow expects this market to gain an increasingly larger market share over the coming decades, as supporting policies, technology and economics improve.

Commitments

Dow continues to advance efforts to create a circular economy by designing packaging solutions that enable the final packaging to be recyclable. However, to truly enable a circular future, Dow set a new target in 2022 to transform the waste, where Dow's collective efforts with partners must expand to drive higher recycling rates for plastic materials through the development of associated ecosystems to increase collection, sorting and recycling. As part of Dow's sustainability targets, Dow intends to transform the waste and other feedstocks to deliver 3 million metric tons per year of circular and renewable solutions by 2030. Also, see [2022 Close the Loop progress](#).

Policies

Dow, as a polyethylene producer, is only one part of the circular ecosystem. Thus, Dow is also advocating for the adoption of policies to accelerate the broader pathway to circularity.

- Circularity-enabling policies such as national targets for recyclability; recycling mandates for plastics; mandates for recycled content in products; Extended Producer Responsibility schemes to finance state-of-the-art local access to collection, sorting and recycling; and policies to incentivize investments in innovative circular technologies are all critical to ensure that post-use plastics are diverted away from landfilling, incineration, open dumps and open burning and instead enter the circular economy.

Circular Economy

2022 Actions Taken

Technology Investments

Dow is investing in technologies in order to use circular feedstocks such as plastic waste and renewables, thereby reducing the reliance on virgin-fossil feedstocks.

Dow tracks circular feedstock use, and sales of circular and renewable solutions that count toward the 2030 Transform the Waste target.

Stakeholders Engaged

- Technology providers

Reducing Waste

Dow is continuously optimizing its operations to minimize waste and use byproducts as alternative input feed. Dow tracks and discloses waste intensity see [GRI 306 Management approach – Waste Management](#). The overall aim is reducing waste from operations to a minimum.

Stakeholders Engaged

- Operations

Recycling

Through innovative developments, combined with partnerships and value chain collaboration, Dow is enabling more plastics packaging applications to be recyclable.

Dow tracks year-on-year increases in the applications that are enabled for recycling.

Stakeholders Engaged

- R&D
- Universities
- Value chain

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301-1 Materials used by weight or volume

In addition to fossil-based resources, Dow employs renewable raw materials, among others based on wood, sugar cane, corn, grains and vegetable oils, preferentially as byproducts from other industrial processes. In 2022, Dow purchased approximately 420 KT of renewable materials. Renewable materials are used by all Dow businesses across a large portfolio of products. Beyond using the renewable raw materials for their specific properties, they are also used to directly substitute fossil-based resources using the International Sustainability and Carbon Certification PLUS certified mass balance approach, allowing Dow to allocate renewables into a wide variety of products. Dow works closely with its suppliers to ensure that its renewable raw materials are ethically sourced and do not come with negative effects such as deforestation, displacing local communities or harm to biodiversity, while expanding the positive gains such as reduction in greenhouse gas emissions.

The use of renewable materials aligns with Dow's Transform the Waste target, which is to transform waste and alternative feedstock to deliver 3 million metric tons per year of circular and renewable solutions by 2030.

OMISSION 301-1 Non-renewable volume

Confidentiality Constraints: Information on total non-renewable volume not disclosed due to competitive reasons.

301-2 Recycled input materials used

In 2022, Dow purchased approximately 13 KT of recycled input materials in the form of, among others, used mattresses, used oils and mechanically recycled plastics. It is Dow's strategy to increase the number of recycled inputs significantly in the coming years. To achieve this, Dow is expanding its recycling efforts through internal innovation, partnerships and scaling of production. Dow works on new technologies, new value chain ecosystems and innovating solutions to improve the recyclability of packaging applications that Dow's products go into so that these products are not lost to the circular economy.

OMISSION 301-2 Percentage of total input materials used

Confidentiality Constraints: Information not reported due to its confidentiality.

301-3 Reclaimed products and their packaging materials

OMISSION 301-3 Reclaimed products and their packaging materials

Information unavailable. Dow will continue to annually assess mechanisms to be able to report the quantity of products and packaging materials reclaimed and if any additional disclosure data is available in the future.

Energy & Emissions Management

3-3 Management approach

Key Impacts

- Dow is a major user and producer of energy. Dow operates energy-intensive assets that today are powered by cost-effective but emissions-intensive fuels. (positive/negative)
- Dow is a large GHG emitter. Chemical processes are energy intensive and hard to decarbonize. (negative)
- Dow has a multi-generational plan to replace end-of-life emissions-intensive assets with higher-efficiency, lower-emissions assets. Dow's size enables it to develop and scale low-carbon technologies that will have a positive impact on the environment, society and the economy. (positive)
- As a large and diverse global company, Dow can drive emissions reductions across the value chain. (positive)
- Dow is a producer of technologies that are essential to a lower-emission future, including lightweight materials used in transportation, materials to improve the energy efficiency of buildings and amines for carbon capture. (positive)

Dow has three operating segments: Packaging & Specialty Plastics, Industrial Intermediates & Infrastructure, and Performance Materials & Coatings. While all segments are responsible for emissions and energy management, most of Dow's direct emissions and energy consumption is associated with the Packaging & Specialty Plastics segment, which consists of two highly integrated global businesses: Hydrocarbons & Energy, which oversees the largest share of Dow's emissions and energy footprint, and Packaging and Specialty Plastics. Hydrocarbons & Energy is a leading global producer of ethylene, a key chemical building block that is energy-intensive in its production and delivered to downstream derivative businesses. The business also produces and procures the power, steam and feedstocks used by the Company's manufacturing sites. As most of Dow's GHG emissions today are associated with the consumption

of energy, the management of energy and emissions are inherently linked.

Commitments

- By 2030, Dow will reduce its net annual carbon emissions by 5 million metric tons compared with its 2020 baseline (15% reduction). By 2050, Dow aspires to be carbon neutral (Scopes 1+2+3 plus product benefits).
- In addition to the above targets, Dow has a 2025 Sustainability Goal to obtain 750 MW of its power demand from renewable sources.

Policies

- Each business, location and facility is directed by Dow's Pollution Prevention Policy to follow the waste management hierarchy, which contributes to the Company's efforts to minimize emissions and reduce energy consumption. This includes (a) source reduction/elimination, (b) recycling, (c) recovery, (d) conversion, (e) treatment and (f) containment. Facilities must support the Company goals and initiatives for climate change, energy conservation and emissions reduction.
- To manage longer-term tactical efforts related to climate and emissions management, Dow has a climate Program Management Office (PMO) overseen by the Executive Leadership Team through its climate steering team. The PMO is designed to ensure that the management of energy and emissions is integrated into Dow's long-term strategy to decarbonize its assets and grow Dow's business ("Decarbonize and Grow").
- As part of Dow's Hydrocarbons & Energy business, Dow's Energy & Climate organization is responsible for the management of a value-driven clean energy portfolio to support Dow's manufacturing sites, and to optimize, innovate and advocate for lower-carbon solutions.



Energy & Emissions Management

2022 Actions Taken

Emissions Monitoring

Scopes 1 and 2 GHG emissions are tracked internally on a monthly basis for Dow's top 25 largest sites. Scope 1, 2 and 3 GHG emissions are reported externally on an annual basis for the Company overall. Each facility monitors energy consumption on an ongoing basis and reports consumption internally on a monthly basis. Energy consumption information is reported externally on an annual basis, including which portion of energy consumption comes from renewable sources. When used with production quantities, emissions and energy intensities can be tracked.

Dow is currently on track to achieve its targets related to GHG emissions reduction.

Stakeholders Engaged

- Executive Leadership Team
- Climate Steering Team
- Climate PMO
- Business Leaders
- Environmental Reporting Team

Renewable Energy Activities

Increase energy consumption from clean energy sources, both renewable and zero-carbon emissions. In 2022, Dow increased access to renewable power to support its sites. In 2022, Dow announced the signing of a letter of intent with X-energy, a nuclear energy innovation company, to develop and deploy X-energy's advanced small modular nuclear technology at a Dow location in the U.S. Gulf Coast.

In 2022, Dow achieved a significant reduction in Scope 2 emissions. See [GRI 305-2 Energy indirect \(Scope 2\) GHG emissions](#). Dow has met and exceeded its 2025 Sustainability Goal to obtain 750 MW of power demand from renewable sources. See also [GRI 302-1 Energy consumption within the organization](#).

Stakeholders Engaged

- Executive Leadership Team
- Climate Steering Team
- Climate PMO
- Hydrocarbons & Energy

Path to Zero Projects

Deliver Fort Saskatchewan Path to Zero project in line with Dow's "Decarbonize and Grow" strategy. The Fort Saskatchewan Path to Zero project will triple Dow's ethylene and polyethylene capacity from the site, while retrofitting the site's existing assets to net-zero carbon emissions (approximately 1 million metric ton Scopes 1 and 2 reduction).

The Fort Saskatchewan project will decarbonize Dow's global ethylene footprint by 20%.

Stakeholders Engaged

- Executive Leadership Team
- Climate Steering Team
- Climate PMO
- Business Leaders across Hydrocarbons & Energy; Plastics and Specialty Plastics

Scope 3 Advancements

Significant progress has been made to advance Dow's Scope 3 program in 2022. Dow continues to refine its approach to Scope 3 data and to improve its methodologies to align to evolving industry standards. While Dow doubled the number of suppliers responding to its requests for climate data in 2022, Dow will continue to engage and support suppliers on climate data sharing, target-setting and decarbonization planning through direct engagement as well as through groups like CDP, WBCSD and Together for Sustainability (TfS). Lastly, Dow has embedded Scope 3 goals into its 2022-2024 Performance Share Unit program.

See more about Dow's methodology/data collection improvements and progress within [GRI 305-3 Other indirect \(Scope 3\) GHG emissions](#).

Dow doubled the number of suppliers who reported climate data in 2022.

Stakeholders Engaged

- Executive Leadership Team
- Climate Steering Team
- Climate PMO
- Business Leaders
- Purchasing and Integrated Supply Chain Leaders
- Environmental Reporting Team

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302-1 Energy consumption within the organization

See disclosures [GRI 302-4 Reduction of energy consumption](#) and [GRI 305-2 Energy indirect \(Scope 2\) GHG emissions](#) for actions to reduce energy consumption. Total energy consumption in 2022 was reduced compared with 2021, primarily due to reduced production rates as a result of macro-economic conditions, particularly in Europe, as well as planned maintenance outages.

Description	2022 (million GJ)	2021 (million GJ)	2020 (million GJ)
Purchased Fuels ¹	312.59	317.07	394.42
Offgas from Feedstock ²	257.32	262.67	241.35
Purchased Electricity	36.74	38.51	37.49
Purchased Steam ³	4.52	5.14	5.23
Power & Steam Sold ³	-46.68	-48.62	-48.25
Total Energy Consumption	564.49	574.77	630.24

1 Purchased fuels data excludes purchased fuels resold or used internally as feedstock.

2 Off-gas from feedstock data includes non-cracker sources.

3 To calculate steam energy, Dow utilizes the work potential method.

Purchased electricity from renewable sources

Source	Capacity 2022 (MW)	Consumption 2022 (million GJ)	Capacity 2021 (MW)	Consumption 2021 (million GJ)	Capacity 2020 (MW)	Consumption 2020 (million GJ)
Wind	603	6.03	535	4.48	375	4.40
Hydro	144	6.06	168	5.05	147	4.69
Biomass	42	0.71	2	0.07	0	0.00
Landfill Gas	3	0.04	3	0.05	3	0.05
Solar	244	2.11	193	1.02	319	0.32
Total	1036	14.95	901	10.67	844	9.46

Purchased steam includes renewable sources

Source	Consumption 2022 (million GJ)	Consumption 2021 (million GJ)	Consumption 2020 (million GJ)
Biomass Total	0.47	0.52	0.51

Also see [305-2 Energy indirect \(Scope 2\) GHG emissions](#) for information on renewable energy improvements in 2022.

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302-2 Energy consumption outside of the organization

OMISSION- 302-2 Energy consumption outside of the organization

Information not available. Dow will continue to evaluate standards, data sources, methodologies and/or calculation tools for their ability to facilitate future reporting.

302-3 Energy intensity

Energy intensity is calculated using total energy consumption divided by total valued production volume, which includes byproducts and co-products. Overall, energy intensity for 2022 increased compared with 2021. As economic conditions deteriorated in the second half of 2022, particularly in Europe, Dow took disciplined actions to adjust production rates and reduce costs. As production units are designed to operate most efficiently at higher asset utilization rates, energy intensity increased in 2022 compared with 2021.

Description (GJ/metric ton of production)	2022	2021	2020
Energy Intensity (Scopes 1 and 2)	11.43	10.85	11.86

302-4 Reduction of energy consumption

Dow tracks overall energy intensity and consumption year over year as key metrics. The following table outlines some examples of conservation and efficiency initiatives completed in 2022. Energy savings were determined by comparing plant operating conditions before projects were implemented to conditions after implementation.

Project Summary	Location	Type of energy reduced	Approximate amount of energy saved (millions KJ/year)
Installed new high-efficiency steam turbine for cracked gas compressor at the ethylene plant. In parallel, installed new acetylene preheater to minimize back-end pressure loss.	Tarragona, Spain	Fuel	1,012,800
Flare gas recovery project at a Texas Light Hydrocarbons plant (TX7).	Freeport, Texas	Fuel	262,000

302-5 Reductions in energy requirements of products and services

OMISSION 302-5 Reduction in energy requirements of products and services

Not applicable. This indicator is not applicable since virtually all Dow products do not require energy in use.



Water Stewardship

3-3 Management approach

Key Impacts

- Dow uses water in its manufacturing processes and in its products mainly tied to its steam and cooling activities. Dow's main consumptive use of water is from evaporative losses from cooling. Effective water stewardship is required for long-term company viability. (negative)
- As a large global company, Dow has the responsibility to minimize its environmental footprint associated with its operations and across the value chain. (positive/negative)
- Dow is committed to technology development, advocacy, partnerships and collaborative action to improve and protect its watershed health and viability. (positive)

Water is a critical raw material in Dow's manufacturing processes. Effective water stewardship is required for long-term company viability and Dow's senior executive leadership team oversees the water strategy. Based on the S&P Global Trucost physical risk assessment, water scarcity is recognized and addressed as the biggest climate-related threat to corporate assets with potential substantive financial or strategic impact on business. Water-related risk includes water availability (too much, too little), water quality, access to safe drinking water and health of ecosystems, reputational and regulatory challenges.

Dow's water risk management approach recognizes that every site and every business is accountable for water while certain watersheds require additional measures to address specific water stress challenges. Dow locations have specific water action plans to address risk to operations given their dependence on a stressed watershed. These action plans include mitigations for local water scarcity or quality issues and consider the needs of other local users for freshwater. Additionally, Dow has identified six locations where its operations are located in a water-stressed watershed, have local water quality issues, have competition among local users for water, or have some local knowledge of watershed challenges:

- Brazos River, Freeport, Texas
- Guadalupe River, Seadrift, Texas
- Purchased fresh water, Bahia Blanca, Argentina
- Rivers Rhine and Meuse, Terneuzen, the Netherlands
- River Weisse Elster and Lake Witznitz (Böhlen site), Dow Central Germany
- Purchased freshwater supply source from Ebro River diversion, Tarragona, Spain

Accountability of water management begins at the site level where the operating permits exist and elevates to the board level through its risk management oversight responsibilities and through the board's EHS&T Committee, providing oversight of environmental and climate related matters, among others. Additionally, each employee also has a vested interest in continued progress, linking sustainability performance to each individual Dow employee's annual Performance Award.

Commitments

- Dow is committed to technology development, advocacy, partnerships and collaborative action to improve and protect its watershed health and viability. Collaboration with nonprofits such as The Nature Conservancy, with universities and municipalities, and with other businesses and industry coalitions such as the CEO Water Mandate are opportunities to gain and share learnings, raise awareness of where the impacts are in the value chain, and catalyze action.
- By 2025, Dow is poised to deliver \$1 billion in value through projects that are good for business and better for ecosystems, including water.
- By 2025, Dow will reduce the freshwater intake intensity at key water-stressed sites by 20% (World-Leading Operations [\(WLO Goal\)](#)↗).
- By 2025, Terneuzen will eliminate the intake from the Biesbosch, the largest freshwater tidal area in Europe, which provides vital potable water to the communities.
- Building on its commitment to U.N. SDG 6, Dow endorses the [CEO Water Mandate](#)↗, mobilizing businesses to advance water stewardship within its own operations and by collaboratively working to enhance water management at the watershed level.
- As co-founder and signatory of the [Water Resilience Pledge](#)↗, Dow is committed to advancing water stewardship within its own operations and to working collaboratively to enhance water management at the watershed level.

2022 Actions Taken

Water Conservation

Reduce freshwater intake intensity by implementing water conservation projects.

- The list of projects to achieve Dow's 2025 WLO freshwater intake intensity goal is reviewed quarterly by the WLO leadership team.
- These projects improve water efficiency along with other benefits. For example, in Seadrift, Texas, Dow upgraded to the state-of-the-art Steamizer[®] XP™ flare tip to maximize smokeless performance efficiencies and reduce the impact of flaring. The upgrade has demonstrated 50% less steam use.

Stakeholders Engaged

- WLO Leadership Team
- Project teams
- Communities

Screening for Impacts

Screen across the R&D portfolio for product benefits and impacts to water.

- Dow's R&D portfolio assessment process prioritizes sustainability elements such as benefits and impacts to water and driving innovation in water consumption and effluents.
- LCA is used to evaluate the water footprint of a product.

Stakeholders Engaged

- Customers
- Communities
- Business functional leaders (as warranted)

Circularity

Deliver nature-based solutions to improve water quantity, quality and health of the watershed and to increase water circularity.

- All high-capital investments (greater than \$10 million) are required to account for any impacts on water as part of the capital approval process.
- Dow's Valuing Nature Team tracks projects that enhance nature, including net-positive water impact.
- Dow is involved in several pilots of technology to increase the ability of water reuse and recycling.
- As of 2022, Dow's Kankakee, Illinois, site is reusing effluent from a reverse osmosis unit, reducing 30% in annual wastewater generation and a 14% reduction in water consumption.

Stakeholders Engaged

- SEAC
- Valuing Nature Team
- Project teams
- Customers
- Communities

Risk Assessment

Continued evaluation of water stress.

- Global water risk screening using the most up-to-date World Resource Institute Aqueduct tool is completed every two years.
- Water stress evaluations are performed if a site has experienced water quality and/or quantity stress or anticipates growth that could impact freshwater quantity or quality needs.
- In 2022, Dow's water body risk assessment led to the funding of long-term affordable access to safe water to families in Querétaro, Mexico, in partnership with [Water.org](#)↗.

Stakeholders Engaged

- Water Resource Institute
- World Wildlife Fund
- S&P Global Trucost
- WBCSD
- Water Resilience Coalition
- Customers
- Communities
- Regulatory bodies
- Employees

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303-1 Interactions with water as a shared resource

Recognizing that water is a resource requiring shared action, Dow is working to advance water stewardship across the enterprise – from supply chains to operations to product offerings. It is important to continue advancements in restoring watersheds and protecting ecosystems by exploring new opportunities with existing partnerships and collaborating across customers, suppliers, communities and other companies.

Some additional details of Dow’s water stakeholder engagement include:

- Partnering with communities to drive watershed-level improvements using nature-based solutions, sharing technical advice and financial support.
- Holding joint reviews with Dow’s customers to assess its performance with respect to water management.
- Collaborating to advance world-class water stewardship in Dow’s operations and supply chain and the chemical industry. Engagement with external groups such as ACC, WBCSD, The Nature Conservancy (TNC) and Water.org advances Dow’s technical expertise and positive impact outside its fence line. Additionally, the Water Resilience Coalition, which is an initiative of the CEO Water Mandate, of which Dow was a co-founder, is committed to achieving positive water impact through collaborations in more than 100 water-stressed basins that support over 3 billion people by 2030.

Dow’s actual **water consumption** within its operations is limited, with only 4% of withdrawals being estimated as lost to evaporation, consumed by other processes or incorporated into products. The remaining 96% of its water withdrawals are returned to the water body.

The various sources of **water withdrawal** to each Dow facility depend on local water availability, quality and an understanding of how other users interact with the watershed. Most of Dow’s facilities withdraw from surface water bodies. Certain facilities also use brackish water/seawater as an alternative source to fresh water. Rainwater is recovered in multiple sites and used as firewater and for other purposes. Efforts to avoid water demand increase, reuse and recycle water from both internal and external sources are put in place whenever economically and technically feasible. Several Dow sites purchase water from third party sources in two forms – raw or treated surface water and as treated effluent wastewater. Dow also sells and treats water for tenants within its industrial parks.

Water is discharged to surface water or seawater based on the location of the manufacturing facility. At a few sites, Dow sends wastewater to be treated by a third party before discharge (typically to surface water). Dow works to eliminate or minimize the generation of emissions to water at the source through research, process improvements, plant operations and maintenance. Dow treats and monitors to ensure quality of water before discharging back to the environment. Rainwater and non-contact cooling waters are typically not treated but monitored for quality parameters as defined by local authorities.

Increasing frequency of severe weather events and climate change continues to challenge Dow’s water availability and quality. In 2022, there was a severe drought in the state of Texas, reducing reservoir levels along all bodies of water in the Brazos River Basin. Dow’s largest production facility, Texas Operations, heavily relies on seawater, surface water and groundwater for its operations. During droughts, water availability and quality are heavily impacted. Reduced water quality associated with low water availability requires cooling towers to consume higher amounts of water with more frequent blow-downs to maintain equipment operating with diminished water quality.

Some other key challenges associated with improving Dow’s performance in water stewardship include:

- Complexity of water systems across its facilities, cost/benefit of new and existing infrastructure and water accounting.
- Large variability associated with shared reservoirs and conveyance systems.
- Solving trade-offs that exist between current lower-carbon technology and associated higher water consumption.

To learn more about how Dow is managing water including its goals and management of risks, see [GRI 3-3 Management approach – Water Stewardship](#) and sections [TCFD Category Strategy](#) and [TCFD Category Risk Management](#).



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303-2 Management of water discharge related impacts

The quality of effluent discharge for each facility is managed by local regulations and respective environmental agencies for each watershed, which typically includes the profile of the receiving waterbody. The management of water discharge-related impacts includes discharge directly to surface water bodies, subsurface water and third party treatment entities. The responsible local authorities also regularly audit Dow’s facilities and management program. All Dow locations are required to develop a program that is consistent with the principles of Responsible Care®, company goals, required external management systems, ISO-14001 as applicable and comply with local applicable environmental licenses and permits. Employees must reduce the impacts to the environment by using appropriate work practices to prevent, report and mitigate releases to the environment.

Additionally, the management of wastewater includes handling, storage, containment, treatment (e.g., destruction), disposal and on-site transportation. Each external contractor or outside service provider used for treatment operations to recycle, recover, convert, treat or contain wastewater must be approved and meet Dow’s ODMS surface water protection standard. As a Responsible Care® company and member of the ICCA, Dow is continually engaged in waste reduction and pollution prevention efforts in its operations, including those linked to water. Water discharge quality is strictly governed by local regulations and each operating site is accountable for meeting the established permit discharge limits and has monitoring capability in place to meet these limits.

303-3 Water withdrawal

Water withdrawal accounting methodologies and associated assumptions are managed at the site level and are based on metered data, calculations, engineering estimates and/or invoices provided by third party suppliers.

Dow worked in collaboration with TNC to complete a robust water stress analysis to support identification of its key water-stressed sites. Sites were identified as “water stressed” if they met all of the following criteria:

- Site or territory withdraws 25% or more renewable freshwater (based on the UN Integrated Water Resources Management (IWRM) framework);
- Site or territory identified as high or medium stress when input into the World Resource Institute Aqueduct tool;
- Review and analysis with local water experts on water stress level; and
- Site identified as globally relevant for Dow in both production output and freshwater withdrawal and is discretionary based on business continuity relevance.

Refer to the [GRI 3-3 Management approach – Water Stewardship](#) for a list of key water-stressed sites and more information on Dow’s water risk management.

Total water withdrawal from all areas

Source (megaliters)	2022	2021	2020
Surface	1,630,494	1,699,905	1,831,697
Groundwater	33,759	34,440	35,672
Seawater	1,041,610	1,092,075	1,101,371
Produced Water	143	174	174
Third-Party Water	170,416	133,655 ¹	123,164 ¹
Total Water Withdrawal – All Areas	2,876,422	2,960,249	3,092,078

¹ Prior year values updated to include recycled water sourced from a third-party

Overall, Dow’s total water withdrawal was reduced in 2022 compared with 2021 primarily due to reduced production rates as a result of macro-economic conditions.

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Total water withdrawal from key water-stressed sites (KWSS)

Source (megaliters)	2022	2021	2020
Surface	135,402	119,968	187,160
Groundwater	336	614	358
Seawater	1,035,824	1,086,112	1,095,556
Produced Water	0	0	0
Third-Party Water	99,276	62,600	55,443
Third-Party Groundwater	0	0	0
Third-Party Surface Water	65,889	28,778	27,713
Third-Party – Produced Water	0	0	0
Third-Party – Seawater Fresh Water	0	0	0
Third-Party – Seawater Non-Fresh Water	25,070	25,359	23,098
Third-Party – Recycled Water	8,317	8,463	4,632
Total Water Withdrawal – KWSS	1,270,838	1,269,294	1,338,517

Total water withdrawal at Dow’s KWSS increased slightly in 2022. Third-party surface water increased due to extreme drought conditions that caused sites to purchase additional water from alternative sources.

Total water withdrawal from each of the sources is listed below for all areas

Source (megaliters)	2022	2021	2020
i. Fresh Water (<=1,000 mg/L Total Dissolved Solids)	1,801,282	1,834,178 ¹	1,962,804
ii. Other Water (>1,000 mg/L Total Dissolved Solids)	1,075,140	1,126,071	1,129,275 ¹

¹ Prior year values updated to include recycled water sourced from a third party

Total water withdrawal from each of the sources is listed below for all areas with water stress

Source (megaliters)	2022	2021	2020
i. Fresh Water (<=1,000 mg/L Total Dissolved Solids)	201,627	149,360	215,231
ii. Other Water (>1,000 mg/L Total Dissolved Solids)	1,069,211	1,119,934 ¹	1,123,286 ¹

¹ Prior year values updated to include recycled water sourced from a third party

To see progress on Dow’s freshwater intensity intake target, please see [TCFD Metric: Freshwater intake intensity at key water-stressed sites](#).



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303-4 Water discharge

Water discharge accounting methodologies are managed at the site level and comply with applicable water discharge reporting requirements. Historically, discharge calculations only accounted for sources of water that had been treated by Dow or a third party. Numbers using the historical methodology representing only treated water discharge are shared below.

Total treated water discharge from all areas

Source (megaliters)	2022	2021	2020
Total Treated Water Discharge – All Areas	117,526	132,510	125,601

Total treated water discharge from KWSS

Source (megaliters)	2022	2021	2020
Total Treated Water Discharge – KWSS	40,528	46,936	43,229

When comparing 2022 to 2021, Dow’s Total Treated Water Discharge is slightly lower due to lower production and improvements in waste minimization and water reuse initiatives. For example, Dow’s Kankakee site has implemented a project allowing reverse osmosis reject water to be reused, which achieved a 30% reduction in the annual wastewater generated by the plant and 14% annual reduction in water consumption.

In 2022, Dow’s methodology for collecting water discharges was improved to account for all effluents. This includes hydraulic flow of treated water by Dow or third parties, water that is transferred to a third party for use and the sources of the effluents that are not treated, such as one-pass cooling, cooling tower blowdowns and rainwater.

Total water discharge values using the new methodology are shared below. Given the new methodology, numbers are not shown for 2020 or 2021 due to lack of data. The data is representative of greater than 99.5% of 2022 global water withdrawal. For certain sites, the methodology is based on an engineering study that was completed in 2021 and adjusted to represent 2022’s interaction with water.

Total water discharge breakdown by destination

Source (megaliters)	2022
Surface	1,405,690
Groundwater	0
Seawater	1,444,600
Produced Water	0
Third-Party Water	142,930
Total Water Discharge – All Areas	2,993,220

Total water discharge breakdown by destination for sites with water stress

Source (megaliters)	2022
Surface	3,900
Groundwater	0
Seawater	1,257,457
Produced Water	0
Third-Party Water	60,893
Total Water Discharge – KWSS	1,322,250

The following tables show a breakdown of total water discharge by Total Dissolved Solids level. Dow does not track the quality of discharge of water transferred to third party for use or treatment by this parameter, as this is under the responsibility of the third party.

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Total water discharge – all sites

Source (megaliters)	2022
i. Fresh Water (<=1,000 mg/L Total dissolved Solids)	892,887
ii. Other Water (>1,000 mg/L Total Dissolved Solids)	1,957,403
iii. Water Transferred to Third Party for Use or Treatment	142,930
Total Water Discharge – All Areas	2,993,220

Total water discharge to areas with water stress

Source (megaliters)	2022
i. Fresh Water (<=1,000 mg/L Total Dissolved Solids)	21,865
ii. Other Water (>1,000 mg/L Total Dissolved Solids)	1,239,492
iii. Water Transferred to Third Party for Use or Treatment	60,893
Total Water Discharge – KWSS	1,322,250

Discharges are treated for priority substances of concern. Dow has defined priority substances of concern through the development of a priority compound list that is composed of chemicals with persistent, bioaccumulative and toxic hazards, and chemicals with carcinogenic, mutagenic and reproductive hazards. This list is global in nature and comprises chemicals identified by multiple agencies including the U.S. Environmental Protection Agency (EPA), the International Agency for Research on Cancer, through the World Health Organization and the European Commission. Discharge limits are set using regulatory requirements. Dow had zero incidents of non-compliance with discharge limits in 2022.

303-5 Water consumption

In 2022, Dow conducted a study that analyzed metered, calculated and estimated water consumption associated with both evaporative losses and process activities at representative and critical water sites. The results of the study indicated that on average, Dow consumes 4% of total water withdrawn. Dow uses this 4% as a generally accepted estimate to calculate total water consumption for all sites. This approach is preferred as the simple equation of water consumption = water withdrawal – water discharge is not representative due to the aggregation of measurement uncertainties of water withdrawals and water discharges and unallocated water inflows/outflows in open conveyance systems.

Description (megaliters)	2022	2021 ¹	2020 ¹
Total water consumption from all areas	116,978	118,410	123,683
Total water consumption from all areas with water stress	50,834	50,772	53,541

¹ Calculation base representing Dow's water product and process consumption improved as a result of a 2022 study of Dow critical water sites.



Biodiversity

3-3 Management approach

Key Impacts

- Safe and sustainable operation of Dow’s assets and certain activities tied to the supply chain relies on, and may contribute to, biodiversity impact from land, freshwater and seawater use, resource use, climate change and pollution. There is an inextricable link between carbon management, water and biodiversity. Dow’s current most material biodiversity impacts are tied to carbon emissions, freshwater intake, waste generation and emissions of priority compounds. (negative)
- Dow’s land-use policies include land-use transactions that are focused on habitat restoration and management, an increasingly important contribution to the ecosystems surrounding current and former sites, such as the sustainable forest stewardship management approach tied to wood and charcoal supply. (positive)
- The transition to bio-based raw materials as a replacement of non-renewable sources is done responsibly with the understanding of potential trade-offs pertaining to land-use change, resource scarcity and habitat loss. (positive/negative)

Key focus areas of biodiversity are evaluated across Dow’s sites and businesses. Dow’s Consumer Solutions business has had particular focus on this topic due to the significance of the biome and resource extraction processes. Timber products, such as charcoal and woodchips, are used by Dow’s Consumer Solutions business. Dow procures these inputs from the market and produces them in its Natural Resources Operation in Brazil. The Natural Resources Operation includes Dow-owned land located in Minas Gerais and Pará states. Dow’s farm in Pará, where charcoal is sourced, is located on the Amazon Biome. Minas Gerais, its smaller eucalyptus plantation used for resourcing woodchips, is located on the Cerrado and Mata Atlantica biomes. Dow’s consumption of timber products as a raw material could cause resource scarcity and have potential to impact habitat loss. To address that risk, Dow has been auditing all the raw material suppliers to avoid any illegal deforestation and to have Forest Stewardship Council (FSC) certification in its own lands.

Commitments

- Dow is a member of the Taskforce on Nature-related Financial Disclosures (TNFD) forum providing support and feedback of final recommendations. Dow has agreed to lead the development of the Chemical Sector specific guidance.
- Dow is committed to no deforestation or conversion of natural ecosystems on its direct operations.
- Dow is committed to increase FSC certification for wood-based products to 70% by 2025 and 100% by 2030.
- Dow commits to conducting biodiversity risk assessments, engaging with stakeholders on biodiversity and applying a mitigation hierarchy to manage impacts.
- Dow applies business decision processes to complete projects that increase business value and are better for ecosystems as part of its [Valuing Nature Goal](#) which includes clean air, clean water, healthy soil and healthy ecosystems:
 - By 2025, Dow will deliver \$1 billion in value through business-driven projects that enhance nature.
 - By 2020, Dow will screen all capital and real estate projects, business development and new products for potential benefit and impacts to nature.

Policies

- Dow follows forest management practices to ensure that timber commodities are compliant with local regulations and have source traceability. External suppliers are tracked to ensure they do not participate in illegal deforestation practices.
- Dow is committed to comply with national regulations on the protection of biodiversity as countries develop and implement their regulatory frameworks in fulfillment of their commitment to the Convention on Biological Diversity and to the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization.

Biodiversity

2022 Actions Taken

Project Screening

Screen capital projects for manufacturing impacts on the ecosystem and evaluate positive contributions that can be made with nature-based solutions.

Projects must demonstrate a significant improvement in one or more of the following areas, without any significant trade-offs:

- Climate change mitigation/adaptation
- Air quality
- Sustainable use and protection of water quantity and quality
- Sustainable use and protection of land
- Biodiversity

Projects are also screened to identify opportunities to utilize engineered natural technology such as wetlands.

Stakeholders Engaged

- Engineering
- Business leadership
- Site leadership

Collaborations

Engage in external collaborations to quantify nature-positive dependencies and impacts using science-based tools.

Collaborating with TNC, EcoMetrix Solutions Group (EMX) discussing tools to allow incorporation of biodiversity as a key metric in Dow's land management and ecosystem services strategy.

Stakeholders Engaged

- EMX
- TNC
- Community
- Workers

Product Screening

Screen across the R&D portfolio for product benefits and impacts to nature.

- A product screen was developed in 2022 to track progress.
- Products have been identified that have a net positive impact on nature.

Stakeholders Engaged

- Customers
- Community

Supplier Screening

Screen suppliers globally for the use of biologically sourced materials by conducting a raw material origin assessment.

- Several checkpoints have been implemented throughout the product creation cycle to identify bio-based raw materials as early as possible.
- Using this assessment, Dow will be scoping opportunities to achieve positive outcomes on biodiversity.

Stakeholders Engaged

- Suppliers
- Dow Supply Chain
- Community
- Customers
- Workers

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304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas

Within the last two years, Dow has initiated the complex process of developing an understanding of nature-related dependencies and nature impacts, recognizing the potential risk to business continuity as the basis for establishing a robust biodiversity strategy. Biodiversity is the subject of ongoing research and efforts by other companies alongside the scientific community and organizations. Dow's process for identifying and assessing dependency- and impact-related biodiversity risks is part of the integrated risk management process across multiple disciplines.

Dow is tackling this effort with its long-time partner TNC and as a member of the TNFD forum. Dow is piloting the LEAP process ([LEAP – the risk and opportunity assessment approach » TNFD](#)) across all identified phases as developed by TNFD and will adjust when additional decisions by Dow leadership and external guidance are made available. Dow is defining the methodology to locate, evaluate priorities and use the nature methodology and tools ([From ash pond to Riverside Wetlands: Making the business case for engineered natural technologies – ScienceDirect](#)) to ensure business decisions consider nature. Building on the work of Dow's Valuing Nature Goal, there are many examples of taking action on projects that drive healthy ecosystems. Using purposefully constructed wetlands that serve as a low-carbon approach to water-treatment filtration in Böhlen is just one example.

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Locate the Interface with Nature

Dow has completed an assessment and screening of locations that are most likely to present critical dependencies, substantial impact and material risks and opportunities. Dow established a priority site list focusing on directly owned and operated assets that represents two key areas of impacts – GHG emissions and water withdrawal at key water-stressed sites. The list of high-priority sites defined is tied to Dow’s TCFD disclosures and represents 95% of GHG Scope 1 and Scope 2 emissions and the six key water-stressed sites. The materiality of indirect impacts (i.e., supply chain and product use phase) and the importance of including additional key biodiversity metrics, are currently being assessed. Such efforts include defining priority suppliers with which to engage as part of the sustainable purchasing program with a specific focus on bio-based raw materials. For reference, site sizes vary from approximately 160 acres to 20 square miles.

Evaluate Priority Dependencies and Impacts

To define the potential for impacts on nature, a screening process was completed by mapping the location of manufacturing assets and importance of the area from a biodiversity perspective. The Integrated Biodiversity Assessment Tool (IBAT) was used to establish the importance of the area. The IBAT provides location-based global biodiversity datasets, which include the World Database on Protected Areas, International Union for Conservation of Nature (IUCN) Red List of Threatened Species and the World Database of Key Biodiversity Areas, using the GIS coordinates of each site. Dow also screened all its sites against the UNESCO World Heritage dataset to identify any site within a 5 km buffer area. Note, per the UNESCO World Heritage dataset, Dow identified Moscow and Vladimir in Russia; however, Dow has not retained these sites for further assessment since dependencies and impacts are not significant from a Dow global perspective.

The IUCN categories referenced below are defined as IV - habitat or species management area, V - protected landscape or seascape and VI - protected area with sustainable use of natural resources.

Name	Latitude	Longitude	IUCN Categories (5 km)	National Protected Area (5 km)	Ramsar Protected Area (5 km)
Alberta, Canada	53.733936	-113.172617	–	No	No
Aratu, Brazil	-12.7765	-38.4981	V	Yes	No
Bahia Blanca, Argentina	-38.719444	-62.27222	–	No	No
Barry, United Kingdom	51.411442	-3.240745	IV	Yes	Yes
Böhlen	51.18847	12.354563	V, IV	Yes	No
Breu Branco, Brazil	-3.7712	-49.5656	V	Yes	No
Cabangu, Brazil	-21.445591	-43.608456	–	No	No
Carrollton, Kentucky	38.70912	-85.104670	V	Yes	No
Deer Park, Texas	29.7052	-95.1238	–	No	No
Freeport, Texas	28.987400	-95.38	V, VI	Yes	No
Leuna, Germany	51.29141	11.98593	IV, V	Yes	No
Louisville, Kentucky	38.21129	-85.841600	V	Yes	No
Map Ta Phut, Thailand	12.7132	101.1686	–	No	No
Midland, Michigan	43.61396	-84.197600	–	Yes	No
Orange, Texas	30.093	-93.7366	V, VI	Yes	No



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Name	Latitude	Longitude	IUCN Categories (5km)	National Protected Area (50km)	Ramsar Protected Area (5km)
Palmyra Aqua Azul, Brazil	-21.464002	-43.554788	–	No	No
Plaquemine, Louisiana	30.314207	-91.240608	–	No	No
Schkopau Manufacturing Ops, Germany	51.39441	11.97442	IV, V	Yes	No
Seadrift, Texas	28.508180	-96.77611	V	Yes	No
South Charleston, West Virginia	38.368090	-81.68547	–	No	No
Stade, Germany	53.652090	9.50786	IV, V	Yes	Yes
St. Charles Operations, Louisiana	29.984457	-90.4442	–	No	No
Tarragona, Spain	41.10182735	1.187549157	V	Yes	No
Tarragona Water Intake	40.797222	0.506667	N/A	N/A	No
Terneuzen, the Netherlands	51.3323	3.8324	IV	Yes	Yes
Terneuzen Water Intake	51.7750092	4.8817876	N/A	N/A	Yes
Texas City, Texas	29.379120	-94.944780	V	Yes	No
Victoria, Texas	28.67551	-96.95453	–	No	No
Wiesbaden, Germany	50.0782	8.2398	IV, V	Yes	No
Zhangjijang, China	31.8756	120.556	–	No	No

Protected area, key biodiversity area and species data reproduced and incorporated under license from the IBAT (<https://www.ibat-alliance.org/>). IBAT is provided by BirdLife International, Conservation International, IUCN and UNEP-WCMC. Contact ibat@ibat-alliance.org for further information.

304-2 Significant impacts of activities, products and services on biodiversity

Dow could have direct and indirect impacts on biodiversity and the health of ecosystems. It works diligently to manage these potential impacts. Examples include:

- Emissions (air and water) from manufacturing sites is one of the key drivers of global biodiversity loss (unep.org). See also [GRI 303: Water and Effluents](#) and [GRI 305: Emissions](#).
- A reduction of species can be caused by habitat conversion from the land occupied by Dow’s manufacturing assets, solid waste sent to landfills and raw material sourcing.
- For water withdrawals from (and discharge to) fresh water and ocean, see [GRI 303-3 Water withdrawal](#) and [GRI 303-4 Water discharge](#).
- Through Dow’s Valuing Nature Goal, it has developed a framework and tool that allows it to quantify key ecosystem services. Using that framework to prioritize Dow’s top impacts and dependencies, it identified the Breu Branco – Pará – Brazil location as a site for further assessment. Dow’s Feedstocks operation in Pará-Brazil is in one of the most threatened regions in the Amazon biome. Approximately 70% of its Amazon forests have already been cleared to make way for cities and low-productivity agriculture. Dow owns a total of 100,000 acres of land here, with 20% used for eucalyptus farming and 80% maintained as native Amazon Forest. Dow’s presence in this region and ownership of this land is a major enabler for forest and local biodiversity preservation. Dependency and impact analysis included both the farm and conservation area. The intent of the study was to understand the percent performance of the nature forest when compared to the farming activities to assess Dow’s current sustainable land management practices. The study noted the high degree of scientific practices used to protect the soil and encourage biodiversity. The results from the study found that the current Dow rainforest stewardship program delivers and sustains 34 key ecosystems services, such as temperature regulation, soil health, water filtration, soil erosion control and biodiversity through overall health of habitat.



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OMISSION – 304.2b Significant direct and indirect positive and negative impacts

Information not available. Dow does not keep detailed records by species affected, extent of areas impacted, duration of impacts or reversibility/irreversibility of the impacts.

304-3 Habitats protected or restored

Restoration or protection activities completed in 2022 include:

Location of Habitat	Habitat Type & Size	Restoration Measure	Third-Party Approvals	Partnerships with Third Party to Protect/Restore Other Areas	Status of Area	Standard/ Methodologies Used
Dow Riverside Wetlands, Midland, Michigan	Wetlands; 23 acres	Wetland restoration completed in 2016, including assessment of ecosystem services; ongoing annual maintenance and invasive species management	N/A	TNC; EMX; AECOM; City of Midland	Maintenance	ESII Tool
Breu Branco, Brazil	Amazon forest; 94,000 acres	Assessment of ecosystem services including biodiversity via habitat health	N/A	EMX; Peabiru; TNC	Complete	ESII Tool
Knoxville, Tennessee	Urban grassland; 7 acres	Assessment of ecosystem services with plan to develop urban grassland	N/A	University of Tennessee Forestry, Wildlife and Fisheries Department	Design phase	ESII Tool
Ludington, Michigan	Mature forest, rolling hills, wetlands, dune habitat; ~300 acres	Property sold at discount to township for creation of Pere Marquette Conservation Park	The Natural Resources Trust Fund (NRTF) administered by the Michigan Department of Natural Resources funded the acquisition of the property from Dow. By accepting those funds provided through the NRTF, Pere Marquette Township is committed to long-term grant obligations, one of which directly states, “The land included in the boundary of the project site must remain open to public outdoor recreation use in perpetuity.”	Jacobs; Pere Marquette Township; MCS Group, Inc.	Complete	Natural Resource Inventory
South Charleston, West Virginia	Grassland, wetlands, open water pond, streams, talus slopes, meadows, deciduous forest; 150 acres	At Ward Hollow Wildlife Habitat, Dow maintains open water impoundments, pollinator gardens and protective habitat for native species by controlling invasive species and diversifying native plants and animals. The Wildlife Habitat Council (WHC)-certified program includes eight conservation projects related to reptiles and amphibians, bat boxes, eastern bluebird nest boxes, education and outreach, invasive species management, pollinators, and waterfowl.	WHC gold certified; 2019 WHC Awareness and Community Engagement Project Award Details on the work being conducted in West Virginia is available at: Dow Community Members Interact with Native Plants and Animals at Ward Hollow Wildlife Habitat (wildlifehc.org)	Wildlife Habitat Council; area schools and community volunteers	Ongoing	N/A



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304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations

Dow completes a plant species inventory and ecological appraisals to understand and appropriately manage animal and plant life at its sites. Specific practices include flagging and avoiding critical breeding seasons and supporting species conservation across Dow’s sites through projects such as its multiple bee hotels and a bird island. This information is considered in Dow’s planning for protection and restoration activities. Refer to [304-3 Habitats protected or restored](#) for specific activities in West Virginia.

OMISSION – 304-4 Red List species and national conservation list species with habitats in areas affected by operations

Information not available. Refer to [304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas](#) for the potential list of Red List species and national conservation with habitats in areas within 5 km of Dow’s operations. Dow has not confirmed where its activities pose an actual threat to endangered plant and animal species and will continue to annually assess available reporting mechanisms for future disclosures.

GRI 305: Emissions 2016

3-3 Management approach – emissions

See combined [GRI 3-3 Management approach – Energy and Emissions Management](#)

305-1 Direct (Scope 1) GHG emissions

GHG emissions are accounted for in accordance with the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard, applying the operational control approach and using emissions factors from the United Nations Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (AR6). Additionally, for sites working under the European Union Emissions Trading System, and under the Alberta Technology Innovation and Emissions Reduction Regulation, Dow’s Scope 1 GHG emissions are externally validated to a reasonable level of assurance. Overall, Scope 1 emissions decreased in 2022 relative to 2021, primarily due to reductions supported by our emissions reduction projects, planned maintenance outages, and impacts of macro-economic conditions, particularly in Europe. For more information on our emissions and energy reduction projects, see [GRI 302-4 Reduction of energy consumption](#) and [GRI 305-5 Reduction of GHG emissions](#).

GHG Emissions (Scope 1) millions of metric tons CO₂e	2022	2021¹	2020¹
Scope 1 GHG Emissions	27.29	28.39	28.79
Scope 1 GHG Emissions excluding power and steam not consumed by the Company	21.84	22.55	23.05

¹ For comparability, historical values updated to reflect identified data correction (which are immaterial to the INtersections report as a whole) and to account for corrections in calculation methodologies.

Scope 1 includes Kyoto Protocol GHGs material to Dow [carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O) and hydrofluorocarbons (HFCs)]. Dow does not have emissions of perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), or nitrogen trifluoride (NF₃).

Biogenic CO₂ emissions in millions of metric tons of carbon dioxide equivalent (CO₂e) were 0.46 million metric tons. Global Warming Potential Factors used for the conversion to CO₂e are sourced from the U.N. IPCC Sixth Assessment Report (AR6), 100-year global warming potential (GWP-100) values.¹ Dow uses the GHG Protocol Corporate Accounting Standard operational control approach for emissions. Additionally, Dow uses a hierarchy approach for calculation methods (e.g., Regulatory, Analyzer, Emission Factors, etc.).

¹ Assuming all methane is fossil using GWP 29.8 results in conservative estimate as not yet implementing use of methane non-fossil (GWP 27.2) for some sources (e.g., landfill, wastewater treatment plant, etc.).



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305-2 Energy indirect (Scope 2) GHG emissions

Scope 2 emissions, baselined in 2020, reflect power and steam purchases to supply manufacturing operations around the world. These are calculated according to the GHG Protocol Scope 2 Guidance, including both location-based and market-based methods. The Scope 2 emissions included in the corporate total used for tracking progress against Dow’s carbon emissions reduction targets are calculated using the market-based method. For Scope 2 emissions, Dow requests, but does not verify, emission factors in CO₂e per unit energy from its suppliers. Dow assumes the most recent IPCC assessment report (AR6) 100-year GWP values for all data if not provided. Dow will continue to improve its understanding of the factors used by its suppliers to represent the information as accurately as possible in the future. The data below includes three of the seven GHG emissions covered by the United Nations Framework Convention on Climate Change (UNFCCC)/Kyoto Protocol: CO₂, CH₄ and N₂O. Emissions of HFCs, PFCs, SF₆ or NF₃ are not material to Scope 2 emissions.

GHG Emissions (Scope 2) millions of metric tons CO ₂ e	2022	2021	2020
Scope 2 – market	4.19	5.80 ¹	6.22 ¹
Scope 2 – location	3.45	3.94	3.95

¹ Historical revisions have been made to reflect the GHG Protocol’s hierarchy of using utility/supplier or residual mix factors when available.

In 2022, Dow’s Scope 2 market-based emissions were reduced by approximately 1.6 million metric tons CO₂e (28% reduction). Approximately 1.1 million metric tons of this reduction can be attributed to Dow’s efforts to procure cleaner sources of energy to support its sites. In 2022, Dow implemented cleaner power agreements, which consisted of renewable power sources to support its operations in Europe, resulting in a material decrease in its Scope 2 emissions from 2021 to 2022¹. The remaining reduction is largely attributed to reduced production due to macro-economic conditions, primarily in Europe, which resulted in decreased power and steam consumption. See [305-5 Reduction of GHG emissions](#) for more information.

305-3 Other indirect (Scope 3) GHG emissions

Tracking and reducing Scope 3 emissions are critical to Dow’s climate strategy. Dow has achieved notable advancements in its Scope 3 strategy in 2022 through three pillars: enhancing carbon accounting data and methods, promoting transparency along the value chain and expanding decarbonization partnerships. Notably, Dow significantly expanded its use of value chain data, including supplier product carbon footprints in upstream scope categories for the first time and achieved 100% primary data from principle nonconsolidated affiliates (or equity method investments). Dow is on a mission to not only establish a Scope 3 target, but also to revolutionize collaborations with stakeholders to ensure accurate reporting and the identification of opportunities to cut emissions.

With an increased focus on enhancing carbon data and improving accounting methods, Dow reported 80.55 million metric tons of Scope 3 emissions in 2022, down by 2% compared with 2021. Approximately 60% of Dow’s Scope 3 emissions come from upstream emissions, which mainly result from purchased raw materials and transportation. Downstream emissions come primarily from the use and end-of-life of sold products. Dow has made significant improvements in carbon accounting, resulting in a more accurate and comprehensive view of Scope 3 emissions. These improvements required recalculation of some previous-year categories.

Notably, Dow improved upon its 2020 and 2021 3.1 Purchased Goods & Services data completeness by including flaring, venting and fugitive emissions through the application of ecoinvent v3.9 factors for propane, ethane, butane and naphtha. This meticulous approach allows Dow to accurately reflect the emissions from those specific years while accounting for the significant correction made by ecoinvent based on new scientific data.

Dow is committed to providing clear, current and transparent data for our emissions reporting following industry-standard methods and data. We align our methods to industry-standard [ecoinvent emissions factors](#), which are updated yearly with expanded sectorial and geographic coverage. As a result, Dow has restated certain data to ensure transparent interpretation of year-over-year changes as we applied the most current version of ecoinvent emissions factors and continue to evolve our approach by leveraging more specific supplier and product data.



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Looking downstream, Dow refined its assessment of the quantity, product type and region of sales of sold products based on internal records. The largest change in a Scope 3 category was from 3.12 End-of-Life of Sold Products due to a refined accounting approach. Dow transitioned from a high-level estimate based on a revenue-based sold product weight and a global estimate of end-of-life treatment to a more granular estimate. Dow adopted actual sold product quantities, forecasted the end-of-life treatment according to the type of product and the region to which the product was sold, and improved the estimate of GHGs associated with the end-of-life treatment using regional ecoinvent factors. While 3.12 remains the most challenging of Dow’s significant Scope 3 categories to estimate, the new approach utilizes actual data and more specific ecoinvent factors. The changes resulted in a significant increase in 2.13 emissions for 2020 and 2021. For 3.15 Investments, Dow achieved 100% primary data from nonconsolidated affiliates. Overall, the actions Dow took in each category demonstrate a commitment to continuous improvement and progress toward a net-zero future.

Category	2022	2021	2020
Category 1: Purchased Goods & Services	40.65	41.65 ¹	45.17 ¹
Category 2: Capital Goods	0.29	0.23 ²	0.24 ²
Category 3: Fuel & Energy Related Activities	4.42	5.22	4.75
Category 4: Upstream Transportation & Distribution	2.63	2.68 ³	2.59 ³
Category 5: Waste Generated in Operations	0.41	0.38 ⁴	0.41 ⁴
Category 6: Business Travel	0.02	0.0045 ⁵	0.0071 ⁵
Category 7: Employee Commuting	0.06	0.051	0.046
Category 8: Upstream Leased Assets	0.008	0.014	0.017
Category 9: Downstream Transportation & Distribution ⁶			
Category 10: Processing of Sold Products ⁶			
Category 11: Use of Sold Products	10.43	10.00 ⁷	9.52 ⁷
Category 12: End-Of-Life Treatment of Sold Products	17.46	18.15 ⁸	19.12 ⁸
Category 13: Downstream Leased Assets ⁹	0	0	0
Category 14: Franchises ⁹	0	0	0
Category 15: Investments	4.17	3.70 ¹⁰	4.03 ¹⁰
Total	80.55	82.08¹¹	85.90¹¹

1 Historical numbers updated to reflect improved understanding of the GHG Protocol and TFS Product Carbon footprint guidelines and to align to the ecoinvent V3.9 emissions factors that impacted Dow’s propane, ethane, butane and naphtha emissions.
 2 Historical numbers updated with new methodology of using actual purchasing data rather than an assumption approach.
 3 Historical numbers updated due to changes in the data collection tool and methodology improving data accuracy and completeness.
 4 For comparability, historical values updated to reflect identified data corrections (which are immaterial to the Intersections report as a whole) and to apply regional emission factors.
 5 For comparability, historical values updated to reflect identified data corrections which are immaterial to the Intersections report as a whole.
 6 Dow is currently developing a methodology to report this category in the future.

7 Historical numbers updated due to change in methodology with use of chemistry-based emissions factors compared with lifecycle factors. In addition the methodology was changed to improve product capture for those products with a high potential to be combusted in fuels.
 8 Historical numbers updated due to change in the calculation methodology, moving from a revenue-based product estimate quantity to actual sold product weights and updated Dow’s ecoinvent emissions factor based on product type and location of sale.
 9 Dow does not currently have any downstream leased assets or franchises; therefore, these categories are not relevant for Scope 3 accounting.
 10 Historical numbers updated to reflect the inclusion of primary Dow investment data in the data collection process.
 11 Totals updated to reflect above changes.



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305-4 GHG emissions intensity

GHG Emission Intensities (metric tons CO ₂ e/metric tons of production)	2022	2021 ¹	2020 ¹
GHG Intensity	0.53	0.54	0.55

¹ Scope 1 and Scope 2 emissions used within this GHG intensity calculation had changes applied to prior periods as documented above in [305-1 Direct \(Scope 1\) GHG emissions](#) and [305-2 Energy indirect \(Scope 2\) GHG emissions](#).

GHG emissions intensity is calculated by taking the sum of the Scope 1 and 2 emissions data, excluding emissions associated with the generation of steam and power sold externally, and dividing it by production volume. The Scope 2 value uses the market-based value. The production value used in this calculation is the total valued production volume. Dow observed an overall decrease in GHG emissions intensity relative to 2021 due to a decrease in Scope 1 and 2 emissions.

305-5 Reduction of GHG emissions

Dow tracks overall GHG emissions and intensity as key metrics. The following table outlines a sampling of reduction initiatives completed in 2022 that will have an impact on Dow's reported Scope 1 and Scope 2 emissions. The baseline year for all projects is 2020. Emissions savings were determined by comparing plant operating conditions before projects were implemented to conditions after implementation.

Project Summary	Location	Scope of Emissions Reduced	Approximate Amount (Metric Tons CO ₂ e/yr)	Gases Included
Sourcing cleaner power to support Dow operations	Multiple locations in Germany	Scope 2	1,052,000	CO ₂ , N ₂ O, CH ₄
Improved catalyst efficiency in ethylene oxide production	Seadrift, Texas	Scope 1	76,000	CO ₂
Installed new high-efficiency steam turbine for cracked gas compressor at the TA-1 ethylene plant. In parallel, installed new acetylene preheater to minimize back-end pressure loss	Tarragona, Spain	Scope 1	59,000	CO ₂
Implementation of mechanized operation and afterburner technology for charcoal production	Palmyra, Brazil	Scope 1	40,000	Biogenic CH ₄
Increase in hydrogen firing limits	St. Charles Operations, Louisiana	Scope 1	20,000	CO ₂ , N ₂ O, CH ₄
Flare gas recovery project at TX7	Freeport, Texas	Scope 1	20,000	CO ₂ , N ₂ O, CH ₄
Impact from Sampled Projects			1,267,000	

305-6 Emissions of ozone-depleting substances (ODS)

Ozone-depleting emissions include substances with ozone depletion potential greater than zero. Emissions are reported in CFC-11 equivalents using ozone depletion factors based on the Montreal Protocol.

2022 (metric tons)	2021 (metric tons)	2020 (metric tons)
0.86	1.63 ¹	2.99 ¹

¹ For comparability, historical values updated to reflect identified data corrections which are immaterial to the Intersections report as a whole.

Dow does not manufacture ozone-depleting substances. Since 2005, Dow has eliminated 99% of ozone-depleting emissions because of a purposeful phase-out and replacement of use in line with the Montreal Protocol. The remaining emissions are primarily fugitive loss from refrigerants used in our processes. Emissions were greatly reduced in 2022 compared with 2021 due to fewer unplanned events related to ODS.



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While Dow does not produce ODS as raw materials directly, ODS are sometimes used as blowing agents in the manufacturing of polyurethane foam. Dow produces polyurethane systems that are used by its customers to manufacture foam, where the ODS can be added to Dow products as part of their process. When these blowing agents are used by Dow’s customers, they are generally fully consumed during the foaming process and are not expected to have emissions or loss associated with their use. Dow’s Polyurethanes business is following, and in some cases has been in advance of, the Montreal Protocol’s regional phase-out schedule for hydrochlorofluorocarbons (HFCs). During this phase-out, Dow is committed to finding the most sustainable solutions for blowing agents to offer to its customers.

305-7 Nitrogen oxides (NOx), sulfur oxides (SOx) and other significant air emissions

This table shows Dow’s significant air emissions. Calculation methodologies for these compounds may vary site to site, or vary by equipment type, as each location may utilize regional calculation methodologies dictated by local regulatory reporting frameworks. For some sites and installations, emissions may be monitored directly via a continuous emissions monitoring system (CEMS) – for example, for some of Dow’s cogeneration assets Dow directly monitors NOx emissions. Where emissions are not directly monitored, emissions factors are used, such as those outlined in EPA AP-42. In general, for combustion products such as NOx and particulate matter, emissions factors are a function of the pollutant, the piece of equipment and the fuel being combusted. In general, SOx emissions are calculated using information about the sulfur content of the fuel being combusted and destruction efficiency of the equipment in operation. Emissions from noncombustible fuels, such as VOCs, are calculated using the substance and equipment specific destruction efficiency, as well as the mole fraction of the substance.

Area	2022 (metric tons)	2021 (metric tons)	2020 (metric tons)	Comments
NOx	18,719	18,068	18,133	NOx emissions are largely driven by the Hydrocarbons & Energy business followed by the Packaging and Specialty Plastics business. NOx emissions increased in 2022 due to a reduction in planned maintenance activities over 2021.
SOx	1,975	2,048	2,242	Dow’s Performance Monomer business comprised the largest contribution to the SOx emissions, followed by the Hydrocarbons & Energy business. SOx emission decreased in 2022 compared with 2021 due to the use of fuels with lower sulfur concentration and a decrease in planned maintenance activities compared with 2021.
Volatile Organic Compounds (VOCs)	8,640	8,521 ¹	7,585 ¹	VOC are organic materials that have a high vapor pressure and low boiling point at room temperature. The emissions are largely driven by Dow’s Packaging and Specialty Plastics business and are mainly light hydrocarbons. VOC emissions remained essentially flat for 2022 compared with 2021.
Chemicals to Air and Water	14,422	15,256	13,910	Chemical emissions are any release or discharge to the air or water of any pollutant from a facility. The chemical emissions category is largely driven by emissions from Dow’s wastewater treatment operations at its large integrated sites. This data excludes NOx, SOx, carbon monoxide, CO ₂ , particulates, methane, hydrogen, nitrogen, oxygen, water, aluminum and certain salts. These emissions include the post-treatment chemical emissions from Dow’s industrial park tenant companies. Emissions decreased in 2022 due to lower process issues caused by severe weather events such as those that occurred in 2021. Other factors driving reductions include increased plant reliability, a decrease in planned maintenance activities compared with 2021 and reduced production.
Priority Compounds to Air and Water	197	227 ²	204 ²	Priority compounds are a subset of VOCs that contain carcinogenic, mutagenic and reproductive hazards and/or are persistent and bioaccumulative in the environment. Emissions of Priority Compounds to Air and Water decreased in 2022 compared with 2021 due to a reduction in unplanned events, a decrease in planned maintenance activities compared with 2021 and production changes.

¹ For comparability, historical values updated to account for identified VOC emissions not previously reported, which are immaterial to the INtersections report as a whole.

² For comparability, historical values updated to reflect identified data corrections which are immaterial to the INtersections report as a whole.





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GRI 306: Waste 2016

Waste Management

3-3 Management approach

Key Impacts

- Production of chemical products results in associated waste being generated. (negative)
- The management of waste is recognized as having the potential for significant impacts to the environment and to communities. A complex regulatory environment for waste has been built to ensure that waste is managed properly. (positive)
- Minimizing the waste intensity (waste mass/production mass) reduces the impact of chemical production on the environment. (positive)

Dow has three operating segments, Packaging & Specialties Plastics, Industrial Intermediaries & Infrastructure and Performance Materials & Coatings. Each one of these has businesses that produce unique chemicals and waste. The type of production chemistry and refining ultimately determine the makeup and intensity of the waste produced.

Commitments

- Dow will meet or exceed all governmental regulations for the generation and disposal of waste.
- Dow's commitment to adherence to a waste management hierarchy (described below) is applied in all waste decisions. Waste is characterized then reviewed to identify recycle/reuse opportunities and if necessary, treated as waste.

Policies

It is Dow's policy to adhere to a waste management hierarchy that minimizes the impact of waste and emissions on the environment. First, Dow works to eliminate or minimize the generation of waste and emissions at the source through research, process design, plant operations and maintenance. Second, Dow also finds ways to reuse and recycle materials. Next, unusable, or non-recyclable hazardous waste is treated before disposal to eliminate or reduce the hazardous nature and volume of waste. Treatment may include destruction by chemical, physical, biological or thermal means. Disposal of waste materials in landfills is considered only after all other options have been thoroughly evaluated.

Waste Management

2022 Actions Taken

Waste Intensity

Waste reporting provides the quantity and type of waste produced, and when used with production quantities across each business portfolio, it yields waste intensities. This provides measurable data to drive improvements, recycling and projects to improve environmental performance.

Waste intensity is measured year over year as a WLO Metric.

Stakeholders Engaged

- Environmental Reporting Team
- Business Leaders
- WLO Team

Waste Disposal

Waste will only be sent for destruction in approved waste disposal facilities.

Audits and approval of disposal facilities used internal and external.

Stakeholders Engaged

- Environmental Technology Center
- External Waste compliance

Reducing Waste

Waste Minimization Value Improvement Practice – reducing waste produced through improved project design.

All projects with value of >2MM have mandatory VIP review.

Stakeholders Engaged

- Global project management
- Project managers

Value Recovery Team

Value Recovery Team – directing material from disposal to external sales.

Sale of off-grade, surplus, distressed and former waste materials into secondary applications.

Stakeholders Engaged

- Supply Chain
- Secondary chemical market

Environmental Stewardship Projects

Environmental Stewardship Projects – support and promote projects supporting 2025 and beyond sustainability goals.

Implementing projects to reduce environmental impact.

Stakeholders Engaged

- Global project management
- Environmental Reporting Team
- Corporate Sustainability Office

See also [GRI 306-2 Management of significant waste-related impacts](#).

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GRI 306 Waste 2020

306-1 Waste generation and significant waste-related impacts



Dow uses raw materials, purchased feedstocks, and additives and catalysts to produce chemical products. The high level of product integration and internal byproduct recycling allows Dow to minimize the amount of waste produced. In addition to produced chemicals, by-products are also sold to secondary customers. These byproducts are used as downstream raw materials, blended into solvents and fuels, etc. Waste produced can be treated internally at Dow for energy recovery, incinerated or sent to a Dow-owned landfill. Waste can also be sent to external disposal facilities as a final option.

The amount of waste generated by Dow is directly impacted by the quality of raw material, internal production efficiency, internal quality measurement and, finally, product specifications. The quantity of impurities either entering or produced during chemical manufacture ultimately determines the amount of product, byproduct and waste produced from a chemical process.

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306-2 Management of significant waste-related impacts

Prevention of waste generation is impacted by several factors at Dow, including strict raw material specification, testing and certification. High levels of integration allow by-product streams that would be waste to be recycled or used as raw materials inside Dow. Waste downstream at customers is minimized by strict quality control of all Dow products. Purer chemical feeds result in less waste.

Actions:

- All suppliers are qualified and must meet global material specifications when working with raw materials, additives and/or purchased chemicals. Materials have certificates of analysis and are, in many cases, tested prior to receiving.
- During the chemical production process, internal quality measurements are maintained to minimize waste. By-product streams quality are monitored before transfer to integrated production facilities.
- Product and by-product streams sold outside of Dow must be approved by product stewards that ensure the final use meets governmental, health and regulatory requirements.
- Quality of products is controlled by testing and ensuring that products sold meet the global product specifications. Material that does not meet the quality standard is recycled internally, sold to an approved secondary application, or sent for disposal.
- Dow products that may not meet the final quality measures due to shelf-life limitations, slight quality issues, damaged packaging, surplus, etc. may be sold into approved secondary markets. These materials are thereby diverted from disposal but are subject to product steward final approval.
- As an active member of Operation Clean Sweep® (OCS), a program designed to prevent pellet, flake and powder loss to the marine environment, Dow's plastics manufacturing and logistics facilities around the world are engaged in this important initiative to help achieve zero pellet loss.

Waste sent outside of Dow is characterized and then transported to a certified waste disposal facility for destruction or landfill. All disposal facilities are certified by Dow using third-party auditing to ensure compliance with all appropriate governmental regulations. Only approved disposal methods and facilities can receive Dow waste.

306-3 Waste generated

The table shows Dow's total weight of waste generated (in millions of metric tons) and a breakdown of this total by composition of the waste. Total waste generated in 2022 has decreased compared with 2021 due to fewer planned maintenance events, combustion activities due to unplanned events and reduced production. Another contributor to the reduction is reflected by Dow's effort to increase recycling and reuse of waste materials during the production process.

In millions of metric tons Waste Composition	Hazardous Waste			Non-Hazardous Waste		
	2022	2021 ¹	2020 ¹	2022	2021 ¹	2020 ¹
Total Waste Generated	0.58	0.61	0.64	0.53	0.65	0.59
Energy Recovery	0.23	0.26	0.36	0.04	0.04	0.03
Landfill	0.02	0.01	0.01	0.13	0.15	0.17
Combustion	0.18	0.20	0.17	0.28	0.37	0.31
Flare	0.02	0.02	0.02			
Waste to Wastewater	0.06	0.05	0.02	0.06	0.05	0.06
Underground Injection	0.00	0.00	0.00	0.00	0.01	0.00
Other Treatment	0.07	0.07	0.06	0.02	0.03	0.03

¹ Waste calculation for 2020 and 2021 was revised to remove the impact of materials from Dow internal waste treatment facilities sent to final disposal as it was previously double counted. For comparability, historical values updated to reflect identified data corrections which are immaterial to the INtersections report as a whole.

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306-3 (2016) Significant Spills

OMISSION 306-3 Significant Spills
 Information not available. Dow will continue to annually assess mechanisms to be able to report this information in the future.

306-4 Waste diverted from disposal

OMISSION 306-4 Waste diverted from disposal
 Information not available. Dow will continue to annually assess mechanisms to be able to report this information in the future.

306-5 Waste directed to disposal

Total weight of hazardous waste directed to disposal.

Disposal Operation (millions of metric tons)	2022	2021 ¹	2020 ¹
Incineration (With Energy Recovery)	0.230	0.262	0.355
Incineration (Without Energy Recovery)	0.206	0.221	0.192
Landfilling	0.022	0.011	0.010
Other disposal operations	0.127	0.117	0.087

¹ Waste calculation for 2020 and 2021 was revised to remove the impact of materials from Dow internal waste treatment facilities sent to final disposal as it was previously double counted. For comparability, historical values updated to reflect identified data corrections which are immaterial to the INtersections report as a whole.

For more information on year-over-year changes, see [306-3 Waste generated](#).

Total weight of non-hazardous waste directed to disposal.

Disposal Operation (millions of metric tons)	2022	2021 ¹	2020 ¹
Incineration (With Energy Recovery)	0.040	0.038	0.029
Incineration (Without Energy Recovery)	0.283	0.367	0.307
Landfilling	0.134	0.148	0.165
Other disposal operations	0.084	0.094	0.084

¹ Waste calculation for 2020 and 2021 was revised to remove the impact of materials from Dow internal waste treatment facilities sent to final disposal as it was previously double counted. For comparability, historical values updated to reflect identified data corrections which are immaterial to the INtersections report as a whole.

Disposal Operation (millions of metric tons)	Hazardous Waste						Non-Hazardous Waste					
	Directed Onsite			Directed Offsite			Directed Onsite			Directed Offsite		
	2022	2021 ¹	2020 ¹	2022	2021 ¹	2020 ¹	2022	2021 ¹	2020 ¹	2022	2021 ¹	2020 ¹
Incineration (With Energy Recovery)	0.198	0.235	0.318	0.032	0.027	0.037	0.034	0.031	0.020	0.006	0.007	0.009
Incineration (Without Energy Recovery)	0.164	0.178	0.148	0.042	0.043	0.044	0.274	0.355	0.296	0.009	0.011	0.011
Landfilling	0.001	0.001	0.003	0.021	0.011	0.007	0.058	0.063	0.057	0.076	0.085	0.109
Other disposal operations	0.051	0.033	0.019	0.077	0.084	0.068	0.061	0.066	0.060	0.024	0.027	0.024

¹ Waste calculation for 2020 and 2021 was revised to remove the impact of materials from Dow internal waste treatment facilities sent to final disposal as it was previously double counted. For comparability, historical values updated to reflect identified data corrections which are immaterial to the INtersections report as a whole.



Sustainable Procurement

3-3 Management approach

Key Impacts

- Dow has the ability to reach a large number of suppliers globally and see the need for shared responsibility, partnership, collaboration and transparency along that journey. Dow’s ability to influence supplier sustainability and drive continuous improvements in performance impacts both Dow’s business objectives as well as the planet. (positive/negative)
- Dow is committed to setting the standard for sustainability, driving supply chain decarbonization and demonstrating highly responsible, ethical business practices, including sustainable labor practices and supplier diversity. (positive)

Dow maintains global relationships with over 30,000 suppliers who provide a wide variety of raw materials, products and services that allow Dow to operate its manufacturing facilities, laboratories and offices. Recognizing that chemical supply chain management is a collaborative topic, Dow will use the TfS and EcoVadis partnership to expand its audit program for suppliers associated with potential sustainability risks.

Policies

[Code of Business Conduct for Suppliers | Public Policy | Dow Corporate](#)⁷ stipulates requirements related to social responsibility including Respect Freedom of Association and Collective Bargaining; No Forced and Compulsory Labor; No Harassment and Abuse of Labor; No Child Labor; No Discrimination; Supplier Diversity; Appropriate Work Hours and Wages; and No Conflict Minerals Sourcing. The Code was expanded in 2022 with additional sustainability requirements for suppliers. The Code is integrated into requests for proposals, tenders, contracts, purchase orders and supplier relationship management strategies, putting sustainability at the forefront of all purchasing activities.

2022 Actions Taken

Risk Assessments

Conducting risk assessments on Dow’s supplier base to identify sustainability impacts.

For additional details, see [GRI 308-2 Negative environmental impacts in the supply chain and actions taken](#).

- Assessments enhance Dow’s operational procedures by considering risk and sustainability assessment data in its procurement decision-making processes and supplier relationship management discussions.
- Based on the suppliers’ responses, Dow can prioritize how to support suppliers to reduce impacts. For example, under climate, providing a near-term focus on emissions calculation and climate goal setting.

Stakeholders Engaged

- Suppliers
- EcoVadis
- CDP
- Dow Purchasing
- TfS



Sustainable Procurement



Supplier Audits

Auditing suppliers in collaboration with TfS.

Audits ensure compliance with key sustainability areas upon which Dow can take action via supplier relationship management conversations.

Stakeholders Engaged

- TfS and their members
- Suppliers

Collaborations

Collaborating with standard agencies, policy setters, industry groups and non-governmental organizations to advance the development and implementation of improved sustainability accounting methods.

- Dow is contributing to the improvement of supplier data.
- Dow offers webinars for suppliers on sustainability topics and provides access to the TfS supplier education platform.

Stakeholders Engaged

- WBCSD
- Partnership for Climate Transparency
- TfS
- Smart Freight Centre

For additional details on supplier engagements, see [GRI 308-2](#).

GRI Disclosure Report – GRI Content Index

308-1 New suppliers that were screened using environmental criteria

Dow's suppliers are selected and managed based not only on criteria around cost, quality and reliability, but also their alignment with Dow's core values of Respect for People, Integrity and Protecting the Planet. All new first-tier suppliers must adhere to the principles set out in the [Code of Business Conduct for Suppliers | Public Policy | Dow Corporate](#), which requires suppliers to track and improve their environmental performance, identify key issues and develop strategies for continuous improvement. Suppliers must proactively manage environmental risks and ensure their products and operations meet applicable standards. Dow also expects suppliers to adopt environmentally friendly technologies and systems and participate in collaborations to develop innovative technology. Dow favors suppliers that set targets to achieve carbon neutrality and circularity and publicly disclose their sustainability metrics and goals. Suppliers with additional environmental risks, such as suppliers of bio-based materials, may need to submit additional documentation to Dow.

308-2 Negative environmental impacts in the supply chain and actions taken

Through the expansion of its purchasing sustainability program, along with its memberships in the WBCSD, TfS, Smart Freight Centre, the CDP Supply Chain program and others, Dow has significantly improved its capacity to assess its suppliers for sustainability risks and impacts. In 2022, Dow assessed its supply chain using a comprehensive supplier sustainability risk mapping of over 20,000 suppliers, as well as via direct data collection from suppliers using EcoVadis, CDP, on-site audits and other forms of outreach.

Outcome from supplier sustainability data collection	Response
Number of suppliers assessed for environmental and social impacts	3,339
Number of suppliers identified as having significant actual and potential negative environmental or social impacts	0
Significant actual and potential negative environmental or social impacts identified in the supply chain	None
Percentage of suppliers identified as having significant actual and potential negative environmental or social impacts with which improvements were agreed upon as a result of assessment	0%
Percentage of suppliers identified as having significant actual and potential negative environmental or social impacts with which relationships were terminated as a result of assessment and why	0%

While no suppliers showed a significant negative environmental impact, 127 suppliers received insufficient environment scores in EcoVadis; these suppliers are being targeted for improvement. No issues were identified in 2022 that necessitated the termination of a supplier. If a significant negative environmental impact were found, it could lead to not contracting with a supplier or the termination of existing contracts.





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GRI 400 Social standards

Talent & Future Workforce

3-3 Management approach

Key Impacts

- Investing in a culture of continuous learning is critical to Dow employees' career paths and is a key enabler for the Company's global competitiveness. (positive)
- Dow is committed to a skills-based development culture, which will better prepare the Company to be a digital organization, unlocking potential and productivity across talent. (positive)
- Dow's investments in educational programs and consultant partnerships with universities and schools provide opportunities for local communities and help develop the next generation of talent. (positive)

Since 2021, Dow has been sponsoring a global enterprise-wide initiative with the vision of building a culture of continuous learning and skill development, along with an improved learning experience that will result in a more engaged and future-ready workforce. Deliverables include access to learning and development opportunities for all employees and, streamlined and connected learning across functions and geographies, with a strong focus toward becoming a skills-valued organization, all while improving the learner experience.

Commitments

As part of Dow's 2022 People and Culture priorities, the Company committed to improve the foundation of the employee learning and development experience – see actions below.

As part of Dow's dedication to the diversity of its workforce and fostering an inclusive culture, Dow is committed to equal opportunities in employment. Dow's benefits offerings reflect its commitment to employees and their future. Dow has a pay-for-performance

compensation philosophy that includes programs such as:

- Competitive base salary
- Annual bonus and/or other short-term incentives
- Long-term incentives

Dow recognizes the many demands on its people's time – in the workplace, at home and in the community. Dow is committed to a workplace strategy that enables and empowers flexibility, grounded in role requirements and individual needs. Design Your Day is one new approach to workplace flexibility.

Dow recognizes that there are potential social impacts associated with its climate strategy and transition. Consistent with the Paris Agreement on climate change, Dow is committed to ensuring a Just Transition of the workforce and the creation of decent work and quality jobs as part of this transition. Dow believes that its technology transition and innovations will create quality jobs consistent with the recent announcement of Dow's net-zero carbon emissions integrated ethylene cracker and derivatives site in Alberta, Canada, that will triple the site's capacity. The project is expected to create 400 to 500 permanent jobs at Dow.

Policies

Dow has multiple policies and programs that enable a continuous life-long learning and development culture through providing guidance, key tools and resources for employees. These include Dow's Employee Development Planning, Circular Career Model and Late-Stage Career Development, ExecOnline Accelerated Skills Development, Learning Opportunities for All Employees, Delivering a High-Performance Culture, formal mentorship and sponsorship and Your Dow Total Rewards programs.

2022 Actions Taken

Established Governance

Established global governance framework to ensure alignment and prioritization of learning and development efforts and priorities globally.

Implemented work process improvements on learning content governance, tools and capabilities.

- Dow launched a Global Learning Council (GLC) in March 2022 to ensure alignment and prioritization of learning and development opportunities, establishing more equitable access to learning opportunities for all employees.
- A Global Power BI Dashboard was implemented in 2022, providing integrated visibility of learning and development efforts, budget spend and training hours.
- In 2022, because of global rationalization efforts and new learning governance processes, Dow removed 187,400 hours of redundant training and implemented a new digital gatekeeping tool: Cognota.

Stakeholders Engaged

- Modernizing Workforce Capabilities (MWC) Program Team
- GLC
- Global/functional learning teams
- Learning administrators
- HR directors
- Talent & Learning Community

Education Programs

Designed a Global Skills Framework (first two levels needed for current and future business-critical roles).

Cultivated a skills-based culture through learning and development offerings for all employees.

- 220 Dow employees graduated from 12 different ExecOnline continuous education programs in 2022. Participants reported 97% overall satisfaction and \$1.8B USD projected financial impact from project work. Key areas of impact were leading and managing globally, building and leading effective teams and leading strategic growth.
- Delivered a global Inclusive Leadership Program in partnership with Mursion that integrated experiential learning, real-time feedback and hands-on practice in a psychologically safe environment. The program used a blended learning approach to build awareness supplemented with hands-on practice for leaders through virtual reality simulations. 90% of participants said they felt more engaged and better equipped to support teams. 82% said the program elevated their commitment toward a more inclusive leadership approach.

Stakeholders Engaged

- MWC Program Team
- HR directors
- Leadership teams
- AON
- GLC

Continuous Development

Dow's investments in educational programs and consultant partnerships with universities and schools provide opportunities for local communities and help develop the next generation of talent.

- In 2022, Dow doubled the global investment on learning and development efforts to upskill its current talent workforce with a total of \$19MM USD compared with the previous year. The main areas of focus were leadership, digital and technical skills upgrade.
- In 2022, Dow sponsored further education for more than 6,000 employees through the Global Education Assistance Program. Employees are sponsored to build skills and competencies via undergraduate, graduate degree and language programs as part of their continuous development plans.

Stakeholders Engaged

- Functional and regional leadership teams
- Functional learning leadership teams
- GLC
- Talent & Learning Community
- Leaders
- Employees
- HR partners

Dow Disclosures – GRI Content Index

401-1 New employee hires and employee turnover

Total number and annual rate of new employee hires during the reporting period, by gender, age group and race/ethnicity:

Title	Number			Rate		
	2022	2021	2020	2022	2021	2020
New Employee Hires by Gender						
Men	2,990	1,736	865	66.7%	65.4%	65.8%
Women	1,488	917	449	33.2%	34.6%	34.2%
Not Disclosed	4			0.1%		
New Employee Hires by Age						
<30	1,676	1,102	613	37.4%	41.5%	46.7%
30-50	2,482	1,373	635	55.4%	51.8%	48.3%
50+	324	178	66	7.2%	6.7%	5.0%
New Hires by U.S. Ethnic Minority						
U.S. Non-Minority	1,431	373	374	59.6%	68.7%	57.6%
U.S. Ethnic Minority Total	937	170	275	39.0%	31.3%	42.4%
American Indian or Alaska Native	9	1	3	0.4%	0.2%	0.5%
Asian	201	29	56	8.4%	5.3%	8.6%
Black or African American	332	58	105	13.7%	10.7%	16.2%
Hispanic or Latino	319	67	96	13.3%	12.3%	14.8%
Native Hawaiian or Other Pacific Islander	4	0	0	0.2%	0.0%	0.0%
Two or More	72	15	15	3.0%	2.8%	2.3%
Not Disclosed	34			1.4%		
New Hires by Region						
Europe, Middle East, Africa and India	1,194	619	400	26.6%	23.3%	30.4%
Latin America	306	154	88	6.8%	5.8%	6.7%
United States and Canada	2,509	1,493	687	56.0%	56.3%	52.3%
Asia Pacific	473	387	139	10.6%	14.6%	10.6%
Global Dow	4,482	2,653	1,314	100.0%	100.0%	100.0%

Dow Disclosures – GRI Content Index

Total number and annual rate of employee turnover during the reporting period, by gender, age group and U.S. ethnic minority:

Title	Number		Rate	
	2022	2021	2022	2021
Voluntary Turnover by Gender				
Men	1,034	860	4.0%	3.4%
Women	454	399	4.2%	4.0%
Not Disclosed	0		0.0%	
Voluntary Turnover by Age				
<30	355	320	6.1%	7.5%
30-50	688	604	2.9%	2.9%
50+	447	335	4.6%	3.2%
Voluntary Turnover by U.S. Ethnic Minority				
U.S. Non-Minority	630	506	5.1%	4.2%
U.S. Ethnic Minority Total	276	184	6.0%	4.5%
American Indian or Alaska Native	1	2	1.5%	3.4%
Asian	70	42	6.8%	4.5%
Black or African American	108	70	7.1%	5.1%
Hispanic or Latino	76	57	4.5%	3.7%
Native Hawaiian or Other Pacific Islander	3	0	21.1%	0.0%
Two or More	18	13	7.3%	6.6%
Not Disclosed	7		6.0%	
Voluntary Turnover by Region				
Europe, Middle East, Africa and India	301	230	2.8%	2.2%
Latin America	63	81	2.1%	2.7%
United States and Canada	954	734	5.3%	4.2%
Asia Pacific	170	214	3.4%	4.4%
Global Dow	1,488	1,259	4.0%	3.5%

Dow Disclosures – GRI Content Index

Title	Number		Rate	
	2022	2021	2022	2021
Involuntary Turnover by Gender				
Men	669	1,183	2.6%	4.7%
Women	180	310	1.7%	3.1%
Not Disclosed	0		0.0%	
Involuntary Turnover by Age				
<30	48	64	0.8%	1.5%
30-50	226	477	1.0%	2.3%
50+	575	952	6.0%	9.1%
Involuntary Turnover by U.S. Ethnic Minority				
U.S. Non-Minority	315	602	2.6%	5.0%
U.S. Ethnic Minority Total	110	194	2.4%	4.7%
American Indian or Alaska Native	2	3	3.0%	5.2%
Asian	10	18	1.0%	1.9%
Black or African American	57	127	3.7%	9.2%
Hispanic or Latino	34	42	2.0%	2.7%
Native Hawaiian or Other Pacific Islander	1	0	7.1%	0.0%
Two or More	6	4	2.4%	2.0%
Not Disclosed	2		1.7%	
Involuntary Turnover by Region				
Europe, Middle East, Africa and India	240	374	2.2%	3.6%
Latin America	111	155	3.6%	5.2%
United States and Canada	443	833	2.5%	4.8%
Asia Pacific	55	131	1.1%	2.7%
Global Dow	849	1,493	2.3%	4.2%

Dow Disclosures – GRI Content Index

401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees

Permanent full-time and less-than-full-time employees are provided a wide variety of benefits. Dow's benefit plans are designed to meet the needs of its employees, while remaining competitive with the market and aligned with the Company strategy. They are also designed to build on the social security benefits provided in each country and, as a result, vary by country. Dow offers the following benefits to both full-time and part-time employees at all significant locations of operation. These locations include but are not limited to all countries with more than 50 employees, covering greater than 99% of Dow's global workforce.

- Pension plans – either defined benefit or defined contribution plans
- Medical plans – often including prescription drugs coverage, dental and vision
- Life insurance
- Disability protection
- Accident insurances
- Paid vacation, holiday and leave programs

401-3 Parental leave

Dow's global parental leave is intended to provide flexibility, work-life balance and an equitable offering for all new parents, birthing and non-birthing, including adoptive and foster parents, regardless of gender. Dow's global parental leave policy provides 16 weeks of paid time-off, which can be taken during the 12 months following the birth of a child. The policy applies to all full- and part-time employees, subject to collective bargaining negotiations where applicable.

OMISSION 401-3b through 401-3e Parental leave

Information not available. Dow will continue to annually assess its system capabilities to be able to report this information in the future.

GRI 402: Labor/Management Relations 2016

402-1 Minimum notice periods regarding operational changes

Anchored in Dow's core values of Respect for People and Integrity, Dow regularly provides direct employee notice of significant operational changes. Notice timing on significant operational changes would vary based on the nature and scope of the change. However, Dow will always comply with legislative requirements for notice timing.

Collective agreements could include specific notice periods, consultation processes and/or negotiation requirements. As collective agreements are negotiated locally, they can have different notice terms specified. Direct Partnership is Dow's preferred Labor Relations model. The Direct Partnership philosophy is focused on collaboration, by all parties, which translates to a greater employee experience. Direct Partnership is aligned with building a culture of trust, transparency, accountability and empowerment.



GRI Disclosure Report – GRI Content Index

GRI 403: Occupational Health & Safety 2018

Health & Wellness

3-3 Management approach

Key Impacts

- Dow's people are its greatest asset, so promoting and protecting their health and well-being enables their meaningful contribution to Dow's success. (positive)
- With health care costs being one of the largest employee-related expenses, identifying ways to control these costs is important. Health and wellness programs promote healthy behaviors, which may also support health care cost management. (positive/negative)

In alignment with Dow's comprehensive operating discipline management system (ODMS), Dow's programs also include a robust occupational health system that supports company sites, functions/businesses and people around the world with health information, resources and consultation on health-related opportunities and issues, as well as responding to public health emergencies. Dow advises on global health engagement and well-being opportunities to foster a culture of health at Dow. Dow provides employees with access to clinical occupational health services; refer to [GRI 403-3 Occupational health services](#) for additional details.

Commitments

- WLO Goal: Dow will have a Total Worker Health® implementation that comprehensively controls workplace health risks, protects workers and improves the health of Dow people (Healthy Culture, Healthy Workplace, Healthy People).

In the table on the following page, you will find management actions, but also refer to [GRI 3-3 Management approach – Safe and Reliable Operations](#) for actions related to audits and self-assessments and narrative on [Health & Wellness Through Total Worker Health®](#).

GRI Disclosure Report – GRI Content Index

2022 Actions Taken

Healthy Culture

As part of the Total Worker Health® Assessment, Dow performs periodic healthy culture site self-assessments, with a target to have 80% of Dow's employee population work at a site within the Gold and Platinum categories of the Healthy Culture Index by 2025.

In 2022, 105 Dow sites received Gold/Platinum award status and the target population metric reached 83.8%.

Stakeholders Engaged

- Site leadership
- Functional experts

Healthy Workplace

As part of the Total Worker Health® Program, Dow has a comprehensive High-Priority Health Risk Reduction program for controlling and reducing workplace health risks.

Dow established annual targets for reducing high-priority health risks due to noise, ergonomic and chemical stressors. Dow tracks progress using monitoring data to confirm risk reduction.

In 2022, Dow met its internal target to eliminate 29 high-priority health risks. This achievement positively impacted 297 workers.

Stakeholders Engaged

- Functional experts
- Aligned business leadership

Healthy People

Improving employee well-being through healthy behaviors, personal health risk factors and workplace health.

- Promoted Reclaim Your Health campaign to engage leaders and employees in ways to manage energy throughout the day.
- Launched the Dow Well-Being Portal in 2022 with tools and resources for employees for supporting health and well-being.
- Engaged Dow people to reduce health risks and maintain good health by using the American Heart Association's most important lifestyle predictors of heart health.

American Heart Association data is confidentially and voluntarily collected as part of an annual visit with the internal occupational health clinics. Data shows a continued improvement in health risks.

By end of 2022, 68% of employees have enrolled with the Dow Well-Being Portal, with a 74% average monthly engagement and 87% of users reporting satisfaction with the Well-Being Portal experience.

Stakeholders Engaged

- Leadership
- Functional experts
- Employees



GRI Disclosure Report – GRI Content Index

GRI 403: Occupational Health & Safety 2018

Safe & Reliable Operations

3-3 Management approach

Key Impacts

- Safe and reliable operations are core to Dow’s culture. Dow puts worker safety first and focuses on reliable, efficient and compliant global manufacturing operations. (positive)
- Excellent unplanned event response and management minimizes the number, length and overall impact. (positive/negative)
- Safe and reliable operations are a requirement to maintain Dow’s license to operate. (positive)
- All Dow employees and contractors have a shared responsibility to make safety and health a daily priority. (positive)

To ensure worker safety, Dow uses a comprehensive, integrated ODMS that includes policies, requirements, processes, best practices and procedures related to its Environment, Health & Safety (EH&S) and Quality and Operations standards, as well as related external standards. Through this system, Dow lays the foundational expectations of hazard assessment and risk mitigation, aligned and certified to Responsible Care® with full operations coverage and in compliance with OSHA 18001 or ISO 45001 standards.

Commitments

- Dow will strive to eliminate fatalities, significantly reduce severe injury and illness incidents and maintain the total recordable injury and illness rate at industry-leading levels.
- Dow will strive to eliminate all process safety events that impact its people, communities and the environment.
- Dow will strive to eliminate all preventable motor vehicle accident fatalities.

- Dow is committed to the inclusion of labor service provider personnel working on Dow sites or on Dow’s behalf in safety and health programs, metrics and goals. As appropriate and allowed by local regulations, contractors are included in Dow’s safety programs, metrics and goals.
- Dow is committed to compliance with legal requirements, Dow standards and requirements and contractual agreements. In cases where local or national laws, codes or regulations impose additional requirements beyond Dow standards for safe operations, affected Dow facilities comply with those requirements or Dow requirements, whichever is more stringent.

Policies

Dow’s [Environment, Health and Safety Policy | Dow Corporate](#) applies to all facilities and operations. Dow requires each organization within Dow to implement and use health and safety programs to:

- Identify, assess and eliminate or mitigate hazards
- Prevent unsafe acts and conditions
- Maintain and improve the health of personnel
- Foster communication on health and safety issues

2022 Actions Taken

Handheld Portable Tools Standard

A new standard to address incidents associated with handheld portable tools was rolled out in 2022.

Lessons learned from an average of about 70 incidents per year prompted development of the standard. The 16 requirements in the standard address both tool design and worker behavior. Implementation of the new requirements is ongoing with a target for full implementation by August 2023.

Stakeholders Engaged

- Operations
- EH&S Operations
- Technical Expertise and Support (TES)

Self-Assessments

Dow requires safety, industrial hygiene, occupational health and environmental management system self-assessments, regular inspections and independent internal audits to monitor compliance and identify gaps and best practices.

Over 100 EHS&S Integrated audits were performed globally in 2022. All deficiencies to internal Dow standards or government requirements that were identified are communicated to leadership, managed and tracked to completion.

Stakeholders Engaged

- EHS&S functional leadership
- Expertise
- Business and executive management
- EHS&T Committee of the Board of Directors

Contractor Safety Standards

Dow's Global Contractor, Delivery Service Provider and Visitor Safety Standard includes mandatory requirements for all sites and locations at Dow for the pre-qualification, induction and monitoring of labor service providers.

Dow fully integrates contractors working on Dow sites in the Company's injury performance targets and goals. Dow's contractor injury rate has continued a performance improvement trend for its labor service providers.

Stakeholders Engaged

- Operations
- TES
- EH&S Operations
- Supply Chain
- Labor services providers (contractors)

Dow Disclosures – GRI Content Index

403-1 Occupational health and safety management system

Dow's occupational health and safety management system includes policies, requirements, processes and best practices. Dow's system is grounded in U.S. Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA) and other relevant non-U.S. region-specific regulatory requirements when more stringent. For information on the ODMS and Responsible Care[®], refer to [GRI 3-3 Management approach – Safe & Reliable Operations](#).

All workers are covered by Dow's management system regardless of whether they are working on or off Dow premises, including all contracted workers performing work on Dow premises. Contractors are included in Dow's calculated OSHA injury rate performance. Workers who deliver materials (e.g., package delivery services) are not included but receive an orientation upon entering a Dow site.

The management system is designed and implemented by professionals working for Dow (e.g., Occupational Health, Industrial Hygiene, EH&S Delivery). They apply expertise and knowledge of scientific and medical literature and work processes to monitor trends and regulations in worker health assessment and make changes to ODMS.

The management system is externally assessed and meets ISO-14001, ISO-9001 and Responsible Care[®] code requirements. Compliance with ODMS and regulations is tracked through self-assessments, independent internal audits and corporate audit governance process, safety-related behavior-based observations, incident investigations, inspections (mechanical integrity) and management system reviews.

Dow Disclosures – GRI Content Index

403-2 Hazard identification, risk assessment and incident investigation

Processes to assess work-related hazards and assess risks include:

- Initial and routine hazard analyses are completed by a team of toxicologists, industrial hygienists and physicians who apply their expertise and knowledge of the scientific and medical literature and work processes to monitor trends and regulations in worker health assessment.
- Results of medical surveillance exams are reviewed as a source of feedback and continuous improvement.
- Risk reviews for new or modified Dow products, including qualitative exposure assessments for chemical, physical, ergonomic and biological hazards to inform control measures and mitigate worker safety and health risks.
- Process safety hazards are evaluated initially and on a recurring basis via Dow's process risk management methodology.
- Personal safety risk analysis using safe work permits, pre-task hazard analysis and pre-startup safety reviews.
- Comprehensive permit-to-work system facilitates a robust dialogue around hazards and mitigations for each task.

Workers are expected and encouraged to identify, report and intervene without fear of reprisal when unsafe or unhealthy work conditions are observed. See [GRI 2-26 Mechanisms for seeking advice and raising concerns](#) to understand the process for workers to report work-related hazards or hazardous situations. Positive recognition is used to celebrate and reinforce coworkers making safe choices. Additionally, worker input on hazards and solutions is part of local near-miss programs.

Dow leverages root cause investigation methodology to understand incident causes and take corrective actions to prevent repeat incidents.

403-3 Occupational health services

There are several services provided by qualified and accredited health professionals that contribute to the identification and elimination of hazards and to minimize risks. Some of those services include:

- On-site emergency medical response.
- Baseline and periodic medical surveillance exams and testing to identify possible adverse health effects from potential exposure to occupational hazards. Exam content and frequency are defined in ODMS and are applied equitably around the globe. Health results are documented in Dow's health record system and addressed.
- Travel health services (e.g., counseling, infectious disease risk communication, vaccinations and access to care) to reduce risk for endemic or acute health problems while on business.
- Fitness for duty evaluations to define accommodations or restrictions to ensure employees can work safely.
- Medical case management (work-related counseling) for employees with health issues to return to work in the safest and most timely manner.
- Encouragement of employees and leaders to utilize and promote the Dow employee assistance programs. For more information, see [Healthy People: Destigmatizing Mental Health](#).

Dow employees, during paid work time, have access to occupational health services at no cost through an on-site company-managed clinic at its major sites, or an off-site provider with oversight by Dow Occupational Health. Clinical treatment is available to all employees for work-related injury or illness.

Additionally, workers' personal health information adheres to [Dow Code of Conduct Policy | Public Policy | Dow Corporate](#) for data protection and is not shared without the informed consent of the individual and on a need-to-know basis with respect to work-related injury/illness cases for classification purposes. Dow uses only aggregated data (personal identifiers removed) in reporting health risk data. Confidentiality training is assigned to every health worker who has a need prior to access to medical records.

Dow Disclosures – GRI Content Index

403-4 Worker participation, consultation and communication on occupational health and safety

Safety and health are part of Dow’s conversations with workers at all levels of the organization. Workers’ input on health and safety is achieved through participation in root cause investigations, “fresh eyes” assessments, internal audits and other continuous improvement activities. Dow also collects and responds to feedback as part of the safety meeting and training processes.

Dow’s workforce is either represented by joint-management worker safety committees or participates directly in periodic safety meetings that review and act upon worker safety data and concerns. They also develop plans for new or improved government or company health and safety requirements. Decision-making authorities vary by site and include EH&S professionals and leadership with input from affected workers.

403-5 Worker training on occupational health and safety

All employees and contractors receive training on occupational health and safety in their local language and free of charge during working hours. Some roles in operations receive overtime pay to attend training sessions. Training content and delivery are designed by subject matter and learning experts and integrates feedback from employees. Topics and frequency are aligned with ODMS and based on job role, job location, knowledge/skill performance and regulatory requirements. Training completion is monitored.

Training effectiveness is assessed dependent on role and risk. Knowledge and ability to perform their role within the management system is validated through knowledge checks, in-field performance assessments or training review boards.

403-6 Promotion of worker health

Dow facilitates worker access to non-occupational medical and health care services. Examples include:

- Access to preventive care (on-site Dow clinics, Dow Family Health Centers (United States) or through external community health care facilities) free of charge or at reduced cost (not available to non-Dow employees, such as contractors, unless required by regulations). Emergency care, however, is provided to all employees, contractors or visitors.
- Voluntary participation in personal health risk determination (as part of Total Worker Health[®]). See actions under [GRI 3-3 Management approach – Health & Wellness](#).
- Availability of the Well-Being Portal to provide Dow employees and their spouses/domestic partners access to tools for managing physical, mental and financial health and well-being. Employees receive incentives to stay engaged with the portal offerings and many other health activities. Current availability of this benefit may vary for employees who are represented by a labor organization. Dow fully intends to expand eligibility for this program to all employees in accordance with applicable federal and local laws.

No voluntary programs or services are associated with decisions regarding employment or engagement of workers.

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403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships

Dow has a multipronged approach toward preventing and mitigating occupational health and safety impacts linked by business relationships, which includes:

- Dow’s transportation safety and security is a supply chain security program that meets or exceeds applicable governmental and transportation regulation requirements. It has stated requirements that minimize the risk of harm posed by chemicals to the supply chain, public, workers and environment.
- Responsible Care® Security Code of Management Practice, Distribution and Business Risk Reviews and management; safe handling guidelines for products in transport; packaging and container requirements qualification; monitoring and periodic assessment of logistics service providers per Responsible Care® principles or approved equivalent; safe handling of chemicals at loading and unloading facilities; and transportation incident reporting and investigation.
- The External Manufacturing work process and standard set minimum performance expectations for external manufacturers to demonstrate adherence to sound health, safety, security and environmental principles and operating philosophy such as Responsible Care®. External manufacturers agree to submit to an initial on-site Environmental, Health, Safety and Quality (EH&S-Q) Assessment and subsequent EH&S-Q Audits at a frequency determined by Dow based on risk.
- Product Stewardship programs align to the businesses to ensure that health, safety and environmental protection is an integral part of designing, manufacturing, marketing, distributing, using, recycling and disposing of Dow products.
- Dow production meets applicable internal and external Good Manufacturing and Distribution Practice requirements for active pharmaceutical and cosmetic ingredients, as well as food contact and food additives and pharmaceutical excipients.
- When Dow employees operate the assets of a third party, such as part of the Dow Services Business, it ensures that, at a minimum, the Dow EH&S standards will be met to ensure the same level of protection of the workforce and the environment.
- The Global Remediation group manages Dow’s global portfolio of remediation liabilities and focuses on mitigation of risk to human health and the environment. Selected solutions for remediation opportunities are based on risk assessment results, land-use opportunities, sustainability, full compliance with legal requirements and ensuring alignment with Dow’s core values around protecting the people and the planet.
- Supplier selection is based on a robust set of criteria ranging from performance and economics to sustainability factors. See [GRI 3-3 Management approach – Sustainable Procurement](#) for more information.

403-8 Workers covered by an occupational health and safety management system

100% of workers whose work and/or workplace is controlled by Dow are required to comply with Dow’s health and safety management system requirements.

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403-9 Work-related injuries

In the table below you will find Dow’s 3-year total work-related injuries. Recordable work-related injuries are inclusive of all workers performing work at Dow locations. Dow stands out in the industry by integrating contractor recordable work-related injuries into its overall tracking. Where the term “injuries” is used, it refers to both injuries and illnesses unless specified otherwise. Rates are calculated based on 200,000 hours worked.

Work-related injuries		2022	2021	2020
Fatality Count (injuries) Total	All Workers	0	0	1
Fatality Count (injuries) – Employees	Employees	0	0	0
Fatality Count (injuries) – Contractors	Contractors	0	0	1
Fatality Rate Total	All Workers	0	0	0.0014
Fatality Rate – Employees	Employees	0	0	0
Fatality Rate – Contractors	Contractors	0	0	0.0033
High-Consequences Work-Related Injuries Incident Count Total	All Workers	0	1	1
High-Consequences Work-Related Injuries Incident Count – Employees	Employees	0	1	0
High-Consequences Work-Related Injuries Incident Count – Contractors	Contractors	0	0	1
High-Consequences Work-Related Injuries Incident Rate Total	All Workers	0	0.0014	0.0014
High-Consequences Work-Related Injuries Incident Rate – Employees	Employees	0	0.0026	0
High-Consequences Work-Related Injuries Incident Rate – Contractors	Contractors	0	0	0.0033
Lost-Time Injuries Incident Count Total	All Workers	39	26	32
Lost-Time Injuries Incident Count – Employees	Employees	20	15	16
Lost-Time Injuries Incident Count – Contractors	Contractors	19	11	16
Lost-Time Injuries Incident Rate Total	All Workers	0.053	0.037	0.046
Lost-Time Injuries Incident Rate – Employees	Employees	0.050	0.039	0.040
Lost-Time Injuries Incident Rate – Contractors	Contractors	0.057	0.035	0.053
Recordable Work-Related injuries Incident Count Total	All Workers	124	99	86
Recordable Work-Related Injuries Incident Count – Employees	Employees	70	49	45
Recordable Work-Related Injuries Incident Count – Contractors	Contractors	54	50	41

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Work-related injuries		2022	2021	2020
Recordable Work-Related Injuries Incident Rate Total	All Workers	0.17	0.14	0.12
Recordable Work-Related Injuries Incident Rate – Employees	Employees	0.18	0.13 ¹	0.11
Recordable Work-Related Injuries Incident Rate – Contractors	Contractors	0.16	0.16	0.14
Worker hours Total	All Workers	146,024,347	139,726,491	140,053,502
Worker hours – Employees	Employees	79,840,884	76,067,581	79,598,857
Worker hours – Contractors	Contractors	66,183,463	63,658,910	60,454,645

¹ Recordable work-related injury employee incident rate re-calculated due to an identified data correction (which are immaterial to the Intersections report as a whole).

The most common work-related injuries for Dow employees and contractors in 2022 were related to slips, trips and falls.

Dow has implemented Life Critical Standards (LCS) to minimize the likelihood of high-consequence work-related injuries. These include elevated work, electrical work, line and equipment opening, isolation of energy sources, safe work permit, hot work, confined space entry, hydro blasting pressure washing, heavy equipment and moving vehicles.

403-10 Work-related ill health

In the table below you will find Dow’s 3-year total work-related ill health. Recordable work-related illnesses includes all workers performing work at Dow locations.

Work-related ill health		2022	2021	2020
Fatality Count (illness) Total	All Workers	0	0	0
Fatality Count (illness) – Employees	Employees	0	0	0
Fatality Count (illness) – Contractors	Contractors	0	0	0
Total Recordables (Illness)	All Workers	17	7	2
Recordables (illness) – Employees	Employees	17	7	1
Recordables (illness) – Contractors	Contractors	0	0	1

As most illness counts relate to hearing, Dow is taking the following actions:

- Noise hazards have been identified, based on industrial hygiene assessments and noise monitoring.
- Noise hazards are prioritized and then projects are put in place to reduce or eliminate noise hazards. These projects include elimination, engineering controls, administrative controls and improved personal protective equipment.

For more details on the high-priority health risk reduction program, see [GRI 3-3 Management approach – Health & Wellness](#).

Dow Disclosures – GRI Content Index

GRI 404: Training and Education 2016

404-1 Average hours of training per year per employee

Aligned to Dow’s continuous learning and development approach, in 2022 the average Dow employee invested 56.9 hours in training and development via learning platforms such as Diamond Learning, Ethics & Compliance and LinkedIn Learning, among other functional and regional-based initiatives. For the same cycle, the average Dow leader invested an average of 23.1 hours toward required leadership curriculums.

As follows, detailed average hours per gender and type of employee for 2022 were:

Average Training Hours	2022	2021	2020
Employee average training	56.9	40.7	62.0
People leader average training	23.1	30.7	

Average Training Hours	2022	Average Training Hours	2022
Female	32.6	Executive	9.2
Male	63.9	Director	29.7
Not Disclosed	64.1	Manager	30.5
		Non-Management	56.9

404-2 Programs for upgrading employee skills and transition assistance programs

Dow is committed to providing continuous career and skill development opportunities to all employees, subject to global offering and career stage. As a global commitment, current offerings are designed by corporate and functional portfolios and complemented by the Office of Inclusion, employee resource groups (ERGs) and the Employee Experience Network initiatives.

Today, Dow has a robust digital experience through the My HR Portal platform, where employees keep their talent profiles updated based on job, career and personal interests – updating their development plans and achievements including educational and skills certifications, mentorship, coaching and sponsorship program participation.

Through the multi-year Manage Workforce Capabilities program, Dow has initiated the path to transition into a skills-based organization with a global governance framework supported by the Global Learning Council, with ongoing learning experience efforts creating a more innovative approach to development enabled by a global skills framework.

In 2022, Dow delivered LEAD – a three-day summit covering all people leaders and influential leaders (~3,500) – with purpose, performance and people-focused topics, including key priorities and leader expectations. People Leader Essentials and People Leader Foundations programs were provided to upskill more than 480 new leaders at Dow. More than 150 High Potential individuals participated in the McKinsey Accelerate Development Program, and 220 leaders graduated from executive educational courses at Columbia, MIT, Wharton, Stanford and Yale through the global ExecOnline Program.



Dow Disclosures – GRI Content Index

Through Dow’s Development for All framework, annual training curriculums are delivered with a focus on onboarding, employee development planning, career paths, performance culture and interview preparation. In addition, more than 15 global, regional and functional mentorship, coaching and sponsorship programs are offered to advance Dow’s inclusion, diversity and equity commitments for underrepresented talent.

Dow is also committed to providing transitional assistance to eligible employees impacted by workforce restructuring programs. In 2022, the Company continued to offer outplacement services at no cost to employees separated from Dow. These outplacement services include career and life coaching, curriculum vitae preparation and optimization, networking and interview preparation to guarantee a meaningful employee experience throughout this transitional career stage.

404-3 Percentage of employees receiving regular performance and career development reviews

Dow leaders partner with their team members to identify strengths and opportunities for continuous development through the performance culture cycle that concludes each year with an annual review. In preparation, leaders gather multi-rater feedback throughout the year in the online My HR Portal platform, considering goal achievements and key contributions, assessing main areas of further upskilling and, finally, reflecting on annual compensation results.

For the 2022 performance cycle, 97% of Dow’s active employees were eligible to receive an annual performance review. The remaining 3% were ineligible due to employment status and local contractual agreements or were hired after the launch of the year-end performance cycle. Of the eligible employees at the end of 2022, 95.6% received a documented performance summary. Compared to the overall eligible populations, there were no meaningful differences between employees who did or did not receive a performance summary across gender or employee category.

Annual Performance Review Received (by Gender)	2022	2021	2020
Men	95.2%	95.3%	94.5%
Woman	96.5%	96.9%	96.6%
Not Disclosed	100.0%	100.0%	100.0%

Annual Performance Review Received (by Role)	2022	2021	2020
Executives	100.0%	100.0%	96.3%
Directors	95.7%	99.5%	96.8%
Managers	98.3%	97.0%	96.8%
Non-Management	95.4%	95.7%	95.0%



Inclusion, Diversity & Equity (ID&E) Management

3-3 Management approach

Key Impacts

- Dow is committed to equal opportunities in employment as part of its dedication to the diversity of its workforce and fostering an inclusive culture. (positive)
- As a large, multi-national company, Dow’s commitment to ID&E is visible and impacts society by example. (positive/negative)
- Dow’s reputation as a leader in ID&E improves its ability to attract and retain a diverse group of talent. (positive)
- Dow’s inclusive culture is a competitive advantage that enables its people to develop, advance, be heard and contribute their best as the Company tackles global challenges and innovates for its customers. (positive)

Dow succeeds when its employees thrive. The Company’s commitment to ID&E has allowed it to navigate through challenging times with increased employee engagement and enhanced innovation. Team Dow continues to deliver successful company performance, fueled by the commitment to advance ID&E for all.

Commitments

Dow’s ALL *IN* 2025 strategy focuses on leading with inclusion, elevating its focus on diversity and embedding equity into its practices, policies and processes. It includes:

- Institutionalizing an inclusive culture and equitable practices.
- Positively impacting the customer experience and driving business value through commitments to ID&E.

- Improving the diversity, including representation of women and U.S. ethnic minorities, and capability of Dow’s workforce and ensure all employees, irrespective of gender, race or ethnicity have an equal opportunity to thrive.
- Cultivating an all-inclusive culture through its people leaders.
- Achieving top benchmark performance in supplier diversity.
- Strengthening ID&E into the communities where Dow employees live, work and do business.
- Establish a leadership position and be recognized as a great place to work for all.

Policies

- Dow has an unwavering commitment to ethical behavior and stands in opposition to any form of sexism, racism, discrimination or harassment. Dow expects its leaders, employees and representatives to actively oppose inequities and injustices in the workplace.
- Dow commits to providing a work environment where everyone feels valued and can accomplish their full potential.
- Dow’s Respect and Responsibility Policy sets expectations for how employees should respect each other in the workplace to achieve Dow’s goals and maintain its high ethical standards.



Inclusion, Diversity & Equity (ID&E) Management



2022 Actions Taken

Leadership and Progress

Dow's global ID&E strategy is led by Chief Inclusion Officer Alveda J. Williams, Ph.D., who reports directly to Chair and CEO Jim Fitterling. This strategy has been endorsed by Dow's Board of Directors, and progress is reviewed by the Compensation and Leadership Development Committee of the Board.

Three Inclusion Councils drive the ID&E strategy from the top of the Company and across the enterprise.

Over the past five years, Dow has made significant progress against its key performance indicators:

- Improved representation for U.S. ethnic minorities and women globally
- Increased ERG participation
- Improved overall employee satisfaction
- Increased spend with diverse suppliers
- Established reputation as a leader in ID&E via external awards and recognition

Stakeholders Engaged

- Dow Board of Directors
- Dow leadership
- ERGs

Metrics

Linked inclusion and diversity metrics to the annual performance award for all people leaders and senior directors and above, where legally permissible.

While performance on individual metrics has varied, Dow has met or exceeded the objectives for the overall ID&E index each year.

Stakeholders Engaged

- People leaders
- Senior directors
- Dow Board of Directors

Hiring

In 2020, institutionalized global inclusive hiring standards that require hiring managers to post open roles, implement a diverse candidate slate, ensure a diverse interview panel and follow a structured interview process to mitigate bias and ensure a consistent candidate experience.

In 2022, 39.0% of external hires in the United States were ethnic minorities and 33.2% of the global hires were women.

Stakeholders Engaged

- Dow leadership
- People leaders
- Employees
- HR talent acquisition



Dow Disclosures – GRI Content Index

GRI 405: Diversity and Equal Opportunity 2016

405-1 Diversity of governance bodies and employees^

Percentage of individuals within the organization's governance bodies by gender, age group and race/ethnicity – Dow's Board of Directors

Percent of Directors by Gender	As of June 2023	As of June 2022	As of June 2021
Men	66.7%	66.7%	73.0%
Women	33.3%	33.3%	27.0%
Percent of Directors by Age			
<30	0.0%	0.0%	0.0%
30-50	0.0%	8.3%	9.0%
50+	100.0%	91.7%	91.0%
Percent of Directors by U.S Ethnic			
U.S. Non-Minority	66.7%	66.7%	73.0%
U.S. Ethnic Minority Total	33.3%	33.3%	27.0%
Black or African American	25.0%	25.0%	18.0% ⁷
Hispanic or Latino	8.3%	8.3%	9.0% ⁷

Number and percentage of employees per employee category by gender, age group and race/ethnicity

Total Number of Employees by Gender	Non-Management	Manager	Director	Executive	Total
Men	24,770	1,710	137	21	26,638
Women	10,095	990	70	8	11,163
Not Disclosed	20	0	0	0	20
Total Number of Employees by Age	Non-Management	Manager	Director	Executive	Total
<30	4,809	14	0	0	4,823
30-50	21,335	1,918	112	7	23,372
50+	8,741	768	95	22	9,626

Dow Disclosures – GRI Content Index

Total Number of Employees by U.S. Ethnic Minority	Non-Management	Manager	Director	Executive	Total
U.S. Non-Minority	11,382	1,008	106	17	12,513
U.S. Ethnic Minority Total	4,465	302	35	9	4,811
American Indian or Alaska Native	69	3	0	0	72
Asian	953	106	12	2	1,073
Black or African American	1,492	86	5	4	1,587
Hispanic or Latino	1,682	95	17	3	1,797
Native Hawaiian or Other Pacific Islander	12	1	0	0	13
Two or More	257	11	1	0	269
Not Disclosed	115	9	1	0	125
Percent of Employees by Gender[^]	Non-Management	Manager	Director	Executive	Total
Men	71.0%	63.3%	66.2%	72.4%	70.4%
Women	28.9%	36.7%	33.8%	27.6%	29.5%
Not Disclosed	0.1%	0.0%	0.0%	0.0%	0.1%
Percent of Employees by Age[^]	Non-Management	Manager	Director	Executive	Total
<30	13.8%	0.5%	0.0%	0.0%	12.8%
30-50	61.1%	71.1%	54.1%	24.1%	61.8%
50+	25.1%	28.4%	45.9%	75.9%	25.5%
Percent of Employees by U.S. Ethnic Minority[^]	Non-Management	Manager	Director	Executive	Total
U.S. Non-Minority	71.3%	76.4%	74.6%	65.4%	71.7%
U.S. Ethnic Minority Total	28.0%	22.9%	24.7%	34.6%	27.5%
American Indian or Alaska Native	0.4%	0.2%	0.0%	0.0%	0.4%
Asian	6.0%	8.1%	8.5%	7.7%	6.1%
Black or African American	9.4%	6.5%	3.5%	15.4%	9.1%
Hispanic or Latino	10.5%	7.2%	12.0%	11.5%	10.3%
Native Hawaiian or Other Pacific Islander	0.1%	0.1%	0.0%	0.0%	0.1%
Two or More	1.6%	0.8%	0.7%	0.0%	1.5%
Not Disclosed	0.7%	0.7%	0.7%	0.0%	0.7%

For more information, see Dow's Equal Employment Opportunity – Employer Information Report: [EEO-1 Report | Dow Corporate](#)



Dow Disclosures – GRI Content Index

405-2 Ratio of basic salary and remuneration of women to men

Dow’s pay-for-performance programs and offerings – including base pay, short-term incentive (STI) and long-term incentive (LTI) programs are designed to be market competitive, equitable and fair. The Company has conducted global pay equity studies for over 20 years to ensure it delivers equal pay for equal work. Dow’s pay equity studies compare the pay gap across all compensation components between genders and U.S. ethnic minorities and non-minorities.

In 2021, Dow transitioned to an expert third party as a partner to ensure that it is applying best-in-class methodology to the pay equity analysis and to validate its findings. This required an interim exclusion of Germany from the analyses in 2021 and 2022.

Pay ratio measures average base pay¹, STI² and LTI³ for all⁴ majority and minority groups regardless of work performed.

Minority to Majority Pay Ratio	2022 ⁴	2021 ⁴	2020
Global Female to Male Pay Ratio	0.98:1.00	0.97:1.00	0.98:1.00
U.S. Ethnic Minority Pay Ratio	0.97:1.00	0.97:1.00	0.98:1.00

¹ Base pay is calculated as the average base pay salary.

² STI is calculated based on the actual STI award paid.

³ LTI is calculated based on the actual LTI granted to eligible roles.

⁴ Gender is evaluated globally, excluding Germany.

Dow’s strategic objective is to sustainably eliminate any pay disparities and ensure its programs, policies and practices promote both equitable pay and equitable opportunities. Dow will continue to conduct annual pay equity analyses to identify and initiate any necessary gap closure actions. In addition, Dow has prioritized specific actions including full evaluation and enhanced guidance and governance of its programs, policies and practices with a deliberate focus on ensuring:

- Pay is market competitive.
- Employee pay decisions are based on a robust and objective framework.
- Pay framework and processes are globally consistent.
- Leaders can clearly communicate the pay equity approach.
- Employees have clarity on how pay decisions are made.

OMISSION 405-2 Reporting by employee category/significant locations of operation

Information not available. Dow has engaged a third party to explore and enhance its reporting capabilities on a more granular level. Dow will assess its ability to include this detail in future reporting.



Human Rights Management

3-3 Management approach

Key Impacts

- **ENVIRONMENTAL:** Pending and future environmental permits are facing increased scrutiny and being challenged outside of the traditional license to operate by noting environmental justice and other equity concerns. (negative)
- **SOCIAL:** Dow's objective is to protect, build and maintain its social license by following industry standard practices, operating responsibility, taking care of its workers and being a good corporate citizen. (positive)
- **GOVERNANCE:** An emerging and growing number of human rights expectations will require enhanced internal coordination across the various businesses, functions and geographies. (negative)

Emerging human rights frameworks seek ways to prevent or mitigate adverse human rights impacts that are directly linked to business operations, products or services. As new issues emerge, governments are continuing to update specific requirements including expectations of business to comply with human rights requirements and legislation. As a result, each of Dow's businesses, functions and geographies is impacted by human rights. Human rights are embedded in Dow's long-term commitment to the United Nations (U.N.) Sustainability Development Goals (SDGs) via its multi-generational sustainability goals, as well as its ID&E strategy. Dow's ambition around the role of business in society is reflected in its ongoing commitments and actions related to environmental, social and governance (ESG).

The Environmental Justice (EJ) Steering Team acts as the governance structure for issues and opportunities related to EJ. The Social Justice Council monitors inequality matters and advises Dow on its response. Most recently, Dow established an ESG Supply Chain Due Diligence Team to implement a comprehensive response aligned with supply chain management (including purchasing), business strategy, communications and sustainability reporting to address emerging regulatory requirements.

Commitments

- Living the values of Integrity and Respect for People is core to the way Dow conducts business and its commitment to the protection of human rights. Dow's Values and the [Dow Code of Conduct Policy | Public Policy | Dow Corporate](#) are influenced by and reflect the fundamental principles described in the [U.N. Universal Declaration of Human Rights](#).
- In May 2007, Dow committed to the [U.N. Global Compact](#) and its Ten Principles, noting that businesses should support and respect the protection of internationally proclaimed human rights and avoid complicity in human rights abuses.
- Dow operates in full accordance with the [U.N. Guiding Principles on Businesses and Human Rights](#). These Guiding Principles provide a framework for governments and companies that are committed to protecting human rights around the world. Dow respects the sovereignty of governments around the world and the responsibility of governments to protect the human rights of its citizens.

Policies

- [Human Rights Policy | Dow Corporate](#) Dow believes that respect for the dignity, rights and aspirations of all people is a cornerstone of business excellence.
- [Dow Code of Conduct Policy | Public Policy | Dow Corporate](#) Dow's Code is a guide to the behaviors and sets expectations for ethical conduct on matters ranging from health and safety in the workplace, to conflicts of interest, bribery, corruption, sustainability, inclusion and diversity, equal opportunity and respect in the workplace, and citizenship.

2022 Actions Taken

Site Assessments

Initiated environmental justice site assessments to prioritize sites and identify equity-based vulnerabilities or opportunities for those sites.

- Sites utilize existing government screening tools (EPA EJ screening tool and the Climate and Economic Justice screening tool).
- Site dashboards were developed to highlight opportunities and vulnerabilities.
- Site education and awareness workshops were hosted to align screening tool metrics and community surveys with site community engagement plans.

Stakeholders Engaged

- Local schools
- Local economic development organizations
- Fenceline community members

Established Steering Team

Established a corporate, multi-functional Environmental Justice Steering Team to provide oversight and strategic direction.

- Team meets bi-monthly and provides quarterly updates to ESG Executive Team.
- The steering team routinely provides advice on political and regulatory vulnerabilities (i.e., permit objections, inspections, enforcement trends) and opportunities.

Stakeholders Engaged

- Site/facility leaders
- Functional leaders from Government Affairs, Legal, Public Affairs and Sustainability

External Collaborations

Announced collaboration with Investor Advocates for Social Justice (IASJ) to commission a racial equity assessment to address industry standards and responsible operations.

- Internal IASJ team established to assess Dow's U.S. operations, policies and the Company's ID&E strategy.

Stakeholders Engaged

- Functional leaders from Government Affairs, Legal, Public Affairs and Sustainability

Governance Structure

Introduced a new human rights (social equity-ESG) governance structure including organization, systems, network and communications to address the growing number of compliance requirements.

- New global social equity role established to facilitate the emerging and growing number of human rights expectations; role requires facilitative leadership to enhance internal coordination across the various businesses, functions and geographies.
- New European human rights officer identified to ensure compliance from a regulatory and legal perspective due to German Due Diligence requirements, and other expected legislation at the European Union level. New global, cross-functional ESG Supply Chain Due Diligence Team formed to develop risk management processes aligned with existing supply chain mapping work.
- New global, cross-functional ESG Supply Chain Due Diligence Team formed to develop risk management processes aligned with existing supply chain mapping work.
- Collaboration with external partners as needed to implement risk assessment and complaints process.

Stakeholders Engaged

- Functional leaders from Supply Chain, Inclusion, Diversity & Equity, Government Affairs, Legal, Public Affairs, EHS&S and Sustainability, leaders across businesses
- EcoVadis, Mayer Brown, NAVEX

Dow Disclosures – GRI Content Index

GRI 406: Non-discrimination 2016

406-1 Incidents of discrimination and corrective actions taken

Dow’s employees are expected to behave in a way that protects its business interests, reputation and each other. For information regarding concerns raised and followed up on, see [GRI 2-25 Processes to remediate negative impacts](#) and [GRI 2-26 Mechanisms for seeking advice and raising concerns](#).

Dow closely tracks reports of discrimination on an ongoing basis and uses this information to craft remediation and intervention plans. Dow views reports of concerns as a positive indicator of employee engagement since reports indicate that employees feel safe in the reporting process and feel confident in Dow’s desire and ability to remediate concerns. Dow expects employees to report concerns and provides training to encourage reporting in areas where reporting rates are less than expected to ensure that employees are aware of the availability of safe reporting channels and resources available to help address their needs. Each Regional Ethics and Compliance Committee is involved in remediation of substantiated cases related to its respective region. In the event an investigation corroborates a trend within a specific region, the OEC will contact the Ethics and Compliance Committee responsible for such region to address the trend.

OMISSION 406-1 Discrimination by specific demographics

Information incomplete. Dow does not currently capture all demographic types listed in the disclosure. Dow will continue to assess if additional disclosure data is available on an annual basis.

GRI 407: Freedom of Association and Collective Bargaining 2016

407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk

At all Dow locations, risks to workers’ rights to exercise freedom of association or collective bargaining are embedded in the [Code of Conduct Policy | Public Policy | Dow Corporate](#). To date, no risks to freedom of association or collective bargaining have resulted from Code of Conduct evaluations. To understand categories of cases brought through Dow’s Code reporting and follow-up processes, see [GRI 2-26 Mechanisms for seeking advice and raising concerns](#).

No specific measures related to freedom of association or collective bargaining have been taken for this reporting period, but the processes described in the [GRI 3-3 Management approach – Sustainable Procurement](#) explains the general actions taken for social criteria gaps. The Sustainable Procurement approach identifies the social criteria gaps as well as the process for monitoring current suppliers and screening new suppliers in the event a gap is found.

For an understanding on Dow’s approach to managing human rights, see [GRI 3-3 Management approach – Human Rights Management](#).



Dow Disclosures – GRI Content Index

GRI 408: Child Labor 2016

408-1 Operations and suppliers at significant risk for incidents of child labor

At all Dow manufacturing and lab locations, risks of incidents involving child labor or young workers exposed to hazardous work are embedded in the [Code of Conduct Policy | Public Policy | Dow Corporate](#)⁷. To date, no risk incidents involving child labor or young workers have resulted from Code of Conduct evaluations. To understand categories of cases brought through Dow’s Code reporting and follow-up processes, see [GRI 2-26 Mechanisms for seeking advice and raising concerns](#).

No specific measures related to incidents involving child labor have been taken for this reporting period, but the processes described in the [GRI 3-3 Management approach – Sustainable Procurement](#) explains the general actions taken for social criteria gaps. The Sustainable Procurement approach identifies the social criteria gaps as well as the process for monitoring current suppliers and screening new suppliers in the event a gap is found.

For an understanding on Dow’s approach to managing human rights, see [GRI 3-3 Management approach – Human Rights Management](#).

GRI 409: Forced or Compulsory Labor 2016

409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor

At all Dow locations, risks of incidents involving forced or compulsory labor are embedded in the [Code of Conduct Policy | Public Policy | Dow Corporate](#)⁷. To date, no risks or incidents involving forced or compulsory labor have resulted from Code of Conduct evaluations. To understand categories of cases brought through Dow’s Code reporting and follow-up processes, see [GRI 2-26 Mechanisms for seeking advice and raising concerns](#).

No specific measures related to incidents involving forced or compulsory labor have been taken for this reporting period, but the processes described in the [GRI 3-3 Management approach – Sustainable Procurement](#) explains the general actions taken for social criteria gaps. The Sustainable Procurement approach identifies the social criteria gaps as well as the process for monitoring current suppliers and screening new suppliers in the event a gap is found.

For a more complete understanding on Dow’s approach to managing supply chain and human rights topics, see [GRI 3-3 Management approach – Human Rights Management](#) and [GRI 3-3 Management approach – Sustainable Procurement](#).

GRI 410: Security Practices 2016

410-1 Security personnel trained in human rights policies or procedures

The Emergency Services & Security (ESS) organization has responsibility for providing global security services for Dow’s sites, off-site events and external engagement activities. ESS recognizes that security personnel can have both negative and positive impacts on local populations and on the upholding of human rights and the rule of law. For example, ESS has provided guidance on the use of force to local law enforcement and contract security providers during local events. ESS routinely discusses best practices for engaging citizens during protests or other events where heightened security is warranted.

For an understanding of Dow’s approach to managing security, see [GRI 3-3 Management approach – Climate & Operational Resilience](#). To understand more about Dow’s Ethics and behavioral training and its approach to managing ethical compliance, see [GRI 3-3 Management approach – Ethics & Compliance](#).

OMISSION 410-1 Security personnel trained in human rights policies or procedures

Information unavailable. Human rights training is not formally incorporated into the [Code of Conduct Policy | Public Policy | Dow Corporate](#)⁷ training for security personnel, which provides an opportunity to evaluate training that ensures the appropriate conduct toward third parties, particularly regarding the use of force. Dow will continue to annually assess mechanisms to be able to report this information in the future.

Dow Disclosures – GRI Content Index

GRI 411: Rights of Indigenous People 2016

411-1 Incidents of violations involving rights of Indigenous peoples

Dow aims to protect the rights of all Indigenous people. Dow employees collaborate across communities, including Indigenous people, to develop and implement local community programs to address unmet needs. Specifically, Canadian employees have developed an Indigenous employee network to discuss community needs.

Dow believes in sustainable business that creates positive social change. The global citizenship strategy for community engagement is a roadmap for how the Company connects its core strengths – its science and technology expertise and global reach and resources – to enhance the lives of people in its communities and help make the planet more sustainable. For additional information about global citizenship, review [GRI 3-3 Management approach – Citizenship](#). For additional information about local communities, review [GRI 413 local communities](#).

OMISSION 411-1 Incidents of violations involving rights of Indigenous peoples

Information unavailable. Actions to track incidents of violations involving the rights of Indigenous people are not collected. Dow will continue to annually assess mechanisms to be able to report this information in the future.



GRI Disclosure Report – GRI Content Index

GRI 413: Local Communities 2016

Citizenship

3-3 Management approach

Key Impacts

- Dow’s global citizenship strategy directs its investments to accelerate social change and create a more sustainable and equitable future. (positive)
- Dow has the ability to positively influence and impact local communities in which it operates through community outreach such as volunteerism, talent or expertise to local initiatives and financial contributions. (positive)
- Local community leaders are key stakeholders in Dow’s community advisory panels (CAPs), permitting discussions, remediation activities and other investments that Dow makes in communities. (positive)

At Dow, innovative, responsible and sustainable business plays an essential role in building healthy, thriving, resilient communities.

Commitments

- Charitable contributions support the following commitment areas: Advancing Sustainable Solutions, Building Inclusive Communities, Developing Tomorrow’s Innovators, Engaging Employees for Impact and Collaborating with Communities.
- Specific targets within Dow’s Engaging for Impact 2025 Sustainability Goal include:
 - 70% of Dow employees will contribute time and expertise through volunteer engagement.
 - Positively contribute to Dow’s enterprise goals on overall employee satisfaction and the employee experience metric – through significantly higher-than-average favorable scores for employees who volunteer.

Policies

- At Dow’s manufacturing sites, community awareness and outreach policies are integrated into Dow’s operating management discipline system and sites are audited on this policy on a regular basis. The policy requires stakeholder lists, stakeholder education activities, a community outreach program, communications process and community dialogue process. In particular, at Dow’s large manufacturing sites, community stakeholder engagement is a key priority, with resources aligned to ensure strong community involvement along with active listening by both Dow and its community partners.
- Dow Company Foundation and company contribution rules govern eligibility requirements for grant-giving across the global organization. An external third party, Charities Aid Foundation America, reviews, vets and validates organization eligibility prior to distributing Foundation grant money outside of the United States.
- Multiple policies, including the [Global Volunteer & ERG Participation Policy](#), Civic Engagement Policy (United States), and Team Rubicon Deployment Policy for veterans (Canada and United States), support volunteer and civic engagement.



Citizenship



2022 Actions Taken

Philanthropy

Dow's philanthropic work is governed by two teams – the Dow Company Foundation's Board of Directors and the Corporate Contributions Committee. The Foundation is a separately governed, private foundation designed to carry out the charitable efforts of Dow. Local and inclusive committees exist within each region to review grant requests. Additionally, Dow employees collaborate across communities to develop and implement local community programs to address unmet needs. Dow works closely with nonprofit partners to understand the needs of the communities and prioritize resources. Included among the needs addressed in communities around the world where Dow operates in 2022: food insecurity, education infrastructure, waste in the environment, health infrastructure, opportunity for students with disabilities, disaster relief, and long-term career and entrepreneurial skills.

In 2022, charitable contributions totaled \$37.3 million. Dow provided 899 grants in 2022 to 685 partner organizations. The charitable organizations that received Dow funding last year reported on priority impacts. Aligned to Dow's measurement framework, priority grantees report on their program's full outcomes using standardized logic models and indicators. [True Impact](#)⁷, Dow's third-party vendor, completes the evaluation process by working directly with nonprofit organizations to collect and interpret data.

Stakeholders Engaged

- Dow Company Foundation
- Dow Corporate Contributions Committee
- Dow sites
- Nonprofit organizations
- Dow ERGs
- Customers

Volunteerism

Whether through the dedication of time, talent or expertise, Dow believes that volunteering promotes a positive employee experience, further supports Dow's global citizenship priorities and investments and, ultimately, advances the Company's ambition. Core engagement programs include MLK Day of Service, #PullingOurWeight, the Business Impact Fund, the ALL /N Employee Resource Group (ERG) Fund and FIRST[®] Robotics.

Employee perceptions about employee engagement and experience are obtained from the Voice annual employee survey. Progress is also evaluated through external benchmarking and awards including DiversityInc, Points of Light, Boston College Center for Corporate Citizenship and Chief Executives for Corporate Purpose.

Stakeholders Engaged

- Dow ERGs
- Dow employee volunteers
- Nonprofit organizations

Community Outreach

Dow sites have a documented Community Outreach Program, which details site operations, products, applications and distribution, corporate social responsibility and projects to protect the community's safety, health and the environment. Dow maintains a dialogue with stakeholders about emergency response plans, reduction of waste and emissions and it creates opportunities to educate and improve community confidence and address community needs.

Feedback received from CAPs, community surveys, local government organizations, industry partnerships, directly from community members, etc. is addressed to maintain the highest standards of safety, security and emergency preparedness in every Dow community. Community members have access to Dow and Dow-related information 24/7, whether it is through social media, local community hotlines, Dow websites and/or email.

Stakeholders Engaged

- Local community leaders
- Local government
- CAPs
- Dow sites
- Community members



Dow Disclosures – GRI Content Index

413-1 Operations with local community engagement, impact assessments and development programs

Last year, 90% of Dow operating sites implemented local community engagement programs including employee volunteerism, donations, serving on community boards, participation in community or municipality committees and hosting CAPs.

Dow uses stakeholder mapping to identify key audiences for community awareness programs: employees, residents and community representatives, government representatives, law enforcement agencies, local emergency planning organizations, CAPs, educational institutions, media, customers, suppliers and industrial-park tenants. Dow continued Community Opinion and Needs Assessments surveys at strategic Dow locations and used the data to inform 2022 community investment and engagement.

Dow sites have documented Community Outreach Programs that describe site operations; products; applications; corporate social responsibility; and projects to protect the community's safety, health and the environment. Dow maintains dialogues with stakeholders about emergency response plans, reduction of waste and emissions and it creates opportunities to educate and improve community confidence and address community needs. Dow addresses feedback from community sources (community surveys, CAP meetings, local government organizations, industry partnerships, directly from community members, etc.) to maintain the highest safety, security and emergency preparedness standards in every Dow community. Investing in Dow's local communities is also an avenue to hear issues or concerns and facilitate the necessary discussions to gain understanding. In addition to these conversations, communities can raise concerns directly through local channels, through Dow's Responsible Care® contact process or through social media. Dow is committed to responding to community input and communicating transparently to support resilient, thriving communities where its employees live and work. One of the ways Dow assesses the impact of its community investment is through its measurement framework, which [True Impact](#)⁷ implements in collaboration with Dow.

413-2 Operations with significant actual and potential negative impacts on local communities

For the list of Risk Factors for Dow, see pages 20-24 of the Dow Inc. Annual Report on Form [10-K](#)~.

GRI 414: Supplier Social Assessment 2016

414-1 New suppliers that were screened using social criteria

Respect for People is a core Dow value. To ensure Dow's supply chain aligns with the highest standards, all Dow suppliers must align with the [Code of Business Conduct for Suppliers | Public Policy | Dow Corporate](#)⁷ during the onboarding process, as well as with every purchase order. Refer to [GRI 3-3 Management approach – Sustainable Procurement](#) for details on the social topics required for suppliers. For the number of suppliers screened for social impacts, see [GRI 308-2 Negative environmental impacts in the supply chain and actions taken](#).

414-2 Negative social impacts in the supply chain and actions taken

The well-being of Dow's suppliers and the communities in which they work is a primary concern for Dow's purchasing and supply chain teams. Dow is continually improving its supplier assessment approach. For additional information on assessments, see [GRI 308-2 Negative environmental impacts in the supply chain and actions taken](#). While no supplier showed a significant negative social impact, 54 suppliers received an insufficient labor and human resources rating in EcoVadis and are being targeted for improvement. No issues were identified in 2022 that necessitated the termination of a supplier. If a significant social impact were found, it could lead to not contracting with a supplier or the termination of existing contracts.

Through Dow's Supply Chain sustainability risk assessment, over 950 assessed suppliers were identified as having a potential risk for negative social impacts. Of the EcoVadis-assessed suppliers, 36 were assessed as having a potential social impact. Of the TFS audits, two suppliers showed critical issues that are being addressed with improvement plans.

Dow Disclosures – GRI Content Index

GRI 415: Public Policy 2016

415-1 Political contributions

Direct Political Contributions

The political process significantly impacts Dow through government policies, legislation and judicial and regulatory decisions. Dow actively participates in the political process through legally authorized advocacy, grassroots efforts and financial contributions.

Dow is committed to the highest standard of ethical conduct in its involvement in the political process. All financial contributions strictly adhere to federal and state laws regarding contribution limits on amount and source, criteria and reporting requirements. Contribution information is a matter of public record in the United States and is readily available to interested parties through the Federal Election Commission, Internal Revenue Service (IRS) and Secretaries of State.

- More information on Dow’s direct political contribution policy can be found here: [Contributions | U.S. Public Policy | Dow Corporate](#)⁷
- Dow’s authorization process for political contributions is available at: [Authorization for Political Contributions | U.S. Public Policy | Dow Corporate](#)⁷
- Dow provides lists of candidates who receive corporate political contributions for the previous five years online at: [Corporate Political Contributions | U.S. Public Policy | Dow Corporate](#)⁷
- A link to Dow’s Lobbying Disclosure Act (LDA) (U.S. Congressional Lobbying Disclosure Filings) can be found here: [Trade Associations | U.S. Public Policy | Dow Corporate](#)⁷

Indirect Political Contributions

Dow participates in many trade and business associations. Engagement with trade and business associations, whose purpose is to promote common business interests, assists the Company in managing priorities relevant to Dow and the chemical industry and disclosures. Contributions related to trade association expenditures represent Dow’s indirect political contributions.

- More information on Dow’s trade association policy can be found here: [Trade Associations | U.S. Public Policy | Dow Corporate](#)⁷

Dow receives information from trade and business associations as well as civic leagues and social welfare organizations in the United States regarding the portion of its dues or contributions that are used for lobbying expenses and political expenditures. Dow includes this information in the aggregate in its quarterly lobbying activity reports filed with the U.S. Congress, as required by the LDA, which can be viewed under the link named “Dow’s LDA filings” within the Trade Associations link above.

In addition, Dow provides a list of trade association membership and discloses expenses above \$25,000 per year, for the previous five years, at: [Trade Associations | U.S. Public Policy | Dow Corporate](#)⁷

Safer Materials

3-3 Management approach

Key Impacts

- Dow is a developer and user of hazardous substances and therefore its products have the potential to negatively impact the planet. (negative)
- Dow works to ensure that its materials are designed, produced, used and disposed of or reused in a way that is measurably better for people and the environment. (positive)

Dow is working to deliver a sustainable future through its materials science expertise and collaboration with its customers. By constantly innovating how it sources, manufactures and delivers material solutions, Dow helps customers achieve their goals and create a better tomorrow. Dow has an impact on safer materials directly through the manufacture and delivery of solutions and indirectly through the chemicals that are sourced.

Commitments

- Dow is committed to demonstrating the value of chemistry and materials science to society and improving the way the world understands and considers science in decision-making to maximize benefits to businesses, society and the planet. Through Dow's [2025 Safe Materials for a Sustainable Planet](#) goal the Company has made progress toward this vision by innovating sustainable materials of tomorrow, leading candid conversations about product safety and committing to the advancement of open and transparent chemistry with the value chain partners, customers and the public.
- In Dow's 2021 Intersections Report, it published the definition of safer materials and committed to evolving its approach to safer materials to enable innovations to meet the needs of the customers and society.

- In an effort to develop safer and more sustainable products for use in consumer, professional and industrial applications, Dow has committed to removing methyl ethyl ketoxime (MEKO, also known as 2-butanone oxime, CAS Registry Number 96-29-7) from its current product portfolio. While there are no regulatory requirements that prohibit the use of MEKO, Dow has made the decision to proactively retire products with MEKO because it has been identified as a Category 1B carcinogen. Dow's commitment is to remove MEKO from consumer and professional products by 2028 and industrial products by 2030.

Policies

Dow has a comprehensive management approach to ensuring the health and environmental safety of its products. Dow adheres to the [Responsible Care](#) Product Safety Code and has based its internal program on this code. The four main pillars of the [Chemicals Management Policy](#) are:

- Responsible Product Management
- Compliance with Product Regulations
- Transition to a More Sustainable Planet and Society
- Industry Leadership in Responsible Care

Please also see the Business Risk Reviews as described in [GRI 3-3 Management approach – Climate and Operational Resilience](#) as another action taken for managing safer materials.



2022 Actions Taken

Safer Materials Strategy

In 2022, Dow enhanced its safer materials strategy by creating three tracks to focus on various aspects of safer materials.

- The first track is focused on the assessment and categorization of the current Dow product portfolio. Dow will put forward a vision for safe chemistry that goes beyond saying it wants a “risk-based approach” and will lend credibility to what it means by controlling risk. This will also set the baseline for the product portfolio and identify priority areas for improvement as part of the safer materials strategy.
- The second track is focused on management of currently identified priority chemicals. Management plans include substituting with safer alternatives, reducing the level of priority substances in products, tightening emissions control at facilities or phasing out products containing the substances.
- The third track is developing predictive tools that R&D and the toxicology team will use early in innovation to discover safer alternatives and the next generation of sustainable products.
- Dow has set a target for the first track to publish high-level criteria for product categorization in 2023.
- As part of the second track, recommendations were made on all of the identified priority substances at the end of 2022.
- The third track has built a team of toxicologists and R&D developers to connect the [predictive toxicology models](#) with the [R&D digital capabilities](#) to align an efficient work process to develop safer alternatives. In 2023, this team will focus on awareness-building.

Stakeholders Engaged

- Employees
- Customers
- Suppliers
- Non-governmental organizations
- Investors
- Regulatory agencies

Risk Characterization Tool

The human and environmental risks of all products are characterized using Dow’s risk characterization process/tool. The tool requires the assessment of hazard and exposure information to identify the appropriate risk tier. In all, Dow’s internal classification has four risk tiers: Tier 1 being lowest risk, Tier 4 being highest risk. The risk tier then determines the required actions and reviews for the Product Stewardship program, including EH&S information development and publication, business risk review requirements and distributor/customer support. Mammalian end points/methods and environmental fate/effects testing recommendations are based on use exposure levels. The use values include intermediate, industrial not intermediate, professional and consumer.

Note: This Dow process aligns with Responsible Care® Risk Prioritization requirements.

Dow has a documented standard defining the requirements for risk characterization. The businesses are internally audited against this standard and any findings are tracked through the enterprise Event and Action Tool.

In 2022, the risk characterization process/tool was enhanced to streamline and automate the assessment process. In 2023, impacted users will receive training on the enhanced process/tool and begin the global implementation. The enhanced process/tool will enable subsequent risk reviews to be completed based on data changes or annually, versus a 5-year cycle.

Stakeholders Engaged

- Employees
- Dow Product Stewardship
- Dow Toxicological, Environmental, Research Consulting

Life Cycle Assessments

Dow focuses product EH&S management on the full product life cycle, from product innovation and raw material selection to production, customer and consumer use, and end of life or reuse. Dow continuously looks for improvement opportunities as part of its management approach at each stage of the product life cycle.

Life cycle assessments (LCAs) are conducted on the life cycle of Dow’s products in accordance with ISO 14040/14044 standards. The company provides results of these assessments upon request when data is available.

To assist with decision-making, Dow continuously conducts internal environmental and safety impact assessments, with increasing rigor throughout the development process, culminating with formal, third party-validated LCAs when appropriate.

Upon the completion of an LCA, the businesses receive feedback on the product, which can assist in driving product improvements. As part of Dow’s policy and in accordance with ISO standards, a critical review is conducted by an external third party before the report is made public. Dow set the goal of conducting LCA trainings for Dow employees and these were rolled out at the end of the year.

Stakeholders Engaged

- Employees
- Customers
- Suppliers
- Industry trade associations

Dow Disclosures – GRI Content Index

416-1 Assessment of the health and safety impacts of product and service categories

100% of Dow products are assessed in an appropriate manner depending upon EH&S profile, product application or use and exposure potential.

416-2 Incidents of non-compliance concerning the health and safety impacts of products and services

Dow tracks product safety incidents and non-conformance with its internal standards and any regulatory non-compliances through its innovative Product Stewardship Metric. Dow had no health and safety related recalls of its commercially sold products in 2022. The metric, which fosters a culture of issue identification and resolution, has led to improvements in raw material and product composition data, distributor training and new distributor requirements, and better internal work process documentation and training for new and experienced employees.



Cybersecurity & Privacy

3-3 Management approach

Key Impacts

- Dow, as part of the chemical industry, faces enterprise security threats that can significantly impact the safe and reliable operations of facilities, manufacturing and work processes, product transportation, proprietary technology, and information and data privacy. (negative)

Dow maintains an Information Security Services program under the authority of its chief information security officer to manage cybersecurity risk to minimize negative impacts from data loss or cyber events. The program includes robust technical controls for cyber threat prevention, detection, response and recovery operations, as well as policy, procedure, technical standards and training requirements. In addition, the Information Security Services program includes the Data Privacy Office, which oversees data privacy and protection practices and compliance with global and regional regulations.

Dow is committed to protecting its intellectual property and other sensitive data from unauthorized access or disclosure, and to protecting its systems from cyber events that could impact safe and reliable operations.

- Dow is committed to adhering to all legal requirements for cybersecurity and privacy for all jurisdictions in which it operates.
- Dow is committed to working collaboratively with partners in industry and in government to share information on cyber threats and cyber defense best practices to help increase its overall collective cyber defense posture.

Policies

- Dow follows the National Institute of Standards and Technology (NIST) Cybersecurity Framework (CSF), which is a controls framework originally designed for critical infrastructure providers but widely adopted internationally as one of the predominant enterprise security frameworks. Link to NIST: [Cybersecurity Framework | NIST](#)
- Dow’s Data Protection & Privacy Policy governs the treatment of personal information for employees, customers, suppliers, contractors and any other person interacting with Dow. This policy mandates appropriate principles for the collection, processing and storage of personal data. It also identifies several key elements of the appropriate protection of personal data, including limitation of purpose, transparency, rights of access, security, confidentiality and restrictions on transfers to third parties. This policy reflects principles from the EU General Data Protection Regulation 2016/679 as well as the Canadian Personal Information Protection and Electronic Documents Act.
- Dow’s Information Technology (IT) Security Policy identifies the roles of users, data owners and information systems and further mandates a high level of due care from users of Dow systems. Information protection and data privacy policies have been established to govern the generation, storage, processing and use of data, including the [Dow Code of Conduct Policy | Public Policy | Dow Corporate](#), Information Handling Policy, Data Protection/Privacy Policy and Dow Record Management Policy. Annual training for these policies and their procedures is required for all employees.



2022 Actions Taken

Policies and Procedures

Dow prepares for cyber events and has an established and mature information and cybersecurity process and training program, consisting of security policies and procedures, immediate notification system, simulation drills and formal training programs for all with access to the Company's network. Protocols and training exist to recognize, communicate and escalate suspicious activities including phishing, viruses, insider threats, suspect human behaviors or safety issues. Dow's cybersecurity practices contribute to Dow's overall emergency response readiness objectives – to prevent harm to the community, environment and workers; to minimize loss; and to preserve critical business continuity.

Internal and external audits, vulnerability testing, governance processes over outsourced service providers, active risk management and benchmarking against peers in the industry were undertaken. This includes regular assessments by external auditors to measure Dow's NIST CSF maturity level. Dow leverages multiple external cybersecurity performance rating agencies (e.g., Security Scorecard, BitSight) to validate Dow's security posture and continually ranks in a leadership position compared with industry peers.

Stakeholders Engaged

- Regulatory agencies
- Auditors
- Rating agencies

Security Operations Center

Dow maintains an enterprise-class Security Operations Center, providing end-to-end operations for purposes of monitoring, detecting, alerting and responding to cyber incidents. Dow has also established formal Crisis and Incident Management Programs, which respond to critical events at a geographic, business and functional level. Full disaster recovery exercises are conducted on a regular basis and business continuity programs are in place.

These programs are periodically tested to ensure their effectiveness in the event of a real crisis or significant incident. This includes regular penetration testing by external experts, tabletop exercises with internal stakeholders and yearly full disaster recovery exercises.

Stakeholders Engaged

- External assessors
- Internal business stakeholders

Partnerships

Dow manages data privacy through a strong partnership between Dow Legal, Human Resources (HR) and the Dow Data Privacy Office (DDPO). The DDPO leverages a global data privacy network, which utilizes an industry-leading platform, OneTrust, to track changes to privacy law, conduct privacy impact assessments, manage Data Subject Access Request (DSAR) activity and conduct incident investigations as needed. The DDPO manages mandatory data privacy training and has implemented a strong Privacy by Design program to ensure privacy is considered up front as new products or services are being designed.

The DDPO is subject to internal audits and is part of Dow's bi-yearly external cyber assessment program. The DDPO is governed by an executive steering team that meets quarterly to review any relative key performance indicators and review any changes to existing or future laws. The DDPO participates in yearly tabletop exercises to ensure Dow's incident response and communications processes stay current

Stakeholders Engaged

- Internal auditors
- External auditors
- Executive steering team
- Dow Legal
- Dow HR

GRI 418: Customer Privacy 2016

418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data

Dow is not aware of any material incidents relating to information systems security affecting the safety of Dow's operations or ability to serve customers or significant breaches of personal information. As part of Dow's Data Privacy Incident process, notice would be provided to users if an incident meets breach criteria or if it believes the situation poses a risk to the rights and freedoms of the data subject as it relates to their personal privacy. Additional cybersecurity and information security information can be found on pages 31-32 in the [2023 Proxy Statement](#).

Independent Assurance Statement



INDEPENDENT ACCOUNTANT'S REVIEW REPORT

**Management of
Dow Inc. and The Dow Chemical Company
Midland, MI**

We have reviewed management of Dow Inc.'s and its consolidated subsidiaries, including The Dow Chemical Company (collectively, "Dow" or the "Company") assertion that the disclosures referenced or included in the Global Reporting Initiative (GRI) Disclosure Report – GRI Content Index (the "GRI Content Index") included within the accompanying Dow 2022 INTERsections Report (the "2022 INTERsections Report") as of and for the year ended December 31, 2022, are presented in accordance with the 2021 Global Reporting Initiative Sustainability Reporting Standards (the "2021 GRI Standards"). The Company's management is responsible for its assertion. Our responsibility is to express a conclusion on the GRI Content Index based on our review.

Our review was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants (AICPA) in AT-C section 105, *Concepts Common to All Attestation Engagements*, and AT-C section 210, *Review Engagements*. Those standards require that we plan and perform the review to obtain limited assurance about whether any material modifications should be made to the GRI Content Index in order for it to be presented in accordance with the 2021 GRI Standards. The procedures performed in a review vary in nature and timing from and are substantially less in extent than, an examination, the objective of which is to obtain reasonable assurance about whether the GRI Content Index is presented in accordance with 2021 GRI Standards, in all material respects, in order to express an opinion. Accordingly, we do not express such an opinion. Because of the limited nature of the engagement, the level of assurance obtained in a review is substantially lower than the assurance that would have been obtained had an examination been performed. We believe that the review evidence obtained is sufficient and appropriate to provide a reasonable basis for our conclusion.

We are required to be independent and to meet our other ethical responsibilities in accordance with the *Code of Professional Conduct* issued by the AICPA. We applied the *Statements on Quality Control Standards* established by the AICPA and, accordingly, maintain a comprehensive system of quality control.

The procedures we performed were based on our professional judgment. In performing our review, we conducted inquiries and performed analytical procedures. For a selection of disclosures within the GRI Content Index, we performed tests of mathematical accuracy of computations, compared the disclosures to underlying records, or observed the data collection process in regard to the accuracy of the data in the GRI Content Index.

The preparation of GRI Content Index included within the 2022 INTERsections Report requires management to interpret the 2021 GRI Standards, make determinations as to the relevancy of

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information to be included, and make estimates and assumptions that affect reported information. Measurement of certain amounts and disclosures referenced or included in the GRI Content Index includes estimates and assumptions that are subject to substantial inherent measurement uncertainty resulting, for example, from the accuracy and precision of greenhouse gas emission conversion factors and the process to measure energy consumption. Obtaining sufficient appropriate review evidence to support our conclusion does not reduce the inherent uncertainty in the amounts and disclosures referenced or included in the GRI Content Index. The selection by management of different but acceptable measurement methods, input data, or assumptions may have resulted in materially different amounts or ESG Disclosures being reported.

Information outside of the GRI Content Index included in the 2022 INTERsections Report, including linked information, was not subject to our review, including the TCFD Disclosure Report, SASB Disclosures Report, WEF Disclosure Report, and Non-GAAP Financial Measures and, accordingly, we do not express a conclusion or any form of assurance on such information. Further, any information relating to forward looking statements, targets, goals and progress against goals, as well as comparative period disclosures newly included in the 2022 INTERsections Report, was not subject to our review and, accordingly, we do not express a conclusion or any form of assurance on such information.

As disclosed in the GRI Content Index related to GRI 303 and 305, the Company changed the methodology used to calculate water consumption and certain categories of Scope 3 emissions, respectively, for the year ended December 31, 2022. The methodology for these calculations was revised in the prior periods presented. Additionally, as disclosed in the GRI Content Index related to GRI 303, the Company changed the methodology used to calculate water discharge as of December 31, 2022. The methodology for this calculation is not revised in the prior periods presented. Our conclusion is not modified with respect to these matters.

Based on our review, we are not aware of any material modifications that should be made to the GRI Content Index as of and for the year ended December 31, 2022, in order for it to be presented in accordance with the 2021 GRI Standards.

Deloitte & Touche LLP

Midland, Michigan

June 19, 2023



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