



# Task Force on Climate-Related Financial Disclosures (TCFD) Report

## Dow Disclosures – TCFD Disclosure Report

**Category Governance:** Disclose the organization’s governance around climate-related risks and opportunities

**Describe the board’s oversight of climate-related risks and opportunities.**

### Board Oversight

The Board is responsible for overseeing the company’s strategy development and planning process, including annual review of the corporate and business plan. The Board is also responsible for overseeing the ESG priorities of the company, including climate priorities, ensuring transparency and accountability. The Board has Committees (individually a “Committee” and collectively the “Committees”) with well-defined oversight responsibilities including the company’s strategy, ESG priorities, risk management and overall performance. Each Committee reports to the Board on the topics discussed and actions taken at Committee meetings. The Committees work together and with the Board to ensure that the Committees and the Board have received all information necessary to permit them to fulfill their duties and responsibilities.

The responsibilities of each of Dow’s four standing Board Committees are stated in the Bylaws and in their respective Committee Charters. A brief description of the Committees and their responsibilities is provided in the diagram. The Environment, Health, Safety & Technology Committee has specific oversight and responsibility for climate-related opportunities. The Audit Committee has specific oversight and responsibility for climate-related risks as part of the Enterprise Risk Management (ERM) process. Although each Committee oversees the management of certain responsibilities as described in the table, the full Board is regularly updated by the Committees, management and senior leaders. In addition, each Committee has accountability for specific areas of Dow’s strategy, which includes climate initiatives. This enables the Board and the Committees to coordinate the various priorities of the company.

AUDIT COMMITTEE	COMPENSATION & LEADERSHIP DEVELOPMENT COMMITTEE	ENVIRONMENT, HEALTH, SAFETY & TECHNOLOGY COMMITTEE	CORPORATE GOVERNANCE COMMITTEE
<p><b>Key Responsibilities</b></p> <ul style="list-style-type: none"> <li>Quality, reliability and integrity of financial statements and application of accounting principles</li> <li>Quality, reliability and integrity of ESG reporting</li> <li>Legal or regulatory requirements and ESG reporting frameworks, adequacy of internal controls</li> <li>Internal audit function performance</li> <li>Independent auditor engagement and performance</li> <li>Oversee the company’s risk management process</li> </ul> <p><b>Risk Oversight</b></p> <ul style="list-style-type: none"> <li>Management and effectiveness of accounting, auditing, external reporting, ethics, compliance and internal controls and cybersecurity</li> </ul>	<p><b>Key Responsibilities</b></p> <ul style="list-style-type: none"> <li>Leadership talent assessment; CEO succession</li> <li>Executive compensation and benefit plans including incentive programs and performance metrics, including ESG metrics</li> <li>Independent Compensation Consultant engagement and performance</li> <li>Oversee the company’s human capital management including ID&amp;E commitment and results, work environment and culture philosophy</li> </ul> <p><b>Risk Oversight</b></p> <ul style="list-style-type: none"> <li>Executive compensation policies, practices and disclosures, succession planning, work environment and culture</li> </ul>	<p><b>Key Responsibilities</b></p> <ul style="list-style-type: none"> <li>Corporate citizenship, social responsibility, public policy and reputation</li> <li>Sustainability and ESG commitments and progress, including efforts to protect the climate, reduce carbon emissions, eliminate plastic waste and deliver circular economy solutions</li> <li>Science and technology capabilities and protection of intellectual property</li> <li>Political contributions and lobbying expenses</li> <li>Oversee the company’s environment, health and safety policies, performance and compliance</li> </ul> <p><b>Risk Oversight</b></p> <ul style="list-style-type: none"> <li>Environment, health and safety policies and operations, emerging regulatory developments and compliance</li> </ul>	<p><b>Key Responsibilities</b></p> <ul style="list-style-type: none"> <li>ESG matters, including stockholder engagement and governance best practices</li> <li>Qualifications of director nominees</li> <li>Board structure and function including annual evaluation of Board and Committee performance</li> <li>Oversee the company’s governance practices</li> </ul> <p><b>Risk Oversight</b></p> <ul style="list-style-type: none"> <li>Director independence, refreshment and succession planning, overall Board effectiveness, potential conflicts of interest and other governance, reporting and compliance matters</li> </ul>



## Dow Disclosures – TCFD Disclosure Report

Throughout the year and at every Board meeting, the Board receives information and updates from management and actively engages with senior leaders with respect to management's execution of the corporate and business plans as well as progress on ESG priorities including economic, environmental and social topics. The Board and management review the company's short- and long-term strategic priorities throughout the year and dedicate time at each Board meeting for appropriate discussion.

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 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.

### Describe management's role in assessing and managing climate-related risks and opportunities.

#### Climate Management Structure

See GRI 102-20 Executive-level responsibilities for economic, environmental and social topics. To manage the implementation of Dow's Climate Strategy, Dow has established a Climate Program Management Office (Climate PMO). The team is led by the Climate Steering Team (CST), which sets strategy and oversees the activities related to assessing and managing climate-related risks and opportunities. 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 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.

**Category Strategy:** Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy and financial planning

### Describe the climate-related risks and opportunities the organization has identified over the short, medium and long term.

See also: GRI 201-2 Financial implications and other risks and opportunities due to climate change

#### Addressing climate-related risks now, and in the future

Addressing climate-related risks and opportunities is part of Dow's overall climate strategy. In 2020, the company announced commitments to reduce its net annual greenhouse gas emissions by an additional 5 million metric tons by 2030 versus our 2020 baseline, a 15% reduction (the 2020 baseline represents a 15% reduction in greenhouse gas emissions since 2005). Dow also announced its intention to be carbon neutral by 2050 (Scopes 1+2+3, as defined by the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard, plus product benefits).

Despite these commitments, climate change-related risks and uncertainties, legal or regulatory responses to climate change, and failure to meet our climate change commitments could negatively impact Dow's operations, financial condition and/or reputation. Climate-related risks include both physical and transition risks.



**Dow Disclosures – TCFD Disclosure Report**

Climate-related physical risks include more frequent severe weather events, potential changes in precipitation patterns, water scarcity and extreme variability in weather patterns, which can disrupt the operations of the company as well as those of its customers, partners and vendors. In 2021, Dow partnered with S&P Global Trucost (Trucost) to assess the company’s exposure to climate-related physical risks based on the geographic location of our manufacturing operations. The risks assessed included water stress, heat waves, cold waves, droughts, hurricanes, wildfires and flooding. The analysis included an assessment of the physical risks using a baseline year of 2020 with time periods ranging to 2050, and scenarios of low, moderate and high climate change. Based on the Trucost methodology, which scores the exposure of sites to physical risks relative to global conditions, Dow is assessed as at moderate exposure in 2050 under all scenarios, with a weighted average that is slightly lower than the average of the materials industry (as defined by Trucost). Dow will use this information to inform decision-making at our sites with respect to managing climate-related physical risks.

Climate-related transition risks include the availability, development and affordability of lower greenhouse gas emissions technology, the effects of carbon pricing and changes in public sentiment, regulations, taxes, public mandates or requirements.

There are also significant climate opportunities for Dow, including the ability 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. Additional opportunity actions to achieve carbon neutrality include expanding access to renewable power and initiating a joint development project with Shell to develop electrified cracking technology powered by clean energy. Our technology and materials science leadership also provide a significant opportunity to deploy materials to help reduce emissions for customers and industries that will allow us to capture value from increasing demand for low-carbon and sustainable products. These are just some examples of critical steps on our path to carbon neutrality by 2050 while enabling business growth.

The table below provides a summary of our climate-related risks and opportunities and the associated value chain stage, time horizon and magnitude of impact:

		Risk/Opportunity Type	Description	Value Chain Stage(s) Covered	Time Horizon (term)			Magnitude of Impact		
Risks	Physical	<b>Acute &amp; Chronic</b>	More frequent incidents of severe weather, or long-term changes in precipitation patterns	<ul style="list-style-type: none"> <li>• Direct operations</li> <li>• Upstream</li> </ul>	SHORT	MEDIUM	LONG	LOW	MEDIUM	HIGH
	Transition	<b>Regulatory</b>	Carbon pricing mechanisms	<ul style="list-style-type: none"> <li>• Direct operations</li> </ul>	SHORT	MEDIUM	LONG	LOW	MEDIUM	HIGH
Opportunities		<b>Technology</b>	Transition to lower-emissions technology	<ul style="list-style-type: none"> <li>• Direct operations</li> <li>• Upstream</li> <li>• Downstream</li> </ul>	SHORT	MEDIUM	LONG	LOW	MEDIUM	HIGH
		<b>Resource Efficiency</b>	Use of more efficient production and distribution processes	<ul style="list-style-type: none"> <li>• Direct operations</li> <li>• Upstream</li> </ul>	SHORT	MEDIUM	LONG	LOW	MEDIUM	HIGH
		<b>Products &amp; Services</b>	Dow products can enable the transition to a low-carbon economy	<ul style="list-style-type: none"> <li>• Upstream</li> <li>• Downstream</li> </ul>	SHORT	MEDIUM	LONG	LOW	MEDIUM	HIGH



## Dow Disclosures – TCFD Disclosure Report

### Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy and financial planning.

The potential impacts of climate-related risks and opportunities are part of Dow's climate strategy and factored into Dow's business and financial planning. When assessing the magnitude of impact, Dow evaluates elements such as changes to 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 of potential lost sales, or in the case of opportunities, improvements in production, increased revenues, cost efficiencies and market share gained. In addition, there could be impacts that need to be considered that are not able to be quantified financially (e.g., reputational impact of certain risks and opportunities).

Dow is taking specific actions to mitigate identified climate-related physical and transition risks, while also advancing opportunities in several key areas. These include:

- **Optimizing Facilities and Processes:** Water recycling investments to reduce Dow's water use and the potential impact of water stress. One example is our commitment to 100% water circularity by 2025 at our site in Terneuzen, the Netherlands.
- **Increasing Renewable Energy:** Dow continues to invest in cost-efficient clean energy, including wind, solar and hydropower, across our operations. In 2021, we expanded access to renewable power to more than 900 MW, so that more than 25% of our purchased electricity comes from renewable sources. Dow is a leading user of renewable energy in the chemical industry and in the top 20 among global corporations according to BloombergNEF.
- **Investing in and Innovating for Carbon Reduction:** In support of Dow's long-term GHG reduction targets, Dow announced \$1B in annual capital spending allocation for the foreseeable future to decarbonize assets, in a phased approach, while growing capacity. This investment plan includes large, industry-leading projects, such as the recently announced net-zero carbon emissions site in Alberta, Canada, as well as emissions-reduction investments in existing facilities and replacement of end-of-life carbon intensive assets with state-of-the-art, carbon-efficient and sustainable technologies. In 2021, Dow implemented energy efficiency and emissions reduction projects, reducing energy consumption by 1.232 million KJ/year and amounting to 611,500 metric tons of CO<sub>2</sub> reduction (GRI 302-4 and 305-5). In 2021, Dow's Terneuzen site outlined a roadmap to support the Dutch Climate Agreement and enable a reduction of 1.7 million metric tons of CO<sub>2</sub> annually by 2030 vs. a 2020 baseline.
- **Engaging 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.
- **Innovating Materials to Enable Customers to Reduce Emissions:** Dow is aligning its innovation and product portfolios to address sustainability opportunities, including climate. Examples include the launch of our industry-leading solution for carbon capture into the Asia Pacific market, encompassing innovative formulated UCARSOL™ and SELEXOL™ solvents, as well as professional solvent management and maintenance services. The company also introduced three new DOWSIL™ silicone technologies for electric and hybrid vehicle applications.



Dow Disclosures – TCFD Disclosure Report

Examples of Climate Risks and Opportunities and Related Potential Impacts				Elements of Dow's Climate Action Plans Addressing Risk/Opportunity						
				Optimizing Our Facilities and Processes	Increasing Renewable Energy	Investments in Carbon Capture	Innovating Low-Carbon Technologies	Engaging Suppliers to Reduce Value-Chain Emissions	Deploying Materials to Help Our Customers Reduce Their Emissions	
Risk/Opportunity Type		Description	Impacts/Opportunity							
Risks	Physical	<b>Acute &amp; Chronic</b>	More frequent incidents of severe weather, or long-term changes in precipitation patterns	<ul style="list-style-type: none"> <li>Reduced revenue/decreased production (supply chain disruptions, etc.)</li> <li>Increased operating or capital costs</li> </ul>	●					
	Transition	<b>Regulatory</b>	Carbon pricing mechanisms	<ul style="list-style-type: none"> <li>Increased costs to comply with changes in regulations</li> </ul>	●	●	●			
		<b>Technology</b>	Transition to lower-emissions technology	<ul style="list-style-type: none"> <li>Increased expense/capital investment in technology and innovation</li> <li>Reduced exposure to carbon cost</li> </ul>		●	●	●		●
Opportunities		<b>Resource Efficiency</b>	Use of more efficient production and distribution processes	<ul style="list-style-type: none"> <li>Reduced operating costs through efficiency gains and cost reductions</li> </ul>	●			●	●	
		<b>Products &amp; Services</b>	Dow products can enable the transition to a low-carbon economy	<ul style="list-style-type: none"> <li>Increased revenue from carbon-advantaged products and technologies</li> </ul>				●	●	●

Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.

**Scenario Analysis: Evaluating Risks & Opportunities**

To further evaluate risks and opportunities related to climate change, as well as test the robustness of Dow's strategic plans to address the risk or opportunity, Dow utilizes climate-related scenario analyses.



**Dow Disclosures – TCFD Disclosure Report**

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 with the International Energy Agency (IEA) Sustainable Development scenario of decarbonizing the economy, and another that aligns with 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.

The following table shows summary parameters of externally developed scenarios selected to evaluate climate risk/opportunity:

Scenario Descriptions, 2050 Snapshot	Sustainable Development <sup>1</sup>	Regional Rivalry <sup>2</sup>
Description	Coordinated path to decarbonization	Uneven path to decarbonization
Market Trends	Increased demand for solutions that mitigate climate change	Slower, regionally driven demand for solutions that mitigate climate change, greater market for climate adaptation products
Temperature Rise	<1.5°C	2.1°C
Carbon Price (USD/metric ton)	135	30
Renewable Energy (% of total primary energy)	47	17

<sup>1</sup> IEA Sustainable Development Scenario  
<sup>2</sup> Regional Rivalry, Shared Socioeconomic Pathway 3.0, RCP6.0

Dow’s strategy is resilient to a range of potential outcomes. For example, in 2021, we outlined a clear path to decarbonize our production processes (Scope 1 and 2 GHG emissions) utilizing a phased approach in which end-of-life capacity is replaced with higher-efficiency, lower GHG-emitting assets. This phased approach will enable us to achieve decarbonization in our Scope 1 and 2 GHG emissions in line with a well-below 2°C world, as is envisioned by the Sustainable Development scenario, while mitigating the affordability risk that presents itself should there be a slower global adoption of the regulatory frameworks needed to address climate change, as is the potential under the Regional Rivalry scenario. 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. Climate scenarios also are incorporated into our long-term assessments of Dow’s manufacturing sites, which is a key input into Dow’s capital approval process.

**Category Risk Management:** Disclose the processes used by the organization to identify, assess and manage climate-related risks  
**Describe the organization’s processes for identifying and assessing climate-related risks.**

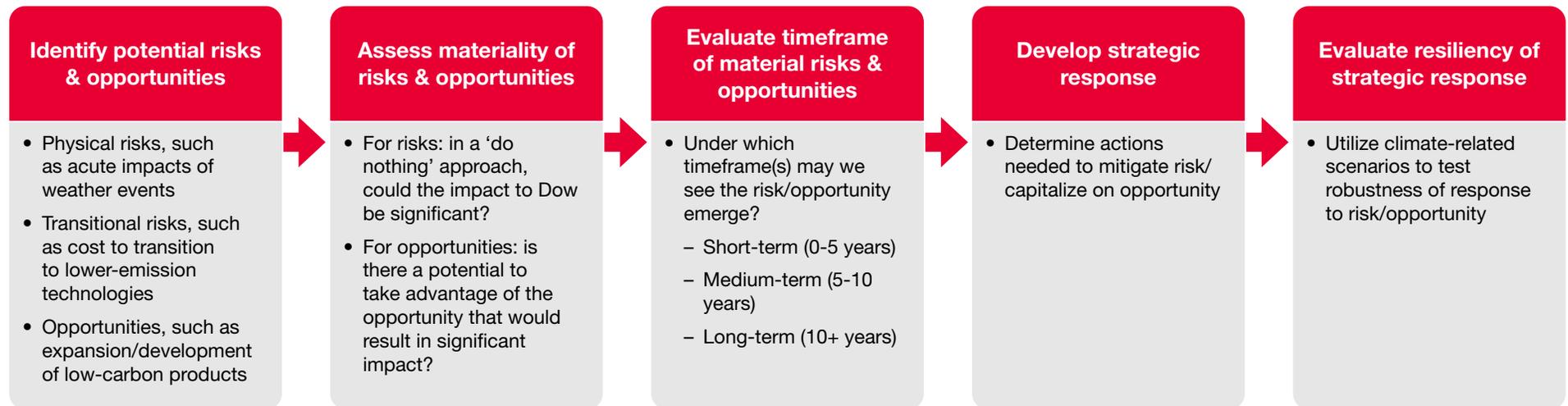
Dow’s ERM process is responsible for identifying significant or major risks to the company and creating action plans to mitigate risks, including climate risks. On an annual basis, the ERM process screens risks from a broad range of inputs, both internal and external to Dow. All risks are reviewed and 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 and, if needed, to an internal subject matter expert accountable for mitigation plans.



**Dow Disclosures – TCFD Disclosure Report**

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. The Audit Committee has oversight of the ERM process and reviews it annually. Specific risks are also reviewed with the Environment, Health, Safety & Technology Committee, Corporate Governance Committee and/or the full Board.

**Describe the organization’s processes for managing climate-related risks.**



**Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization’s overall risk management.**

Potential climate-related risks are integrated into the ERM process. Climate-related risks, including both physical and transition risks, 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 CST, which is accountable for monitoring climate-related risks and developing and implementing mitigation plans.

**Category Metrics:** Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities

**Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.**

Dow utilizes several metrics to track performance and inform on our progress toward addressing our climate and sustainability risks and opportunities. These include disclosures of our Scope 1, 2 and 3 GHG emissions as well as additional metrics related to energy intensity, renewable power and energy, freshwater intake intensity and the alignment of our innovation and product portfolios to our sustainability priorities. Where appropriate, we also report on our progress against defined targets for these metrics.

**Dow Disclosures – TCFD Disclosure Report****Scope 1, 2 and 3 GHG Emissions**

Scope 1 and 2 GHG emissions are collected and accounted for in accordance with the World Resources Institute/World Business Council for Sustainable Development (WBCSD) Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition). Scope 3 emissions data are prepared according to the GHG Protocol's Corporate Accounting Standard and the Corporate Value Chain (Scope 3) Accounting and Reporting Standard, as well as the WBCSD's Guidance for Accounting and Reporting Corporate GHG Emissions in the Chemical Sector Value Chain. For more information on GHG emissions see 305-1 Direct (Scope 1) GHG emissions, 305-2 Energy indirect (Scope 2) GHG emissions and the [GHG Protocol Disclosure Report – Scope 1 Emissions by GHG](#).

Overall, Scope 1 emissions decrease 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 CO<sub>2</sub>e (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.

When compared to 2020, increases in 2021 Scope 3 emissions were driven by two primary factors. First, some variations were due to differences in Dow's products or operations. Most significantly, Dow increased its sales of fuel additives, which resulted in an increase in category 3.11, Use of Sold Products, by approximately four million tons of CO<sub>2</sub>e. Second, as part of our work to continuously improve the accuracy and comprehensiveness of our scope 3 accounting, several improvements were implemented in this reporting cycle.<sup>2</sup> We expect our Scope 3 emissions methodology and values to continue to evolve as we enhance and further standardize our approach and refine our estimates with more specific and primary data. We are working to establish transparent approaches and to define scope 3 targets that will allow us to demonstrate clear progress on our Scope 3 emissions reductions. For additional information see GRI 305-3 Other indirect (Scope 3) GHG emissions.

Description	Baseline year	Baseline Value	2021	2020	2019 <sup>1</sup>	Target Year
Scope 1	2020	28.49	28.29	28.49	27.20	2030 <sup>5</sup>
Scope 2 – Market	2020	6.07 <sup>1</sup>	5.68	6.07 <sup>1</sup>	6.58 <sup>1,2,3</sup>	2030 <sup>5</sup>
Scope 3	NA <sup>4</sup>	NA <sup>4</sup>	77.64	69.26	93.94	NA <sup>4</sup>

<sup>1</sup> For consistency and comparability, 2019 and 2020 values were updated using the work potential method vs the energy content method for steam energy accounting.

<sup>2</sup> A correction was made to an emission factor used for electricity purchases.

<sup>3</sup> A correction was made to the quantity of steam purchased and consumed.

<sup>4</sup> Dow is actively working to set a scope 3 target/baseline while also working to enhance our processes and value chain engagement to ensure transparent reporting and identification of emission reduction opportunities.

<sup>5</sup> Reduce net annual carbon emissions by five million metric tons versus our 2020 baseline (Scope 1 + 2).

**Energy Intensity**

See also: *GRI 302-1 Energy Consumption and GRI 302-3 Energy Intensity*

Energy intensity is calculated using total energy consumption (GRI 302-1 Energy consumption within the organization) divided by production volume. We have evolved our production volume to total valued production which includes byproducts and coproducts and has been applied to all years reported.

As noted in 302-1, the methodology was updated for total energy consumption and changes are being applied prospectively; prior year periods will not be revised. Therefore, energy intensity values are presented consistent with the approach in 302-1 where the 2021 energy intensity values have been calculated using the values from the new and historical methods for energy consumption. This approach enables comparisons to prior year data. Overall, energy intensity for 2021 was flat when compared to 2020.



**Dow Disclosures – TCFD Disclosure Report**

Description (GJ/Metric Ton of Production)	2021 (New Method) <sup>1</sup>	2021 (Old Method) <sup>2</sup>	2020 <sup>2</sup>	2019 <sup>7</sup>
Energy Intensity (Scope 1&2)	10.85	12.06	11.86	12.31

<sup>1</sup> Value for the total energy consumption (numerator) used new methodology as described in 302-1

<sup>2</sup> Value for the total energy consumption (numerator) used the historical methodology as described in 302-1

**Freshwater Intake Intensity at Key Water-Stressed Sites**

This metric is aligned with the physical risk of climate change and changing weather patterns. The changing patterns in supply and demand for water in a climate change impacted world have posed challenges for certain manufacturing assets, such as extended droughts in certain locations and low river levels, impacting ability to ship products. We have developed a methodology to evaluate water risk at Dow sites. We have also engaged in developing optimization tools to understand the relationship between water and our climate adaptation strategy. This metric was adopted in recognition of the criticality of virgin fresh water as a shared resource in water-stressed basins and to ensure that water does not become a constraint on community prosperity.

Dow’s six KWSS, which all comply with ISO 14001-2015 standards, include: 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).

Dow has set a target to reduce freshwater intake intensity at KWSS by 20% from its 2015 baseline.<sup>1</sup>

The freshwater intake intensity metric is calculated by taking the sum of virgin freshwater withdrawal associated with Dow manufacturing at the KWSS divided by production volume. Dow has set a target to reduce freshwater intake intensity at KWSS by 20% from its 2015 baseline. In 2021, Dow updated its freshwater intensity metric to only account for freshwater intake associated with Dow production (and not transferred to industrial park [iPark] tenants) and improved the calculation of large variations associated with water reservoirs. In addition, the production volume used in this metric uses total valued production which includes products produced by the company, as well as byproducts and coproducts generated from the production, which is in line with other intensity metrics at Dow.

Baseline Year	Baseline Value	2021	2020	2019 <sup>7</sup>	Target Year	Target Value
2015	6.6	4.5	6.1	6.7	2025	5.3

<sup>1</sup> As indicated below – the freshwater intake intensity calculation has changed from previously reported numbers.

The freshwater intake intensity shows a reduction in 2021. A water conservation project was implemented at Freeport, Texas, which also benefited from the installation of certain higher efficiency assets. Increase in rainfall at major sites and weather freeze events resulting in unplanned shutdowns, impacting both water withdrawal and production, account for the remaining decrease which are beyond Dow’s control.

**Renewable Power and Energy Metrics (%)**

A key element of Dow’s climate action plan to reduce Scope 2 emissions is to increase access to renewable power to support our sites. Dow’s access to renewable power has expanded to over 900 MW, surpassing Dow’s 2025 Sustainability Goal of obtaining 750 MW of its power demand from renewable sources. Tracking renewable power as a percentage of power purchased is a metric that can indicate progress against this pillar of our plan. As Dow also operates combined heat and power (CHP) plants to support our sites, we are also providing the percentage of renewable power we purchase as a portion of the total power consumed. Lastly, we provide the metric on renewable energy (renewable power and steam we purchase) as a percent of energy consumed, which includes fuel purchases to run our operations and self-generate power and steam, consumption of process off-gas for energy-related activities, purchased electricity and purchased steam.



**Dow Disclosures – TCFD Disclosure Report**

Description	2021	2020	2019 <sup>†</sup>
% renewable power, of power purchased	27%	25%	22%
% renewable power, of power consumed	15%	14%	13%
% renewable energy, of energy consumed	2%	2%	2%

Dow’s products and services are a key component of Dow’s climate strategy as they provide an opportunity to enable the transition to a low-carbon economy. Dow has two metrics to track progress that assess our innovation and product portfolios. These are evolving metrics and we will continue to advance our approach to ensure progress and transparency.

- **R&D Portfolio alignment to sustainability (%):** Our innovation portfolio and its alignment to our climate and other sustainability priorities is critical for achieving our sustainability goals. 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 priorities.

Description	2021 <sup>1</sup>	2020 <sup>2</sup>	2019 <sup>†</sup>
% R&D portfolio alignment to sustainability	>85%	>80%	

<sup>1</sup> Innovation projects are aligned to Dow’s sustainability focus areas and provide a sustainability benefit over incumbent approaches (2021).

<sup>2</sup> Innovation projects are aligned to Dow’s sustainability focus areas: climate protection, circular economy, stop the waste and safer materials (2020).

- **Sustainability-driven revenue opportunities:** Dow’s materials science solutions enable several markets and applications where sustainability is the key growth driver. Often characterized by a double-digit compound annual growth rate, these applications are fueled by commitments of consumers, private sector and governments to support the transition to a lower-carbon and more circular economy. Some examples of new or growing markets that are driven by sustainability include, but are not limited to: green buildings and climate change adaptation, e-mobility, renewable energy generation, recycling and food preservation. Dow’s businesses identify products in their portfolios that help enable such applications and report respective revenues at a market segment level. The table below supplies the 2021 aggregated ratio:

Description	2021 <sup>1</sup>	2020	2019 <sup>†</sup>
Revenue from products that enable sustainability-driven markets	43%		
Revenue from products that address world challenges		48%	48%

<sup>1</sup> The definition of this metric has been updated for 2021 and is not able to be applied to prior years. In 2021 we collected revenue from products that enable sustainability-driven markets. In 2020 and 2019, we captured revenue from products that address world challenges.

Dow’s products sold into sustainability-driven applications are crucial building blocks (see [Innovating low-carbon materials and technologies](#)); however, they often have similar characteristics to competing products or a business-as-usual level of performance. Work is underway to start reporting separately revenues of those products that are better for the planet and people across their life cycle compared with incumbent solutions. Examples include low-carbon materials, products with recycled and bio-content, solutions enabling recycling, biodegradable products and materials that are safer than incumbents.

