Welcome to your CDP Climate Change Questionnaire 2022

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Dow (NYSE: DOW) combines global breadth; asset integration and scale; focused innovation and materials science expertise; leading business positions; and environmental, social and governance (ESG) leadership to achieve profitable growth and deliver a sustainable future. The Company's ambition is to become the most innovative, customer centric, inclusive and sustainable materials science company in the world. 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. Dow operates 104 manufacturing sites in 31 countries and employs approximately 35,700 people. Dow delivered net sales of approximately $55 billion in 2021.

Dow's major manufacturing sites are located in Argentina, Brazil, Canada, China, Germany, The Netherlands, Spain, Thailand, United Kingdom, and the United States. Our portfolio includes six global businesses which are organized into the following operating segments: Packaging & Specialty Plastics (Hydrocarbons & Energy and Packaging and Specialty Plastics), Industrial Intermediates & Infrastructure (Industrial Solutions and Polyurethanes & Construction Chemicals), and Performance Materials & Coatings (Coatings & Performance Monomers and Consumer Solutions).

This report is a combined report being submitted by Dow Inc. and The Dow Chemical Company and its consolidated subsidiaries ("TDCC" and together with Dow Inc., "Dow" or the "Company").

Dow supports the Paris Agreement and is committed to achieving its goal of keeping global temperature rise well below 2°C and to pursue efforts to limit the increase to 1.5°C. As both a major user of energy, as well as a producer of technologies that are essential to a lower-carbon future, we have a responsibility to act. As a tangible demonstration of our commitment to climate protection, in 2021 Dow set the following targets:
- By 2030, Dow will reduce its net annual carbon emissions by 5 million metric tons vs. our 2020 baseline (15% reduction) and representing a 30% reduction since its 2005 baseline. By 2050, Dow intends to be carbon neutral (scope 1 + 2 + 3 plus product benefits).

- Demonstrating progress toward the 2030 target, Dow intends to reduce emissions by approximately 2 million metric tons between 2022 and 2025 through increased use of clean energy, driving energy efficiency improvements, and through manufacturing asset renewals and optimization while growing earnings by ~$2B/Year.
These targets are in addition to our 2025 Sustainability Goals with the following climate-related objectives:
- To obtain 750 MW of its power demand from renewable sources by 2025, which Dow has already exceeded having expanded access to clean energy to more than 900 megawatts, enabling more than 25% of our purchased electricity to come from renewable sources. BloombergNEF ranks Dow amongst the top 20 global corporations for clean energy purchases.

Dow's Sustainability Team ensures progress is made on both the new commitments, and the Company's 2025 Sustainability Goals. In addition, the company further enhanced its carbon-focused team (initiated in 2018) through the creation of a Climate Steering Team and Climate Program Management Office (Climate PMO), led by the Executive Leadership Team. The enhanced team structure further aligns senior leadership from across Dow's businesses and functions and drives all aspects of the Company's initiatives around carbon and emissions.

A summary of Dow's current strategy as it relates to carbon emissions is as follows:
- Optimizing our manufacturing facilities and processes.
- Increasing clean energy in our purchased power mix.
- Collaborating with our supply chain to tackle upstream emissions.
- Investing in transformative next-generation solutions.
- Developing low-carbon products, technologies, and services for our customers.

Dow supports CDP's efforts to promote the measurement, management, reporting, and reduction of greenhouse gas emissions. Dow also supports the recommendations made by the Task Force on Climate-related Financial Disclosures (TCFD). GHG emissions are collected and accounted for in accordance with the GHG Protocol: A Corporate Accounting and Reporting Standard (Revised Edition), published by the World Resources Institute/World Business Council for Sustainable Development. Dow recently released our 2021 Environmental, Social and Governance Report (the "2021 ESG Report"). Along with our 2021 ESG Report, Dow views the opportunity to report to CDP as a key mechanism for us to report our progress as it relates to climate.
More information on Dow can be found at www.dow.com.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1, 2021	December 31, 2021	Yes	1 year

C0.3

(C0.3) Select the countries/areas in which you operate.

Argentina
Australia
Belgium
Brazil
Canada
China
Colombia
Egypt
France
Germany
India
Indonesia
Italy
Japan
Mexico
Netherlands
Philippines
Portugal
Republic of Korea
Russian Federation
Singapore
South Africa
Spain
Sweden
Taiwan, China
Thailand
Turkey
United Arab Emirates
United Kingdom of Great Britain and Northern Ireland
United States of America
Viet Nam

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

USD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Operational control

C-CH0.7

(C-CH0.7) Which part of the chemicals value chain does your organization operate in?

Row 1

Bulk organic chemicals

Lower olefins (cracking)
Aromatics
Ethylene oxide & Ethylene glycol
Ethanol
Polymers

Bulk inorganic chemicals

Chlorine and Sodium hydroxide
Hydrogen
Other industrial gasses

Other chemicals

Specialty chemicals
Specialty organic chemicals

C0.8

(C0.8) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
Yes, an ISIN code	US2605571031
Yes, a CUSIP number	260557 103
Yes, a Ticker symbol	DOW

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Chief Executive Officer (CEO)	Description of the position and explanation of how the CEO's responsibility is related to climate issues: The CEO provides leadership oversight for the entire organization, including decisions made on strategy as it relates to sustainability and climate change. The CEO is responsible for discussing Company strategy, plans, results, and issues with the Board and Board Committees. As Chairman of the Board and in consultation with the Independent Lead Director, the CEO ensures that topics related to sustainability and climate change are given appropriate time on meeting agendas, and that decisions made related to the Company's strategy around sustainability and climate change are brought to consensus. The CEO is a member of the Executive Leadership Team, which oversees the efforts of Dow's Climate Steering Team and Program Management Office (Climate PMO) and associated sub-teams. The Executive Leadership Team oversees all of Dow's efforts related to carbon emissions reduction and climate management, including but not limited to: setting targets and goals, developing strategy, reporting, advocacy, evaluation of climate risks and opportunities, technology investments, and capital planning. All of our board committees have input and oversight of elements of our ESG and climate related strategy. In 2021, the Company made three major Board Endorsed climate related decisions, including: - Announcement of plans to build the world's first net-zero carbon emissions, integrated ethylene cracker and derivatives site in Fort Saskatchewan, Alberta. - Deployment of a Clear Path to Zero-Carbon Emissions for our Net-Zero 2050 commitment, including targeting $1B per year of investment over that time period to decarbonize and grow the business. - Production of a detailed roadmap to reduce current CO2 emissions from operations in Terneuzen, the Netherlands, by more than 40% by 2030.
Board-level committee	Description of the position and explanation of how the Board-level committee's responsibility is related to climate issues: The Environment, Health, Safety & Technology (EHS&T) Committee oversees the following: environmental performance, health, safety, community, corporate citizenship, social responsibility, public policy, sustainability, climate, and science and technology. Key responsibilities of the EHS&T Committee include, but are not limited to: - Assess current aspects of the Company's environment, health and safety (EH&S) policies and performance and make recommendations to the Board and management of the Company with regard to promoting and maintaining superior standards of performance, including processes to ensure compliance with applicable laws and regulations. - Oversee risk management associated with EH&S policies and operations, emerging regulatory developments, reporting and compliance. - Oversee and advise the Board on ESG matters and on matters impacting corporate social responsibility. - Oversee and advise the Board on the Company's corporate citizenship, including

	public policy and corporate reputation. - Oversee and advise the Board on the Company's sustainability commitments and progress, including efforts to protect the climate, reduce carbon emissions, eliminate plastic waste and delivery circular economy solutions. - Regularly review the Company's science and technology capabilities in relation to its strategies and plans and make recommendations to the Board and the management of the Company with the goal of continually enhancing the Company's science and technology capabilities and protecting its intellectual property. Aspects of the Company's strategy as it relates to carbon and climate change are integrated into the responsibilities above. Example of a climate-related decision: In 2021, the Board and its Committees improved ESG transparency and accountability, building on the Company's nearly 20 years of annual sustainability reporting with the first integrated ESG report and clear alignment of ESG oversight responsibilities that were outlined in the Committee Charters adopted in February 2022.
Board-level committee	Description of the position and explanation of how the Board-level committee's responsibility is related to climate issues: The Audit Committee oversees the following: external reporting, risk management, internal controls, compliance with legal and regulatory requirements and ESG reporting frameworks. Key responsibilities of the Audit Committee include, but are not limited to: - Meet periodically with management to discuss current and, if any, proposed, guidelines and policies governing the processes used to assess, monitor and control the Company's major risk exposures, including climate-related or financial risk exposures, as well as, if any, actual major risk exposures. - Provide oversight on the external reporting process and the adequacy of the Company's internal controls. - Review the internal controls framework and centralized processes related to the Company's ESG reporting, and assurances provided on the assertion that the ESG disclosures referenced in the Company's annual ESG report are presented in accordance with applicable ESG reporting frameworks. - Reviews effectiveness of the Company's systems, procedures and programs designed to promote and monitor compliance with applicable laws and regulations and receives prompt reports on any compliance matter that could adversely impact the Company's external reporting process or adequacy of internal controls. Aspects of the Company's strategy as it relates to carbon and climate change are integrated into the responsibilities above. Example of a climate-related decision: In 2021, the Board and its Committees improved ESG transparency and accountability, building on the Company's nearly 20 years of annual sustainability reporting with the first integrated ESG report and clear alignment of ESG oversight responsibilities that were outlined in the

	Committee Charters adopted in February 2022. With support of the Board and Audit Committee, the Company included climate change-related risks in its statement of risk factors in the Company's Annual Report on Form 10-K for the year ended December 31, 2021, filed with the SEC on February 4, 2022.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – some meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues	Dow's full Board and our EHS&T Committee (Board level committee) both review climate-related topics multiple times per year. Dow held six Board meetings and the Committees of the Board collectively held 27 meetings for a total of 33 meetings in 2021 during which economic, environmental, and social topics were discussed. The EHS&T Committee of the Board (which held five meetings in 2021) oversees strategy and action plans developed by Dow's Executive Leadership Team as they relate to sustainability, carbon, and climate change. The CEO is a member of the Executive Leadership Team, along with the President and Chief Financial Officer, General Counsel and Corporate Secretary, Senior VP of Research & Development and Chief Technology Officer, Business Presidents, Senior VP of Operations, Manufacturing & Engineering, Chief Human Resources and Inclusion Officer, Senior VP of Corporate Development and Chief Information and Digital Officer. Under the advisement of the Executive Leadership Team, sub-teams direct specific efforts related to CO2 reduction and climate, such as reporting, policy advocacy, evaluating climate risks and opportunities, technology investment, and capital planning. Dow's overall carbon organization (Executive Leadership Team, Climate Steering Team and associated sub-teams) is referred to as the 'Climate Program Management Office (Climate PMO)'. Ultimately, the Climate PMO is responsible to the Board via the CEO.

		Although each Committee is responsible for overseeing the management of certain responsibilities and risk as described in the Committee Charters, the full Board is regularly updated by the Committees, management and senior leaders. This enables the Board and the Committees to coordinate oversight and the relationships among the various priorities of the Company. Examples of climate-related topics discussed at EHS&T Committee meetings include but are not limited to: monitoring environmental performance and progress against Dow's Sustainability Goals; overseeing risk associated with EH&S policies and operations, emerging regulatory developments, reporting and compliance; and reviewing the Company's sustainability commitments and progress, including efforts to protect the climate, reduce carbon emissions, eliminate plastic waste and deliver circular economy solutions. Examples of climate-related topics discussed at full Board meetings include but are not limited to: updates by the Committees, management and senior leaders on the Company's strategy, ESG leadership, risk management and overall performance; approving significant capital investments to achieve the Company's Sustainability Goals; and reviewing the Company's annual report on the Company's environmental, social and governance (ESG) report performance.

C1.1d

(C1.1d) Does your organization have at least one board member with competence on climate-related issues?

	Board member(s) have competence on climate-related issues	Criteria used to assess competence of board member(s) on climate-related issues
Row 1	Yes	In alignment with the Task Force on Climate-related Financial Disclosures (TCFD), Dow has assessed each of its Director's professional experience (including other board memberships which result in the command of the Dow's climate-related impacts) and education, board-level accountability, frequency and structure of review of the relevant subject matter, and substantive information provided from internal and external subject matter experts.

		Based on the 2021 assessment of Director nominees for the 2022 Proxy Statement, Dow determined that six out of Dow's twelve Directors, or 50%, possess relevant experience to address Dow's climate-related risks and opportunities.

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

The CEO is ultimately responsible for reporting to the Board on climate related risks and opportunities.

Where in the organizational structure this position lies:

The CEO is the highest-ranking position at Dow. The CEO is a member of the Executive Leadership Team, along with the President and Chief Financial Officer, General Counsel and Corporate Secretary, Senior VP of Research & Development and Chief Technology Officer, Business Presidents, Senior VP of Operations, Manufacturing & Engineering, Chief Human Resources and Inclusion Officer, Senior VP of Corporate Development and Chief Information and Digital Officer. Under the advisement of the Executive Leadership Team, sub-teams direct specific efforts related to CO2 reduction and climate, such as reporting, policy advocacy, evaluating climate risks and opportunities, technology investment, and capital planning. Dow's overall carbon organization (Executive Leadership Team. Climate Steering Team and associated sub-teams) is referred to as the 'Climate Program Management Office (Climate PMO)'. Ultimately, the Climate PMO is responsible to the Board via the CEO. Under the management of the CEO and the Executive Leadership Team, the Climate PMO is responsible for putting plans in place to meet Dow's new climate targets: By 2030, Dow will reduce our net annual carbon emissions by 5 million metric tons versus our 2020 baseline (15% reduction). By 2050, Dow intends to be carbon neutral (Scopes 1 + 2 + 3 plus product benefits).

The Climate PMO meets monthly, with sub-teams meeting more frequently. The focus of the monthly meeting is to monitor progress from each of the Project Tracks in the Climate PMO. Updates on progress against our objectives from the senior leaders that oversee the day-to-day activities of the Climate PMO are provided to the CEO at least quarterly.

Additionally, Dow's Sustainability External Advisory Council (SEAC) reviews critical issues regarding our sustainability objectives. The SEAC brings external insights such as views on

biodiversity, environmental justice or changes in the sustainability landscape in China. Our ELT will use this information to inform our strategy. The Science and Technology Advisory Council is composed of academics from premiere Scientific Institutions and they bring insights and external input to the science and programs of Dow's Innovation pipeline, including the various projects focused on sustainability .

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	The ESG component was 20% of the 2021 Performance Award (annual cash bonus) program for all employees. Included in the ESG component is the WLO index, the metric associated with our 2025 World Leading Operations sustainability goal. The WLO index consists of four indices, including Environmental Stewardship. Two of the elements of the Environmental Stewardship index are targets to maintain absolute GHG emissions below 2006 baseline and to obtain 750 MW of our power demand from renewable sources by 2025.

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive	Type of incentive	Activity incentivized	Comment
Chief Executive Officer (CEO)	Monetary reward	Emissions reduction target Efficiency target Supply chain engagement Company performance against a climate-related sustainability index	
Chief Financial Officer (CFO)	Monetary reward	Emissions reduction target Efficiency target Supply chain engagement Company performance against a climate-related sustainability index	
Other, please specify Senior Vice President, Operations - Manufacturing & Engineering	Monetary reward	Emissions reduction target Efficiency target Supply chain engagement	

		Company performance against a climate-related sustainability index	
Other, please specify Senior Vice President, Research & Development and Chief Technology Officer	Monetary reward	Emissions reduction target Efficiency target Supply chain engagement Company performance against a climate-related sustainability index	
Other, please specify General Counsel and Corporate Secretary	Monetary reward	Emissions reduction target Efficiency target Supply chain engagement Company performance against a climate-related sustainability index	
All employees	Monetary reward	Emissions reduction target Efficiency target Supply chain engagement Company performance against a climate-related sustainability index	

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	1	5	The Company has a fiduciary responsibility to its stakeholders to manage short term performance. This responsibility has both quarterly and yearly components.
Medium-term	5	10	The Company monitors market trends, and external forces that are expected to present opportunities or be disruptive to Dow.

			Manufacturing processes, assets and product portfolios are adjusted based on these trends.
Long-term	10	30	The chemical industry is capital intensive with long lasting assets and highly valuable intellectual property. All major investment decisions, portfolio reviews, acquisitions and divestitures are reviewed in the light of long-term trends, opportunities and threats (10-30 year). Those reviews consider evolution of global trends in regulation, climate change, energy and raw material markets, and consumer demands. In addition, a long-term outlook is used to identify opportunities to design new solutions which enable lower carbon for the system and value chain our products touch.

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

Definition of substantive impact:
When assessing whether a climate related risk or opportunity is substantive, Dow evaluates impacts related to elements such as the cost of raw materials, impact on operating cost (e.g. energy costs, costs of complying with regulation), cost of investment in new technology to reduce emissions, impact to the price at which products can be sold, impact as a result of potential lost sales, or in the case of opportunities, market share gained, etc. In addition, there could be impacts that need to be considered that are not yet able to be quantified in a concrete manner (for example, reputational impact of certain risks are more difficult to quantify) but could still be important for discussion due to a variety of factors. Whether or not a risk or opportunity is determined to be substantive is also dependent on other factors such as where in the value chain the impact may be felt and the duration of impact.

Description of the quantifiable indicators used to define substantive impact:
Dow defines a substantive financial or strategic impact when identifying or assessing climate related-risk or opportunity as one that has the potential to impact Dow at a level of $50 million USD or more. Probability of occurrence/likelihood is often incorporated to determine substantiveness. For example, a risk with the potential to impact Dow at a level of $200 million USD with a probability of occurrence of 25% would meet the threshold of a substantive impact ($200 million USD * 25% = $50 million USD).

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered

Direct operations
Upstream
Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

Risk management is considered a strategic priority for the company, and responsibility for managing risk rests with executive management, while the Committees, and the Board as a whole, provide oversight. The Enterprise Risk Management ("ERM") approach and process are overseen by the Audit Committee and reviewed at least annually with key risks regularly evaluated at meetings of the Committees and Board, including risks with economic, environmental and social impacts.

The ERM process is responsible for identifying significant or major risks to the company and creating action plans to mitigate risks, including climate risks. On an annual basis, the ERM process screens risks from a broad range of inputs, both internal and external to Dow. All risks are reviewed and categorized based on potential impact and likelihood of a significant event occurring. Each risk is assigned to a member of Dow's Executive Leadership Team ("ELT") and, if needed, to an internal subject matter expert(s) accountable for mitigation plans.

The results of the annual ERM process are reviewed with Dow's ELT – a diverse, cross-functional team representing all of Dow's businesses, functions and geographic regions. Key risks that have specified mitigation actions are reviewed more regularly in leadership team meetings. In addition, risks can be re-evaluated based on several factors including changes in the external and macroeconomic environment, concerns identified by senior leaders or Dow's Board, or through detection in Dow's internal work processes.

Potential climate-related risks are integrated into the ERM process. Climate-related risks, including both physical (e.g., acute impacts of weather events) and transition risks (e.g., cost to transition to lower-emission technologies), and opportunities (e.g., expansion/development of low-carbon products) are assessed in multiple ERM risk categories including, but not limited to, portfolio management; strategy, business and market choices; external factors including macroeconomic, industry, geopolitical and regulatory trends; operations and safety; financial performance, including investor and rating agency perspectives; and regulatory and compliance actions. Climate-related risks are assigned to Dow's Climate Steering Team ("CST"), which is accountable for monitoring climate-related risks and developing and implementing mitigation plans.

The CST consists of executive business and functional leaders who report to either the CEO or CFO. The CST is facilitated by the global climate transition director, who also

facilitates the Climate Program Management Office (“PMO”). The Climate PMO is composed of business and functional leaders from across the company. The Climate PMO has a series of sub-teams responsible for assessing and managing climate related risks and opportunities, including reducing Scope 1, 2 and 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. Each sub-team is sponsored by two or more members of the CST, who are accountable for the team’s success. The Climate PMO is tasked with setting goals and targets, prioritizing actions, monitoring progress of sub-teams and ensuring alignment of cross-team objectives. Both the CST and Climate PMO meet at least every six weeks and report to the ELT at a minimum of once per quarter. Climate PMO sub-teams meet more frequently as required to drive actions and progress toward project targets.

Dow takes an exploratory approach to climate-related scenario analyses to evaluate a range of different futures. Most recently, Dow has utilized two boundary scenarios to assess our strategy: one where our global ambition aligns to the International Energy Agency (IEA) Sustainable Development scenario of decarbonizing the economy, and another that aligns to the Regional Rivalry Shared Socioeconomic Pathway (SSP) 3.0, which explores a more uneven path to decarbonization. As Dow is a large consumer of energy, scenarios that focus on trends in energy consumption are particularly relevant to Dow. The scenarios selected were intended to span a range of potential energy futures in terms of global primary energy consumption and energy types. Dow also selected these scenarios to cover a range of assumptions around policy development. The scenarios highlight varying outcomes. For example, in the Sustainable Development scenario, Dow’s cost of regulatory compliance is higher than in Regional Rivalry, but our opportunities for the development of low-emissions goods and services and low-carbon technologies are much greater. We utilize these results to build the resiliency of our company as it relates to a variety of outcomes.

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Rationale for relevance: Dow operates manufacturing sites in 31 countries across the globe. Current approaches to climate-related regulation vary across the different countries in which Dow operates, but all impact the expected cost to operate our facilities. Regulations focused on the cost of carbon emissions have a variable component in that the cost of compliance may vary over time depending on elements such as available allowances and Dow’s own emissions projections. Example of risk type: Climate change regulations apply to Dow's operations in Europe through the EU Emissions Trading System

		(ETS). The ETS results in costs at several of Dow's manufacturing facilities. From a risk management standpoint, Dow has a team that maintains long term projections on the potential impact of the ETS on Dow's operations, based on our emissions projections and projected prices of certificates. These projections are reviewed with senior leadership at least annually.
Emerging regulation	Relevant, always included	Rationale for relevance: Dow operates manufacturing sites in 31 countries across the globe. Climate change regulations are emerging and changing in different geographies where Dow has operations. Changes in governments can also bring changes to regulation that Dow needs to be aware of in order to anticipate impact to our operations. Depending on Dow's emissions footprint in a particular geography the impact of emerging regulation may vary but could be significant. Example of risk type: As the majority of Dow's emissions are generated in the United States, of particular relevance to Dow is the potential for carbon emissions pricing mechanisms being instituted at the state or federal level of the US, resulting in increased cost to comply. For example, several carbon pricing proposals have been introduced so far in the 117th Congress (2021-2022), five of which would establish some form of carbon tax at the federal level (or carbon 'fee'). From a risk management standpoint, Dow has internal carbon pricing forecasts for emission costs and forward market trading, as well as an internal shadow carbon pricing for capital project and maintenance project reviews. Dow's Government Affairs team monitors changes in regulation specifically related to climate change. These inputs are incorporated in the risk assessment and management process. Dow also utilizes carbon pricing projections in externally developed scenarios that demonstrate a pathway to mitigating the temperature rise to less than 2°C, such as the International Energy Agency (IEA) Sustainable Development Scenario. We use these scenarios to evaluate potential impact from carbon pricing schemes on Dow's operations. In general, climate change risks and opportunities related to emerging regulation are presented to the Leadership Team at least twice a year.
Technology	Relevant, always included	Rationale for relevance: Dow has mature, capital intensive assets in place that are by nature energy and emission intensive. Though Dow continuously looks for opportunities to reduce the energy and emissions intensity of our operations, many of our assets have been optimized such that, in order to achieve further significant step-changes in emissions, new technologies not yet economically available will need to be implemented. As a science- and technology-driven company, Dow ensures continuous evaluation of changes/progress related to economically available technologies that could reduce our energy or emissions intensity, or capture emissions.

		Example of risk type: Dow operates capital-intensive assets that currently rely largely on natural gas to generate the heat needed to run our processes (e.g. boilers, furnaces, combined heat and power plants). Some technologies needed for the deep decarbonization of these assets, such as high temperature and high-pressure electrification and green hydrogen, are not yet available at scale. Dow is working on the acceleration of these technologies – for example, Dow and Shell have a joint development agreement to advance technology to electrify ethylene steam crackers. But implementation will come at a cost, and for jurisdictions where there is not currently a price on carbon emissions, Dow needs to balance implementation of these technologies while maintaining regional competitiveness. For jurisdictions where there is a price on carbon emissions, Dow needs to employ its technology and project management expertise to ensure the capital needed to implement new technologies is deployed as efficiently as possible. Dow's Manufacturing & Engineering and R&D organizations continue to evaluate new and emerging technologies for application within our operations. For example, Dow is investigating options for Carbon capture, utilisation and storage (CCUS) for its operations in The Netherlands, including options for capture technology, development of infrastructure (pipeline & storage), and working with the government to evaluate the landscape for subsidies. In addition to internal efforts, Dow engages in external working groups, such as the Gulf Coast Carbon Collaborative (GC3) to understand the landscape of technological changes. Climate change risk and opportunities, including commentary on emissions reduction technologies, are presented to the Leadership Team at least twice per year.
Legal	Relevant, sometimes included	Rationale for relevance: Failure to meet legal obligations related to climate change would have negative impacts for Dow. Since there have not been any material climate change litigation relating to the chemical industry, this risk is only sometimes included in the assessments. Example of risk type: Dow closely monitors the development of litigation, such as cases that have developed in the energy industry seeking to recover climate change-related damages allegedly resulting from defendant energy companies' production (gasoline, fuels). The chemical industry and energy industry are linked. As some of Dow's feedstock is a by-product of energy production, material impact to the energy industry could have an impact to Dow. Dow is actively involved with industry groups regionally and globally to assess the legal risk from climate change.

Market	Relevant, always included	Rationale for relevance: Dow has many product families. Our portfolio includes six global businesses which are organized into the following operating segments: Packaging & Specialty Plastics (Hydrocarbons & Energy and Packaging and Specialty Plastics), Industrial Intermediates & Infrastructure (Industrial Solutions and Polyurethanes & Construction Chemicals), and Performance Materials & Coatings (Coatings & Performance Monomers and Consumer Solutions). Example of risk type: Markets that Dow serves including high-performance buildings, architectural paint, protective and functional coatings, insulation, infrastructure, heat transfer fluids, and energy have trends that demand innovation to more carbon efficient solutions. Dow products contribute to carbon emission reductions today – for example, foam made with Dow Polyurethanes helps to increase the insulation resistance factor of buildings, thereby reducing emissions associated with heating and/or cooling – but the Company needs to continue to make sure that we provide innovative solutions to these market trends or risk losing market share. Each Dow business unit addresses the market risk individually. For example, each business reports their sustainability goals, and products that enable sustainability-driven markets including energy efficiency and climate change.
Reputation	Relevant, always included	Rationale for relevance: How companies are addressing risks and opportunities related to climate change is increasingly being used as a criterion to evaluate organizations by investors, customers, and other key stakeholders. The investment community is strategically making sustainability an integral part of portfolio construction, with some firms vocalizing intent to limit investments in companies seen as not acting on climate-related issues or who score poorly in third-party Environmental, Social, and Governance (ESG) rankings. Dow's customers have their own sustainability objectives that often require collaboration with their suppliers. Failure to act on climate-related issues could impact Dow from a reputational standpoint, affecting our interactions with both the investment community and current/future customers. Example of risk type: Although Dow continues to receive recognition by external organizations for our sustainability efforts, there continues to be a risk that we are perceived as not doing enough. We continue to push not only internally to meet our aggressive targets, but even work to support those we work with. An example our engagement with our Suppliers to reduce value chain emissions. Dow joined the CDP

		Supply Chain Program to collect supplier data and identify value-chain emissions improvement opportunities. Dow's Investor Relations, Public Affairs, Government Affairs and Sustainability teams monitor reports and initiatives that have the potential to impact Dow's reputation. These teams also offer input into the tangible actions we can take to improve our leadership in the climate change space.
Acute physical	Relevant, always included	Rationale for relevance: Dow has 104 manufacturing sites in 31 countries, and a globally connected supply chain. The potential for acute impacts as a result of climate change varies across Dow's locations, but some of Dow's major manufacturing sites are located in areas that could experience more severe weather. In addition, because of Dow's interconnectivity, an impact to one location could have a resulting impact on our supply chain and subsequently impact those locations that may not experience a severe weather event directly. Example of risk type: The impact of severe weather is not only a safety risk, but also has the potential to result in production loss events. Dow has significant operations in the US Gulf Coast region and others that are likely to be impacted by acute effects of climate change including severe weather events. Hurricanes Gustav and Ike, which hit the U.S. Gulf Coast in 2008, caused temporary outages for several of the Company's Gulf Coast production facilities, resulting in $181 million in additional operating expenses. In the first quarter of 2021, Winter Storm Uri had a broad impact on the U.S. Gulf Coast and in particular across the entire state of Texas, which resulted in widespread utility and raw material supply disruptions and industry-wide production outages. As a result of the winter storm, the product and supply chain impacts across the industry created very tight supply dynamics. To mitigate risks associated with severe weather, we have engineered the facilities to better withstand these events. Additionally, these sites have specific emergency preparedness plans that detail actions to take in the event of severe weather. Prices of finished goods may be adjusted as well. Historically, these activities and associated routine costs are driven by normal operational preparedness. Dow continues to study the long-term implications of changing climate parameters on water availability, plant siting issues, and impacts and opportunities for products.
Chronic physical	Relevant, always included	Rationale for relevance: Dow operates 104 sites in 31 countries, and a globally connected supply chain. Some of these sites have the potential to be impacted by chronic effects of climate change such as drought, water level rise, temperature rise, and changing weather patterns.

		Example of risk type: Of particular importance to Dow's operations are water availability and water quality – both of which are needed for the safe operation of our plants. Without available water, Dow could experience production loss events. Understanding of the risk of impact to the water supply for our plants is important in order for Dow to put plans in place to mitigate the risk. Using the Aqueduct tool from the World Resources Institute (WRI), as well as how material a production loss event may be at a particular site, Dow has identified six key water-stressed sites that are closely monitored with respect to this risk. The key water-stressed sites are designated based on a number of factors: their location in a water-stressed watershed; water quality; competition among users of the same watershed; local knowledge of watershed challenges at the site; and long-term projections. Dow has also developed a "watch list" of sites where water challenges may occur.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical

Cyclone, hurricane, typhoon

Primary potential financial impact

Decreased revenues due to reduced production capacity

Company-specific description

Dow has engaged S&P Trucost to evaluate the potential for acute physical impacts on our manufacturing sites. Using data from the National Oceanic and Atmospheric Administration (NOAA), as well as their own analysis, S&P Trucost highlighted the US Gulf Coast region for Dow as an area with an increased potential for hurricane impact compared to other regions. Trucost looks at the historical incidence and severity of hurricane, typhoon, or cyclone activity at a given location, weighted in favour of recent events. The specific Dow sites that have an elevated potential for exposure to severe

weather events such as hurricanes, are St. Charles Operations, Louisiana; Freeport, Texas; Seadrift, Texas; Deer Park, Texas; and Texas City, Texas. Along with this forward-looking evaluation from S&P Trucost, Dow has already experienced impacts from severe weather at these locations. Hurricanes Gustav and Ike that hit the U.S. Gulf Coast in 2008 caused temporary outages for several of the Company's Gulf Coast facilities, resulting in $181 million in additional operating expenses. Hurricane Harvey hit the U.S. Gulf Coast in 2017 and caused widespread temporary logistics and supply chain disruptions as well as brief outages and slowdown of production rates for some of our facilities. In addition, though not a hurricane, but still a severe weather event, winter storm Uri which hit Texas in 2021 resulted in an impact to of approximately $400 million USD in the first quarter of 2021, as a result of production loss due to unexpected plant shutdowns.

Time horizon

Short-term

Likelihood

More likely than not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

50,000,000

Potential financial impact figure – maximum (currency)

400,000,000

Explanation of financial impact figure

The financial impact figure is intended to represent the potential annual earnings before interest & taxes (EBIT) impact due to production loss from a severe weather event. On the low end, there are severe weather events that occur in a given year that do not reach the minimum event threshold costs. Each potential severe weather event experienced in the past has impacted Dow differently – depending on the exact location and nature of the event, Dow could be unaffected as a result of the event hitting the region, a partial shutdown of the facilities could occur, or on the high end, a full shutdown could occur. The duration of the event also affects the financial impact. The high end of the potential financial impact figure represents the impact associated with production loss due to the most recent severe weather event that impacted the US Gulf Coast region – winter storm Uri. As this storm impacted one of Dow's largest production facilities, Freeport Texas, it is a reasonable estimate for the upper limit on a potential range of financial impact.

Cost of response to risk

20,000,000

Description of response and explanation of cost calculation

Explanation of Cost Calculation: The cost presented here is an estimate of salaries and wages of Dow personnel in emergency services roles that support the US Gulf Coast (Approximately 200 FTEs at approximately $100,000 USD each per year). It does not include costs associated with contractors who support Dow's emergency services organization, the support that other individuals not directly tied to the emergency services organization may provide, or future engineering-related costs. The cost is integrated into normal operations.
Case study of response to risk:
To mitigate risks associated with severe weather, we have engineered the facilities to better withstand these events. Additionally, these sites have specific emergency preparedness plans that detail actions to take in the event of severe weather.
Situation: Dow has facilities in the US Gulf Coast that are at a higher risk of impact as a result of severe weather than some of our other sites.
Task: Dow needs to ensure that the potential impact from severe weather on our US Gulf Coast facilities is minimized as much as possible. The first focus is on the safety of Dow employees, contractors, and the communities in which Dow operates. The second is to minimize potential production loss as a result of a severe weather event.
Action: Dow maintains hurricane preparedness plans for our Gulf Coast facilities to serve as a guide for coordinating resources to ensure the safety of personnel and minimize losses during hurricanes and other tropical weather events. Dow also maintains site freeze plans that clarify site expectations to assist units, functions, and individuals in preparation for and in response to such conditions. These plans are reviewed at least annually and were done so in 2021.
Result: Dow's preparedness to deal with severe weather events helps to minimize the potential impact of these events. For example, during the most recent severe weather event, winter storm Uri, some of Dow's cogeneration assets were able to continue operation during the event. Dow went from being an importer of power in 2021 before the storm to an exporter in the event, as we maintained operation of our cogeneration assets as our need for on-site power was reduced, to the benefit of the whole Texas grid.
Timescale of implementation: The timescale of implementation is ongoing and annual.

Comment

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

On October 6th, at the 2021 investor day, Dow announced plans to build the world's first net-zero carbon emissions integrated ethylene cracker and derivatives site with respect to scope 1 and 2 carbon dioxide emissions. This project would more than triple Dow's ethylene and polyethylene capacity at its Fort Saskatchewan, Alberta site, while retrofitting the site's existing assets to net-zero carbon emissions. The organic brownfield investment would significantly increase Dow's capacity of advantaged ethylene, polyethylene and derivatives manufactured across Alberta.
Dow expects the new brownfield ethylene cracker to add approximately 1.8 million metric tons of capacity in a phased manner through 2030, and along with derivatives capacity and site retrofit investments, will enable the Company to produce and supply approximately 3.2 million metric tons of certified low- to zero-carbon emission products for our customers.
The production process at Fort Saskatchewan will convert cracker off-gas into hydrogen as a clean fuel to be used in the production process, and carbon dioxide that would be captured onsite to be transported and stored by adjacent third-party CO2 infrastructure.

The technology utilized at the site and resultant low to zero-carbon benefits will be used across the globe to help deliver low- to zero-carbon emissions solutions to meet customers' sustainability needs. Dow is focused on serving high growth markets that support human well-being, drive industrial efficiency, and enable the world's energy transition. Key aspects of the project are summarized as follows:
- Organic, brownfield investment would more than triple Dow's ethylene and polyethylene capacity from its Fort Saskatchewan, Alberta site while retrofitting the entire site to net-zero scope 1 and 2 carbon dioxide emissions
- Decarbonizes ~20% of Dow's global ethylene capacity while growing polyethylene supply by ~15% and supporting ~$1 billion of EBITDA growth by 2030
- Project builds on success of Dow's industry-leading TX-9 investment and is expected to deliver ~15% lower capital intensity vs. TX-9 cracker and derivatives
- Fort Saskatchewan site selected due to availability of carbon capture infrastructure, competitive feedstocks and attractive government partnerships

- Investment will advance Dow's commitments to reduce carbon emissions, reaching ~30% by 2030 (vs. the 2005 baseline), on the path to carbon neutrality by 2050

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

700,000,000

Potential financial impact figure – maximum (currency)

1,200,000,000

Explanation of financial impact figure

The investment, which is subject to continued review and/or approval by Dow's Board of Directors and various regulatory agencies, would decarbonize approximately 20 percent of Dow's global ethylene capacity while growing polyethylene supply by about 15 percent and supporting approximately $0.7B to $1.2 B of EBITDA growth across the value chain by 2030. The EBITDA impact was calculated using volume growth times expected unit margin range. Further, Dow estimates that the project can be completed with an approximately 15 percent lower capital intensity than Dow's industry-leading Texas-9 cracker and derivative units.

Cost to realize opportunity

1,000,000,000

Strategy to realize opportunity and explanation of cost calculation

Explanation of cost calculation:
Dow expects to allocate ~$1 billion of capex annually for such projects – or approximately 1/3 of its depreciation and amortization levels – to decarbonize its global asset base in a phased, site-by-site approach. Cost estimates for the Fort Saskatchewan project are based on TX-9 project costs, updated equipment estimates from vendors, and location factors. The timescale for implementation will be a phased approach through 2030 with project FID expected in 2023 timeframe and first phase expected to come online in 2027.

Strategy to realize opportunity:
Fundamentally, Dow capitalizes on the opportunity to transition to low emission technology in many ways: improving the accuracy in projections that could influence

project economics, a strong understanding of the regulatory environment, excellence in project execution (on time, on budget), and collaboration with partners (other industrials, local governments, NGOs, etc.).
Situation: Dow's science-based strategy includes a phased approach to decarbonize while meeting growing demand for our products and contributing to a low-carbon future through continued investment in new products, technologies and processes. Dow specifically sees the opportunity to invest in transformative, next-generation technologies to help mitigate climate-related risks.
Task: Dow expects to grow capacity and underlying earnings by >$3B while reducing CO2 emissions by ~30% over 2005 baseline by the year 2030.
Action: Dow recently announced plans to build the world's first net-zero carbon emissions (scope 1 & 2) integrated ethylene cracker and derivatives site in Fort Saskatchewan, which will triple the site's capacity, while retrofitting existing assets to be net zero. This investment decarbonizes 20% of Dow's global ethylene and derivatives capacity while expanding polyethylene capacity by ~15%. It utilizes existing infrastructure and technologies to convert the whole site to net-zero carbon emissions with circular hydrogen and carbon capture storage while capitalizing on the Alberta feedstock advantage. It also leverages the TX-9's best-in-class emissions and conversion cost performance.
Result: The Alberta site will enable differentiated sales with certifiable low- to zero-carbon emissions and will decarbonize ~20% of ethylene carbon capacity. The expanded capacity of the site, which will operate with net-zero CO2 emissions, will also enable an additional $0.7B – $1.2B earnings growth by 2030.

Comment

In addition, Dow recognizes that there are potential social impacts associated with our climate strategy and transition. Consistent with the Paris Agreement on climate change, we commit to ensuring a Just Transition of the workforce and the creation of decent work and quality jobs as part of our transition. Our technology transition and innovations will create quality jobs consistent with the recent announcement of our 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.

C3. Business Strategy

C3.1

(C3.1) Does your organization's strategy include a transition plan that aligns with a 1.5°C world?

Row 1

Transition plan

Yes, we have a transition plan which aligns with a 1.5°C world

Publicly available transition plan

Yes

Mechanism by which feedback is collected from shareholders on your transition plan

We have a different feedback mechanism in place

Description of feedback mechanism

Throughout the year, members of the management team, and select members of the Board, conduct extensive outreach to stockholders, engaging with investors who collectively held approximately 70 percent of outstanding shares of common stock of the Company held by institutional stockholders. This outreach included engagement, the off-cycle proxy interactions on ESG with large shareholders as well as various investor coalitions like CA100+, NZAMI and ESG ratings agencies like MSCI, Sustainalytics, Bloomberg, DJSI, the management team regularly updated investors and stakeholders on a range of topics including ESG, and gained an understanding of their perspectives and concerns. The Board and management team carefully consider the feedback from these interactions when reviewing our climate-based strategies and priorities in the proxy, investor day materials, 10-K, latest 10-Q and ESG Report. After every quarterly earnings release, the CEO and the CFO of the Company interact with the top shareholders to discuss the financial performance as well as the progress on the ESG goals and initiatives and this cadence continues through the quarter at investor conferences, non-deal investor road shows as well as direct interactions with key stakeholders.

Dow provides information on our progress against our CO2 reduction targets, as well as information on our current approach to achieving these targets, on an annual basis in our ESG Report. Dow presents information to investors, NGOs, ESG Advisory and ratings firms and investor coalitions on climate-related initiatives directly and indirectly when appropriate during annual governance engagement and quarterly dialogues with large owners – these events actively seek investor input. At Dow's 2021 Investor Day which was attended by more than 5000 audience members either online or in person, the company outlined its effort to achieve carbon neutrality by 2050 while meeting its 2030 reduction targets as well as the various programs to develop sustainable products in each of its end markets. Dow also provides with updates on its carbon neutrality efforts at each quarterly earnings webcast.

Stockholders and other parties interested in communicating directly with the full Board, the Chairman, or the independent Directors as a group or individually, may do so by mail addressed to Dow Inc. in care of the Office of the Corporate Secretary, 2211 H.H. Dow Way, Midland, Michigan 48674 or via email addressed to directors@dow.com.

Frequency of feedback collection

More frequently than annually

Attach any relevant documents which detail your transition plan (optional)

Dow-2021-ESG-Report.pdf

Dow-2021-Investor-Day.pdf

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

	Use of climate-related scenario analysis to inform strategy
Row 1	Yes, qualitative and quantitative

C3.2a

(C3.2a) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Physical climate scenarios RCP 6.0	Company-wide		1. Objective: Dow takes an exploratory approach to climate-related scenario analysis to evaluate a range of different futures. The purpose of our scenario analysis is to understand how Dow's current portfolio may perform under different possible future states, which in turn informs strategic decisions. Our most recent scenario planning study was initiated in 2020. 2. Scenario definition: Dow utilized the Regional Rivalry scenario described by Shared Socioeconomic Pathway (SSP3) RCP6.0 to assess physical risks. Per Matsui, et. al. in "An emission pathway for stabilization at 6 Wm−2 radiative forcing": "Representative Concentration Pathway 6.0 (RCP6) is a pathway that describes trends in long-term, global emissions of greenhouse gases (GHGs), short-lived species, and land-use/land-cover change leading to a stabilisation of radiative forcing at 6.0 Watts per square meter (Wm−2) in the year 2100 without exceeding that value in prior years. Simulated with the Asia-Pacific Integrated Model (AIM), GHG emissions of RCP6 peak around 2060 and then decline through the rest of the century." 3. Parameters: The physical climate scenario analysis covered all Dow businesses. Dow evaluated margin impact to our upstream Hydrocarbons & Energy Business quantitatively utilizing inputs from the scenarios (energy demand, fuel mix, carbon emission prices). Dow

			qualitatively evaluated potential opportunities for our downstream businesses utilizing market drivers described in the scenarios. • Scenario Description: Regional Rivalry, Shared Socioeconomic Pathway, RCP 6.0 • Description: Uneven path to decarbonization • Market Trends: Slower, regionally driven demand for solutions that mitigate climate change, greater market for climate adaptation products • Temperature Rise: 2.1°C • Carbon Price (USD/metric ton): 30 • Renewable Energy (% of total primary energy): 17 4. Assumptions: From a policy standpoint, Dow's chosen physical climate scenario describes an uncoordinated pathway around decarbonization. An example assumption used during this analysis was the level of GHG emissions driving global warming and the subsequent physical risks and climate-related impacts the GHG emissions yielded. 5. Analytical choices: Physical climate scenarios were evaluated on a 30-year (to 2050) timeframe. This time horizon aligns with Dow's longer term carbon related objectives (to be carbon neutral by 2050, for Scope 1+2+3 plus product benefits).
Transition scenarios IEA SDS	Company-wide		1. Scenario definition: The IEA Sustainable Development scenario (IEA SDS) is a 2°C or lower scenario. As per the recommendations from the Task Force on Climate-related Financial Disclosures (TCFD), utilizing a 2°C or lower scenario is recommended. Per IEA, "The SDS is based on a surge in clean energy policies and investment that puts the energy system on track for key SDGs… All current net zero pledges are achieved in full and there are extensive efforts to realize near-term emissions reductions; advanced economies reach net zero emissions by 2050, China around 2060, and all other countries by 2070 at the latest. Without assuming any net negative emissions, this scenario is consistent with limiting the global temperature rise to 1.65 °C (with a 50% probability). With some level of net negative emissions after 2070, the temperature rise could be reduced to 1.5 °C in 2100." 2. Parameters: Dow is a large consumer of energy, so transition

			scenarios that focus on trends in energy consumption are particularly relevant to Dow. • Scenario Descriptions, 2050 Snapshot Sustainable Development: IEA Sustainable Development Scenario (IEA SDS) • Description: Coordinated path to decarbonization • Market Trends: Increased demand for solutions that mitigate climate change • Temperature Rise: <1.5°C • Carbon Price (USD/metric ton): 135 • Renewable Energy (% of total primary energy): 47 3. Assumptions: The transition scenario model Dow selected spanned a range of potential energy futures through global primary energy consumption and energy types. IEA SDS represents the successful scale-up of climate mitigation efforts and global climate policies. Dow's selected transition scenario covers a range of policy development assumptions. An example policy development assumption considered was the relative impact of regulation vs. CO2 price driven changes in energy markets. 4. Analytical choices: Climate-related transition risks and opportunities inform our strategy across all strategic planning timeframes: short (1-5 years), medium (5-10 years), and long term (>10 years). Dow analyzed the parameter "costs of carbon pricing mechanisms" in the context of the actions and choices needed to comply with regulatory changes. Dow also analyzed the parameter "expenses and capital investment associated with the transition to low-emissions technologies" in the context of Dow's exposure to the cost of carbon and how each might influence Dow's transition to lower-emissions technology.

C3.2b

(C3.2b) Provide details of the focal questions your organization seeks to address by using climate-related scenario analysis, and summarize the results with respect to these questions.

Row 1

Focal questions

- For risks: in a 'do nothing' approach, could the impact to Dow be significant?
- For opportunities: is there a potential to take advantage of the opportunity that would

result in significant impact?
• Under which timeframe(s) may we see the risk/opportunity emerge?
• Which actions are needed to mitigate risk/ capitalize on opportunity?
• What variables are needed to support decision-making?

Results of the climate-related scenario analysis with respect to the focal questions

Focal questions are a key anchor point for many of the decisions made during scenario development and analysis.
Results summary:
Physical scenario data indicate changes in environmental impact factors dependent on global warming, time horizons, and geolocation (e.g. increased drought risk). Acute and chronic risks include more frequent incidents of severe weather, or long-term changes in precipitation patterns; reduced revenue/decreased production; and increased operating/capital costs. This data answered the risk-based focal question, “What variables are needed to support decision making?”
Climate-related transition risks include availability, development, and affordability of lower GHG emissions technology; the effects of carbon pricing; and changes in public sentiment, regulations, taxes, public mandates, or requirements. For example, carbon pricing mechanisms present potential increased costs to comply with changes in regulations.
Decision/actions:
The physical scenario results were shared with our facilities and operational structure to drive internal climate change and resilience discussions. Driving discussions to create meaningful climate adaptation and physical risk mitigation mechanisms is a key action we’re taking to support decision making and to capitalize on opportunities to minimize our comprehensive climate-related risk profile. An example related to chronic physical risks related to water availability was the identification of 6 water stressed sites globally and the establishment of mitigation plans.
The transition scenario analysis presented breakthrough technologies as solutions to the focal question “Is there potential to take advantage of opportunities that would result in significant impact?” Scenario-specific datasets are provided for testing technologies, investments, and strategies for economic viability in sensitivity analyses. These variables have helped answer the question, “What variables are needed in order to support decision-making?” One variable important to Dow is society's willingness to pay for lower carbon emitting solutions. For Dow’s downstream businesses, both scenarios present opportunities to develop solutions related to climate change – whether these are focused on the mitigation of climate change or the products that address climate adaptation.

C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities	Description of influence

	influenced your strategy in this area?	
Products and services	Yes	Description of how strategy has been influenced by climate-related risks/opportunities and the time horizon covered: Climate-related risks and opportunities have informed our strategy as it relates to our products and services across all strategic planning timeframes [short (1-5 years), medium (5-10 years), and long term (>10 years)], and include elements of both climate change adaptation and mitigation. Dow products can often reduce GHG emissions more than the footprint of manufacturing them, and we continue to align investments in our product R&D with a low-carbon future. We also evaluate our product line for resiliency in future scenarios. We see climate protection and the circular economy being inherently linked. As such, we have developed a strategic product-related goal around advancing the circular economy that by 2035, Dow will help 'close the loop' by having 100% of Dow products sold into packaging applications be reusable or recyclable. This is in addition to our climate-related targets and our other circularity target announced in 2020 to enable 1 million metric tons of plastic per year to be collected, reused or recycled through our direct actions and partnerships by 2030. Case study of a strategic decision made in this area: Situation: Climate protection and circular economy are inherently linked. Advancing a circular economy not only minimizes waste but can reduce economy-wide emissions currently based largely on an extractive linear system. Task: Because of our leadership position in manufacturing and materials technology, we have the opportunity to take a leading role in supporting the development and implementation of the circular economy. Dow sees advancing the circular economy as a fundamental part of our sustainability strategy. Action: In 2020 we announced new circular economy targets, including that by 2035, Dow will help "close the loop" by having 100% of Dow products sold into packaging applications be reusable or recyclable. Result: In 2021, we enabled 85% of the products we sell into packaging applications to be reusable or recyclable. Additional application development, packaging redesign, and infrastructure improvements are required to deliver our 100% commitment.

Supply chain and/or value chain	Yes	Description of how strategy has been influenced by climate-related risks/opportunities and time horizon covered: Climate-related risks and opportunities have informed our strategy relative to our value chain through climate change adaptation and mitigation initiatives across all strategic planning timeframes: short (1-5 years), medium (5-10 years), and long term (>10 years). Dow recognizes the need to reduce value chain emissions to mitigate climate-related risk. Dow's goal is to be carbon neutral by 2050, including Scope 3 supply chain-related emissions. Dow is developing scope 3 climate strategies for all material categories, which consists of both internal activities to actively manage and reduce our impact as well as external engagement to drive and promote climate action. Dow was named a CDP Supplier Engagement Leader in 2022, achieving an "A" score on the Supplier Engagement Rating system. Case study of a strategic decision made in this area: Situation: Reducing purchased logistics emissions is a key priority for Dow. Task: Collaborating with Dow's internal shipment data and our logistics suppliers to identify and track emission reduction opportunities. Action: Emissions are now being tracked on the shipment level. A transportation optimization engine is helping identify shipment consolidations when products can be shipped together while respecting all relevant constraints, including material compatibility, route, temperature requirements and delivery times. Result: Improving data to calculate logistics emissions resulted in a large variance compared to previous years. This resulted in much more granular and accurate calculation of Upstream Transportation emissions, resulting in a decrease of approximately 50% from 2020 (more than 2 million MTCO2e).
Investment in R&D	Yes	Description of how strategy has been influenced by climate-related risks/opportunities and the time horizon covered: Climate-related risks and opportunities have informed our strategy as it relates to investment in R&D across all strategic planning timeframes [short (1-5 years), medium (5-10 years), and long term (>10 years)], and includes elements of climate change adaptation and mitigation. Achieving Dow's goal to be carbon neutral by 2050 will involve the use of breakthrough technologies. Scenario analysis can provide insights into opportunities for these breakthrough technologies. Case study of a strategic decision made in this area:

		Situation: Today's ethylene steam crackers, which make up a large portion of Dow's asset base, rely primarily on natural gas combustion to obtain the pressures and temperature needed to operate – making these assets CO2 intensive. We know from climate-related scenario analysis that pathways to limit temperature rise to well below 2°C involve an acceleration in the use of renewable energy. As the energy grid becomes greener, using renewable electricity to heat steam cracker furnaces could become one of the breakthrough technologies to decarbonize the chemicals industry. Task: Develop a technologically and economically feasible solution for ethylene steam crackers that allows the chemicals industry to utilize renewable electricity in place of natural gas combustion. Action: In 2020, Dow and Shell announced a joint development agreement to accelerate technology to electrify ethylene steam crackers. Following the initial announcement, other collaborators joined the effort, including The Netherlands Organisation for Applied Scientific Research (TNO) and the Institute for Sustainable Process Technology (ISPT). Result: The joint program has been awarded €3.5 million (USD$4.2 million) in Mission-driven Research Development and Innovation (MOOI) scheme funding from The Netherlands government. In the first year, the program has advanced electrification solutions for today's steam crackers while also pursuing game-changing technologies for novel designs of electrified crackers in the longer-term. The companies are now evaluating construction of a multi-megawatt pilot plant, with potential start-up in 2025, subject to investment support.
Operations	Yes	Description of how strategy has been influenced by climate-related risks/opportunities and the time horizon covered: Climate-related risks and opportunities have informed our strategy as it relates to Operations across all strategic planning timeframes [short (1-5 years), medium (5-10 years), and long term (>10 years)] and includes elements around both climate change adaptation and mitigation. Dow recognizes the need to reduce emissions to mitigate climate-related risk. Dow has a goal to reduce emissions by 15% by 2030 (from 2020 baseline) and be carbon neutral by 2050 (Scope 1+2+3 plus product benefits). In addition, Dow has set 'World Leading Operations' 2025 Sustainability Goals that address a number of areas with the goal of reducing our impact on the environment: for example, reducing freshwater

		intake intensity, reducing our waste intensity, and reducing our GHG emissions. Situation: A key part of Dow's strategy to reduce our GHG emissions and minimize our carbon exposure is to increase the amount of renewables in our purchased power mix. We know from climate scenario analysis that renewables will play an increasingly important role in future electricity grids. Task: We have a dedicated 2025 Sustainability Goals to source 750 MW of renewable power capacity to support our sites by 2025. A portion of our goal to reduce emissions by 15% by 2030 will come from increasing the use of renewable power. Action: In 2021, we expanded access to renewable power to more than 900 MW, such that more than 25% of our purchased electricity comes from renewable sources. Result: In 2021, we continued to be one of the top 20 global corporations using clean energy according to Bloomberg NEF, and we added 132 MW of wind and solar clean power capacity through new renewable power purchase agreements. The power supplied by the new agreements is expected to reduce our Scope 2 emissions by more than 600,000 metric tons of CO2 per year. The new agreements bring our total access to clean energy to more than 900 MW, well ahead of our 2025 Sustainability Goal of 750 MW power from renewable sources.

C3.4

(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Direct costs Indirect costs Capital expenditures Capital allocation	Climate-related risks and opportunities influence our financial planning across short (1-5 years), medium (5-10 years), and long term (>10 years) timeframes. Case study of how climate-related risks and opportunities have influenced financial planning – Capital Allocation 1. Situation: A climate-related risk for Dow is related to carbon emission pricing regulation. If carbon emission prices rise significantly in the jurisdictions where we operate, it could impact our cost to operate compared to competitors. 2. Task: Ensure the potential for rising emission costs is incorporated into our capital allocation process such that the potential impact of rising

		emission prices are mitigated. This enables Dow to make appropriate investment decisions regarding the capital needed for decarbonization. 3. Action: Dow has an internally defined price on carbon that is incorporated in the business process plan and in our long-term division capital allocation process. We maintain a 20-year carbon price forecast for all jurisdictions in which we operate that is updated, at a minimum, on an annual basis. The business process plan is used in 1-5 year decisions (short term). The division capital allocation process is utilized to evaluate long term investments. As many assets in the chemical industry are capital intensive, long-lived assets, long-term investments are evaluated on a 20-year timeframe. The objective of defining an internal carbon price is to mitigate the risk of carbon exposure, to make the best decisions that will ensure company results longer term comply with regulatory frameworks. 4. Result: Our projected price on carbon emissions helps inform our decisions regarding the allocation of spending on internal and external resources dedicated to achieving these reduction objectives. For example, Dow's projected emissions price forecast for the EU ETS is incorporated into the project economics for our decarbonization plan for our site in Terneuzen, The Netherlands. Another example is where Dow's projected emissions price forecast for the Alberta TIER is incorporated into the project economics for our decarbonization plan for our site in Alberta, Canada.

C3.5

(C3.5) In your organization's financial accounting, do you identify spending/revenue that is aligned with your organization's transition to a 1.5°C world?

No, but we plan to in the next two years

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Absolute target

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1

Year target was set

2020

Target coverage

Company-wide

Scope(s)

Scope 1
Scope 2

Scope 2 accounting method

Market-based

Scope 3 category(ies)

Base year

2020

Base year Scope 1 emissions covered by target (metric tons CO2e)

28,490,000

Base year Scope 2 emissions covered by target (metric tons CO2e)

6,070,000

Base year Scope 3 emissions covered by target (metric tons CO2e)

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

34,560,000

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

100

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

100

Base year Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

100

Target year

2030

Targeted reduction from base year (%)

15

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]

29,376,000

Scope 1 emissions in reporting year covered by target (metric tons CO2e)

28,290,000

Scope 2 emissions in reporting year covered by target (metric tons CO2e)

5,680,000

Scope 3 emissions in reporting year covered by target (metric tons CO2e)

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

33,970,000

% of target achieved relative to base year [auto-calculated]

11.3811728395

Target status in reporting year

Underway

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

Target ambition

Please explain target coverage and identify any exclusions

In 2020, Dow announced the following climate protection targets: By 2030, Dow will reduce its net annual carbon emissions by 5 million metric tons vs. its 2020 baseline (15% reduction). By 2050, Dow intends to be carbon neutral (Scope 1 + 2 + 3 plus product benefits). These targets are in addition to our 2025 Sustainability Goals, which have the following climate-related objectives: Dow will obtain 750 MW of its purchased power from renewable sources by 2025, which the company has already exceeded, and though we will grow globally over the next 10 years, Dow's absolute greenhouse gas (GHG) emissions will not exceed our 2006 baseline. Dow considers our target to reduce emissions by 15% compared to our 2020 baseline to be 2°C aligned, and in alignment with external scenarios that indicate the level of emission reduction required in hard-to-abate sectors. For example, under the recently released Net Zero by 2050 report from the International Energy Agency (IEA), an approximately 7.5% reduction in energy-related emissions is required by 2030 from the chemicals sector to enable net zero by 2050. The baseline represents Scope 1 + 2 emissions in 2020. The value of the baseline equals 34.56 million metric tonnes of CO2e.

Plan for achieving target, and progress made to the end of the reporting year

Plan for achieving target:

Our strategy includes a phased approach to decarbonize while meeting growing demand for our products and contributing to a low-carbon future through continued investment in new products, technologies and processes. Our actions include:

• Replacing end-of-life assets with higher-efficiency, lower emissions technology. We are taking a phased, site-by-site approach to reducing our carbon footprint by replacing end-of-life and high carbon-intensity assets with more carbon-efficient technologies, and by investing in carbon abatement technologies, including circular hydrogen and carbon capture and storage.

• Accelerating investment in renewable energy. In 2021, we expanded access to renewable power to more than 900 megawatts, such that more than 25% of our purchased electricity comes from renewable sources. Dow is a top user of clean energy in the chemical industry and top-25 among global corporations.

• Innovating low-carbon materials and solutions. We are helping our customers achieve their climate-related goals through products that enable benefits such as energy efficiency, light-weighting, fuel transition, circularity, increased operational efficiency, resource reductions and reduced emissions.

• Investing in transformative next-generation technologies. We are innovating next-generation manufacturing technologies, such as fluidized catalytic dehydrogenation (FCDh), ethane dehydrogenation (EDH) and electric cracking technology (e-cracking). These breakthrough manufacturing processes are at various stages of development and are part of our solutions to create a lower-carbon industry footprint.

Progress made to the end of the reporting year:

• Announced plans to build the world's 1st net-zero carbon emissions integrated ethylene cracker and derivatives site in Fort Saskatchewan, Alberta, Canada while tripling the site's manufacturing capacity: CO2 savings: >1MM mta.

• Shared a multi-generation plan to convert our Terneuzen manufacturing site in the Netherlands to use clean energy from a new hydrogen plant: CO2 savings: 1.4MM mta (phase 1).

• Advanced retrofit of proprietary FCDh pilot plant in Louisiana for planned 2022 start-up: 20% CO2 reduction vs. traditional processes.

• Expanded access to renewable power to >900MW: CO2 savings: 0.6MM mta.

• Collaborated with >100 suppliers to drive transparency on Scope 3 carbon emissions and advance climate action with suppliers and non-governmental organization (NGO) partners.

List the emissions reduction initiatives which contributed most to achieving this target

Target reference number

Abs 2

Year target was set

2020

Target coverage

Company-wide

Scope(s)

Scope 1
Scope 2
Scope 3

Scope 2 accounting method

Market-based

Scope 3 category(ies)

Category 1: Purchased goods and services
Category 2: Capital goods
Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2)
Category 4: Upstream transportation and distribution
Category 5: Waste generated in operations
Category 6: Business travel
Category 7: Employee commuting
Category 8: Upstream leased assets
Category 11: Use of sold products
Category 12: End-of-life treatment of sold products
Category 13: Downstream leased assets
Category 14: Franchises
Category 15: Investments

Base year

2020

Base year Scope 1 emissions covered by target (metric tons CO2e)

28,490,000

Base year Scope 2 emissions covered by target (metric tons CO2e)

6,070,000

Base year Scope 3 emissions covered by target (metric tons CO2e)

69,260,000

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

103,820,000

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

100

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

100

Base year Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

100

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

100

Target year

2050

Targeted reduction from base year (%)

100

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]

0

Scope 1 emissions in reporting year covered by target (metric tons CO2e)

28,290,000

Scope 2 emissions in reporting year covered by target (metric tons CO2e)

5,680,000

Scope 3 emissions in reporting year covered by target (metric tons CO2e)

77,640,000

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

111,610,000

% of target achieved relative to base year [auto-calculated]

-7.5033712194

Target status in reporting year

Underway

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

Target ambition

Please explain target coverage and identify any exclusions

Dow, like other carbon-intensive industries, does not currently have an emissions target pathway that has been approved by the Science Based Targets Initiative. However, our emissions reduction targets are scientifically based and in alignment with, and ahead of, the International Energy Agency's 2050 Net Zero Emissions Scenario for the chemical industry. Currently, SBTi does not have chemical sector specific guidance for emissions

reductions and decarbonization. Dow is part of the SBTi expert advisory group (EAG) that is working to develop this guidance. Dow also collaborates with SBTI/members to bring carbon-intensive industries together to accelerate target setting and adoption. Our ability to meet these commitments, while enabling business growth, will require effective management of our energy consumption and the implementation of new technologies. In addition, we will need the appropriate infrastructure and policy developments to support emissions reductions. For example, under the recently released Net Zero by 2050 report from the International Energy Agency (IEA), an approximately 95% reduction in energy-related emissions is required by 2050 from the chemicals sector. In 2020, Dow announced the following climate protection targets: By 2030, Dow will reduce its net annual carbon emissions by 5 million metric tons vs. its 2020 baseline (15% reduction). By 2050, Dow intends to be carbon neutral (Scope 1 + 2 + 3 plus product benefits). These targets are in addition to our 2025 Sustainability Goals, which have the following climate-related objectives: Dow will obtain 750 MW of its power demand from renewable sources by 2025, and though we will grow globally over the next 10 years, Dow's absolute greenhouse gas (GHG) emissions will not exceed our 2006 baseline. The baseline represents Scope 1 + 2 emissions in 2020. The value of the Scope 1 plus Scope 2 baseline equals 34.56 million metric tonnes of CO2e. The covered emissions in base year represented here also include approximately 69.26 million metric tonnes of Scope 3 emissions at baseline.

Plan for achieving target, and progress made to the end of the reporting year

Plan for achieving target:

Our strategy includes a phased approach to decarbonize while meeting growing demand for our products and contributing to a low-carbon future through continued investment in new products, technologies and processes. Our actions include:

• Replacing end-of-life assets with higher-efficiency, lower emissions technology. We are taking a phased, site-by-site approach to reducing our carbon footprint by replacing end-of-life and high carbon-intensity assets with more carbon-efficient technologies, and by investing in carbon abatement technologies, including circular hydrogen and carbon capture and storage.

• Accelerating investment in renewable energy. In 2021, we expanded access to renewable power to more than 900 megawatts, such that more than 25% of our purchased electricity comes from renewable sources. Dow is a top user of clean energy in the chemical industry and top-20 among global corporations.

• Innovating low-carbon materials and solutions. We are helping our customers achieve their climate-related goals through products that enable benefits such as energy efficiency, light-weighting, fuel transition, circularity, increased operational efficiency, resource reductions and reduced emissions.

• Investing in transformative next-generation technologies. We are innovating next-generation manufacturing technologies, such as fluidized catalytic dehydrogenation (FCDh), ethane dehydrogenation (EDH) and electric cracking technology (e-cracking). These breakthrough manufacturing processes are at various stages of development and are part of our solutions to create a lower-carbon industry footprint.

Progress made to the end of the reporting year:

• Announced plans to build the world's 1st net-zero carbon emissions integrated

ethylene cracker and derivatives site in Fort Saskatchewan, Alberta, Canada while tripling the site's manufacturing capacity: CO2 savings: >1MM mta.
• Shared a multi-generation plan to convert our Terneuzen manufacturing site in the Netherlands to use clean energy from a new hydrogen plant: CO2 savings: 1.4MM mta (phase 1).
• Advanced retrofit of proprietary FCDh pilot plant in Louisiana for planned 2022 start-up: 20% CO2 reduction vs. traditional processes.
• Expanded access to renewable power to >900MW: CO2 savings: 0.6MM mta.
• Collaborated with >100 suppliers to drive transparency on Scope 3 carbon emissions and advance climate action with suppliers and non-governmental organization (NGO) partners.

List the emissions reduction initiatives which contributed most to achieving this target

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

Net-zero target(s)
Other climate-related target(s)

C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

Target reference number

Oth 1

Year target was set

2015

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Energy consumption or efficiency
Other, please specify
MW

Target denominator (intensity targets only)

Base year

2015

Figure or percentage in base year

5.85

Target year

2025

Figure or percentage in target year

750

Figure or percentage in reporting year

900.55

% of target achieved relative to base year [auto-calculated]

120.2311361957

Target status in reporting year

Achieved

Is this target part of an emissions target?

One of Dow's 2025 Sustainability Goals is to procure 750 MW of renewable power capacity to support our sites by 2025. Achieving this target aligns with our efforts to reduce our emissions of 5 million tonne of CO2 equivalent in 2030 in that an increase in procured renewable power capacity to support our sites results in a decrease in Dow's Scope 2 emissions (as calculated using the market-based method).

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain target coverage and identify any exclusions

Our ambition is to become the most innovative, customer-centric, inclusive and sustainable materials science company in the world, so that we can achieve our purpose to deliver a sustainable future for the world through our materials science expertise and collaboration with our partners. One of Dow's 2025 Sustainability Goals is to procure 750 MW of renewable power capacity to support our sites by 2025. Dow is a leading user of renewable power in our industry (Source: BNEF, PPA Top Offtakers by Capacity). Under our 2025 Sustainability Goals, Dow has committed to obtain 750 MW of renewable power capacity by 2025.

Plan for achieving target, and progress made to the end of the reporting year

List the actions which contributed most to achieving this target

Dow purchases renewable energy in Europe, Latin America and North America. Because the economics for renewables vary, we have wind, solar, hydro, biomass and landfill gas, depending on the location. All of our projects are selected based on the lowest long-term cost of power or steam from available alternatives. We support

contract-based additionality of renewable power where our assets operate, helping industry and residents alike. In 2021, Dow signed agreements for 107 MW of wind power capacity to support the Dow Cabangu, Brazil site beginning in 2024, 25 MW of solar power capacity to support the Dow Prentiss, Canada site beginning in 2022, and six agreements across eight sites across Spain, U.K, Sweden, France, and Germany.

Target reference number

Oth 2

Year target was set

2020

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Engagement with suppliers

Other, please specify

Invite top suppliers in terms of spend to respond to CDP Supply Chain request

Target denominator (intensity targets only)

Base year

2020

Figure or percentage in base year

0

Target year

2022

Figure or percentage in target year

50

Figure or percentage in reporting year

31

% of target achieved relative to base year [auto-calculated]

62

Target status in reporting year

Underway

Is this target part of an emissions target?

Engagement with suppliers on projects to reduce emissions is a subset of Dow's longer term CO2 reduction efforts (target Abs 2).

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain target coverage and identify any exclusions

To achieve our goals to track and reduce scope 3 emissions, Dow is leveraging the CDP Supply Chain Program to engage with suppliers on climate change.

Plan for achieving target, and progress made to the end of the reporting year

Plan for achieving target:
Through our partnership with CDP Supply Chain Program, we engaged a number of our suppliers to participate in CDP for the first time and encouraged seasoned reporters to improve their reporting around key climate KPIs. The process of inviting suppliers to participate in CDP inspired and empowered our Procurement team to become part of Dow's decarbonization efforts, and the data we received back from suppliers grew our internal capacity to understand supply chain carbon emissions and climate strategies. Beyond our learnings as a team, we are able to leverage the supplier data to advance our scope 3 strategy, allowing Dow to become more strategic in our decarbonization, data collection, and advocacy efforts.

Progress made to the end of the reporting year:
In the first year of the program, we focused on purchasing spend as a key criterion to select suppliers. In 2021, our first year with the CDP Supply Chain Program, we invited 172 suppliers to participate in CDP, representing 31% of our global purchasing spend. As we grow and refine our scope 3 emissions estimates, we will build in additional selection criteria – most importantly, estimated greenhouse gas emissions from key materials and services, as well as suppliers considered strategic in terms of their relationship with Dow or their role in key collaborative decarbonization initiatives.

List the actions which contributed most to achieving this target

Target reference number

Oth 3

Year target was set

2020

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

R&D investments

Percentage of R&D budget/portfolio dedicated to low-carbon products/services

Target denominator (intensity targets only)

Base year

2020

Figure or percentage in base year

80

Target year

2025

Figure or percentage in target year

85

Figure or percentage in reporting year

85

% of target achieved relative to base year [auto-calculated]

100

Target status in reporting year

Achieved

Is this target part of an emissions target?

Yes

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain target coverage and identify any exclusions

Advancement in sustainable technology and products are key component of Dow's climate targets. In 2021, >85% of Dow's R&D Portfolio had alignment to sustainability. These projects are aligned with the following sustainability focus areas: climate protection, circular economy, stop the waste, and safer materials. All of which are part of our 2025 sustainability targets portfolio.

Plan for achieving target, and progress made to the end of the reporting year

List the actions which contributed most to achieving this target

We have developed and implemented an approach that documents the primary alignment of each innovation project to Dow's sustainability priorities. The approach uses a rigorous and well-defined process that includes training, review and approval of the data, as well as an annual evaluation to drive improvement. 2021 was the second year for the evaluation approach and we will continue to evolve to ensure alignment of innovation with our sustainability targets. The following are just a couple of examples of how Dow is investing in improved technology aimed to reach our GHG emission targets.

Dow aims to be a leader in the development of lower emissions technology consistent with the recent announcement of a net-zero emissions facility in Alberta, Canada. To get to net-zero carbon emissions for the Alberta site, we also will invest in capabilities to convert cracker off-gas into circular hydrogen to be used as a clean fuel in the production process. We also initiated a joint development project with Shell to develop electrified cracking technology powered by clean energy.

Target reference number

Oth 4

Year target was set

2020

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Other, please specify

Other, please specify

% of packaging applications that are recyclable or reusable

Target denominator (intensity targets only)

Base year

2020

Figure or percentage in base year

82

Target year

2035

Figure or percentage in target year

100

Figure or percentage in reporting year

85

% of target achieved relative to base year [auto-calculated]

16.6666666667

Target status in reporting year

Underway

Is this target part of an emissions target?

Improving circularity of plastics through recycling and reuse is critical to a world that is also targeting carbon emissions reduction. The lower-carbon benefits of polyethylene-based packaging serve as a key driver and source of value. Moving to circular products means incorporating recycling feedstocks from waste instead of more extraction of fossil fuels.

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain target coverage and identify any exclusions

Through our Close the Loop (CTL) target, we are tracking our progress toward enabling 100% of the packaging applications we sell to be recyclable or reusable by 2035.

Plan for achieving target, and progress made to the end of the reporting year

Progress made to the end of the reporting year: In support of and in collaboration with our value chain partners, we align our innovation and application development programs to ensure we have the right solutions at the right time. And our year-over-year progress shows that it's working. Plans for achieving target include helping customers design for recyclability, growing our recyclable/renewable business, and scaling advanced recycling.

List the actions which contributed most to achieving this target

Target reference number

Oth 5

Year target was set

2020

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Other, please specify

Other, please specify

Enable metric tons of plastic per year to be collected, reused or recycled through direct actions and partnerships.

Target denominator (intensity targets only)

Base year

2020

Figure or percentage in base year

8,000

Target year

2030

Figure or percentage in target year

1,000,000

Figure or percentage in reporting year

23,000

% of target achieved relative to base year [auto-calculated]

1.5120967742

Target status in reporting year

Underway

Is this target part of an emissions target?

Improving circularity of plastics through recycling and reuse is critical to a world that is also targeting carbon emissions reduction. The lower-carbon benefits of polyethylene-based packaging serve as a key driver and source of value. Moving to circular products means incorporating recycling feedstocks from waste instead of more extraction of fossil fuels.

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain target coverage and identify any exclusions

Through our Stop the Waste target, we are tracking our progress toward enabling 1MM metric tons of plastic per year to be collected, reused or recycled through direct actions and partnerships by 2030.

Plan for achieving target, and progress made to the end of the reporting year

Progress made to the end of the reporting year: In 2021, we enabled the collection, reuse or recycling of 23,000 metric tons of plastic waste, up from 8,000 metric tons 2020 2021 in 2020. Plans for achieving target include investing to improve plastics recycling infrastructure, partnering across the value chain to bring hard-to-recycle plastics into the circular economy, and helping communities address waste management gaps.

List the actions which contributed most to achieving this target

C4.2c

(C4.2c) Provide details of your net-zero target(s).

Target reference number

NZ1

Target coverage

Company-wide

Absolute/intensity emission target(s) linked to this net-zero target

Abs2

Target year for achieving net zero

2050

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

Please explain target coverage and identify any exclusions

Dow, like other carbon-intensive industries, does not currently have an emissions target pathway that has been approved by the Science Based Targets Initiative. However, our emissions reduction targets are scientifically based and in alignment with, and ahead of, the International Energy Agency's 2050 Net Zero Emissions Scenario for the chemical industry. For example, under the recently released Net Zero by 2050 report from the International Energy Agency (IEA), an approximately 95% reduction in energy-related emissions is required by 2050 from the chemicals sector. Currently, SBTi does not have chemical sector specific guidance for emissions reductions and decarbonization. Dow is part of the SBTi expert advisory group (EAG) that is working to develop this guidance. Dow also collaborates with SBTI/members to bring carbon-intensive industries together to accelerate target setting and adoption. In 2020, Dow announced the following climate protection targets: By 2030, Dow will reduce its net annual carbon emissions by 5 million metric tons vs. its 2020 baseline (15% reduction). By 2050, Dow intends to be carbon neutral (Scope 1 + 2 + 3 plus product benefits). These targets are in addition to our 2025 Sustainability Goals, which have the following climate-related objectives: Dow will obtain 750 MW of its power demand from renewable sources by 2025, which Dow has already exceeded, and though we will grow globally over the next 10 years, Dow's absolute greenhouse gas (GHG) emissions will not exceed our 2006 baseline. The baseline represents Scope 1 + 2 emissions in 2020. The value of the Scope 1 plus Scope 2 baseline equals 34.56 million metric tonnes of CO2e. The covered emissions in base year represented here also include approximately 69.26 million metric tonnes of Scope 3 emissions at baseline.

Do you intend to neutralize any unabated emissions with permanent carbon removals at the target year?

Unsure

Planned milestones and/or near-term investments for neutralization at target year

Planned actions to mitigate emissions beyond your value chain (optional)

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	14	
To be implemented*	7	1,430,000
Implementation commenced*	3	100,000
Implemented*	4	611,500
Not to be implemented	0	

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Energy efficiency in production processes
Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

24,000

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

Voluntary/Mandatory

Mandatory

Annual monetary savings (unit currency – as specified in C0.4)

894,000

Investment required (unit currency – as specified in C0.4)

22,200,000

Payback period

21-25 years

Estimated lifetime of the initiative

6-10 years

Comment

LA-2 flare gas reduction from cracker in Plaquemine, Louisiana.

Initiative category & Initiative type

Energy efficiency in production processes

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

23,000

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

1,209,000

Investment required (unit currency – as specified in C0.4)

10,000

Payback period

<1 year

Estimated lifetime of the initiative

>30 years

Comment

Implementation of new pressure controller to modulate steam turbine, controlling off-gas header pressure and reduce requirements for header pressure makeup with natural gas.

Initiative category & Initiative type

Energy efficiency in production processes

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

14,500

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
3,249,000

Investment required (unit currency – as specified in C0.4)
6,600,000

Payback period
1-3 years

Estimated lifetime of the initiative
16-20 years

Comment
Implementation of tuneable diode laser analysers on cracker furnaces in Terneuzen.

Initiative category & Initiative type
Low-carbon energy consumption
Low-carbon electricity mix

Estimated annual CO2e savings (metric tonnes CO2e)
550,000

Scope(s) or Scope 3 category(ies) where emissions savings occur
Scope 2 (market-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
0

Investment required (unit currency – as specified in C0.4)
0

Payback period
No payback

Estimated lifetime of the initiative
3-5 years

Comment
Sourcing cleaner power & steam to support Dow operations in Europe.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Compliance with regulatory requirements/standards	Dow is subject to regulatory requirements at all of our operating facilities. Maintaining compliance with regulatory requirements and standards is an important driver for potential investments in emission reduction activities.
Financial optimization calculations	Dow strives to manage our facilities in the most cost-effective way, while continuing to ensure the safety of our employees, the environment, and the communities in which we operate. Cost of emissions, as well as cost savings that can occur during optimization projects, is factored into financial optimization evaluations for our projects.
Internal price on carbon	Dow has an internal price on carbon that is used when prioritizing capital projects.
Internal incentives/recognition programs	Incentives are provided to all Dow employees through the Annual Performance Award. Payouts are determined by measuring actual performance against each metric goal, including progress towards our 2025 Sustainability Goals via an Environmental Stewardship index, which includes our climate-related targets and is part of our World Leading Operations Index metric. In addition, Dow has other incentive programs that award individual projects. For example, the Sustainable Environmental Engagement at Dow (SEED) award recognizes individuals annually who find innovative ways to save money while proactively reducing waste or emissions at Dow.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products.

Level of aggregation

Group of products or services

Taxonomy used to classify product(s) or service(s) as low-carbon

Other, please specify

Taxonomy used is based off the avoided emissions, see "Methodology used to calculate avoided emissions" for more information.

Type of product(s) or service(s)

Chemicals and plastics

Other, please specify

Interior Insulation

Description of product(s) or service(s)

PU for Insulated metal panels (IMP)

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Yes

Methodology used to calculate avoided emissions

Other, please specify

A planned benefit reduction strategy was adopted to model the GWP of energy use linearly declining to zero by 2050 and a 5% per year social value reduction.

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Use stage

Functional unit used

1 kg formulated PU insulation product sold for IMP

Reference product/service or baseline scenario used

Comparison is same thickness mineral wool based IMP

Life cycle stage(s) covered for the reference product/service or baseline scenario

Use stage

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

0.0611

Explain your calculation of avoided emissions, including any assumptions

Benefit of PU based IMP is calculated compared to mineral wool based IMP using annual energy flow reduction with same thickness while PU IMP having lower density than mineral wool IMP. Product benefits is cumulative over 30 years assuming same benefits every year. Heating and cooling days where Dow PU formulations sold used to calculate total benefits.

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

0.31

Level of aggregation

Group of products or services

Taxonomy used to classify product(s) or service(s) as low-carbon

Other, please specify

Taxonomy used is based off the avoided emissions, see "Methodology used to calculate avoided emissions" for more information.

Type of product(s) or service(s)

Chemicals and plastics

Other, please specify

Exterior Insulation

Description of product(s) or service(s)

Binder for EIFS

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Yes

Methodology used to calculate avoided emissions

Other, please specify

A planned benefit reduction strategy was adopted to model the GWP of energy use linearly declining to zero by 2050 and a 5% per year social value reduction.

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Use stage

Functional unit used

1kg of binders in 1 m2 of insulation, insulating life over 30 years

Reference product/service or baseline scenario used

EIFS is compared with insulated vinyl sidings (next best chemical solution) – comparable insulation thicknesses (2 inches)

Life cycle stage(s) covered for the reference product/service or baseline scenario

Use stage

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

76

Explain your calculation of avoided emissions, including any assumptions

EIFS is compared with Brick wall (non-use) and insulated vinyl sidings (next best chemical solution) – comparable insulation thicknesses (2 inches). No credible non-chemical solution was found. Product benefits is cumulative over 30 years assuming same benefits every year. Heating and cooling days where Dow PU formulations sold used to calculate total benefits.

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

0.31

Level of aggregation

Group of products or services

Taxonomy used to classify product(s) or service(s) as low-carbon

Other, please specify

Taxonomy used is based off the avoided emissions, see "Methodology used to calculate avoided emissions" for more information.

Type of product(s) or service(s)

Chemicals and plastics

Other, please specify

Packaging

Description of product(s) or service(s)

Plastic packaging

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Yes

Methodology used to calculate avoided emissions

Other, please specify

A planned benefit reduction strategy was adopted to model the GWP of energy use linearly declining to zero by 2050 and a 5% per year social value reduction.

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Cradle-to-gate + end-of-life stage

Functional unit used

1 kg of plastic packaging

Reference product/service or baseline scenario used

Plastic Packaging vs. Other technologies (steel, aluminum, glass, paper, etc.)

Life cycle stage(s) covered for the reference product/service or baseline scenario

Cradle-to-gate + end-of-life stage

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

3

Explain your calculation of avoided emissions, including any assumptions

Benefit is based on the 2018 Franklin report for N. America showing the benefit of plastic versus other technologies. Benefit would be the same over any time horizon (i.e., 1 year or 30 years).

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

23.6

Level of aggregation

Group of products or services

Taxonomy used to classify product(s) or service(s) as low-carbon

Other, please specify

Taxonomy used is based off the avoided emissions, see "Methodology used to calculate avoided emissions" for more information.

Type of product(s) or service(s)

Chemicals and plastics

Other, please specify

Window sealants

Description of product(s) or service(s)

Silicones for window sealing

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Yes

Methodology used to calculate avoided emissions

Other, please specify

A planned benefit reduction strategy was adopted to model the GWP of energy use linearly declining to zero by 2050 and a 5% per year social value reduction

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Cradle-to-grave

Functional unit used

1 kg Silicone Product

Reference product/service or baseline scenario used

Silicone Window Sealant (outside-facing IG window units) vs. Polyurethane and Polysulfide Window Sealant

Life cycle stage(s) covered for the reference product/service or baseline scenario

Cradle-to-grave

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

0.198

Explain your calculation of avoided emissions, including any assumptions

30 year timeframe used in assessment; benefit is due to less seal failure with silicone sealant and therefore less building energy use. Benefit is based on the case study originally completed in the Global Silicones report. Silicone sealant carbon footprint is

higher than PU alternative, but after 20 years seal failure begins with PU, so benefit for silicone sealant occurs during last 10 years of a 30 year window life span.

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

0.16

C5. Emissions methodology

C5.1

(C5.1) Is this your first year of reporting emissions data to CDP?

No

C5.1a

(C5.1a) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?

Row 1

Has there been a structural change?

No

C5.1b

(C5.1b) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?

	Change(s) in methodology, boundary, and/or reporting year definition?	Details of methodology, boundary, and/or reporting year definition change(s)
Row 1	Yes, a change in methodology Yes, a change in boundary	To align with the GHG protocol reporting standard, approximately 350,000 MT of not-previously reported methane and nitrous oxide emissions from landfills and wastewater treatment facilities were added to scope 1 emissions. For change in methodology, our calculation methodologies for GHG emission accounting were improved globally as part of a combined effort to align with the Task Force on Climate-Related Financial Disclosure reporting guidance and the GHG protocol standard. Scope 2 emissions also had increase of approximately 10,000 MT of emissions due to change in methodology from estimated data to invoice data for our San Lorenzo and Bitterfield facilities; and decrease in emissions due to change from energy to work potential method for Singapore.

C5.1c

(C5.1c) Have your organization's base year emissions been recalculated as result of the changes or errors reported in C5.1a and C5.1b?

	Base year recalculation	Base year emissions recalculation policy, including significance threshold
Row 1	Yes	The 2020 Baseline was adjusted by 360,000 MT and included changes from both change in methodology & boundary.

C5.2

(C5.2) Provide your base year and base year emissions.

Scope 1

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

28,490,000

Comment

The baseline provided here is associated with Dow's 2030 carbon emission target to reduce emissions by 5 million metric tonnes (Scope 1 + Scope 2). Dow's baseline emissions represent emissions in 2020.

Scope 2 (location-based)

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

3,950,000

Comment

The baseline provided here is for reference. Dow utilizes our Scope 2 (market-based) value to track progress against our targets, including Dow's 2030 carbon emission target to reduce emissions by 5 million metric tonnes (Scope 1 + Scope 2).

Scope 2 (market-based)

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

6,070,000

Comment

The baseline provided here is associated with Dow's 2030 carbon emission target to reduce emissions by 5 million metric tonnes (Scope 1 + Scope 2). Dow's baseline emissions represent emissions in 2020.

Scope 3 category 1: Purchased goods and services

Base year start

January 1, 2021

Base year end

December 31, 2021

Base year emissions (metric tons CO2e)

39,650,000

Comment

Scope 3 category 2: Capital goods

Base year start

January 1, 2021

Base year end

December 31, 2021

Base year emissions (metric tons CO2e)

1,970,000

Comment

Scope 3 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)

Base year start

January 1, 2021

Base year end

December 31, 2021

Base year emissions (metric tons CO2e)

5,220,000

Comment

Scope 3 category 4: Upstream transportation and distribution

Base year start
January 1, 2021

Base year end
December 31, 2021

Base year emissions (metric tons CO2e)
2,010,000

Comment

Scope 3 category 5: Waste generated in operations

Base year start
January 1, 2021

Base year end
December 31, 2021

Base year emissions (metric tons CO2e)
1,040,000

Comment

Scope 3 category 6: Business travel

Base year start
January 1, 2021

Base year end
December 31, 2021

Base year emissions (metric tons CO2e)
4,500

Comment

Scope 3 category 7: Employee commuting

Base year start
January 1, 2021

Base year end
December 31, 2021

Base year emissions (metric tons CO2e)

51,000

Comment

Scope 3 category 8: Upstream leased assets

Base year start

January 1, 2021

Base year end

December 31, 2021

Base year emissions (metric tons CO2e)

14,000

Comment

Scope 3 category 9: Downstream transportation and distribution

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 10: Processing of sold products

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 11: Use of sold products

Base year start

January 1, 2021

Base year end

December 31, 2021

Base year emissions (metric tons CO2e)

11,130,000

Comment

Scope 3 category 12: End of life treatment of sold products

Base year start

January 1, 2021

Base year end

December 31, 2021

Base year emissions (metric tons CO2e)

11,960,000

Comment

Scope 3 category 13: Downstream leased assets

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Dow does not have any materially significant downstream leased assets.

Scope 3 category 14: Franchises

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Dow does not have any franchises.

Scope 3 category 15: Investments

Base year start

January 1, 2021

Base year end

December 31, 2021

Base year emissions (metric tons CO2e)

4,590,000

Comment

Scope 3: Other (upstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3: Other (downstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

C5.3

(C5.3) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
The Greenhouse Gas Protocol: Scope 2 Guidance
US EPA Emissions & Generation Resource Integrated Database (eGRID)

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)

28,290,000

Start date

January 1, 2021

End date

December 31, 2021

Comment

Kyoto Scope 1 emissions

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)

28,490,000

Start date

January 1, 2020

End date

December 31, 2020

Comment

Kyoto Scope 1 emissions

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

Dow tracks progress against our Sustainability Goals using the market-based method of Scope 2 accounting but reports a location-based value as well both here and in our annual Environmental, Social and Governance Report.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based

3,940,000

Scope 2, market-based (if applicable)

5,680,000

Start date

January 1, 2021

End date

December 31, 2021

Comment

Past year 1

Scope 2, location-based

3,950,000

Scope 2, market-based (if applicable)

6,070,000

Start date

January 1, 2020

End date

December 31, 2020

Comment

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

No

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

39,650,000

Emissions calculation methodology

Hybrid method
Average data method
Spend-based method
Average spend-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

Purchased Goods & Services emissions were calculated using Dow's internal primary data representing all purchases in 2021. For raw materials, quantities of purchased materials were converted to GHG emissions related to the cradle-to-gate emissions to produce and deliver a ton of a certain material. Over 95% of materials by weight were matched with a specific emissions factor from databases like Ecoinvent v.3.8, using region or process-specific factors wherever possible. A weighted average emissions factor was used for the remaining 5%, representing the average emissions per ton of the other 95% of Dow's purchased materials. Services and packaging emissions were calculated based on spend, using environmentally-extended input output (EEIO) LCA data that represents the cradle-to-gate emissions associated per unit of revenue in a particular sector. Dow is working towards embedding supplier-specific data via data collection efforts as well as industry-group initiatives to improve carbon emissions calculation methodologies and data-sharing practices. All carbon accounting is aligned with the Greenhouse Gas Protocol.

Capital goods

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

1,970,000

Emissions calculation methodology

Average spend-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

Capital expenditures were obtained from Dow's 2021 10-K, table titled "Reconciliation of Non-GAAP Cash Flow Measures." Detailed information on the products and services within capital goods spend were not available within 2021. Per the WBCSD Guidance for Accounting and Reporting Corporate GHG Emissions in the Chemical Sector Value Chain, a standard composition for capital goods was assumed as 25% of spend on concrete and 75% on steel. Spend-based EEIO emissions factors were used to convert spend to GHG emissions. All carbon accounting is aligned with the Greenhouse Gas Protocol.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

5,220,000

Emissions calculation methodology

Average data method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

The average-data method is employed for Fuel- and Energy-related Activities, using invoice data for 2021 fuel and energy purchases coupled with average emissions factors as detailed below. For upstream emissions of fuels, purchased quantities were taken from the Dow's internal records; emission factors were taken from ecoinvent v3.8 following specific scenario models. For the upstream emissions of purchased electricity, data on the location, type, and amount of purchased non-renewable electricity were gathered from internal records. Country and grid specific life cycle emission factors from ecoinvent v3.8 that exclude emissions from combustion were matched with the quantity of electricity purchased to calculate emissions. For purchased steam, quantities of purchased steam were obtained from invoices and/or metering data from each site. We assumed the fuel source to produce this steam was natural gas, as the primary steam suppliers to Dow utilize this fuel type. We calculated the energy needed to produce the steam, the equivalent mass of natural gas to produce that energy, and used an ecoinvent v3.8 emission factor to convert the natural gas to CO2e. For transmission and distribution losses, ecoinvent v3.8 country-specific transmission and distribution losses for the generation of electricity were multiplied by the purchased non-renewable electricity in each site. All carbon accounting is aligned with the Greenhouse Gas Protocol.

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

2,010,000

Emissions calculation methodology

Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

Upstream Transportation includes the emissions from Dow's purchased logistics, including transport between Dow's facilities and to the customer. Emissions for purchased logistics were previously reported in 3.9 Downstream Transportation; these emissions have been moved to 3.4 to better align with key methodologies used to calculate logistics emissions. In 2021, Dow launched an internal transportation carbon tracker tool, which allows Dow to track emissions on an individual shipment level. Actual shipment weights were taken from Dow's internal shipment tracking systems. Average distance was calculated based on the mode of transport: Bulk marine uses GPS data, container shipping use port-to-port average distance, and road, rail and air moves use great circle distance based on the origin and destination of each shipment. Emissions factors were selected from the GLEC Framework to the highest degree of specificity possible based on information from carriers and Dow logistics experts. All carbon accounting is aligned with the Greenhouse Gas Protocol, supplemented by the logistics-sector specific guidance of the Global Logistics Emissions Council Framework.

Waste generated in operations

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

1,040,000

Emissions calculation methodology

Waste-type-specific method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

Dow tracks all waste leaving our facilities and the type of treatment the waste undergoes, such as landfill, combustion, underground injection, energy recovery, wastewater, or other treatment. Based on the amount of waste and treatment

technology, emissions from waste generated in operations was estimated using US EPA Waste Reduction (WARM) model factors. All carbon accounting is aligned with the Greenhouse Gas Protocol.

Business travel

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

4,500

Emissions calculation methodology

Hybrid method
Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Please explain

Dow obtained the total air miles travelled, rental car days, and hotel room nights used by Dow employees in 2021 from our global travel provider. Business travel not booked through the travel provider is not included. Aviation was based on total air miles booked through the travel provider. Passenger car emissions were based on the total rental days reported by the travel provider; miles driven was estimated based on the average miles per day according to the AAA Foundation for Traffic Safety. Hotel emissions were based on the number of nights in hotels reported by the travel provider. Travel was converted to CO2e using ecoinvent v3.8 emissions factors. All carbon accounting is aligned with the Greenhouse Gas Protocol.

Employee commuting

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

51,000

Emissions calculation methodology

Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

As a result of COVID-19, many Dow employees continued to work from home in 2021. Using information from Dow Human Resources, an assumption was made regarding the number of employees required to be on site, e.g., to work at Dow’s manufacturing

facilities and the average number of working days per year. Average miles per day for the US was used to estimate the commuting distance, based on data from the AAA Foundation for Traffic Safety. Emissions were calculated based on this average number of miles using the ecoinvent 3.8 emissions factor for passenger cars. All carbon accounting is aligned with the Greenhouse Gas Protocol.

Upstream leased assets

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

14,000

Emissions calculation methodology

Average data method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

Emissions associated with leased assets was based on the square footage of Dow's leased offices and laboratories, with an assumed energy use per square foot based on US EPA data on home energy use (an assumption was made that residential and office energy use is similar). All carbon accounting is aligned with the Greenhouse Gas Protocol.

Downstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Please explain

Emissions from Category 9: Downstream Transportation & Distribution have been realigned to Category 4: Upstream Transportation & Distribution to better comply with the Greenhouse Protocol and GLEC Framework. Dow is evaluating the data required to report downstream transport emissions with sufficient accuracy in the future.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Please explain

Emissions associated with the processing of sold products are not estimated at this time; from the Greenhouse Gas Protocol: "In certain cases, the eventual end use of sold intermediate products may be unknown. For example, a company may produce an intermediate product with many potential downstream applications, each of which has a different GHG emissions profile and be unable to reasonably estimate the downstream

emissions associated with the various end-users of the intermediate product. In such a case, companies may disclose and justify the exclusion of downstream emissions from categories in the report (but should not selectively exclude a subset of those categories).

Use of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

11,130,000

Emissions calculation methodology

Methodology for direct use phase emissions, please specify

GHG Protocol

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

Most Dow products are inert and do not have use phase emissions. The emissions presented here specifically represent carbon-based products that are sold and consumed in fuel applications. To calculate emissions, the quantity of this material sold in 2021 was obtained from primary sales data, and representative CO2 emission factors were used to calculate combustion emissions. It is assumed that this total product weight was converted to 100% carbon dioxide with no side reactions. All carbon accounting is aligned with the Greenhouse Gas Protocol.

End of life treatment of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

11,960,000

Emissions calculation methodology

Waste-type-specific method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

Emissions associated with the end-of-life treatment of sold products were based on the quantity of sold products (minus products included in 3.11), using Dow's annual revenue as a proxy to estimate sold quantities. The end-of-life fate of the products (landfill, combustion, wastewater, etc.) was both determined through internal business-aligned

studies. Emission factors from EPA's WARM model were used to calculate the emissions from each end-of-life treatment. All carbon accounting is aligned with the Greenhouse Gas Protocol.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

Dow does not have any materially significant downstream leased assets.

Franchises

Evaluation status

Not relevant, explanation provided

Please explain

Dow does not have any franchises.

Investments

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

4,590,000

Emissions calculation methodology

Investment-specific method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Please explain

Investment-specific data was obtained from key contacts at companies that Dow has a partial ownership interest in, including EQUATE Petrochemical Company K.S.C.C., Kuwait Styrene, Kuwait Olefins, Sadara Chemical Company, Siam Polyethylene Company Ltd., Siam Polystyrene Company Ltd., Siam Styrene Monomer Company Ltd., and Siam Synthetic Latex Company Ltd. Emissions were calculated based on these company's reported Scope 1 and Scope 2 emissions according to Dow's ownership interest (%). For some investment companies, data was not available in 2021; wherever possible, previous years' data was used as a proxy, though in some cases, emissions data were missing and thus not included. Dow intends to close this data gap in the future.

Other (upstream)

Evaluation status

Please explain

Other (downstream)

Evaluation status

Please explain

C6.5a

(C6.5a) Disclose or restate your Scope 3 emissions data for previous years.

Past year 1

Start date

January 1, 2020

End date

December 31, 2020

Scope 3: Purchased goods and services (metric tons CO2e)

38,170,000

Scope 3: Capital goods (metric tons CO2e)

1,760,000

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

4,750,000

Scope 3: Upstream transportation and distribution (metric tons CO2e)

4,140,000

Scope 3: Waste generated in operations (metric tons CO2e)

1,750,000

Scope 3: Business travel (metric tons CO2e)

5,100

Scope 3: Employee commuting (metric tons CO2e)

46,000

Scope 3: Upstream leased assets (metric tons CO2e)

17,000

Scope 3: Downstream transportation and distribution (metric tons CO2e)

Scope 3: Processing of sold products (metric tons CO2e)

Scope 3: Use of sold products (metric tons CO2e)

6,440,000

Scope 3: End of life treatment of sold products (metric tons CO2e)

7,270,000

Scope 3: Downstream leased assets (metric tons CO2e)

0

Scope 3: Franchises (metric tons CO2e)

0

Scope 3: Investments (metric tons CO2e)

4,920,000

Scope 3: Other (upstream) (metric tons CO2e)

Scope 3: Other (downstream) (metric tons CO2e)

Comment

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?

Yes

C6.7a

(C6.7a) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.

	CO2 emissions from biogenic carbon (metric tons CO2)	Comment
Row 1	540,000	

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

0.00062

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

33,970,000

Metric denominator

unit total revenue

Metric denominator: Unit total

54,968,000,000

Scope 2 figure used

Market-based

% change from previous year

31

Direction of change

Decreased

Reason for change

Dow reported 2021 net sales of $54.9 billion, up 43% year-over-year, with gains across every region and operating segment.
Scope 1 emissions decreased slightly in 2021 relative to 2020 which is in line with normal year over year operating fluctuations and supported by energy reduction projects such as flare gas reduction and other energy efficiency projects. The current actions in flight will enable reduction of net emissions in the medium to longer term.
Dow's Scope 2 emissions were reduced by approximately 400,000 metric tons CO2e (6.4% reduction) in 2021 when compared to 2020 as a result of Dow's efforts to source cleaner sources of energy to support our sites.
This significant increase in net sales combined with the overall scope 1 and 2 reduction of carbon emissions from 2020 to 2021 lead to the significantly reduced intensity figure for 2021.

Intensity figure

0.53

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

28,225,464

Metric denominator

metric ton of product

Metric denominator: Unit total

52,954,816

Scope 2 figure used

Market-based

% change from previous year

4

Direction of change

Decreased

Reason for change

GHG intensity on a metric ton of product basis reflects emissions solely related to the manufacture of materials, excluding emissions associated with the production of power and steam not consumed by the company. Emissions of GHG were lower in 2021 vs. 2020 due to the implementation of energy reduction projects. These projects include LA-2 flare gas reduction from our Plaquemine cracker facility, Implementation of new pressure controller to modulate steam turbine, controlling off-gas header pressure and reduce requirements for header pressure makeup with natural gas also at our Plaquemine site, Implementation of tunable diode laser analyzers on cracker furnaces at our Terneuzen site, and Sourcing cleaner power and steam to support Dow operations in Europe in multiple European sites.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	27,470,000	IPCC Sixth Assessment Report (AR6 - 100 year)
CH4	570,000	IPCC Sixth Assessment Report (AR6 - 100 year)
N2O	159,000	IPCC Sixth Assessment Report (AR6 - 100 year)
HFCs	94,000	IPCC Sixth Assessment Report (AR6 - 100 year)

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)

United States of America	18,717,844
Netherlands	3,854,940
Germany	1,994,186
Canada	1,080,903
Spain	922,233
Argentina	876,642
Brazil	292,552
United Kingdom of Great Britain and Northern Ireland	178,595
China	50,977
Thailand	127,818
Portugal	50,329
Other, please specify Rest of world	146,737

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By business division
By facility
By activity

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
HYDROCARBONS & ENERGY	23,717,120
COATINGS & PERFORMANCE MONOMERS	843,564
INDUSTRIAL SOLUTIONS	616,593
PACKAGING & SPECIALTY PLASTICS	1,171,104
CONSUMER SOLUTIONS	646,750
POLYURETHANES & CONSTRUCTION CHEMICALS	809,397
CORP OPERATIONS/SHARED SERVICES	489,228

C7.3b

(C7.3b) Break down your total gross global Scope 1 emissions by business facility.

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude

PLAQUEMINE, LA	5,170,573	30.2842	-91.2406
FREEPORT, TX	5,969,309	28.9539	-95.3594
ST. CHARLES OPERATIONS	2,950,145	29.9424	-90.3964
TERNEUZEN, NLD	3,842,795	51.3381	3.8275
DOW CENTRAL GERMANY, DEU	1,294,521	51.39	11.9851
TARRAGONA, ESP	922,233	41.12	1.24
FORT SASKATCHEWAN, CAN	1,010,925	53.7089	-113.2124
BAHIA BLANCA, ARG	874,022	-38.7144	-62.2674
SEADRIFT,TX	892,211	28.415	-96.7133
STADE, DEU	681,664	53.5988	9.4747
DEER PARK, TX	629,437	29.705	-95.1236
TEXAS CITY, TX	75,307	29.3836	-94.9025
SOUTH CHARLESTON, WV	125,726	38.3683	-81.6997
CARROLLTON, KY	197,372	38.6809	-85.1794
CABANGU, BRA	17,907	30.289083	-91.234274
BREU BRANCO, BRA	16,229	-3.771692	-49.564957
MIDLAND, MI	116,503	43.6156	-84.2472
ARATU, BRA	198,069	-22.3302	-42.5578
ESTARREJA, PRT	50,329	40.7528	-8.5709
ZHANGJIAGANG, CHN	41,386	31.8756	120.556
REST OF THE WORLD	563,157	43.6156	-84.2472
SABINE, TX	2,411,763	30.066	-93.757

BARRY, UK	176,980	51.412	-3.24
PRENTISS, CAN	65,187	52.387	-113.599
ELIZABETHTOWN, KY	6	37.667	-85.835

C7.3c

(C7.3c) Break down your total gross global Scope 1 emissions by business activity.

Activity	Scope 1 emissions (metric tons CO2e)
Process activities	16,286,486
Energy and steam stationary combustion	11,913,659
Blowing agents	93,611

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Comment
Chemicals production activities	22,516,175	Dow operates combined heat and power (CHP) plants to support our operations. At some sites, we also generate power and steam for third parties or to sell to the grid. Emissions associated with power and steam sales to third parties or to the grid are excluded from this number.

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Germany	1,827,132	4,131,275
United States of America	1,022,451	652,898
China	203,932	195,925
Thailand	221,121	205,129
Canada	68,500	59,554
Spain	137,787	61,328

Brazil	216,657	92,555
Argentina	106,887	125,975
Portugal	22,929	20,948
United Kingdom of Great Britain and Northern Ireland	14,039	0
France	2,265	720
Netherlands	13,913	13,842
Italy	8,623	8,623
Other, please specify Rest of world	76,951	109,871

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By facility

C7.6b

(C7.6b) Break down your total gross global Scope 2 emissions by business facility.

Facility	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
STADE, DEU	1,286,758	3,270,537
DOW CENTRAL GERMANY, DEU	486,006	787,526
TERNEUZEN, NLD	2,444	2,373
MIDLAND, MI	131,500	116,463
FREEPORT, TX	91,358	57,104
MT MEIGS, AL	1,047	1,051
CARROLLTON, KY	70,782	70,782
BAHIA BLANCA, ARG	100,561	115,825
TEXAS CITY, TX	222,973	177,175

TARRAGONA, ESP	137,636	61,323
ARATU, BRA	92,855	14,571
REST OF THE WORLD	454,711	361,055
ZHANGJIAGANG, CHN	155,948	186,311
MAP TA PHUT	221,113	205,120
BREU BRANCO, BRA	54,467	64,575
FORT SASKATCHEWAN	13,769	11,890
SOUTH CHARLESTON, WV	21,188	21,189
ESTARREJA, PRT	22,929	20,948
ST CHARLES OPERATIONS	40,381	35,662
BARRY, UK	13,669	0
ELIZABETHTOWN, KY	12,329	12,329
PLAQUEMINE, LA	4	3
CABANGU, BRA	65,579	11,122
DEER PARK, TX	177,626	19,125
SEADRIFT, TX	4,270	460
SABINE, TX	6,553	6,462
PRENTISS, ALBERTA, CAN	54,731	47,664

C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Chemicals production activities	3,898,236	5,613,907	The majority of Dow's emissions are related to chemical production activities, however, a small percentage is assumed to be related to general facilities management. This amount has been excluded from the numbers presented here.

C-CH7.8

(C-CH7.8) Disclose the percentage of your organization's Scope 3, Category 1 emissions by purchased chemical feedstock.

Purchased feedstock	Percentage of Scope 3, Category 1 tCO2e from purchased feedstock	Explain calculation methodology
Ethane	18	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Propane	15	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Silicon	7	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Naphtha	4	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Caustic Soda	4	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Propylene	4	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Chlorine	3	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Benzene	2	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Oxygen	2	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.

Other (please specify) Biphenyl	2	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Hydrogen	2	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Octene	2	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Acetone	2	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Butane	1	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Styrene	1	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Ammonia	1	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Nitrogen	1	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Methanol	1	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Methyl Methacrylate	1	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Pygas	1	Emissions were calculated using the mass of material purchased multiplied by best

		representative emission factors from the ecoinvent database.
Other (please specify) Acetic Acid	1	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Hexene	1	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Carbon Monoxide	1	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Butyl Acrylate	1	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Hydrochloric Acid	1	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Methyl Chloride	1	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Nitric Acid	1	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Toluene Diisocyanate	1	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Ethylene	1	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.
Other (please specify) Charcoal	1	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.

Other (please specify) Calcium Oxide	1	Emissions were calculated using the mass of material purchased multiplied by best representative emission factors from the ecoinvent database.

C-CH7.8a

(C-CH7.8a) Disclose sales of products that are greenhouse gases.

	Sales, metric tons	Comment
Carbon dioxide (CO2)	0	
Methane (CH4)	1,443,000	Approximately 70% of this amount is related to Natural Gas that Dow purchases and resells among tenants in our sites. In Argentina, Dow has extraction and sales of natural gas. Dow also has interests in natural gas extraction in the United States. The content of methane in the natural gas was considered to answer this question.
Nitrous oxide (N2O)	0	
Hydrofluorocarbons (HFC)	0	
Perfluorocarbons (PFC)	0	
Sulphur hexafluoride (SF6)	0	
Nitrogen trifluoride (NF3)	0	

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation

Change in renewable energy consumption	61,868	Decreased	0.18	Scope 2 Emissions: Tarragona had a full year of renewables, and sites such as Wiesbaden, Erstein and Lauterbourg added renewable capacity. In 2021, 61,868 metric tons of CO2e were reduced by our change in renewable energy consumption, and our total Scope 1 and Scope 2 emissions in the 2020 was 34,560,000 CO 2e, therefore we arrived at -0.18% through (-61,868/34,560,000) * 100 = -0.18% (i.e. a 0.18% decrease in emissions).
Other emissions reduction activities	688,374	Decreased	1.99	Scope 1 Emissions: A flare gas operational improvement project reduced GHG emissions by 240,488 metric tons at our Sabine River site. Scope 2 Emissions: A switch for coal to natural gas reduced DCG emissions by 447,886 metric tons at our Dow Central Germany site. In total, 688,374 metric tons of CO 2e were reduced by our other emissions reductions activities, and our total Scope 1 and Scope 2 emissions in 2020 was 34,560,000 CO 2e, therefore we arrived at -1.99% through (-688,374/34,560,000) * 100 = -1.99% (i.e. a 1.99% decrease in emissions).
Divestment				
Acquisitions				
Mergers				
Change in output	433,168	Decreased	1.25	Scope 1 Emissions: Our Terneuzen site produced less power and steam in 2021 vs. 2020 due to less demand causing a reduction in emissions of 229,092 MT. In addition, production was stopped at two facilities, a silicone smelter facility at our Mt. Meigs, Alabama site and a monomer production facility at our Dow Central Germany site reducing emissions by 145,413 MT. Scope 2 Emissions: Production stopped at Mt. Megis resulting in a 58,663 MT reduction. In total, -433,168 metric tons of CO 2e

				were reduced by our change in output, and our total Scope 1 and Scope 2 emissions in 2020 was 34,560,000 CO 2e, therefore we arrived at -1.99% through (-433,168/34,560,000) * 100 = -1.25% (i.e. a 1.25% decrease in emissions).
Change in methodology				
Change in boundary				
Change in physical operating conditions	371,093	Increased	1.07	Scope 1 Emissions: In 2021, increased production at our Sabine River site generated an increase in power demand/output from our onsite cogen unit. Several factors negatively impacted production in 2020 and included a maintenance event and hurricane, both which triggered shutdowns of onsite facilities. 2021 was not impacted by such events. In total, 371,093 metric tons of CO 2e were increased by our change in physical operating conditions, and our total Scope 1 and Scope 2 emissions in 2020 was 34,560,000 CO 2e, therefore we arrived at 1.07% through (371,093/34,560,000) * 100 = 1.07% (i.e. a 1.07% increase in emissions).
Unidentified	206,642	Increased	0.6	The amount reported here as 'unidentified' emissions may encompass a number of different changes, including but not limited to: smaller energy efficiency/emission reduction projects, minor changes to measurement protocols for GHGs (eg. updated grid factors for Scope 2 emissions), and improvements in data accounting methodologies). In total, 206,642 metric tons of CO 2e were increased, and our total Scope 1 and Scope 2 emissions in 2020 was 34,560,000 CO 2e, therefore we arrived at 0.60% through (206,642/34,560,000) * 100 = 0.60% (i.e. a 0.60% increase in emissions).

Other				

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Market-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 5% but less than or equal to 10%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	Yes
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh

Consumption of fuel (excluding feedstock)	HHV (higher heating value)	0	161,038,889	161,038,889
Consumption of purchased or acquired electricity		2,963,889	7,733,333	10,697,222
Consumption of purchased or acquired steam		144,444	1,283,333	1,427,778
Consumption of self-generated non-fuel renewable energy		0		0
Total energy consumption		3,108,333	170,055,556	173,163,889

C-CH8.2a

(C-CH8.2a) Report your organization's energy consumption totals (excluding feedstocks) for chemical production activities in MWh.

Consumption of fuel (excluding feedstocks)

Heating value

HHV (higher heating value)

MWh consumed from renewable sources inside chemical sector boundary

0

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

161,025,703

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

13,186

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

161,038,889

Consumption of purchased or acquired electricity

MWh consumed from renewable sources inside chemical sector boundary

2,963,889

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

7,733,333

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

0

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

10,697,222

Consumption of purchased or acquired steam

MWh consumed from renewable sources inside chemical sector boundary

144,444

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

1,283,333

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

0

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

1,427,778

Consumption of self-generated non-fuel renewable energy

MWh consumed from renewable sources inside chemical sector boundary

0

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

0

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

0

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

0

Total energy consumption

MWh consumed from renewable sources inside chemical sector boundary

3,108,333

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

170,042,369

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

13,186

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

173,163,889

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	No
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	Yes

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Sustainable biomass

Heating value

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Other biomass

Heating value

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Other renewable fuels (e.g. renewable hydrogen)

Heating value

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Coal

Heating value

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Oil

Heating value

HHV

Total fuel MWh consumed by the organization

123,056

MWh fuel consumed for self-generation of heat

123,056

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Gas

Heating value

HHV

Total fuel MWh consumed by the organization

87,752,778

MWh fuel consumed for self-generation of heat

28,958,417

MWh fuel consumed for self-generation of steam

35,276,617

MWh fuel consumed for self- cogeneration or self-trigeneration

23,517,744

Comment

Other non-renewable fuels (e.g. non-renewable hydrogen)

Heating value

HHV

Total fuel MWh consumed by the organization

72,963,889

MWh fuel consumed for self-generation of heat

4,377,833

MWh fuel consumed for self-generation of steam

39,400,500

MWh fuel consumed for self- cogeneration or self-trigeneration

29,185,556

Comment

Total fuel

Heating value

HHV

Total fuel MWh consumed by the organization

160,839,722

MWh fuel consumed for self-generation of heat

33,459,306

MWh fuel consumed for self-generation of steam

74,677,117

MWh fuel consumed for self- cogeneration or self-trigeneration

52,703,300

Comment

C8.2d

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	19,994,664	7,723,507	0	0
Heat	0	0	0	0
Steam	7,661,996	6,243,118	0	0
Cooling	0	0	0	0

C-CH8.2d

(C-CH8.2d) Provide details on electricity, heat, steam, and cooling your organization has generated and consumed for chemical production activities.

Electricity

Total gross generation inside chemicals sector boundary (MWh)

19,994,664

Generation that is consumed inside chemicals sector boundary (MWh)

7,723,507

Generation from renewable sources inside chemical sector boundary (MWh)

0

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

0

Heat

Total gross generation inside chemicals sector boundary (MWh)

0

Generation that is consumed inside chemicals sector boundary (MWh)

0

Generation from renewable sources inside chemical sector boundary (MWh)

0

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

0

Steam

Total gross generation inside chemicals sector boundary (MWh)

7,661,996

Generation that is consumed inside chemicals sector boundary (MWh)

6,243,118

Generation from renewable sources inside chemical sector boundary (MWh)

0

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

0

Cooling

Total gross generation inside chemicals sector boundary (MWh)

0

Generation that is consumed inside chemicals sector boundary (MWh)

0

Generation from renewable sources inside chemical sector boundary (MWh)

0

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

0

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero or near-zero emission factor in the market-based Scope 2 figure reported in C6.3.

Sourcing method

Direct procurement from an off-site grid- connected generator e.g. Power purchase agreement (PPA)

Energy carrier

Electricity

Low-carbon technology type

Large hydropower (>25 MW)

Country/area of low-carbon energy consumption

Brazil

Tracking instrument used

Contract

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

1,215,720

Country/area of origin (generation) of the low-carbon energy or energy attribute

Brazil

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

Sourcing method

Direct line to an off-site generator owned by a third party with no grid transfers

Energy carrier

Steam

Low-carbon technology type

Sustainable biomass

Country/area of low-carbon energy consumption

Brazil

Tracking instrument used

Contract

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

145,600

Country/area of origin (generation) of the low-carbon energy or energy attribute

Brazil

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

Sourcing method

Direct procurement from an off-site grid- connected generator e.g. Power purchase agreement (PPA)

Energy carrier

Electricity

Low-carbon technology type

Solar

Country/area of low-carbon energy consumption

Brazil

Tracking instrument used

Contract

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

116,806

Country/area of origin (generation) of the low-carbon energy or energy attribute

Brazil

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

Sourcing method

Green electricity products from an energy supplier (e.g. green tariffs)

Energy carrier

Electricity

Low-carbon technology type

Renewable energy mix, please specify

Mix of solar, wind, hydro, biomass

Country/area of low-carbon energy consumption

Brazil

Tracking instrument used

Contract

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

59,741

Country/area of origin (generation) of the low-carbon energy or energy attribute

Brazil

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

Sourcing method

Direct procurement from an off-site grid- connected generator e.g. Power purchase agreement (PPA)

Energy carrier
Electricity

Low-carbon technology type
Wind

Country/area of low-carbon energy consumption
Argentina

Tracking instrument used
Contract

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
75,397

Country/area of origin (generation) of the low-carbon energy or energy attribute
Argentina

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)
2,019

Comment

Sourcing method
Direct procurement from an off-site grid- connected generator e.g. Power purchase agreement (PPA)

Energy carrier
Electricity

Low-carbon technology type
Wind

Country/area of low-carbon energy consumption
Argentina

Tracking instrument used
Contract

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
23,499

Country/area of origin (generation) of the low-carbon energy or energy attribute

Argentina

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

Sourcing method

Direct line to an off-site generator owned by a third party with no grid transfers

Energy carrier

Electricity

Low-carbon technology type

Wind

Country/area of low-carbon energy consumption

Belgium

Tracking instrument used

Contract

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

6,130

Country/area of origin (generation) of the low-carbon energy or energy attribute

Belgium

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

Sourcing method

Direct line to an off-site generator owned by a third party with no grid transfers

Energy carrier

Electricity

Low-carbon technology type

Solar

Country/area of low-carbon energy consumption
Belgium

Tracking instrument used
Contract

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
553.5

Country/area of origin (generation) of the low-carbon energy or energy attribute
Belgium

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)
2,014

Comment

Sourcing method
Green electricity products from an energy supplier (e.g. green tariffs)

Energy carrier
Electricity

Low-carbon technology type
Low-carbon energy mix, please specify
Solar, hydro, wind

Country/area of low-carbon energy consumption
France

Tracking instrument used
GO

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
28,732

Country/area of origin (generation) of the low-carbon energy or energy attribute
France

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

Sourcing method
Green electricity products from an energy supplier (e.g. green tariffs)

Energy carrier
Electricity

Low-carbon technology type
Renewable energy mix, please specify
solar, hydro, wind

Country/area of low-carbon energy consumption
Germany

Tracking instrument used
GO

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
6,865

Country/area of origin (generation) of the low-carbon energy or energy attribute
Germany

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

Sourcing method
Green electricity products from an energy supplier (e.g. green tariffs)

Energy carrier
Electricity

Low-carbon technology type
Renewable energy mix, please specify
solar, hydro, wind

Country/area of low-carbon energy consumption
Spain

Tracking instrument used

GO

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

383,889

Country/area of origin (generation) of the low-carbon energy or energy attribute

Spain

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

Sourcing method

Green electricity products from an energy supplier (e.g. green tariffs)

Energy carrier

Electricity

Low-carbon technology type

Hydropower (capacity unknown)

Country/area of low-carbon energy consumption

Sweden

Tracking instrument used

GO

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

5,277

Country/area of origin (generation) of the low-carbon energy or energy attribute

Sweden

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

Sourcing method

Green electricity products from an energy supplier (e.g. green tariffs)

Energy carrier

Electricity

Low-carbon technology type

Renewable energy mix, please specify

solar, hydro, wind

Country/area of low-carbon energy consumption

United Kingdom of Great Britain and Northern Ireland

Tracking instrument used

GO

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

66,745

Country/area of origin (generation) of the low-carbon energy or energy attribute

United Kingdom of Great Britain and Northern Ireland

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

Sourcing method

Direct procurement from an off-site grid- connected generator e.g. Power purchase agreement (PPA)

Energy carrier

Electricity

Low-carbon technology type

Wind

Country/area of low-carbon energy consumption

United States of America

Tracking instrument used

US-REC

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

916,261

Country/area of origin (generation) of the low-carbon energy or energy attribute

United States of America

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

Sourcing method

Direct procurement from an off-site grid- connected generator e.g. Power purchase agreement (PPA)

Energy carrier

Electricity

Low-carbon technology type

Other biomass

Country/area of low-carbon energy consumption

United States of America

Tracking instrument used

US-REC

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

12,480

Country/area of origin (generation) of the low-carbon energy or energy attribute

United States of America

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

Sourcing method

Green electricity products from an energy supplier (e.g. green tariffs)

Energy carrier

Electricity

Low-carbon technology type
Solar

Country/area of low-carbon energy consumption
United States of America

Tracking instrument used
US-REC

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
501

Country/area of origin (generation) of the low-carbon energy or energy attribute
United States of America

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

C8.2g

(C8.2g) Provide a breakdown of your non-fuel energy consumption by country.

Country/area
Argentina

Consumption of electricity (MWh)
371,160

Consumption of heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]

371,160

Country/area
Brazil

Consumption of electricity (MWh)

2,064,983

Consumption of heat, steam, and cooling (MWh)

145,618

Total non-fuel energy consumption (MWh) [Auto-calculated]

2,210,601

Country/area

Canada

Consumption of electricity (MWh)

595,749

Consumption of heat, steam, and cooling (MWh)

148,985

Total non-fuel energy consumption (MWh) [Auto-calculated]

744,734

Country/area

China

Consumption of electricity (MWh)

231,396

Consumption of heat, steam, and cooling (MWh)

99,830

Total non-fuel energy consumption (MWh) [Auto-calculated]

331,226

Country/area

France

Consumption of electricity (MWh)

39,696

Consumption of heat, steam, and cooling (MWh)

2,417

Total non-fuel energy consumption (MWh) [Auto-calculated]

42,113

Country/area
Germany

Consumption of electricity (MWh)
5,729,293

Consumption of heat, steam, and cooling (MWh)
264,188

Total non-fuel energy consumption (MWh) [Auto-calculated]

5,993,481

Country/area
Italy

Consumption of electricity (MWh)
30,146

Consumption of heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]

30,146

Country/area
Netherlands

Consumption of electricity (MWh)
845,103

Consumption of heat, steam, and cooling (MWh)
688,614

Total non-fuel energy consumption (MWh) [Auto-calculated]

1,533,717

Country/area
Portugal

Consumption of electricity (MWh)
45,805

Consumption of heat, steam, and cooling (MWh)
15,944

Total non-fuel energy consumption (MWh) [Auto-calculated]

61,749

Country/area
Spain

Consumption of electricity (MWh)
383,941

Consumption of heat, steam, and cooling (MWh)
80,322

Total non-fuel energy consumption (MWh) [Auto-calculated]

464,263

Country/area
Thailand

Consumption of electricity (MWh)
250,284

Consumption of heat, steam, and cooling (MWh)
253,814

Total non-fuel energy consumption (MWh) [Auto-calculated]

504,098

Country/area
United Kingdom of Great Britain and Northern Ireland

Consumption of electricity (MWh)
66,945

Consumption of heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]

66,945

Country/area

United States of America

Consumption of electricity (MWh)

7,610,912

Consumption of heat, steam, and cooling (MWh)

5,910,846

Total non-fuel energy consumption (MWh) [Auto-calculated]

13,521,758

Country/area

Other, please specify

Rest of Wold

Consumption of electricity (MWh)

155,579

Consumption of heat, steam, and cooling (MWh)

80,245

Total non-fuel energy consumption (MWh) [Auto-calculated]

235,824

C-CH8.3

(C-CH8.3) Does your organization consume fuels as feedstocks for chemical production activities?

Yes

C-CH8.3a

(C-CH8.3a) Disclose details on your organization's consumption of fuels as feedstocks for chemical production activities.

Fuels used as feedstocks

Naphtha

Total consumption

5,847,000

Total consumption unit

metric tons

Inherent carbon dioxide emission factor of feedstock, metric tons CO2 per consumption unit

3.08

Heating value of feedstock, MWh per consumption unit

13.12

Heating value

HHV

Comment

Fuels used as feedstocks

Propane liquid

Total consumption

5,025,000

Total consumption unit

metric tons

Inherent carbon dioxide emission factor of feedstock, metric tons CO2 per consumption unit

3

Heating value of feedstock, MWh per consumption unit

14.08

Heating value

HHV

Comment

Fuels used as feedstocks

Ethane

Total consumption

9,945,000

Total consumption unit

metric tons

Inherent carbon dioxide emission factor of feedstock, metric tons CO2 per consumption unit

2.93

Heating value of feedstock, MWh per consumption unit

14.34

Heating value

HHV

Comment

Fuels used as feedstocks

Butane

Total consumption

672,000

Total consumption unit

metric tons

Inherent carbon dioxide emission factor of feedstock, metric tons CO2 per consumption unit

3.03

Heating value of feedstock, MWh per consumption unit

13.67

Heating value

HHV

Comment

C-CH8.3b

(C-CH8.3b) State the percentage, by mass, of primary resource from which your chemical feedstocks derive.

	Percentage of total chemical feedstock (%)
Oil	28
Natural Gas	72
Coal	0
Biomass	0

Waste (non-biomass)	0
Fossil fuel (where coal, gas, oil cannot be distinguished)	0
Unknown source or unable to disaggregate	0

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description

Other, please specify

Dow will achieve 1 percent per year average increase in production index from our most-utilized facilities from the 2015 baseline.

Metric value

1.05

Metric numerator

Corporate Production Index

Metric denominator (intensity metric only)

% change from previous year

0.76

Direction of change

Increased

Please explain

The Production Index is a measure of the non-capital capacity increases for existing Dow facilities. Our production index increased from 2020 to 2021 and was measured in 2021 at 5.4% above the baseline (2015 baseline production index = 1, 2025 Target =1.1). Improvements in our Production Index imply increased efficiencies at our Operations, which allow us to produce more product out of our existing asset base.

Description

Other, please specify

Dow will reduce the freshwater intake intensity at key water-stressed sites by 20 percent.

Metric value

4.5

Metric numerator

Freshwater lbs

Metric denominator (intensity metric only)

Production lbs

% change from previous year

27

Direction of change

Decreased

Please explain

Dow has identified six key water-stressed sites whose data is used for this metric. These sites are Freeport, Texas (Brazos River); Seadrift, Texas (Guadalupe River); Bahia Blanca, Argentina (Purchased freshwater); Terneuzen, The Netherlands (Rivers Rhine and Meuse); Böhlen, Germany (River Weisse Elster and Lake Witznitz) and Tarragona, Spain (Purchased freshwater supply source from Ebro River diversion). Freshwater intake intensity decreased from 2020 to 2021. The 2015 baseline = 6.6 lbs of freshwater/lb of production, and the 2025 Goal is 5.2 lbs freshwater/lb of production. 2021 KWSS freshwater intensity calculation methodology was updated to remove freshwater that was transferred to 3rd party (customer). Historical years were also updated to reflect that change. Note, historical narratives were not updated. This metric is highly dependent on weather impacts for some of our locations. Freeport, Texas as an example can benefit from heavy rainfall within our reservoirs which then significantly lowers the site's water withdrawals requirement. The achievement of this metric is substantiated with known water conservation and efficiency improvements.

Description

Waste

Metric value

0.03

Metric numerator

Waste lbs

Metric denominator (intensity metric only)

Production lbs

% change from previous year

3.8

Direction of change

Increased

Please explain

Dow has a 2025 Sustainability Goal to reduce its waste intensity footprint by 20 percent. 2021 waste intensity slightly increased from 2020 due to increase in unplanned events leading to higher waste output.

C-CH9.3a

(C-CH9.3a) Provide details on your organization's chemical products.

Output product

High Value Chemicals (Steam cracking)

Production (metric tons)

14,336,867

Capacity (metric tons)

Direct emissions intensity (metric tons CO2e per metric ton of product)

0.56

Electricity intensity (MWh per metric ton of product)

0.35

Steam intensity (MWh per metric ton of product)

0.15

Steam/ heat recovered (MWh per metric ton of product)

Comment

Output product

Other, please specify

Valued Chemicals from Hydrocarbon Production

Production (metric tons)

5,763,647

Capacity (metric tons)

Direct emissions intensity (metric tons CO2e per metric ton of product)

0.54

Electricity intensity (MWh per metric ton of product)

0.34

Steam intensity (MWh per metric ton of product)
0.14

Steam/ heat recovered (MWh per metric ton of product)

Comment

Output product
Aromatics extraction

Production (metric tons)
2,346,068

Capacity (metric tons)

Direct emissions intensity (metric tons CO2e per metric ton of product)
0.001

Electricity intensity (MWh per metric ton of product)
0

Steam intensity (MWh per metric ton of product)
0

Steam/ heat recovered (MWh per metric ton of product)

Comment

Output product
Other, please specify
Other Hydrocarbon Production

Production (metric tons)
644,629

Capacity (metric tons)

Direct emissions intensity (metric tons CO2e per metric ton of product)
0.42

Electricity intensity (MWh per metric ton of product)
0.27

Steam intensity (MWh per metric ton of product)
0.11

Steam/ heat recovered (MWh per metric ton of product)

Comment

Output product
Butadiene (C4 sep.)

Production (metric tons)
238,722

Capacity (metric tons)

Direct emissions intensity (metric tons CO2e per metric ton of product)
0.003

Electricity intensity (MWh per metric ton of product)
0

Steam intensity (MWh per metric ton of product)
0

Steam/ heat recovered (MWh per metric ton of product)

Comment

Output product
Polymers

Production (metric tons)
15,054,176

Capacity (metric tons)

Direct emissions intensity (metric tons CO2e per metric ton of product)
0.1

Electricity intensity (MWh per metric ton of product)
0.06

Steam intensity (MWh per metric ton of product)

0.03

Steam/ heat recovered (MWh per metric ton of product)

Comment

Output product

Specialty chemicals

Production (metric tons)

2,251,023

Capacity (metric tons)

Direct emissions intensity (metric tons CO2e per metric ton of product)

0.57

Electricity intensity (MWh per metric ton of product)

0.36

Steam intensity (MWh per metric ton of product)

0.15

Steam/ heat recovered (MWh per metric ton of product)

Comment

Output product

Other base chemicals

Production (metric tons)

12,319,205

Capacity (metric tons)

Direct emissions intensity (metric tons CO2e per metric ton of product)

0.16

Electricity intensity (MWh per metric ton of product)

0.1

Steam intensity (MWh per metric ton of product)

0.04

Steam/ heat recovered (MWh per metric ton of product)

Comment

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	

C-CH9.6a

(C-CH9.6a) Provide details of your organization's investments in low-carbon R&D for chemical production activities over the last three years.

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Other, please specify CO2 reduction and energy optimization	Applied research and development	≤20%		
Radical process redesign	Applied research and development	≤20%		
Carbon capture, utilization and storage (CCUS)	Pilot demonstration	≤20%		
Process step integration	Applied research and development	≤20%		
Other, please specify Process and Sustainability Innovation	Applied research and development	≤20%		
Other, please specify Process efficiency	Basic academic/theoretical research	≤20%		

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

Final DT GHG Review Report.pdf

Final DT GRI Review Report.pdf

Dow-2021-ESG-Report.pdf

Page/ section reference

The attached documents “Final DT GHG Review Report” and “Final DT GRI Review Report” summarize the Limited Assurance Review performed by Deloitte & Touche LLP, which included the Scope 1 emissions being disclosed herein. The same information can be found on page 183 & 179 respectively of the document “Dow-2021-ESG-Report”, with the relevant GRI Index disclosures on page 140.

Relevant standard

Attestation standards established by AICPA (AT105)

Proportion of reported emissions verified (%)

100

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

TIER 2021 Final Verification Report.pdf

Page/ section reference

Dow has provided the attached example of verification associated with our emissions reported in jurisdictions where there exists a carbon emission price. The attached report was provided by RWDI AIR Inc. for Dow's Fort Saskatchewan, Alberta, Canada site for the period of January 1, 2021 to December 31st, 2021. The verification conclusion can be found on page 44. The emissions indicated in 'Total Regulated Emissions' include both direct (Scope 1) and indirect (Scope 2) emissions.

Relevant standard

Alberta Technology Innovation and Emissions Reduction (TIER)

Proportion of reported emissions verified (%)

4

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach

Scope 2 market-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

Final DT GHG Review Report.pdf

Final DT GRI Review Report.pdf

Dow-2021-ESG-Report.pdf

Page/ section reference

The attached documents “Final DT GHG Review Report” and “Final DT GRI Review Report” summarize the Limited Assurance Review performed by Deloitte & Touche LLP, which included the Scope 2 emissions being disclosed herein. The same information can be found on page 183 & 179 respectively of the document “Dow-2021-ESG-Report”, with the relevant GRI Index disclosures on pages 140 and 141.

Relevant standard

Attestation standards established by AICPA (AT105)

Proportion of reported emissions verified (%)

100

Scope 2 approach

Scope 2 market-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

TIER 2021 Final Verification Report.pdf

Page/ section reference

Dow has provided the attached example of verification associated with our emissions reported in jurisdictions where there exists a carbon emission price. The attached report was provided by RWDI AIR Inc. for Dow’s Fort Saskatchewan, Alberta, Canada site for the period of January 1, 2021 to December 31st, 2021. The verification conclusion can be found on page 44. The emissions indicated in ‘Total Regulated Emissions’ include both direct (Scope 1) and indirect (Scope 2) emissions.

Relevant standard

Alberta Technology Innovation and Emissions Reduction (TIER)

Proportion of reported emissions verified (%)

2

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category

Scope 3: Purchased goods and services
Scope 3: Capital goods
Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)
Scope 3: Upstream transportation and distribution
Scope 3: Waste generated in operations
Scope 3: Business travel
Scope 3: Employee commuting
Scope 3: Upstream leased assets
Scope 3: Investments
Scope 3: Downstream transportation and distribution
Scope 3: Processing of sold products
Scope 3: Use of sold products
Scope 3: End-of-life treatment of sold products

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

Final DT GRI Review Report.pdf
Dow-2021-ESG-Report.pdf

Page/section reference

The attached document “Final DT GRI Review Report” summarize the Limited Assurance Review performed by Deloitte & Touche LLP, which included the Scope 3 emissions being disclosed herein. The same information can be found on page 179 respectively of the document “Dow-2021-ESG-Report”, with the relevant GRI Index disclosures on pages 141-142.

Relevant standard

Attestation standards established by AICPA (AT105)

Proportion of reported emissions verified (%)

100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C8. Energy	Energy consumption	AICPA Attestation Standards	Dow engaged Deloitte & Touche LLP to perform a review in accordance with the attestation standards established by the American Institute of Certified Public Accountants (AICPA) of management's assertion that the ESG disclosures referenced or included within the Global Reporting Initiative Content Index ("GRI Index"), included within the Dow 2021 Environmental, Social and Governance Report as of, and for the year ended December 31, 2021 (the "2021 ESG Report") are presented in accordance with the Global Reporting Initiative Sustainability Reporting Standards under its Comprehensive option. The data points included within the CDP disclosure question C8.2a that are part of the ESG disclosures referenced or included in the GRI Index are: 1) Consumption of fuel (excluding feedstock) 2) Consumption of purchased or acquired electricity (as converted) 3) Consumption of purchased or acquired steam (as converted). ** Reference to CDP question number: C8.2a ** Type of verification and frequency: limited assurance, annual process

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

Alberta TIER - ETS
Canada federal fuel charge
EU ETS

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

Alberta TIER - ETS

% of Scope 1 emissions covered by the ETS

3.55

% of Scope 2 emissions covered by the ETS

1.81

Period start date

January 1, 2021

Period end date

December 31, 2021

Allowances allocated

1,008,101

Allowances purchased

22,554

Verified Scope 1 emissions in metric tons CO2e

1,003,192

Verified Scope 2 emissions in metric tons CO2e

103,061

Details of ownership

Facilities we own and operate

Comment

100% of Dow’s emissions in Alberta are covered under the Alberta CCIR. Dow's emissions covered under the Alberta CCIR represent 3.55% of the total Scope 1 from Dow, and 1.81% of Dow’s total Scope 2 emissions (as per the market-based method).

EU ETS

% of Scope 1 emissions covered by the ETS

24.23

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2021

Period end date

December 31, 2021

Allowances allocated

4,342,658

Allowances purchased

2,511,498

Verified Scope 1 emissions in metric tons CO2e

6,854,156

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

Dow's emissions covered under the EU ETS represent 24.23% of the total Scope 1 from Dow.

C11.1c

(C11.1c) Complete the following table for each of the tax systems you are regulated by.

Canada federal fuel charge

Period start date

January 1, 2021

Period end date

December 31, 2021

% of total Scope 1 emissions covered by tax

Total cost of tax paid

124,000

Comment

The Canada federal fuel charge impacts Dow minimally through fuel gas purchases at our St. Clair and West Hill sites, as well as through diesel purchases for rail cars at our Prentiss Site. The attributable Scope 1 emissions associated with the use of this fuel would be <0.01% of Dow's total Scope 1 emissions.

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

The trading schemes in which we participate apply to almost all segments of our business. The EU ETS covers Dow's power and steam plants, as well as chemical installations from almost all Dow business segments. The Alberta Carbon Competitiveness Incentives Regulation (CCIR) ETS (now TIER) covers Dow's power and steam plant in Fort Saskatchewan, as well as chemical installations from Dow's Hydrocarbons & Energy Business, and Packaging & Specialty Plastics. An internal team manages Dow's participation in both schemes, including ensuring emissions regulated under each ETS are accurately measured and verified.

With respect to potential emerging regulation, Dow's Government Affairs team monitors the political landscape across all of the areas of the world where Dow operates to understand the status of emerging regulation as it relates to emissions trading schemes (ETS) or carbon taxes in order to understand any potential impact to our business.

Dow's overall strategy as it relates to both systems we are currently regulated by, as well as areas of the world where we foresee the potential for future regulation, is to actively reduce GHG emissions in the most cost-efficient way. The oversight for action as to relates to reducing our carbon emissions lies with the Climate Program Management Office (Climate PMO), which reports to the CEO. The Climate PMO includes Senior Leaders responsible for our participation in ETS, as well as Dow's Vice President of Government Affairs.

Dow's current strategy to achieve our objectives around carbon and climate change include: implementing energy efficiency projects, sourcing cost-advantaged renewable power to support our Operations, and evaluating low carbon technology options for the maximum affordable footprint reduction.

For actions taken in 2021, Dow Announced plans to build the world's 1st net-zero carbon emissions integrated ethylene cracker and derivatives site in Fort Saskatchewan, Alberta, Canada, while tripling the site's manufacturing capacity. The timescale for implementation will be a phased approach through 2030. Dow also shared a multi-generation plan to convert our Ternuezen manufacturing site in the Netherlands to use clean energy from a new hydrogen plant.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

Navigate GHG regulations
Change internal behavior
Drive energy efficiency
Drive low-carbon investment
Stress test investments
Identify and seize low-carbon opportunities
Other, please specify
Manage risk, Capital planning and capital growth project evaluations

GHG Scope

Scope 1
Scope 2

Application

Carbon pricing is used by Dow primarily in the following ways: evaluating long term capital investments, ensuring continued compliance with regulatory frameworks, adding additional justification for investments in energy efficiency/emission reduction projects to meet climate/carbon related internal targets, and aiding in climate change risk management. Ultimately the goal of utilizing an internal carbon price is to mitigate the risk of Dow's carbon exposure in order to ensure future resiliency.

Actual price(s) used (Currency /metric ton)

36

Variance of price(s) used

Dow does not use uniform pricing. The price provided above of $36 USD/metric ton of CO2e is a weighted cost of carbon based on regional pricing in 2021 and Dow's emissions in the different jurisdictions. Dow's carbon pricing strategy is to use regionally differentiated and evolutionary pricing. On an annual basis, Dow reviews and updates a 20-year carbon pricing forecast based on regulatory outlooks, coal-to-gas conversion costs, and clean technology development and implementation. Dow assesses that carbon policy will continue to be fragmented across the globe in the short to medium term timeframes, and as such, Dow uses a range of carbon price outlooks across the Company depending on each geography/country.
Aside from the "base case" internal prices described above, for large capital allocation projects, Dow conducts a sensitivity analysis, varying the internal carbon price applied to evaluate the impact of changing carbon prices on the project economics.

Type of internal carbon price

Shadow price

Impact & implication

Company specific description on how Dow uses internal price on carbon:
Utilizing a regionally differentiated and evolutionary pricing scheme for our internal carbon price allows Dow to mitigate risk and prioritize investment across its global operations. This has driven increased consideration of energy efficiency and emission reduction opportunities at our manufacturing facilities overall. Our carbon price forecasts are used when considering larger capital projects that have an impact on emissions. For example, based on our internal pricing forecasts, Dow has prioritized larger emission reduction projects and potential future mitigations in jurisdictions where there is a higher projected carbon price, such as the recently announced roadmap for our Terneuzen site that foresees the construction of a clean hydrogen plant, investments in carbon capture, and the replacement of some of our gas turbines with electrical motor drives.
Carbon pricing also factors into our assessments of operational costs to run our production facilities. Based on our carbon pricing projections, and projections for emissions reductions at our sites, we can optimize our portfolio of emission allowances accordingly, in order to maximize value to Dow.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers
Yes, our customers/clients
Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Engagement & incentivization (changing supplier behavior)

Details of engagement

Run an engagement campaign to educate suppliers about climate change

% of suppliers by number

100

% total procurement spend (direct and indirect)

100

% of supplier-related Scope 3 emissions as reported in C6.5

Rationale for the coverage of your engagement

Engagement with suppliers around climate change, as well as Dow's other sustainability goals, is a key part of our strategy to meet our corporate sustainability goals. By 2050, Dow intends to be carbon neutral, including our Scope 3 emissions. The largest category of our Scope 3 emissions are our purchased goods and services. Dow recognizes that in order to have an impact on this category, Dow must work with the members of our value chain. Dow works with a variety of suppliers ranging from external manufacturers (EM), raw material, logistic service providers (LSPs) and labor service providers to capital equipment and MRO and corporate service providers. Dow has over 30,000 suppliers in our supply chain in 100+ countries, with a purchased managed spend of over $20 billion. We have procurement centers around the world to establish effective relationships with global and local suppliers of goods and services. We have chosen to work with our suppliers because we recognize the impact suppliers can have on the footprint of our value chain. Dow's Supplier Code of Conduct is a key element of our approach to ensuring supplier sustainability; it includes sustainability principles that align with Dow's climate-related objectives, such as energy conservation and minimizing emissions.

Impact of engagement, including measures of success

Through our Supplier Code of Conduct, we continue to engage new suppliers globally and communicate our expectations that all suppliers are compliant with regulations and Dow's values. We continually review and refresh our Supplier Code of Conduct, completing analyses of current standards and industry best practices to ensure we're holding our suppliers to the highest standards for sustainability, human rights, and environmental health & safety. The requirements of our Supplier Code of Conduct are built into all new supplier contracts to ensure they are contractually enforceable and is also referred to in all purchase orders. In June 2022, the Company published an update to our Supplier Code of Conduct that more clearly defines expectations for suppliers as well as best practices that align with the Company's ESG priorities.

Description of measures of success:
Dow reserves the right to audit supplier compliance at any time. When we identify less than adequate supplier practices, we reserve the right to discontinue business with the supplier. Annually, we've identified compliance issues in less than 0.1 percent of our supplier base, resulting in the immediate cessation of business.

Description of impact according to measure of success chosen:
Dow launched its multigenerational plan for Sustainable Procurement in 2021, evolving our ESG program from compliance to a culture that embeds sustainability as a strategic and financial advantage. Some key highlights include:
• Updating our Supplier Code of Conduct to reflect a more ambitious and progressive outlook for suppliers, launching in 2022.
• Dow began monitoring suppliers potentially associated with high GHG emissions via the CDP Supply Chain Program, allowing for visibility of our suppliers' climate impacts

and strategy over time, building on our continuous efforts to monitor our supply chain for environmental impacts. Continuing this journey, Dow will request ESG data from suppliers associated with high spend and/or high ESG risk using the Ecovadis platform in 2022.
• For climate-specific projects where we have engaged with our suppliers, Dow measured tonnes of GHGs reduced in one year compared to a baseline (eg. The previous year).

Comment

These engagements form the foundation of Dow's new Supplier ESG Program, launching in 2022, which will become Dow's pathway for supplier engagement on ESG topics. The results of these audits are an indicator of the success of the program. Dow will also demonstrate a 50% improvement in a Transportation Stewardship Index through progress in incident-free performance, leading-edge programs to influence logistics and raw material suppliers, and risk reduction across the value chain by 2025. Leveraging our approach to our suppliers and external manufacturing (EM) suppliers, we also set high standards for our Logistic Service Providers (LSPs) by having in place an extensive risk-based program in order to qualify providers and established periodic follow-up assessments. These assessments include reviewing health & safety practices; labor practices; environmental compliance and security and are conducted via work processes and external initiatives such as the Safety & Quality Assessment System (SQAS); Chemical Distribution Institute (CDI); Responsible Care® and Anti-Corruption Due Diligence (ACDD). We also operate a detailed Distribution Risk Review process to ensure risks are adequately mitigated.

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement & Details of engagement

Collaboration & innovation

Other, please specify

Engage customers and assess willingness/interest to collaborate on sustainability

% of customers by number

50

% of customer - related Scope 3 emissions as reported in C6.5

Please explain the rationale for selecting this group of customers and scope of engagement

During the second half of 2021, we have used our quarterly customer relationship survey to also engage selected customers and assess their interest and willingness to collaborate with Dow on sustainability. The Dow CX and Sustainability teams designed a process to survey these customers and understand their needs in areas like carbon

and climate change, circular economy, water efficiency and impacts. The process allowed Dow to identify customers that have unmet needs and/or are willing to explore opportunities in any of those sustainability-related areas, so that an individualized follow-up process could be arranged with customers that expressed interest to engage.
The rationale for selecting a specific subset of Dow customers was to make sure we prioritize efforts and resources towards the most strategic customers and the ones that have reciprocal interest and commitment to the topic. We expect demand for collaboration around sustainability to exceed capacity and therefore we used our customer distinction framework and our customer survey process to help with prioritization. It is important to note that engagement with customers around sustainability was not limited to the channel and approach described on this section.

Impact of engagement, including measures of success

During the 2nd half of 2021, we surveyed ~50% of Dow direct customers (~19,000 contacts across ~3,000 customers), as part of our ongoing customer relationship survey process. Out of the customers surveyed, we selected ~700 customers for the targeted sustainability engagement questions. These customers were selected among our two top customer tiers as explained above.
Out of the ~2,800 survey responses we received during this period of time, about 900 indicated willingness/interest to engage on at least one of the sustainability topics. This was a clear demonstration that the topic is of extreme interest to customers we serve and also a confirmation of the need for us to prioritize efforts and resources in this space.
Information collected via this process was used as one of the many avenues to initiate conversations and collaboration with customers around sustainability.

C12.1d

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

Definition of who other partners in the value chain constitutes:
For the purposes of addressing this question, Dow considers ‘other partners in the value chain’ to mean any entity Dow may engage with on matters relating to our operations or goals that are not suppliers of a good or service to Dow, customers purchasing products from Dow, or Dow employees. Other partners in the value chain could mean, but is not limited to, organizations Dow sponsors or provides membership fees to, partners associated with investments Dow partially owns, partners in research and development of new technologies, etc.
Dow actively engages with different partners and stakeholders in the value chain to promote sustainability, which includes climate-related issues. Dow is open to collaboration with all partners in the value chain. From a climate-related perspective, Dow prioritizes efforts in this space based on the alignment of the party’s objectives with ours. For example, Dow is a sponsor of the MIT Joint Program on the Science and Policy of Global Change due to the organization’s focus on comprehensive analysis to understand the complexities of the impact of climate change, amongst other objectives.
Our measurements of success are ultimately rooted in the collaboration’s impact on reducing emissions, either within our value chain or industry-wide. For example, we consider our partnership with Shell to advance electric steam cracking technology to be an example of an

engagement with another partner in our value chain that could result in significant emissions reductions for the chemical industry as a whole if successful. Another example of a partnership would be through our multi-year collaboration with the International Olympic Committee (IOC) as the Official Carbon Partner.
Case study of climate-related engagement strategy with other partners in the value chain:
Situation: Dow's technologies are also making a positive impact on another partner in our value chain through our multi-year collaboration with the International Olympic Committee (IOC). Underlying the collaboration is both Dow and the IOC's commitment to playing a part in contributing to the United Nations (UN) General Assembly's 2030 Agenda for Sustainable Development and the 17 Sustainable Development Goals (SDGs). The SDGs provide a common framework for public and private actors to implement actions to contribute to sustainable development. Both Dow's 2025 Sustainability Goals and the IOC Sustainability Strategy closely align to SDGs, including partnerships for sustainability (#17) and climate action (#13).
Task: Dow's three carbon programs as a Top Olympic Partner include Sochi 2014, Rio 2016 and the IOC programs. The latest effort – the carbon partnership with the IOC - has the goal to deliver third party verified greenhouse gas reductions – (i) to balance the operational carbon footprint of the IOC from 2017 - 2021; and (ii) deliver a positive carbon legacy by encouraging the adoption of low carbon solutions in the industry value chain.
Action: As the IOC's Official Carbon Partner, Dow has helped implement an effective carbon mitigation strategy with project partners that are designed to unlock carbon reductions along the value chains in packaging, the built environment, industry and energy, and soil and forests.
Result: To date, the cumulative third party verified GHG reductions resulting from these efforts have reached more than 5 million metric tonnes of CO2e.

C12.2

(C12.2) Do your suppliers have to meet climate-related requirements as part of your organization's purchasing process?

Yes, climate-related requirements are included in our supplier contracts

C12.2a

(C12.2a) Provide details of the climate-related requirements that suppliers have to meet as part of your organization's purchasing process and the compliance mechanisms in place.

Climate-related requirement

Complying with regulatory requirements

Description of this climate related requirement

Engaging suppliers that prioritize environmental issues is critical for Dow. This year, suppliers were engaged on ESG factors through data collection, policies and guidelines including Dow's Supplier Code of Conduct. Beginning in 2022, ESG criteria will be used for all sourcing decisions and will encompass more than 20,000 suppliers. After suppliers are selected and agree to our Supplier Code of Conduct, Dow engages on

specific actions including:
1. Learning more about sustainability via training, sharing best practices on integrating sustainability into activities, and identifying new innovations and collaboration opportunities.
2. Collecting ESG data annually via ESG assessment programs (e.g. CDP and Ecovadis). Results are integrated into supplier relationship management frameworks, improvement action plans and Dow's value chain ESG metrics.
3. Continually monitoring supply chain ESG risks, flagging materials, regions or individual suppliers with potential negative environmental impacts. Recognizing chemical supply chain management is collaborative, Dow uses programs (e.g. Together for Sustainability, Ecovadis) to expand streamlined, coordinated monitoring and auditing processes.
4. Seeking improvement by lowering our supply chain's environmental impact and by identifying new innovations to advance a low-carbon, circular and fair economy. Improvements are tracked through supplier ESG data collection and success stories from individual suppliers.

% suppliers by procurement spend that have to comply with this climate-related requirement

31

% suppliers by procurement spend in compliance with this climate-related requirement

100

Mechanisms for monitoring compliance with this climate-related requirement

Certification
Supplier self-assessment
Supplier scorecard or rating

Response to supplier non-compliance with this climate-related requirement

Retain and engage

C12.3

(C12.3) Does your organization engage in activities that could either directly or indirectly influence policy, law, or regulation that may impact the climate?

Row 1

Direct or indirect engagement that could influence policy, law, or regulation that may impact the climate

Yes, we engage directly with policy makers
Yes, we engage indirectly through trade associations
Yes, we engage indirectly by funding other organizations whose activities may influence policy, law, or regulation that may significantly impact the climate

Does your organization have a public commitment or position statement to conduct your engagement activities in line with the goals of the Paris Agreement?

Yes

Attach commitment or position statement(s)

Page 123 of the Dow-2021-ESG-Report.pdf indicates:
"Dow supports the Paris Agreement and its goal to keep global temperature rise to well below 2°C and to pursue efforts to limit the increase to 1.5°C. Consistent with this commitment, we have set an ambitious target of being carbon neutral by 2050 (Scope 1+2+3 plus product benefits). We have also set a medium-term goal to reduce our net annual carbon emissions by 5 million metric tons by 2030 versus our 2020 baseline (15% reduction). This builds upon an already achieved 15% emissions reduction since 2005 (~30% total reduction by 2030 vs. 2005). Our emissions reduction targets are scientifically-based and in alignment with, and ahead of, the International Energy Agency's 2050 Net Zero Emissions Scenario for the chemical industry. Our ability to meet these commitments, while enabling business growth, will require effective management of our energy consumption and the implementation of new technologies. In addition, we will need the appropriate infrastructure and policy developments to support emissions reductions; Dow is actively engaged in constructive advocacy to advance pragmatic policies to enable a successful path to zero."

Dow-2021-ESG-Report.pdf

Describe the process(es) your organization has in place to ensure that your engagement activities are consistent with your overall climate change strategy

Dow's overall strategy as it relates both to systems we are currently regulated by, as well as areas of the world where we foresee the potential for future regulation, is to actively reduce GHG emissions in the most cost-efficient way, while engaging with policy makers worldwide to offer insight into opportunities to accelerate carbon reduction at manufacturers similar to Dow. The oversight for action as it relates to reducing our carbon emissions lies with Dow's cross-business, cross functional "Program Management Office" (PMO), which reports to a Climate Steering Team led by a variety of senior leaders with direct alignment to the CEO. Dow's Vice President of Government Affairs and Chief Sustainability Officer are directly involved in these actions and ensure alignment of government engagement across the entire PMO.

C12.3a

(C12.3a) On what policy, law, or regulation that may impact the climate has your organization been engaging directly with policy makers in the reporting year?

Focus of policy, law, or regulation that may impact the climate

Climate-related targets

Specify the policy, law, or regulation on which your organization is engaging with policy makers

Dow is actively engaged in public policy areas in pursuit of efforts to create common approaches to climate policy globally, both to encourage global economic growth and to establish open markets for exports and innovation. For example, Dow supports an economy wide market-based price on carbon. Dow also supports the aims of the Paris Agreement. Dow actively engages with policy makers to support policies with the aim to accelerate the development of all forms of clean energy technologies (advanced nuclear, hydrogen, carbon capture and storage, etc.), while making investments to modernize the transmission grid, and support industry's deployment of energy efficient manufacturing processes and building materials.

Dow's global public policy advocacy covers a wide range of specific topics in geographies where we do business. Dow makes available our top public policy priorities globally, and by geographic region, at: https://corporate.dow.com/en-us/about/legal/public-policy.html

Policy, law, or regulation geographic coverage

Global

Country/region the policy, law, or regulation applies to

Your organization's position on the policy, law, or regulation

Support with minor exceptions

Description of engagement with policy makers

Dow supports the Paris Agreement and its goal to keep global temperature rise to well below 2°C and to pursue efforts to limit the increase to 1.5°C. Consistent with this commitment, we have set an ambitious target of being carbon neutral by 2050 (Scope 1+2+3 plus product benefits). We have also set a medium-term goal to reduce our net annual carbon emissions by 5 million metric tons by 2030 versus our 2020 baseline (15% reduction). This builds upon an already achieved 15% emissions reduction since 2005 (~30% total reduction by 2030 vs. 2005). Our emissions reduction targets are scientifically-based and in alignment with, and ahead of, the International Energy Agency's 2050 Net Zero Emissions Scenario for the chemical industry.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

Our ability to meet these commitments, while enabling business growth, will require effective management of our energy consumption and the implementation of new technologies. In addition, we will need the appropriate infrastructure and policy developments to support emissions reductions; Dow is actively engaged in constructive advocacy to advance pragmatic policies to enable a successful path to zero.

Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Focus of policy, law, or regulation that may impact the climate

Emissions trading schemes

Specify the policy, law, or regulation on which your organization is engaging with policy makers

Dow supports an economy wide market-based price on carbon and are advocating for public policies that incentivize and enable society's transition to net-zero. We believe an Emissions Trading System is the most efficient policy tool to do so. With no federal regulatory price on carbon in the U.S., Dow believes a voluntary emissions trading system for hard-to-abate sectors would achieve greater carbon reduction for less cost than a clean-energy standard approach.

To the extent other carbon reduction policies are pursued, funds from carbon pricing should be invested towards process technology breakthroughs, deliver demand-driven scale-up opportunities, and deployed in strategic infrastructure investments.

In the absence of a global carbon market, carbon border adjustment mechanisms will be important to protect the competitiveness of domestic, trade-exposed manufacturers and prevent investment leakage across borders.

Dow makes available our top public policy priorities globally, and by geographic region, at: https://corporate.dow.com/en-us/about/legal/public-policy.html

Policy, law, or regulation geographic coverage

Global

Country/region the policy, law, or regulation applies to

Your organization's position on the policy, law, or regulation

Support with minor exceptions

Description of engagement with policy makers

We're actively engaged and collaborating with governments and community partners to help our industry achieve carbon neutrality faster — because we know that public policy will be a key consideration in our investment decisions. There are technologies available right now that would lower carbon emissions, but they need supportive policy and incentives to scale up, ensure affordability, and improve access.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

We believe that a market-based economy-wide price on carbon is one of the most effective policies to address climate change. The best policies should reduce CO2 emissions at a reasonable cost.

Any policy proposal must include a full feedstock exemption, permanent regulatory relief, federal pre-emption of state (or subnational) programs and protection from carbon and investment leakage.

Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Focus of policy, law, or regulation that may impact the climate

Circular economy

Specify the policy, law, or regulation on which your organization is engaging with policy makers

Dow is actively engaged in public policy areas in pursuit of innovation that changes how an industry works to make a profound impact on global and social challenges, including sustainability. Dow's global public policy advocacy covers a wide range of specific topics in geographies where we do business. Dow makes available our top public policy priorities globally, and by geographic region, at: https://corporate.dow.com/en-us/about/legal/public-policy.html

Policy, law, or regulation geographic coverage

Global

Country/region the policy, law, or regulation applies to

Your organization's position on the policy, law, or regulation

Support with minor exceptions

Description of engagement with policy makers

Our Approach to Advancing a Circular Economy: At Dow, our vision for turning the tide on plastic waste is centered on solving challenges from designing for recyclability at the beginning of a product's life to encouraging local infrastructure to closing the loop. The issue is complex, and through partnerships, we are working across the value chain to improve collection, access to recycling and processing infrastructure. We also are creating new business models that will impact the overall recycling rates of plastics. Improving circularity of plastics through recycling and reuse is critical to a world that is also targeting carbon emissions reduction. The lower-carbon emissions benefits of polyethylene-based packaging (versus other polymers, paper, glass, and metal) serve as a key driver and source of value. Moving to circular products means incorporating recycled feedstocks from waste instead of more extraction of fossil fuels.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

Support policies which;
*Achieve widespread access to waste collection.
*Recognize the role plastics play in a lower carbon future.
*Support life cycle analysis as a means to evaluate impacts of plastics and alternatives.
*Support innovation in product design and recycling technology.
*Develop global guidance, with industry input, on product design, recycled content, and optimizing resources.
*Measure progress.

Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Focus of policy, law, or regulation that may impact the climate

Extended Producer Responsibility (EPR)

Specify the policy, law, or regulation on which your organization is engaging with policy makers

Dow is actively engaged in public policy areas in pursuit of innovation that changes how an industry works to make a profound impact on global and social challenges, including sustainability. Dow's global public policy advocacy covers a wide range of specific topics in geographies where we do business. Dow makes available our top public policy priorities globally, and by geographic region, at: https://corporate.dow.com/en-us/about/legal/public-policy.html

Policy, law, or regulation geographic coverage

Global

Country/region the policy, law, or regulation applies to

Your organization's position on the policy, law, or regulation

Support with minor exceptions

Description of engagement with policy makers

Dow considers EPR a viable, transparent way of ensuring there is sufficient, focused funding for waste management systems.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

Dow supports EPR systems that meet three criteria:
1. Fixes the Problem: Funds should be dedicated to waste management infrastructure, and fees should be sufficient to cover the full costs of the program. Recycling targets should be set using the best available science while taking into consideration local realities
2. Flexible: Enables industry to innovate to find the most effective and efficient way to meet our legal responsibilities while adhering to harmonized reporting requirements and standardized definitions.
3. Fair: Accountability and enforcement that discourage free-riders (imports), and is equally applied in a material neutral way to all products in a category (i.e. paper, glass, plastic and aluminum packaging).

We believe EPR systems that meet these criteria would reduce the amount of waste ending up in the environment, and we are committed to advancing policy solutions that can make a real difference.

Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Focus of policy, law, or regulation that may impact the climate

International trade agreement

Specify the policy, law, or regulation on which your organization is engaging with policy makers

Dow is actively engaged in public policy areas in pursuit of innovation that changes how an industry works to make a profound impact on global and social challenges, including sustainability. Dow's global public policy advocacy covers a wide range of specific topics in geographies where we do business. Dow makes available our top public policy priorities globally, and by geographic region, at: https://corporate.dow.com/en-us/about/legal/public-policy.html.

Policy, law, or regulation geographic coverage

Global

Country/region the policy, law, or regulation applies to

Your organization's position on the policy, law, or regulation

Support with minor exceptions

Description of engagement with policy makers

We are committed to protecting our planet by addressing climate change, including contributing to a lower carbon future, both in our operations and value chains. Dow supports the Paris Agreement and its goal to keep global temperature rise to well below 2°C and to pursue efforts to limit the increase to 1.5°C.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

Implementing a finalized Paris Rulebook is essential to drive progress and create global carbon markets.

Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Focus of policy, law, or regulation that may impact the climate

Low-carbon, non-renewable energy generation

Specify the policy, law, or regulation on which your organization is engaging with policy makers

Dow is actively engaged in public policy areas in pursuit of innovation that changes how an industry works to make a profound impact on global and social challenges, including sustainability. Dow's global public policy advocacy covers a wide range of specific topics

in geographies where we do business. Dow makes available our top public policy priorities globally, and by geographic region, at: https://corporate.dow.com/en-us/about/legal/public-policy.html.

Policy, law, or regulation geographic coverage

Global

Country/region the policy, law, or regulation applies to

Your organization's position on the policy, law, or regulation

Support with minor exceptions

Description of engagement with policy makers

Dow is committed to advance the development of cost-effective clean energy alternatives and reduce carbon emissions. To achieve global climate change targets, all sources of low carbon electricity generation should be considered.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

Dow considers nuclear energy, especially the promising technology of advanced small modular reactors, to be a long-term viable source of low carbon-emitting sustainable energy.

• Advanced small modular reactors offer the advantage of baseload replacement and renewable supplement, and can alleviate intermittent capacity issues due to the nature of renewable power.

•Technologies that are still under commercial development, such as hydrogen and natural gas connected with carbon capture, will be required for the clean energy transition.

•Dow believes BLUE hydrogen also has an important role to play in the energy transition pathway – our need for competitively priced, consistent energy supply to produce high process heat and steam is a critical consideration.

Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Focus of policy, law, or regulation that may impact the climate

Mandatory climate-related reporting

Specify the policy, law, or regulation on which your organization is engaging with policy makers

Dow is actively engaged in public policy areas in pursuit of innovation that changes how an industry works to make a profound impact on global and social challenges, including sustainability. Dow's global public policy advocacy covers a wide range of specific topics in geographies where we do business. Dow makes available our top public policy

priorities globally, and by geographic region, at: https://corporate.dow.com/en-us/about/legal/public-policy.html.

Policy, law, or regulation geographic coverage

Global

Country/region the policy, law, or regulation applies to

Your organization's position on the policy, law, or regulation

Support with minor exceptions

Description of engagement with policy makers

Dow has been a member of the Task Force on Climate-related Financial Disclosures (TCFD) since its beginnings. Dow's member role has been as Data Preparers and we are currently leading TCFD's work group to define guidance on metrics for non-financial companies. Dow has voluntarily reported on our Sustainability objectives, following GRI guidance since 2003. We have also participated in CDP since 2003 when it started as the Carbon Disclosure Project. Other voluntary reporting in which we participate in are Ecovadis, Dow Jones Sustainability Index, Just Capital, amongst others. Dow supports making climate change risk and opportunities, as well as ESG reporting, mandatory. Dow is also a long-standing and active member of the World Economic Forum, particularly its initiatives addressing climate change. Dow actively participates in the WEF's Alliance of CEO Climate Leaders; mandatory carbon reporting, and TCFD are among the topics of the alliance.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

Support;

• Utilization of existing standards and frameworks – notably the framework developed by the Task Force on Climate-related Financial Disclosures ("TCFD") and the Greenhouse Gas ("GHG") Protocol Corporate Accounting and Reporting Standard.

• Efforts to provide consistent, comparable, and decision-useful information to investors while providing companies with clear reporting obligations and guidelines along with safe harbor protections for Scope 3 disclosures.

• Adoption of standard reporting practices that will help ensure investors and business counterparts have similar and/or comparable information across international jurisdictions.

Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

C12.3b

(C12.3b) Provide details of the trade associations your organization engages with which are likely to take a position on any policy, law or regulation that may impact the climate.

Trade association

American Chemistry Council

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

The American Chemistry Council issued a set of policy recommendations to enable dramatic reductions in greenhouse gas (GHG) emissions. The plan is built around three imperatives – developing and deploying clean manufacturing technologies, pricing carbon, and promoting the adoption of emissions-reducing solutions. To support climate progress ACC calls on Congress to enact legislation to:
- Increase government investment & scientific resources to develop & deploy lower emissions technologies in the manufacturing sector
- Adopt transparent, predictable, technology- & revenue-neutral, market-based, economy-wide carbon price signals
- Encourage adoption of emissions-avoiding solutions & technologies to reduce emissions throughout the economy to achieve significant emissions savings

Dow endeavors to participate actively in the leadership of key trade associations. In 2021 Dow's CEO was the Chair of ACC's Board and co-led the Board Sustainability Committee. Other Dow executives participate in the Energy and Climate Change Policy Working Groups, among other working groups within ACC.

Engagement with trade and business associations, whose purpose is to promote common business interests, assists us in managing priorities relevant to Dow and the chemical industry. However, Dow may from time to time find itself in disagreement with the prevailing views of the majority of the association's membership. It is Dow's practice, and preference, to work within the association policy process to assure that Dow's views are adequately communicated and represented in association policy, strategy and tactics. In all cases, any Dow public position on a matter of public policy is the prevailing company position, irrespective of any trade association position to the contrary.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

National Association of Manufacturers

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

The National Association of Manufacturers (NAM) supports the objectives of the Paris Climate Agreement to significantly reduce the risks and impacts of global climate change. Manufacturers are committed to helping address climate change and achieving meaningful global GHG reductions in an equitable, timely, and cost-effective manner, while increasing the global competitiveness of U.S. industries. There is a clear governmental role in addressing climate change. Some of the actions recommended by NAM to address climate change include (but are not limited to):

- One Unified Policy
- Ensuring a Level Playing Field and Avoiding Carbon Leakage
- Preserve Consumer Choice and Manufacturing Competitiveness
Immediate Actions
- Massively invest in public- and private-sector energy and water efficiency.
- Fund and expand climate and clean energy R&D federal programs at the Department of Energy and elsewhere
- Pave the way for a smart grid.
- Commercialize and deploy carbon capture, utilization and storage technology
- Ratify the Kigali Amendment.

Dow endeavors to participate actively in the leadership of key trade associations. Dow is part of NAM's Energy and Resources Policy Committee that works on Climate Change Policy.

Engagement with trade and business associations, whose purpose is to promote common business interests, assists us in managing priorities relevant to Dow and the chemical industry. However, Dow may from time to time find itself in disagreement with the prevailing views of the majority of the association's membership. It is Dow's practice, and preference, to work within the association policy process to assure that Dow's views are adequately communicated and represented in association policy, strategy and

tactics. In all cases, any Dow public position on a matter of public policy is the prevailing company position, irrespective of any trade association position to the contrary.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

European Chemical Industry Council (CEFIC)

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

The European chemical industry has the ambition to become climate neutral by 2050 and is uniquely positioned at the heart of European manufacturing to contribute to realizing a climate neutral society. The European chemical industry supports the Paris Climate Agreement and strong action on climate change in line with the scientific advice provided by the Intergovernmental Panel on Climate Change (IPCC).
An entirely new industrial policy focus must be deployed to unlock the huge scale of investments required. CEFIC calls for the recommendations of the Industrial Transformation Master Plan, towards creating an enabling framework for the chemical industry to kick-start its transformation as soon as possible:
1. Managing the different global speeds. To maintain industry competitiveness, climate policies need to consider the global perspective, especially when the speed of transformation is different from the rest of the world and cost of carbon is expected to increase further.
2. Abundant access to climate-friendly energy and feedstock at an affordable price.
3. Infrastructure and integration. National governments need to collectively prioritize investments in infrastructure for energy as well as for the transport and storage of CO2.
4. Innovation towards climate-friendly technologies.
5. Supportive financial and market frameworks for large and small companies.
6. Leverage inter-sectoral symbiosis potential. Frameworks should encourage large industrial clusters to realize synergies between different industry sectors.

CEFIC has welcomed the EU Climate Law which enshrines the EU objective of climate-neutrality by 2050 and highlights, in particular, the importance of sectorial roadmaps that will assist sectors in planning the necessary investments.

Engagement with trade and business associations, whose purpose is to promote common business interests, assists us in managing priorities relevant to Dow and the chemical industry. However, Dow may from time to time find itself in disagreement with the prevailing views of the majority of the association's membership. It is Dow's practice, and preference, to work within the association policy process to assure that Dow's views are adequately communicated and represented in association policy, strategy and tactics. In all cases, any Dow public position on a matter of public policy is the prevailing company position, irrespective of any trade association position to the contrary.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

C12.3c

(C12.3c) Provide details of the funding you provided to other organizations in the reporting year whose activities could influence policy, law, or regulation that may impact the climate.

Type of organization

Non-Governmental Organization (NGO) or charitable organization

State the organization to which you provided funding

International Emissions Trading Association (IETA)

Funding figure your organization provided to this organization in the reporting year (currency as selected in C0.4)

26,000

Describe the aim of this funding and how it could influence policy, law or regulation that may impact the climate

To deliver the Paris Agreement's climate protection goals, IETA advocates the power of markets to price carbon effectively and deliver net-zero targets. We will -

• Seek to strengthen the credibility and functionality of today's carbon markets promote accelerated growth of high-integrity voluntary markets

• expand work on new market-based initiatives, including emissions trading systems

(ETS, tax-and-offset programmes and UN FCCC carbon trading mechanisms)
• promote linked carbon pricing systems as a valuable means of channeling increased finance to the climate transition
• convene the carbon market to build the professional community and networks that can deliver a net zero future - and herald the benefits of market cooperation in our communications.

Have you evaluated whether this funding is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Type of organization

Non-Governmental Organization (NGO) or charitable organization

State the organization to which you provided funding

Center for Climate and Energy Solutions (C2ES)

Funding figure your organization provided to this organization in the reporting year (currency as selected in C0.4)

35,000

Describe the aim of this funding and how it could influence policy, law or regulation that may impact the climate

C2ES mission is to advance strong policy and ambitious action to: reduce greenhouse gas emissions; promote and accelerate the clean energy transition; strengthen adaptation and resilience to climate impacts; and facilitate the necessary financial investments to do so. A range of solutions, including market-based approaches and other complementary policies will be critical to achieve each of these goals. We believe a sound climate strategy must reflect the urgent need for ambitious action. Solutions developed through inclusive stakeholder engagement, informed by the latest science focused on the long-term goals of the Paris Agreement, which are equitable and just leaving no one behind, and which create good jobs, are essential to ensure a strong, sustainable domestic and global economy.

Have you evaluated whether this funding is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In mainstream reports

Status

Complete

Attach the document

Dow-2021-Annual-Report.pdf

Page/Section reference

Pages 8-9, 33-34, 61-64

Content elements

Governance
Strategy
Risks & opportunities
Emission targets
Other metrics

Comment

Publication

In voluntary sustainability report

Status

Complete

Attach the document

Dow-2021-ESG-Report.pdf

Page/Section reference

Pages 14-34, 75-82, 180-193

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

C15. Biodiversity

C15.1

(C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related issues within your organization?

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues	Description of oversight and objectives relating to biodiversity
Row 1	Yes, both board-level oversight and executive management-level responsibility	Under the climate efforts tied to recognizing the changing climate as a key stressor for biodiversity, Dow has made the commitment to achieving the goal of keeping temperature rise well below 2°C and pursuing efforts to limit the increase to 1.5°C. Dow is also committed to comply with national regulations on the protection of biodiversity as countries develop and implement their regulatory framework in fulfilment 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. One of Dow's 2025 Sustainability Goals is the pioneering Valuing Nature Goal. By 2025, Dow will deliver $1 billion in Net Present Value (NPV) through business-driven projects that enhance nature. Dow also has opportunities to enhance biodiversity with the rivers we interact with, the lands we own, the communities we operate in and the innovative products we offer. For example, Dow is collaborating with The Nature Conservancy (TNC) and the Peabiru Institute to analyse the biodiversity within Dow's preserved native Amazon forests and identify a local community to manage the commercial cooperative. Dow's Sustainability External Advisory Council (SEAC) reviews critical issues regarding our sustainability objectives, which includes biodiversity. In the short- to medium-term timeframe (<10 years), biodiversity impacts are managed through a combination of technological, commercial, and operational activities. The management principles governed by Dow's Operating Discipline Management System are included in order of priority: avoid, reduce, reuse, regenerate, restore and transform. Biodiversity impacts are also evaluated and managed on long-term timelines (10+ years) by including impacts to nature as part

		of our capital allocation process. We screen all capital projects for opportunities to use nature-based solutions.

C15.2

(C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity?

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity	Biodiversity-related public commitments	Initiatives endorsed
Row 1	Yes, we have made public commitments and publicly endorsed initiatives related to biodiversity	Other, please specify Under the climate efforts tied to Recognizing the changing climate as a key stressor for biodiversity, Dow has made the commitment to achieving the goal of keeping temperature rise well below 2°C	SDG

C15.3

(C15.3) Does your organization assess the impact of its value chain on biodiversity?

	Does your organization assess the impact of its value chain on biodiversity?
Row 1	Yes, we assess impacts on biodiversity in both our upstream and downstream value chain

C15.4

(C15.4) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?	Type of action taken to progress biodiversity- related commitments
Row 1	Yes, we are taking actions to progress our biodiversity-related commitments	Land/water protection Land/water management Species management Education & awareness Law & policy Livelihood, economic & other incentives

C15.5

(C15.5) Does your organization use biodiversity indicators to monitor performance across its activities?

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	No	

C15.6

(C15.6) Have you published information about your organization's response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located
In voluntary sustainability report or other voluntary communications	Content of biodiversity-related policies or commitments Governance Impacts on biodiversity Details on biodiversity indicators Risks and opportunities Biodiversity strategy	Pages: 25-26. 107, 134-139 [1]

[1]Dow-2021-ESG-Report.pdf

C16. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

Dow appreciates the opportunity to report to CDP on our climate-related initiatives. Dow has a long history of leadership in reporting transparency and sustainability disclosures, and we see CDP as a critical report driving transparency on climate-related issues.

Dow is working on continuous improvement in progress measurement of its Close the Loop and Stop the Waste metrics. These metrics, and Close the Loop in particular, are in the very early stages of their maturity within Dow and the broader industry. In our attempts to minimize uncertainties and connect to externally reported sources of information, we made improvements to our process, which led to a shift in our 2020 baseline metric for the Close the Loop metric from 81% to 82%. The current CTL metric is primarily built upon the

external ratios of recyclability for given material production, however Dow is pursuing developing its own ratios for the production level metric as well as an opportunity to include a more specific measurement focused on specific sales into enabled applications in the future.

Regarding sections C10.1a, C10.1b, and C10.1c:
We engaged Deloitte & Touche LLP (Deloitte) to perform a review relating to the ESG disclosures referenced or included in the Global Reporting Initiative ("GRI") Content Index (the "ESG disclosures") and the GHG disclosures referenced or included in the GHG Protocol Disclosure Report included within the accompanying Dow 2021 Environmental, Social and Governance Report (the "2021 ESG Report") in accordance with the 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.
The 100% selected herein reflects that 100% Scope 1, 2, and 3 emissions were subject to the review. The CDP Climate Change 2022 Reporting Guidance provides the following instructions for the proportion of reported emissions verified "identify what proportion of your total reported emissions for Scope 1 has been subject to the verification/assurance process described." Note that we have indicated 100% was subject to assurance; however, this does not reflect the actual % of Scope 1, 2, and 3 emissions tested.

Cautionary Statement about Forward-Looking Statements
Certain statements in this report are "forward-looking statements" within the meaning of the federal securities laws, including Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Such statements often address expected future business and financial performance, financial condition, and other matters, and often contain words or phrases such as "anticipate," "believe," "estimate," "expect," "intend," "may," "opportunity," "outlook," "plan," "project," "seek," "should," "strategy," "target," "will," "will be," "will continue," "will likely result," "would" and similar expressions, and variations or negatives of these words or phrases.
Forward-looking statements are based on current assumptions and expectations of future events that are subject to risks, uncertainties and other factors that are beyond Dow's control, which may cause actual results to differ materially from those projected, anticipated or implied in the forward-looking statements and speak only as of the date the statements were made. These factors include, but are not limited to: sales of Dow's products; Dow's expenses, future revenues and profitability; the continuing global and regional economic impacts of the coronavirus disease 2019 ("COVID-19") pandemic and other public health-related risks and events on Dow's business; any sanction, export restrictions, supply chain disruptions or increased economic uncertainty related to the ongoing conflict between Russia and Ukraine; capital requirements and need for and availability of financing; unexpected barriers in the development of technology, including with respect to Dow's contemplated capital and operating projects; Dow's ability to realize its commitment to carbon neutrality on the contemplated timeframe; size of the markets for Dow's products and services and ability to compete in such markets; failure to develop and market new products and optimally manage product life cycles; the rate and degree of market acceptance of Dow's products; significant litigation and environmental matters and related contingencies and unexpected expenses; the success of competing technologies that are or may become available; the ability to protect Dow's intellectual property in the United States and abroad; developments related to contemplated

restructuring activities and proposed divestitures or acquisitions such as workforce reduction, manufacturing facility and/or asset closure and related exit and disposal activities, and the benefits and costs associated with each of the foregoing; fluctuations in energy and raw material prices; management of process safety and product stewardship; changes in relationships with Dow's significant customers and suppliers; changes in consumer preferences and demand; changes in laws and regulations,
political conditions or industry development; global economic and capital markets conditions, such as inflation, market uncertainty, interest and currency exchange rates, and equity and commodity prices; business or supply disruptions; security threats, such as acts of sabotage, terrorism or war including the ongoing conflict between Russia and Ukraine; weather events and natural disasters; disruptions in Dow's information technology networks and systems; and risks related to Dow's separation from DowDuPont Inc. such as Dow's obligation to indemnify DuPont de Nemours, Inc. and/or Corteva, Inc. for certain liabilities.
Where, in any forward-looking statement, an expectation or belief as to future results or events is expressed, such expectation or belief is based on the current plans and expectations of management and expressed in good faith and believed to have a reasonable basis, but there can be no assurance that the expectation or belief will result or be achieved or accomplished. A detailed discussion of principal risks and uncertainties which may cause actual results and events to differ materially from such forward-looking statements is included in the section titled "Risk Factors" contained in the company's Annual Report on Form 10-K for the year ended December 31, 2021 and its subsequent reports on Form 10-Q and Form 8-K. These are not the only risks and uncertainties that Dow faces. There may be other risks and uncertainties that Dow is unable to identify at this time or that Dow does not currently expect to have a material impact on its business. If any of those risks or uncertainties develops into an actual event, it could have a material adverse effect on Dow's business. Dow assumes no obligation to update or revise publicly any forward-looking statements whether because of new information, future events, or otherwise, except as required by securities and other applicable laws.

C16.1

(C16.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Chairman and Chief Executive Officer	Chief Executive Officer (CEO)