

# Welcome to your CDP Water Security Questionnaire 2023

# **W0. Introduction**

#### W0.1

#### (W0.1) Give a general description of 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 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 37,800 people. Dow delivered net sales of approximately \$57 billion in 2022.

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).

Building on our commitment to UN SDG 6, to the CEO Water Mandate and our pledge to the Water Resilience Coalition, Dow's current strategy as it relates to water can be summarized as follows:

Direct Operations: Optimizing our manufacturing facilities and processes to reduce our internal water footprint

• Supply Chain: Collaborating with our supply chain partners to tackle additional water optimization efforts such as increasing clean energy in our purchased power mix which directly impacts our supply chain water consumption

• Watershed management: Investing in transformative next-generation solutions such as advanced water treatment technologies allowing our facilities to reuse/recycle additional water and nature-based solutions.



• Customers: Using our materials science to innovate products and processes that help improve sustainable water management across our entire value chain focusing on stressed watersheds.

Dow's 2025 Sustainability water-related goals and targets are the following: -As part of our World Leading Operation goal, Dow will reduce the freshwater intake intensity at key water stressed sites by 20 percent by 2025.

Dow's blueprint on sustainable watershed management establishes how to create a path to addressing water scarcity.

-By 2030, Dow will reduce its net annual GHG emissions by 5 million metric tons vs. our 2020 baseline (15% reduction). By 2050, Dow intends to be carbon neutral (scope 1 + 2 + 3 plus product benefits).

Dow's actual water consumption within its operations is limited, with only 4% of withdrawals being estimated as lost to evaporation, consumed by other processes or incorporated into products. The remaining 96% of its water withdrawals are returned to the water body. Our main use of water is tied to our energy demand, steam production and cooling activities. Dow's key water intensive suppliers provide primarily hydrocarbons, which also require large volumes of steam and cooling water. As a producer of technologies that are essential to a lower-carbon future, we have a responsibility to recognise the nexus between water, energy and climate. Dow's support of the Paris

Agreement and commitment to achieving its goal of keeping global temperature rise below 2°C - and efforts to limit the increase to 1.5°C - are critical. As a tangible demonstration of our commitment to climate protection, in 2020 Dow set the following targets:

 $\cdot$  By 2030, Dow will reduce its net annual GHG emissions by 5 million metric tons vs. our 2020 baseline (15% reduction). By 2050, Dow intends to be carbon neutral (scope 1 + 2 + 3 plus product benefits).

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 recently released its INtersections 2022 Progress Report on Advancing our Ambition. Along with this report Dow views the opportunity to report to CDP as a key mechanism for us to report our progress as it relates to water.

More information on Dow can be found at www.dow.com.

#### W-CH0.1a

(W-CH0.1a) Which activities in the chemical sector does your organization engage in?

Bulk organic chemicals

Bulk inorganic chemicals

Specialty organic chemicals

Specialty inorganic chemicals



## W0.2

#### (W0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date
Reporting year	January 1, 2022	December 31, 2022

#### W0.3

#### (W0.3) 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
United Arab Emirates
United Kingdom of Great Britain and Northern Ireland
United States of America
viet inam

#### W0.4

(W0.4) Select the currency used for all financial information disclosed throughout your response.



USD

#### W0.5

(W0.5) Select the option that best describes the reporting boundary for companies, entities, or groups for which water impacts on your business are being reported.

Companies, entities or groups over which operational control is exercised

#### **W0.6**

(W0.6) Within this boundary, are there any geographies, facilities, water aspects, or other exclusions from your disclosure?

No

#### W0.7

(W0.7) 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

## W1. Current state

#### W1.1

(W1.1) Rate the importance (current and future) of water quality and water quantity to the success of your business.

	Direct use importance rating	Indirect use importance rating	Please explain
Sufficient amounts of good quality freshwater available for use	Vital	Important	Primary use in direct operations: The majority of freshwater use is for cooling operations and steam production (>85% from a global perspective ) with a small proportion being consumed in production of products and other ancillary uses. Level of importance: In 2022, 64% of water withdrawals were freshwater. Water quality and quantity are both vital to our direct use in operations. Poor water quality can impact the level of water treatment required to meet strict water



			<ul> <li>quality specifications for product quality and can also lead to enhanced corrosion in the facilities.</li> <li>Future use: We expect no significant changes in importance of direct use. As Dow operates mature, capital-intensive assets, water consumption and effluents are evaluated and managed on long-term timelines (10+ years) involving multi-decade assessments. Future shifts in product portfolio or future process technology innovations could alter this status.</li> <li>Primary use for indirect operations: Many of our raw material suppliers that process hydrocarbons use water as a coolant steam and for energy generation. Other products are less dependent on freshwater.</li> <li>Therefore, the availability is important, but not in all cases vital for operations in our supply chain.</li> <li>Future use: We also expect no significant changes of dependency in our supply chain. Shifts in product portfolio or future process technology innovations could alter this status.</li> </ul>
Sufficient amounts of recycled, brackish and/or produced water available for use	Vital	Important	Primary use in direct operations: Brackish/seawater is used for cooling purposes. Why Vital was chosen for level of importance: In 2022, 36% of Dow's total water withdrawal was associated with seawater/brackish water. In locations where it is technically feasible and economical and sustainable solution from a life cycle perspective, we recycle/reuse various water sources both internally (ex. Cascading of cooling waters; harvesting of rainwater) and externally (ex. treated municipal wastewater). Produced water is not a significant water element for Dow's raw materials and processes. Future use: Currently, we expect no significant changes, as use of brackish water depends on availability/local conditions. Dow is involved in several pilots with various stakeholders of novel technology to increase the ability of water reuse and recycling (ex. Advance treatment of cooling tower blowdown). We are also involved in nature- based solutions at a watershed level to improve both water quantity and quality at a watershed level



<ul> <li>(ex. Loch Leven Restoration of wetlands in the Mississippi River).</li> <li>Primary use in indirect operations: Our main suppliers include other chemical producers, power providers and hydrocarbons suppliers which also use brackish/seawater when the process, availability and local conditions require cooling. Therefore, important was chosen as the indirect use importance rating. The use of recycled water is also encouraged.</li> </ul>
use importance rating. The use of recycled water is also encouraged. Future use: Currently, we expect no significant changes of dependency on seawater/brackish in our supply chain. Therefore, this aspect is important, but not in all cases vital for operations.

#### W1.2

(W1.2) Across all your operations, what proportion of the following water aspects are regularly measured and monitored?

	% of sites/facilities/operations	Frequency of measurement	Method of measurement	Please explain
Water withdrawals – total volumes	100%	Other, please specify Water measurement are either continuous or daily	Varies by site from direct measurement; calculated (ex. run hours * pump curve) or estimated.	Method: Dow accounts for water-related volumes at a facility and site level within an internal global database following our Global Emissions Inventory (GEI) standard. Each facility/site is required to develop a water accounting methodology that complies with GEI reporting requirements outlined in the GEI standard.



Water	100%			Iraining protocols for data entry are via internal training modules at the global level and by in-person training at the site/facility. Water withdrawal data by volume varies in precision. It is metered, calculated (ex. Pump flow multiplied by running hours) or estimated (ex. Cooling tower make-up water based on original engineering design). For certain locations, the data is supplied by a third party. 100% of Dow's production sites are monitored for total volumes of water withdrawals. Frequency: Per GEI standard, water data is collected annually for non-key sites, monthly for key water stressed sites.
water withdrawals – volumes by source	100%	Water measurement are either	from direct measurement; calculated (ex. run hours *	accounts for water related volumes at a facility and site



	continuous or	pump curve) or	level within an
	daily	estimated.	internal global
			database
			following the
			Global Emissions
			Inventory (GEI)
			standard. Each
			facility/site is
			required to
			develop a water
			accounting
			methodology that
			complies with GEI
			reporting
			requirements
			outlined in the
			GEI standard
			Training protocols
			for data entry is
			done via internal
			training modules
			at the global level
			and by in-person
			training at the
			site/facility. Water
			withdrawal data
			by volume varies
			in precision. It is
			metered,
			calculated (ex.
			Pump
			flow*running
			hours) or
			estimated (ex.
			cooling tower
			make-up water
			based on original
			engineering
			design). For
			certain locations,
			the data is
			supplied by a
			third party. 100%
			of Dow's
			production sites
			are monitored for



				total volumes of water withdrawals. Frequency: Aggregated water data is collected annually for non- key sites, monthly for key water stress sites. Key site data is aggregated and verified quarterly.
Water withdrawals quality	100%	Other, please specify Water quality measurement vary by site, parameter and source; can be daily, weekly, monthly, yearly	Global environmental analytical technology center defines appropriate frequency, method and standard	Method: Dow collects water quality data on a local site level. Measurements are carried out according to site- specific processes and equipment requirements and guidelines. Approved lab methods are defined by the site with oversight by Dow's Global Analytical Environmental Technology Center. Methods, equipment, and maintenance follow a rigorous quality and auditing process. The parameters monitored are dependent on the requirements for each site and environmental



				conditions present within the watershed, which may impact water quality. Typical withdrawals water quality parameters include total dissolved solids, chlorine content, turbidity, temperature, and pH. The frequency of monitoring varies according to local requirements for the production process, context of the water body and water withdrawal permit and is decided by the site. It will vary from continuous analyzers to daily or weekly grab samples.
Water discharges – total volumes	100%	Other, please specify Measurements are either continuous or daily for treated water; frequency for non-treated water such as rainwater can be yearly	Varies by site from direct measurement; calculated (ex. run hours * pump curve) or estimated (i.e., yearly average)	Dow accounts for water volumes at a facility and site level within an internal global database following the Global Emissions Inventory (GEI) standard. Each facility and site develop a water accounting procedure to align with the global



		methodology that
		complies with GEI
		and incorporates
		planned
		preventative
		maintenance
		program of
		associated
		instrumentation.
		Water discharges
		by volume varies
		in precision.
		Volumes are
		metered,
		calculated (ex.
		Pump flow
		multiplied by
		running hours),
		estimated (ex.
		average rain*
		surface area), or
		supplied by a
		third party. The
		total water
		discharge volume
		methodology was
		improved this
		year to account
		for all water
		discharges at
		sites representing
		greater than
		99.5% of total
		water withdrawal.
		Each site involved
		received training
		on the new
		methodology.
		Frequency of
		reporting: As per
		the GEI standard,
		discharge water
		data is collected
		annually.



Water	100%	Other, please	Varies by site	Method: Dow
discharges –		specify	from direct	accounts for
volumes by		Measurements	measurement;	water related
destination		are either	calculated (ex.	volumes by
		continuous or	run hours *	destination
		treated water	pump curve) or	(surface water;
		frequency for	estimated	seawater; third-
		non-treated	(yearly average	party water;
		water such as	rain * surface	groundwater) at a
		be vearly	area)	facility & site level
				within an internal
				global database
				following the
				Global Emissions
				Inventory (GEI)
				standard. Each
				facility and site
				are required to
				use a water
				accounting
				methodology that
				complies with
				GEI. Water
				discharges by
				volume and
				destination vary in
				precision. It is
				metered,
				calculated (ex.
				Pump flow*
				running hours) or
				estimated (ex.
				average rain*
				surface area).
				Dow's 2022
				INtersections
				Progress Report
				includes, for all
				production sites,
				the total water
				discharges
				volumes by
				destination that
				originate from
				Dow's or third-



				party wastewater treatment assets. This aspect is relevant because our sites treat and discharge water volumes to freshwater bodies. We work to eliminate or minimize the generation of emissions to water at the source through research, process improvements, plant operations and maintenance.
Water discharges –	100%	Monthly	Water discharge	100% of our
volumes by			at the site level	are monitored for
treatment			and complies	this water aspect
method			with applicable	and this is
metriod			water discharge	considered part of
			reporting	the normal facility
			requirements	management for
			Water discharge	our sites. The
			data is metered.	global reporting
			calculated (ex.	was recorded for
			Pump	greater than
			flow*running	99.5% of water
			hours) or	withdrawal.
			estimated (ex.	Discharges that
			cooling tower	require treatment
			make-up water	are treated to
			based on	secondary level
			original	or tertiary level,
				aepending on the
			details are	operations of the
			stored in a	third party. This
			alohal internal	aspect is relevant
			database For	because our sites
			certain locations.	treat and



			the data is supplied by a third party. 95% of Dow's water withdrawal is accounted for in water discharges.	discharge water volumes to freshwater bodies. We are committed to reducing water pollution. We are required to ensure that quality and quantity of discharged water complies with standards and regulations.
Water discharge quality – by standard effluent parameters	100%	Other, please specify Water discharge quality is monitored at a site level to comply with site specific discharge water permit. The frequency varies by site and parameter. It can be continuous, daily or monthly.	We monitor water discharge quality by standard effluent parameters at the site level using automatic water samplers and lab testing. Key measures such as pH are monitored continuously through on-site monitoring systems and samples are collected on a daily or monthly basis as defined by local site discharge permit to analyse for other regulated parameters such as metal concentration and load, 5-day biological oxygen demand	These parameters are monitored monthly / daily/continuously (pH is monitored continuously and samples for other parameters are taken on a daily or monthly basis) depending on the parameter and as specified within discharge permit. This aspect is relevant because our sites or 3rd party treat and discharge water volumes to freshwater bodies. We are committed to reducing water emissions. We are required to ensure that quality and quantity of



			(BOD), or total suspended solids (TSS).	discharged water complies with standards and regulations.
Water discharge quality – emissions to water (nitrates, phosphates, pesticides, and/or other priority substances)	100%	Other, please specify Water discharge quality is monitored at a site level to comply with site specific discharge water permit. At a minimum, the data is reported collected globally as per the GEI standard on an annual basis for all sites.	Calculation methodologies and discharge limits are determined by regulatory requirements. 100% of Dow's production sites are monitored for water discharge quality (such as nitrogen, heavy metals, and phosphate). The specific methodology is defined by the Global Environmental Analytical technology center.	These parameters are monitored monthly / daily and as specified within the sites water management standard. This aspect is relevant because our sites or third party treat and discharge water volumes to freshwater bodies. We are committed to reducing water emissions. We are required to ensure that quality and quantity of discharged water complies with standards and regulations. Dow has defined priority substances of concern through the development of a priority compound list that is composed of chemicals with



Water discharge quality – temperature	100%	Other, please specify Temperature is monitored as a parameter according to site specific permit. Frequency is defined by site specific permit requirements and varies from continuous to daily.	We use sensors specifically designed to monitor temperature in wastewater and industrial effluent treatment applications at sites as specified in permit. The online sensors (thermometers) are factory calibrated and	carcinogenic, mutagenic and reproductive hazards. This list is global in nature and comprises chemicals identified by multiple agencies including the U.S. Environmental Protection Agency (EPA), the International Agency for Research on Cancer, through the World Health Organization and the European Commission. We assure coverage of 100% of relevant sites (i.e., all sites with discharges of cooling water).
Water	100%	Veerly	maintained.	
consumption – total volume	100%	теапу	metered, calculated and estimated water consumption	conducted a study which indicated that on average, Dow



			associated with	consumes 4% of
			both evaporative	total water
			losses and	withdrawn. Dow
			process	uses this 4% as a
			activities at	generally
			representative or	accepted
			critical water	estimate to
			sites to develop	calculate total
			an estimated	water
			consumption	consumption for
			percentage. This	all sites. This
			approach is	approach is
			preferred as the	preferred as the
			equation (water	equation (water
			consumption =	consumption =
			water	water withdrawal
			withdrawal-	- water
			water discharge)	discharge) is not
			is not	representative
			representative	due to the
			due to the	aggregation of
			aggregation of	measurement
			measurement	uncertainties of
			uncertainties of	water withdrawals
			water	and water
			withdrawals and	discharges and
			water	unallocated water
			discharges and	inflows/outflows in
			unallocated	open conveyance
			water	systems.
			inflows/outflows	
			in open	
			conveyance	
			systems.	
Water	100%	Other, please	Water	Dow accounts for
recycled/reused		specify	recycled/reused	water
		Recycled	is reported using	recycled/reused
		water is	metered,	related flows at a
		monthly basis	calculated (ex.	facility and site
		for key water	Pump flow*	level within an
		stress sites	running hours),	internal global
		and yearly for	engineering	database
		an other sites	estimates (ex.	following the
			Based on	Global Emissions
			engineering	Inventory (GEI)



			design flows) or invoices provided by third-party suppliers. Data entry and maintenance of associated devices have precise reporting requirements. We publicly reported the information for the entire company in our 2022 INtersections Progress Report. 100% of Dow's production sites are monitored for water recycled/reused.	standard. Each facility/site is required to develop a water accounting methodology that complies with GEI.
The provision of fully- functioning, safely managed WASH services to all workers	100%	Other, please specify The audit frequency is set by the EHS&S department with a maximum interval between EHS&S integrated audits of five years.	We use an internal audit tool to measure progress towards WASH services for employees.	Dow has standards to ensure access to fully functioning, safely managed Water, Sanitation and Hygiene (WASH) services for all employees and contractors globally. Dow's Global EHS&S function is responsible for the management of occupational health and of Dow employees, as well as the coordination and



occupational medicine. Dow's programs include a robust Occupational Health system that supports company sites, and businesses globally with health information and resources on health-related issues such as WASH. We require self- assessments, regular inspections and independent internal audits to monitor compliance and identify gaps. Audit results are reviewed quarterly by Dow's Executive Sustainability Team, which is accountable to Dow's Leadership Team.			auditing of
medicine. Dow's programs include a robust Occupational Health system that supports company sites, and businesses globally with health information and resources on health-related issues such as WASH. We require self- assessments, regular inspections and independent internal audits to monitor compliance and identify gaps. Audit results are reviewed quarterly by Dow's Executive Sustainability Team, which is accountable to Dow's Leadership Team.			occupational
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a robust Occupational Health system that supports company sites, and businesses globally with health information and resources on health-related issues such as WASH. We require self- assessments, regular inspections and independent internal audits to monitor compliance and identify gaps. Audit results are reviewed quarterly by Dow's Executive Sustainability Team, which is accountable to Dow's Leadership Team.			programs include
Cocupational Health system that supports company sites, and businesses globally with health information and resources on health-related issues such as WASH. We require self- assessments, regular inspections and independent internal audits to monitor compliance and identify gaps. Audit results are reviewed quarterly by Dow's Executive Sustainability Team, which is accountable to Dow's Leadership Team.			a robust
Health system that supports company sites, and businesses globally with health information and resources on health-related issues such as WASH. We require self- assessments, regular inspections and independent internal audits to monitor compliance and identify gaps. Audit results are reviewed quarterly by Dow's Executive Sustainability Team, which is accountable to Dow's Leadership Team.			Occupational
that supports company sites, and businesses globally with health information and resources on health-related issues such as WASH. We require self- assessments, regular inspections and independent internal audits to monitor compliance and identify gaps. Audit results are reviewed quarterly by Dow's Executive Sustainability Team, which is accountable to Dow's Leadership Team.			Health system
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and businesses globally with health information and resources on health-related issues such as WASH. We require self- assessments, regular inspections and independent internal audits to monitor compliance and identify gaps. Audit results are reviewed quarterly by Dow's Executive Sustainability Team, which is accountable to Dow's Leadership Team.			company sites,
globally with health information and resources on health-related issues such as WASH. We require self- assessments, regular inspections and independent internal audits to monitor compliance and identify gaps. Audit results are reviewed quarterly by Dow's Executive Sustainability Team, which is accountable to Dow's Leadership Team.			and businesses
health information and resources on health-related issues such as WASH. We require self- assessments, regular inspections and independent internal audits to monitor compliance and identify gaps. Audit results are reviewed quarterly by Dow's Executive Sustainability Team, which is accountable to Dow's Leadership Team.			globally with
and resources on health-related issues such as WASH. We require self- assessments, regular inspections and independent internal audits to monitor compliance and identify gaps. Audit results are reviewed quarterly by Dow's Executive Sustainability Team, which is accountable to Dow's Leadership Team.			health information
Image: second			and resources on
issues such as WASH. We require self- assessments, regular inspections and independent internal audits to monitor compliance and identify gaps. Audit results are reviewed quarterly by Dow's Executive Sustainability Team, which is accountable to Dow's Leadership Team.			health-related
WASH. We require self- assessments, regular inspections and independent internal audits to monitor compliance and identify gaps. Audit results are reviewed quarterly by Dow's Executive Sustainability Team, which is accountable to Dow's Leadership Team.			issues such as
require self- assessments, regular inspections and independent internal audits to monitor compliance and identify gaps. Audit results are reviewed quarterly by Dow's Executive Sustainability Team, which is accountable to Dow's Leadership Team.			WASH. We
Image: set of the			require self-
Image: section			assessments,
Image: state of the state of			regular
Image: state of the state of			inspections and
internal audits to monitor compliance and identify gaps. Audit results are reviewed quarterly by Dow's Executive Sustainability Team, which is accountable to Dow's Leadership Team.			independent
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Image: state in the state in			monitor
Image: state indextImage: state i			compliance and
Audit results are reviewed quarterly by Dow's Executive Sustainability Team, which is accountable to Dow's Leadership Team.			identify gaps.
Image: state of the state of			Audit results are
quarterly byDow's ExecutiveSustainabilityTeam, which isaccountable toDow's LeadershipTeam.			reviewed
Dow's Executive Sustainability Team, which is accountable to Dow's Leadership Team.			quarterly by
Sustainability Team, which is accountable to Dow's Leadership Team.			Dow's Executive
Team, which is accountable to Dow's Leadership Team.			Sustainability
accountable to Dow's Leadership Team.			Team, which is
Dow's Leadership Team.			accountable to
Team.			Dow's Leadership
			Team.

#### W1.2b

(W1.2b) What are the total volumes of water withdrawn, discharged, and consumed across all your operations, how do they compare to the previous reporting year, and how are they forecasted to change?

Volume (megaliters/ye ar)	Comparis on with previous reporting year	Primary reason for comparison with previous reporting year	Five- year foreca st	Primary reason for forecast	Please explain
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Total	2,876,422	About the	Increase/decre	Unkno	Increase/decre	Overall, Dow's
withdrawal		same	ase in business	wn	ase in business	total water
S			activity		activity	withdrawal was
						reduced slightly
						in 2022
						compared with
						2021 primarily
						due to reduced
						production
						rates as a
						result of macro-
						economic
						conditions.
						Third-party
						surface water
						increased due
						to extreme
						drought
						conditions that
						caused sites to
						purchase
						additional water
						from alternative
						sources. During
						drought
						periods, the
						quality of the
						water
						deteriorates
						which in turns
						leads to
						additional water
						being required
						associated with
						treatment
						losses.
						Changes in
						process
						technologies
						(ex. newer low
						carbon
						technologies
						being
						investigated to
						meet



						decarbonizing goals are assessed for optimal water requirements) , product mix and water resilience activities are actively being pursued making a 5- year forecast difficult to assess. We define changes below 15% as "about the same", 15%- 30% as "higher or lower" and >30% as "much higher or lower".
Total discharges	2,993,220	About the same	Change in accounting methodology	Unkno wn	Increase/decre ase in business activity	In 2022, Dow's methodology for collecting water discharges was improved to account for all effluents (previously accounting only for treated water discharges). The new accounting methodology includes hydraulic flow of post-treated water by Dow or third parties,



			water that is
			transferred to a
			third party for
			use, and
			effluents that
			meet regulatory
			specifications
			and are directly
			discharged
			without
			treatment. such
			as one-pass
			cooling cooling
			tower
			blowdowns and
			rainwater. Total
			wator
			discharge value
			uscharge value
			mothodology in
			methodology is
			Teponed here.
			The data is
			representative
			of greater than
			99.5% of 2022
			global water
			withdrawal. For
			certain sites,
			the
			methodology is
			based on an
			engineering
			study that was
			completed in
			2021 and
			adjusted to
			represent
			2022's
			interaction with
			water. Future
			trends:
			Changes in
			process
			technologies
			(ex. Associated
			with meeting



						Dow's decarbonizing goals), product mix and water resilience activities are actively being pursued making a 5- year forecast difficult to assess.
Total consumpti on	116,978	Lower	Change in accounting methodology	Unkno wn	Increase/decre ase in business activity	In 2022, Dow conducted a study on metered, calculated and estimated water consumption associated with both evaporative losses and process activities at representative and critical water sites. The results of the study indicated that on average, Dow consumes 4% of total water withdrawn. Dow uses this 4% as a generally accepted estimate to calculate total water



			for all sites.
			This approach
			is preferred as
			the simple
			equation of
			water
			consumption =
			water
			withdrawal -
			water
			discharge is not
			representative
			due to the
			aggregation of
			measurement
			uncertainties of
			water
			withdrawals
			and water
			discharges and
			unallocated
			water
			inflows/outflows
			in open
			discharge flows
			discharge nows
			associated with
			cooling
			activities and
			rainwater are
			estimated and
			contain a nign
			level of
			inaccuracy.
			Seawater/brack
			ish water when
			readily
			available is
			used in certain
			locations for
			cooling
			activities.
			Freshwater
			intake is
			primarily used



			for cooling and
			is either
			returned
			directly in one-
			pass cooling or
			evaporated
			back to the
			environment if
			used in cooling
			towers.
			Rainwater is
			recovered in
			multiple sites
			and used as
			firewater and
			for other
			purposes. Its
			volume
			compared to
			other intakes is
			relatively small.
			Only a small
			proportion of
			water intake
			ends up in
			product (i.e.,
			direct
			consumption).
			The total
			volume of
			water
			consumed is
			lower in 2022
			compared to
			2021 as a
			result of the
			combined
			impact of
			process
			efficiency
			improvements,
			business
			portfolio
			changes,
			production
			volume



			changes and
			accounting
			methodology
			changes.
			Future trends:
			Changes in
			process
			technologies
			(ex. Associated
			with meeting
			Dow's
			decarbonizing
			goals), product
			mix and water
			resilience
			activities are
			currently
			actively being
			pursued
			making a 5year
			forecast difficult
			to assess.

#### W1.2d

(W1.2d) Indicate whether water is withdrawn from areas with water stress, provide the proportion, how it compares with the previous reporting year, and how it is forecasted to change.

	Withdraw als are from areas with water stress	% withdra wn from areas with water stress	Compari son with previous reporting year	Primary reason for comparison with previous reporting year	Five- year foreca st	Primary reason for forecast	Identificat ion tool	Please explain
Ro w 1	Yes	26-50	About the same	Increase/decr ease in business activity	Unkno wn	Increase/decr ease in business activity	WRI Aqueduct WWF Water Risk Filter	Dow completes a global water risk screening of all sites using the most up- to-date



World
Resource
Institute
Aqueduct
tool and
WWF
Water
Risk Filter
everv two
vears.
Water
stress
evaluation
sare
performed
if a site
has
experienc
ed water
quality
and/or
quantity
stress or
anticipates
arowth
that could
impact
freshwater
quantity or
quality
needs.
Total
water
withdrawal
at Dow's
KWSS
increased
slightly in
2022
Third-party
surface
water
increased
due to
extreme
drought



				conditions
				that
				caused
				sites to
				purchase
				additional
				water from
				alternative
				sources.
				Future
				trends:
				Changes
				in process
				technologi
				es (ex.
				Associate
				d with
				meeting
				Dow's
				decarboni
				zing
				goals),
				product
				mix and
				water
				resilience
				activities
				are
				currently
				actively
				being
				pursued
				making a
				5year
				forecast
				difficult to
				assess.

## W1.2h

#### (W1.2h) Provide total water withdrawal data by source.

Relevance	Volume	Comparison	Primary reason	Please
	(megaliters/year)	with	for comparison	explain
		previous	with previous	
			reporting year	



			reporting vear		
Fresh surface water, including rainwater, water from wetlands, rivers, and lakes	Relevant	135,402	About the same	Increase/decrease in business activity	Water withdrawal is about the same as previous years.
Brackish surface water/Seawater	Relevant	1,035,824	About the same	Increase/decrease in business activity	Water withdrawal is about the same as previous years.
Groundwater – renewable	Relevant	336	Lower	Increase/decrease in business activity	2022 is lower since 2021 was a higher year than usual due to low surface water availability in certain sites.
Groundwater – non- renewable	Not relevant				
Produced/Entrained water	Not relevant				
Third party sources	Relevant	99,276	Much higher	Increase/decrease in business activity	Third-party surface water increased due to extreme drought conditions that caused sites to purchase additional water from alternative sources.



## W1.2i

#### (W1.2i) Provide total water discharge data by destination.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Primary reason for comparison with previous reporting year	Please explain
Fresh surface water	Relevant	1,405,690	About the same	Change in accounting methodology	Dow's water discharge volume methodology was improved this year to account for all water discharges at sites representing greater than 99.5% of total water withdrawal. Fresh surface water is defined as water with a total dissolved solids less than 1,000 mg/I TDS. A large portion of the water discharged to freshwater is associated with cooling water and discharged back to its original source with negligible losses or variation in quality. Rainwater/run-off that enters the site boundary and is captured is counted as a discharge. Volumes for each destination are an aggregation of estimated (ex. yearly average rain multiplied by surface area), modelled (ex.



					cooling tower chemistry), or sourced from direct measurements (flowmeter). We define changes below 15% as "about the same", 15%-30% as "higher or lower" and >30% as "much higher or lower".
Brackish surface water/seawater	Relevant	1,444,600	About the same	Change in accounting methodology	Dow's water discharge volume methodology was improved this year to account for all water discharges at sites representing greater than 99.5% of total water withdrawal. Brackish surface water/seawater is defined as a total dissolved solids of at least higher than 1,000 mg/I TDS. A large portion of the water discharged to brackish surface water/seawater brackish/seawater is associated with cooling water and discharged with negligible losses or variation in quality. Rainwater/run-off that enters the site boundary and is captured is counted as a discharge and in some locations discharged to brackish surface water/seawater. We



					define changes below 15% as "about the same", 15%-30% as "higher or lower" and >30% as "much higher or lower".
Groundwater	Not relevant				Dow does not discharge any water to groundwater and therefore reported as not relevant.
Third-party destinations	Relevant	142,930	About the same	Change in accounting methodology	Dow's water discharge volume methodology was improved this year to account for all water discharges at sites representing greater than 99.5% of total water withdrawal. Third-party water refers to water that is sent for treatment. Dow does not track the quality of discharge of water transferred to third party for use or treatment by this parameter, as this is under the responsibility of the third party. We define changes below 15% as "about the same", 15%-30% as "higher or lower" and >30% as "much higher or lower".

### W1.2j

(W1.2j) Within your direct operations, indicate the highest level(s) to which you treat your discharge.



	Relevan ce of treatme nt level to discharg e	Volume (megaliters/ye ar)	Comparis on of treated volume with previous reporting year	Primary reason for comparis on with previous reporting year	% of your sites/facilities/operati ons this volume applies to	Please explain
Tertiary treatment	Relevant	96,970	Higher	Change in accounting methodolo gy	100%	Greater than 50% of wastewater generated by Dow sites are treated at the tertiary level. Rationale for Level of Treatment for sites is determined based on the required based on the required based on the required discharged discharged governed bo for sites in the case of tertiary treatment, the sites wastewater includes a biological wastewater



			with
			additional
			purification
			for the
			removal of
			parameters
			such as
			total
			suspended
			solids via a
			tertiary
			treatment
			wetlands or
			UF/RO to
			allow for
			treated
			water to be
			recycled
			back to the
			process.
			Dow
			complies
			with all
			relevant
			regulatory
			standards
			and
			emission
			limit values
			as defined
			by the local
			authorities
			based on
			local law
			and
			prescribed
			in
			discharge
			permits. All
			Dow
			locations
			are
			required to
			develop a
			program
			that is



			consistent
			with the
			principles of
			Responsibl
			e Care® ,
			company
			goals,
			required
			external
			manageme
			nt systems,
			ISO-14001
			as
			applicable
			and comply
			with local
			applicable
			environmen
			tal licenses
			and
			permits. As
			а
			Responsibl
			e Care®
			company
			and
			member of
			the
			Internationa
			I Council on
			Chemical
			Association
			s (ICCA),
			Dow is
			continually
			engaged in
			emissions
			reduction
			and
			pollution
			prevention
			efforts in its
			operations.
			Estimate on
			treatment
			level



			represents
			greater
			than 99.5%
			of water
			withdrawal.
			We define
			changes
			below 15%
			as "about
			the same",
			15%-30%
			as "higher
			or lower"
			and >30%
			as "much
			higher or
			lower".
			Changes-
			Compared
			to 2021 the
			volume in
			2022 is
			much
			higher.
			Accounting
			methodolog
			y was
			reviewed in
			2022
			clarifying
			associated
			definition of
			treatment
			levels with
			sites.
			Future
			Trends-
			Currently,
			we expect
			no
			significant
			changes in
			the
			volumes of
			tertiary
			treated


						wastewater. The volumes may vary based on product mix and regulatory changes in discharge limits.
Secondar y treatment	Relevant	71,442	Lower	Change in accounting methodolo gy	100%	Rationale for Level of Treatment- Most of Dow's secondary wastewater treatment facilities aim to remove organic substances via biological treatment including aeration tanks, secondary clarifier or in some cases membranes . Such facilities involve monitoring of treatment level for chemical oxygen demand (COD)/total



				oxygen
				demand
				(TOC),
				biological
				oxygen
				demand
				nutrients
				amongst
				other
				parameters
				as required
				by local
				authorities.
				Dow
				complies
				with all
				relevant
				regulatory
				standards
				and
				emission
				limit values
				as defined
				by the local
				authorities
				based on
				local law
				and
				prescribed
				in
				discharge
				permits
				The quality
				of effluent
				discharge
				for each
				facility is
				managed
				by local
				regulations
				and
				respective
				environmen
				tal agencies
				for each
				watershed.
		1		,



			which
			typically
			includes the
			profile of
			the
			receiving
			waterbody.
			The
			responsible
			local
			authorities
			also
			regularly
			audit Dow's
			facilities
			and
			manageme
			nt program.
			All Dow
			locations
			are
			required to
			develop a
			program
			that is
			consistent
			with the
			principles of
			Responsibl
			e Care® ,
			company
			goals,
			required
			external
			manageme
			nt systems,
			ISO-14001
			as
			applicable
			and comply
			with local
			applicable
			environmen
			tal licenses
			and
			permits. As



			а
			Responsibl
			e Care®
			company
			and
			member of
			the ICCA,
			Dow is
			continually
			engaged in
			emissions
			reduction
			and
			pollution
			prevention
			efforts in its
			operations.
			Estimate on
			treatment
			level
			represents
			greater
			than 99.5%
			of water
			withdrawal.
			We define
			changes
			below 15%
			as "about
			the same",
			15%-30%
			as "higher
			or lower"
			and >30%
			as "much
			higher or
			lower".
			Water
			treated by a
			third party
			is at a
			minimum to
			secondary
			treatment.
			Changes-
			Compared



						to 2021 the volume in 2022 is much higher. Accounting methodolog y was reviewed in 2022 clarifying associated definition of treatment levels with sites. Future Trends- Currently, we expect no significant changes in the volumes of secondary treated wastewater. The volumes may vary based on product mix and regulatory changes in discharge
						discharge limits.
Primary treatment only	Relevant	18,762	This is our first year of measurem ent	Change in accounting methodolo gy	100%	Rationale For Level of Treatment- Primary wastewater treatment is typically



			physical
			(ex. aims
			removal of
			solid
			substances
			via solid
			sand filter
			or chemical
			(ex.pH
			neutralizati
			on) e.g. at
			our
			Boehlen
			site in
			Germany
			whore
			vileie raipwatar is
			filtered via
			sand
			Tiltration
			prior to
			discharge).
			Changes-
			Compared
			to 2021 the
			volume in
			2022 is
			much
			higher.
			Accounting
			methodolog
			y was
			reviewed in
			2022
			clarifying
			associated
			definition of
			treatment
			levels with
			sites.
			Future
			Trends-
			Currently,
			we expect
			no
			significant



						changes in the volumes of primary treated wastewater. The volumes may vary based on product mix and regulatory changes in discharge
Discharge to the natural environme nt without treatment	Relevant	2,674,352	About the same	Change in accounting methodolo gy	100%	Rational for Treatment- Estimate on treatment level is based on facilities withdrawing 99.5% of water. This is reported as transfer to 3rd party for use water and under the responsibilit y of the third party. We define changes below 15% as "about the same", 15%-30% as "higher or lower" and >30%



						as "much higher or lower". Changes- Compared to 2021 the volume in 2022 is higher. The accounting methodolog y was reviewed in 2022 clarifying associated definition of what should be accounted for in transfer to third party. Future Trends- Currently, we expect no significant changes in the volumes.
Discharge to a third party without treatment	Relevant	131,693	Higher	Change in accounting methodolo gy	100%	Estimate on treatment level is based on facilities withdrawing 99.5% of water. This is reported as transfer to 3rd party for use



				water. We
				define
				changes
				below 15%
				as "about
				the same",
				15%-30%
				as "higher
				or lower"
				and >30%
				as "much
				higher or
				lower".
				Future
				trends will
				be tied to
				production
				volumes
				and
				environmen
				tal
				conditions.
				The reason
				for a higher
				reported
				volume
				compared
				to previous
				year is
				mainly due
				to a change
				in
				accounting
				methodolog
				y and
				clarification
				of the
				definition.
Other	Not			No other
	relevant			treatment
				methods
				reported.
				For
				example,
				nature-



			based
			treatment
			are
			qualified
			based on
			the
			correspondi
			ng function
			of treatment
			being
			performed.
			Seadrift,
			Texas
			facility uses
			a treatment
			wetland.
			This
			treatment is
			classified
			as tertiary
			within the
			reported
			volume
			since it
			resolves
			parameters
			of pH and
			TDS
			polishing
			the effluent
			from the
			anaerobic
			treatment
			plant and
			clarifiers.

# W1.2k

(W1.2k) Provide details of your organization's emissions of nitrates, phosphates, pesticides, and other priority substances to water in the reporting year.

Emissions to water in the reporting	Category(ies) of substances included	List the specific substances included	Please explain
--	--	--	----------------



	tonnes)			
Row 1	14,422	Priority substances listed under the EU Water Framework Directive	The reported quantity includes emissions to both air and water of chemical emissions. Chemical emissions are any release or discharge to the air or water of any pollutant from a facility. The chemical emissions category is largely driven by emissions from Dow's wastewater treatment operations at its large integrated sites. This data excludes NOx, SOx, carbon monoxide, CO2, particulates, methane, hydrogen, nitrogen, oxygen, water, aluminum and certain salts. These emissions include the post-treatment chemical emissions from Dow's industrial park tenant companies. Emissions decreased in 2022 due to lower production volumes associated with process issues caused by severe weather events when compared to 2021. Other factors driving reductions include increased plant reliability, a decrease in planned maintenance activities compared with 2021 and reduced production.	Dow also reports priority compounds to air and water. It has defined priority substances of concern through the development of a priority compound list that is composed of chemicals with persistent, bioaccumulative and toxic hazards, and chemicals with carcinogenic, mutagenic and reproductive hazards. This list is global in nature and comprises chemicals identified by multiple agencies including the U.S. Environmental Protection Agency (EPA), the International Agency for Research on Cancer, through the World Health Organization and the European Commission. Discharge limits are set using regulatory requirements. Dow had zero incidents of non- compliance with discharge limits in 2022. Priority compounds are a subset of VOCs that contain carcinogenic, mutagenic and reproductive hazards and/or are persistent and bioaccumulative in the environment. Emissions of Priority Compounds to Air and Water decreased in 2022 compared with 2021 due to a reduction in unplanned events, a decrease in planned maintenance activities compared with 2021 and production changes. In 2022, Dow's emissions of priority compounds were 197 metric



tons compared to 227 in 2021
------------------------------

# W1.3

#### (W1.3) Provide a figure for your organization's total water withdrawal efficiency.

	Revenue	Total water withdrawal volume (megaliters)	Total water withdrawal efficiency	Anticipated forward trend
Row 1	56,900,000,000	2,876,422	19,781.5202359042	Dow has set a target to reduce freshwater intake intensity at KWSS by 20% from its 2015 baseline before the end of 2025. Future trends: We are working diligently at meeting both decarbonization and water withdrawal targets. Dow is investing in projects to reduce our freshwater intensity.

# W-CH1.3

(W-CH1.3) Do you calculate water intensity for your activities in the chemical sector? Yes

# W-CH1.3a

(W-CH1.3a) For your top five products by production weight/volume, provide the following water intensity information associated with your activities in the chemical sector.





#### About the same

#### **Please explain**

Compared to the previous year the intensity is the same (2022: 2.7). The ethylene production vs water used in ethylene production did not vary significantly. We define changes below 15% as "about the same", changes between 15 % and 30% as "higher"/"lower" and changes of more than 30% as "much higher"/"much lower".

#### Choice of numerator and denominator:

Dow chose a numerator and denominator that aligns with the Life Cycle Assessment (LCA) methodology ReCiPe2016 to determine water consumed in cubic meters per ton of product. Life Cycle Assessments (LCA) are useful method for examining the total environmental water use impact of a process, product, or service. Key inputs and boundaries for the gate- to- gate water footprint include water associated with steam consumption, cooling activities, fire water, cleaning and other miscellaneous uses.

#### Boundary and explanation:

Dow's Terneuzen site was chosen to represent the water intensity for Dow's top five products because it is our largest European site, manufactures a product mix that is representative of Dow's top global products, and is a KWSS that has one of Dow's most accurate water balances.

How the metrics are used internally/Strategy in place to reduce water intensity: Water intensity is a key metric captured currently within Dow's World Leading Operation goals with the specific target of decreasing freshwater intake intensity by 20% at key water stress sites. This target is a corporate target translated into individual site freshwater intake strategies driving the required attention to this metric. As an example: Dow Terneuzen intends to cease importing any freshwater by 2025, instead re-using only locally sourced water. This includes exploring methods to capture and process local water sources such as rainwater or other industrial streams currently discharged to the river, as well as expanding its usage of Terneuzen municipal wastewater. Not only would the usage of these additional sources eliminate the need for water from remote sources for Dow's industrial usage, but it could secure an additional 6-8 million m3/year of water for use by various sectors such as agriculture or industry. Dow's goal is for Terneuzen reach 100% water circularity by 2025.

#### Anticipated Future trends:

Although Dow has the intent to reduce water intensities, climate impact, growth opportunities and links between low carbon technologies and water make it difficult to predict

#### **Product type**

Bulk organic chemicals



#### Product name

Propylene

Water intensity value (m3/denominator)

2.7

#### Numerator: water aspect

Total water consumption

#### Denominator

Ton

#### Comparison with previous reporting year

About the same

#### **Please explain**

Compared to the previous year the intensity is the same (2022: 2.7). The propylene production vs water used in propylene production did not vary significantly. We define changes below 15% as "about the same", changes between 15 % and 30% as "higher"/"lower" and changes of more than 30% as "much higher"/"much lower".

Choice of numerator and denominator:

Aligns with the Life Cycle Assessment (LCA) methodology ReCiPe2016 to determine water consumed in cubic meters per ton of product. Life Cycle Assessments (LCA) are useful method for examining the total environmental water use impact of a process, product, or service. Key inputs and boundaries for the gate- to- gate water footprint include water associated with steam consumption, cooling activities, fire water, cleaning and other miscellaneous uses.

#### Boundary and explanation:

Dow's Terneuzen site was chosen to represent the water intensity for Dow's top five products because it is our largest European site, manufactures a product mix that is representative of Dow's top global products, and is a KWSS that has one of Dow's most accurate water balances.

How the metrics are used internally/Strategy in place to reduce water intensity: Water intensity is a key metric captured currently within Dow's World Leading Operation goals with the specific target of decreasing freshwater intake intensity by 20% at key water stress sites. This target is a corporate target translated into individual site freshwater intake strategies driving the required attention to this metric. As an example: Dow Terneuzen intends to cease importing any freshwater by 2025, instead re-using only locally sourced water. This includes exploring methods to capture and process local water sources such as rainwater or other industrial streams currently discharged to the river, as well as expanding its usage of Terneuzen municipal wastewater. Not only would the usage of these additional sources eliminate the need for water from remote sources for Dow's industrial usage, but it could secure an additional 6-8 million m3/year of water for use by various sectors such as agriculture or industry. Dow's goal is for Terneuzen reach 100% water circularity by 2025.



Anticipated Future trends:

Although Dow has the intent to reduce water intensities, climate impact, growth opportunities and links between low carbon technologies and water make it difficult to predict

#### **Product type**

Bulk organic chemicals

#### Product name

LDPE

#### Water intensity value (m3/denominator)

2.8

#### Numerator: water aspect

Total water consumption

#### Denominator

Ton

#### Comparison with previous reporting year

About the same

#### Please explain

Compared to the previous year the intensity is the same (2022: 2.8). The LDPE production vs water used in LDPE production did not vary significantly. We define changes below 15% as "about the same", changes between 15 % and 30% as "higher"/"lower" and changes of more than 30% as "much higher"/"much lower".

Choice of numerator and denominator:

Aligns with the Life Cycle Assessment (LCA) methodology ReCiPe2016 to determine water consumed in cubic meters per ton of product. Life Cycle Assessments (LCA) are useful method for examining the total environmental water use impact of a process, product, or service. Key inputs and boundaries for the gate- to- gate water footprint include water associated with steam consumption, cooling activities, fire water, cleaning and other miscellaneous uses.

#### Boundary and explanation:

Dow's Terneuzen site was chosen to represent the water intensity for Dow's top five products because it is our largest European site, manufactures a product mix that is representative of Dow's top global products, and is a KWSS that has one of Dow's most accurate water balances.

How the metrics are used internally/Strategy in place to reduce water intensity: Water intensity is a key metric captured currently within Dow's World Leading Operation



goals with the specific target of decreasing freshwater intake intensity by 20% at key water stress sites. This target is a corporate target translated into individual site freshwater intake strategies driving the required attention to this metric. As an example: Dow Terneuzen intends to cease importing any freshwater by 2025, instead re-using only locally sourced water. This includes exploring methods to capture and process local water sources such as rainwater or other industrial streams currently discharged to the river, as well as expanding its usage of Terneuzen municipal wastewater. Not only would the usage of these additional sources eliminate the need for water from remote sources for Dow's industrial usage, but it could secure an additional 6-8 million m3/year of water for use by various sectors such as agriculture or industry. Dow's goal is for Terneuzen reach 100% water circularity by 2025.

Anticipated Future trends:

Although Dow has the intent to reduce water intensities, climate impact, growth opportunities and links between low carbon technologies and water make it difficult to predict

#### **Product type**

Bulk organic chemicals

#### Product name

LLDPE

#### Water intensity value (m3/denominator)

2.9

#### Numerator: water aspect

Total water consumption

#### Denominator

Ton

#### Comparison with previous reporting year

About the same

#### **Please explain**

Compared to the previous year the intensity is the same (2022: 2.9). The LLDPE production vs water used in LDDPE production did not vary significantly. We define changes below 15% as "about the same", changes between 15 % and 30% as "higher"/"lower" and changes of more than 30% as "much higher"/"much lower".

Choice of numerator and denominator:

Dow chose a numerator and denominator that aligns with the Life Cycle Assessment (LCA) methodology ReCiPe2016 to determine water consumed in cubic meters per ton of product. Life Cycle Assessments (LCA) are useful method for examining the total



environmental water use impact of a process, product, or service. Key inputs and boundaries for the gate- to- gate water footprint include water associated with steam consumption, cooling activities, fire water, cleaning and other miscellaneous uses.

Boundary and explanation:

Dow's Terneuzen site was chosen to represent the water intensity for Dow's top five products because it is our largest European site, manufactures a product mix that is representative of Dow's top global products, and is a KWSS that has one of Dow's most accurate water balances.

How the metrics are used internally/Strategy in place to reduce water intensity: Water intensity is a key metric captured currently within Dow's World Leading Operation goals with the specific target of decreasing freshwater intake intensity by 20% at key water stress sites. This target is a corporate target translated into individual site freshwater intake strategies driving the required attention to this metric. As an example: Dow Terneuzen intends to cease importing any freshwater by 2025, instead re-using only locally sourced water. This includes exploring methods to capture and process local water sources such as rainwater or other industrial streams currently discharged to the river, as well as expanding its usage of Terneuzen municipal wastewater. Not only would the usage of these additional sources eliminate the need for water from remote sources for Dow's industrial usage, but it could secure an additional 6-8 million m3/year of water for use by various sectors such as agriculture or industry. Dow's goal is for Terneuzen reach 100% water circularity by 2025.

#### Anticipated Future trends:

Although Dow has the intent to reduce water intensities, climate impact, growth opportunities and links between low carbon technologies and water make it difficult to predict.

#### **Product type**

Bulk organic chemicals

#### Product name

Benzene

#### Water intensity value (m3/denominator)

3.1

#### Numerator: water aspect

Total water consumption

#### Denominator

Ton

#### Comparison with previous reporting year



#### About the same

#### **Please explain**

Compared to the previous year the intensity is the same (2022: 3.1). The benzene production vs water used in benzene production did not vary significantly. We define changes below 15% as "about the same", changes between 15 % and 30% as "higher"/"lower" and changes of more than 30% as "much higher"/"much lower".

Choice of numerator and denominator:

Dow chose a numerator and denominator that aligns with the Life Cycle Assessment (LCA) methodology ReCiPe2016 to determine water consumed in cubic meters per ton of product. Life Cycle Assessments (LCA) are useful method for examining the total environmental water use impact of a process, product, or service. Key inputs and boundaries for the gate- to- gate water footprint include water associated with steam consumption, cooling activities, fire water, cleaning and other miscellaneous uses. Boundary and explanation:

Dow's Terneuzen site was chosen to represent the water intensity for Dow's top five products because it is our largest European site, manufactures a product mix that is representative of Dow's top global products, and is a KWSS that has one of Dow's most accurate water balances.

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#### Anticipated Future trends:

Although Dow has the intent to reduce water intensities, climate impact, growth opportunities and links between low carbon technologies and water make it difficult to predict

### W1.4

(W1.4) Do any of your products contain substances classified as hazardous by a regulatory authority?

#### Products contain hazardous substances



### W1.4a

# (W1.4a) What percentage of your company's revenue is associated with products containing substances classified as hazardous by a regulatory authority?

Regulatory classification of hazardous substances	% of revenue associated with products containing substances in this list	Please explain
Candidate List of Substances of Very High Concern for Authorisation above 0.1% by weight (EU Regulation)	Less than 10%	We believe global sales of substances listed on the Candidate List of substances of very high concern (SVHC) for Authorization above 0.1% by weight is a relevant metric for this survey, as it tracks CMR Cat 1, ED, and PBT.

# W1.5

#### (W1.5) Do you engage with your value chain on water-related issues?

	Engagement
Suppliers	Yes
Other value chain partners (e.g., customers)	Yes

# W1.5a

#### (W1.5a) Do you assess your suppliers according to their impact on water security?

Row 1

#### Assessment of supplier impact

Yes, we assess the impact of our suppliers

#### **Considered in assessment**

Supplier dependence on water Supplier impacts on water availability Supplier impacts on water quality Procurement spend

Number of suppliers identified as having a substantive impact

0

% of total suppliers identified as having a substantive impact Less than 1%

#### Please explain



In 2022, Dow assessed its supply chain using a comprehensive supplier sustainability risk mapping of over 20,000 suppliers, as well as via direct data collection from suppliers using EcoVadis, CDP, on-site audits and other forms of outreach. We received EcoVadis ratings for over 3,000 suppliers; the EcoVadis survey includes questions around water policies, metrics and quantitative objectives. No suppliers were found to have substantive water impacts necessitating immediate action. The threshold used to identify a supplier with substantive impacts is based on their EcoVadis rating (e.g. ratings below 45 points on the Environment pillar) or corrective action plan (improvement areas highlighted by EcoVadis).

# W1.5b

# (W1.5b) Do your suppliers have to meet water-related requirements as part of your organization's purchasing process?

	Suppliers have to meet specific water-related requirements	Comment
Row 1	No, but we plan to introduce water-related requirements within the next two years	Dow expects suppliers to comply with the Code of Conduct for suppliers provisions on environmental responsibility and pollution prevention. While not requesting specific water criteria in supplier selection, Dow aims to strengthen water-related assessments and relationship management for suppliers with identified water risks.

# W1.5d

(W1.5d) Provide details of any other water-related supplier engagement activity.

#### Type of engagement

Information collection

#### **Details of engagement**

Collect water management information at least annually from suppliers

Collect information on water-related risks at least annually from suppliers

Collect water quantity information at least annually from suppliers (e.g., withdrawal and discharge volumes)

Collect water quality information at least annually from suppliers (e.g., discharge quality, pollution incidents, hazardous substances)

Collect WASH information at least annually from suppliers

#### % of suppliers by number

26-50

% of suppliers with a substantive impact

None



#### Rationale for your engagement

Dow actively engages with suppliers to assess their water-related practices and policies, among other environmental, social and governance issues. Dow engaged with over 3,000 suppliers via EcoVadis in 2022 based on potential environmental, social and governance risks, spend, and/or the suppliers' engagement with Together for Sustainability (TfS).

#### Impact of the engagement and measures of success

The EcoVadis questionnaire gathers valuable information on supplier objectives and policies specifically related to water management. The questionnaire also includes quantitative metrics on water usage, providing Dow with insights into the water footprint of its supply chain. By analyzing the responses received through the EcoVadis platform, Dow can identify areas that require improvement, develop corrective action plans, and collaborate with suppliers to enhance water stewardship throughout the value chain. This process enables Dow to prioritize suppliers for further engagement and foster a culture of continuous improvement in water conservation and sustainability.

#### Comment

#### Type of engagement

Innovation & collaboration

#### **Details of engagement**

Encourage/incentivize suppliers to work collaboratively with other users in their river basins toward sustainable water management

#### % of suppliers by number

1-25

#### % of suppliers with a substantive impact

None

#### Rationale for your engagement

To ensure that none of Dow's products or materials inadvertently escape into aquatic environments, all of Dow's logistics and external manufacturing suppliers are required to take part in Operation Clean Sweep®.

#### Impact of the engagement and measures of success

Operation Clean Sweep is an initiative aimed at preventing accidental spills or leaks of plastic pellets, flakes, and powders into the environment. The primary focus of Operation Clean Sweep is to prevent pellet loss at various stages of the plastic supply chain, including production, transportation, storage, and handling. Through this program, Dow's suppliers commit to following a set of guidelines and principles, including implementing effective containment measures, conducting employee training on proper handling and spill prevention, and regularly evaluating and improving their pellet management practices.



#### Comment

Type of engagement

Information collection

#### **Details of engagement**

Other, please specify

### % of suppliers by number

1-25

#### % of suppliers with a substantive impact

None

#### Rationale for your engagement

Dow engaged with Together for Sustainability (TfS) to conduct in-person audits on suppliers. These audits assess issues including Management, Environmental, Health & Safety, Labour & Human Rights and Governance performance. Dow expects suppliers to provide freshwater, sanitation and hygiene to their workforce, in line with proper labor conditions.

#### Impact of the engagement and measures of success

There were no critical findings in Dow's TfS audits in 2022.

#### Comment

# W1.5e

(W1.5e) Provide details of any water-related engagement activity with customers or other value chain partners.

#### Type of stakeholder

Customers

#### Type of engagement

Education / information sharing

#### **Details of engagement**

Educate and work with stakeholders on understanding and measuring exposure to water-related risks

Run an engagement campaign to educate stakeholders about your water-related performance and strategy

#### Rationale for your engagement



Dow partnered with one of our key customers to review water stress levels associated with locations where product was being manufactured. We reviewed mitigation measures and exchanged information on both water stress methodologies and improvements to tracking of water stress.

#### Impact of the engagement and measures of success

Dow implemented discussions with each business to help each business engage on water stress at a business level. Although certain sites may not reach the financial risk defined by the Company, it may make sense for the business to engage with those specific sites. Measure of success is for the business to have defined appropriate mitigation plans for business continuity in the face of an agreed level of water stress at that specific site (ex. mitigation the potential low product availability by supplying key customer from another site)

#### Type of stakeholder

Customers

#### Type of engagement

Innovation & collaboration

#### **Details of engagement**

Collaborate with stakeholders on innovations to reduce water impacts in products and services

#### Rationale for your engagement

Dow is working to deliver a sustainable future through its materials science expertise and collaboration with its customers. By constantly innovating how it sources, manufactures and delivers material solutions, Dow helps customers achieve their goals and create a better tomorrow. Dow has an impact on safer materials directly through the manufacture and delivery of solutions and indirectly through the chemicals that are sourced. Our approach is to engage with customers driving the sustainability attributes of our product and technology portfolio to help our customers and value chain partners deliver more sustainable solutions to the world we share. Such an example is designing products that make more efficient use of water in both our manufacturing process and the downstream value chain such as antifoams agents reducing the amount of rinsing required for our customers.

#### Impact of the engagement and measures of success

At Dow, our ambition is clear – to be the most innovative, customer-centric, inclusive and sustainable materials science company in the world. Guided by that ambition, we are using our expertise, products, technologies and partnerships to meet the evolving demands of our customers while also leading the transition to a more sustainable and inclusive future. The impact of engaging on sustainability metrics such as water allows us to anticipate the significant changes facing our industry, by blending science and ingenuity, and by collaborating for greater impact, we are generating long term value for our shareholders, customers and wider society, and creating a resilient company built.



The measure of our success lies in securing both access to capital, retaining customers and increased revenue.

# **W2. Business impacts**

# W2.1

(W2.1) Has your organization experienced any detrimental water-related impacts? Yes

# W2.1a

(W2.1a) Describe the water-related detrimental impacts experienced by your organization, your response, and the total financial impact.

Country/Area & River basin United States of America Other, please specify San Jacinto and Trinity River Systems

#### Type of impact driver & Primary impact driver

Chronic physical Inadequate infrastructure

#### **Primary impact**

Impact on company assets

#### **Description of impact**

The impact resulted in additional costs associated with manufacturing assets. The infrastructure (pipes conveying various types of water - potable, process, wastewater, condensate- and instrumentation) were not designed/installed to handle freezing conditions for multiple days. Winter storm Elliott which occurred in December 2022 presented freezing conditions. The reported financial impact is a total of all expenses associated with the repairs of both pipes and instrumentation associated with the event.

#### **Primary response**

Other, please specify Improve maintenance procedures and freeze protection of critical equipment

#### **Total financial impact**

13,624,326

#### **Description of response**

The response is associated with Dow manufacturing assets only as it involves improving the ability of the installed infrastructure and instrumentation to either be properly prepared for an upcoming freeze event to avoid any damage or to be able to be



insulated adequately if required to stay up and running during severe cold conditions. The repairs have been mostly completed (remaining costs associated with repairs are 2.5% overall cost of project). Where feasible and justified, the infrastructural assets have been improved in their ability to withstand freezing conditions and therefore should reduce the potential of future financial and operational impacts. Some of the repairs are still underway.

#### Country/Area & River basin

United States of America Other, please specify Guadalupe River

#### Type of impact driver & Primary impact driver

Acute physical Drought

#### **Primary impact**

Increased operating costs

#### **Description of impact**

Water flow was an issue with Texas rivers in the summer of 2022 amid record drought and stretches of 100-degree F temperatures. The Seadrift manufacturing process withdraws water from the Guadalupe River for its water needs which include cooling, steam generation, potable water, fire water and other process water. The impact resulted in additional spending to reach desired water quality. Additional water treatment equipment was leased to address declining water quality in the river, primarily from elevated content of silica. The equipment was brought to the site starting on August 17th, 2022, and remained on site until the end of the reporting year. The financial impact reported below represents the additional costs associated with the leased equipment and required power and chemicals to operate the water treatment units to ensure the water quality met the required specs.

#### Primary response

Develop drought emergency plans

#### **Total financial impact**

2,257,956.3

#### **Description of response**

The primary response strategy (leasing of additional water treatment equipment) was initiated on August 17, 2022, and remains on site because the quality of the river water is still inadequate. The additional water treatment equipment was sufficient to meet the water quality requirement of the manufacturing processes. The primary response was put in place as a temporary solution. As a secondary response, Dow is currently investigating the need and economic justification for alternative technologies and storage capacity to prevent future financial and operational cost impacts. The



secondary response strategy involves discussions with other water users within the watershed and may result in collective action initiatives.

#### Country/Area & River basin

United States of America Other, please specify Guadalupe River

#### Type of impact driver & Primary impact driver

Chronic physical Other, please specify Seasonal restricted fresh water supply results in an increase of the temperature in cooling water supply system/basins leading to loss of production.

#### **Primary impact**

Reduction or disruption in production capacity

#### **Description of impact**

Seadrift site's cooling infrastructure uses cooling ponds to supply cooling water to downstream manufacturing processes. During peak summer conditions (from July to October of 2022) for certain years accompanied by drought conditions, seasonal restricted fresh water supply can result in an increase of the temperature in cooling water supply system/basins leading to loss of production volume. The financial impact reported is tied to the loss margin tied to production output reduction.

#### **Primary response**

Amend the Business Continuity Plan

#### **Total financial impact**

8,782,253

#### **Description of response**

The Seadrift site has implemented several responses related to high water-cooling temperature during summer months beyond amending the business continuity plan by adjusting production volume. This includes past investments and improved maintenance of existing water-cooling technology (cooling ponds) which has resulted in reducing the level of impact while not eliminating it. To prevent future financial and operational impacts, Dow is looking at alternative cooling technologies (ex. cooling towers), improving forecasting and monitoring of water withdrawal temperature, engaging with local watershed stakeholders to develop watershed level improvements, securing alternative water supply such as increased internal water recycling and additional storage capacity. The total financial impact was calculated by defining the potential loss in sales tied to the reduction in production volume by not being able to meet the cooling demand associated with the impacted manufacturing processes.



# W2.2

# (W2.2) In the reporting year, was your organization subject to any fines, enforcement orders, and/or other penalties for water-related regulatory violations?

	Water-related regulatory violations	Comment
Row 1	No	Dow had zero incidents of non-compliance with discharge limits in 2022. The definition of water-related regulatory violations follows Dow's GRI 303-2018 disclosure indicating incidents associated with priority substances.

# **W3. Procedures**

# W3.1

# (W3.1) Does your organization identify and classify potential water pollutants associated with its activities that could have a detrimental impact on water ecosystems or human health?

	Identification and classification of potential water pollutants	How potential water pollutants are identified and classified
Row 1	Yes, we identify and classify our potential water pollutants	Dow's surface water protection standard defines the policy and processes that identify, classify water pollutants with potential impacts to watershed/ecosystems or human health. This applies to all surface drainage of every site. The UN Globally Harmonized System which includes physical, health and environmental hazards is used to classify and label all chemicals. The potential pollutants include the following major categories: organic pollutants, pathogens (ex. cyanobacteria), suspended solids, inorganic pollutants (ex. metals), thermal pollution and other. The control measures must be documented: description/map of site drainage areas with the classified pollutant, method of identification of potential pollutants by sheen), method to identify acceptable off-site surface water drainage pollutant levels (ex. drinking water quality limits), methods or procedures to contain or manage pollutants on site (ex. spill response), methods or procedures to treat drainage. Every site abides by specific discharge permits. Authorities set standards based on national or supranational regulation. Effluent standards are set on pollutant properties and current capacity of the receiving water body. Dow's Environmental Technology Center and Operations Regulatory Services assist with the implementation of the



	standard including analytical methods/metrics/ indicators for the
	potential pollutants, training and auditing.

# W3.1a

(W3.1a) Describe how your organization minimizes the adverse impacts of potential water pollutants on water ecosystems or human health associated with your activities.

#### Water pollutant category

Other synthetic organic compounds

#### Description of water pollutant and potential impacts

BOD/TOC/COD can come from a variety of sources, such as the industrial process itself and/or the biomass that is used in the wastewater treatment plant (WWTP). The energy/food source that the microbes use is monitored to assess the amount of TOC being released to the environment. TOC can be a limiting factor in algae and/or bacterial growth. An excess of TOC can lead to algae and/or bacterial growth resulting in the usage of oxygen from the waterway. Therefore, an excess of TOC is a contributing factor in the loss of oxygen for other aquatic species. BOD is also monitored to understand the oxygen. All sites manage their wastewater discharges to the level required in their permit. These permit values are based on the units determined by the regulatory agency involved and can be Chemical Oxygen Demand (COD), Total Organic Carbon (TOC) or Biological Oxygen Demand. Dow estimates the COD discharges on annual basis from the total wastewater discharge (including water sent for treatment to third party) value and a base Chemical Oxygen Demand value for our sites of 100 PPM. In 2022, 11824 metric tonnes of COD were estimated to have been discharged in association with Dow's manufacturing facilities.

#### Value chain stage

Direct operations Supply chain

#### Actions and procedures to minimize adverse impacts

Assessment of critical infrastructure and storage condition (leakages, spillages, pipe erosion etc.) and their resilience Resource recovery Implementation of integrated solid waste management systems

Industrial and chemical accidents prevention, preparedness, and response

Requirement for suppliers to comply with regulatory requirements

Discharge treatment using sector-specific processes to ensure compliance with regulatory requirements

Upgrading of process equipment/methods

#### Please explain



Actions taken to minimize adverse impacts include monitoring of levels in water discharge, ensuring treatment levels meets the most effective technology and are well maintained, meet compliance with effluent quality standards and measures are in place to prevent spillage, leaching, and leakages. BOD/TOC/COD is monitored analytically via sampling and instrumentation. This can either be a lab procedure and/or depending on the site, the system may be on-line (meaning taking a slip stream from the process and analysing at a certain frequency). BOD testing is very specific and takes numerous days to complete. Therefore, most plants monitor oxygen levels using dissolved oxygen probes in an on-line fashion. Some sites will complete respirometry analysis to gain an understanding of oxygen demand along with the microbe's growth. TOC and dissolved oxygen (DO) are monitored at various parts of the process. BOD is mostly monitored as a compliance parameter. Each operating site is accountable for meeting effluent requirements and for having monitoring capabilities in place to meet these limits. Measurement of results & success: Dow measures total emission of BOD/TOC at a facility level. We define success by meeting our permitted levels while striving to continuously reduce quantities of TOC/BOD.

#### Water pollutant category

Other physical pollutants

#### Description of water pollutant and potential impacts

Total suspended solids (TSS) can come from run-off or microbial growth. Depending on the nature of the TSS it can be biotic or abiotic. There can be a variety of issues with high levels of TSS such as increased water temperature through sunlight adsorption, decreased sunlight for aquatic plant activity through turbidity or the TSS can serve as a carbon source for microbial growth which then leads to lower oxygen levels for aquatic life.

#### Value chain stage

**Direct operations** 

#### Actions and procedures to minimize adverse impacts

Assessment of critical infrastructure and storage condition (leakages, spillages, pipe erosion etc.) and their resilience Implementation of integrated solid waste management systems Industrial and chemical accidents prevention, preparedness, and response

Requirement for suppliers to comply with regulatory requirements

Discharge treatment using sector-specific processes to ensure compliance with regulatory requirements

Upgrading of process equipment/methods

#### **Please explain**

Actions taken to minimize adverse impacts include monitoring of levels in water discharge, ensuring treatment levels meets the most effective technology and well maintained, meet compliance with effluent quality standards and measures are in place to prevent spillage, leaching, and leakages. Dow measures TSS at a facility level or is



measured by third party when wastewater is transferred for treatment. We define success by meeting our permitted levels while striving to continuously reduce TSS. Dow does not track TSS at a global level.

#### Water pollutant category

Nitrates

#### Description of water pollutant and potential impacts

Nitrogen and Phosphorus are common chemical elements found in many molecules used in the chemical industry, ie. ammonia, a building block of many chemical products (ie. plastics, fertilizer). Nitrogen and phosphorus are macronutrients and depending on the system can be limiting factors in the growth of microbial communities. Nitrogen and phosphorus are not harmful in normal amounts to aquatic species; it is the excess microbial growth they can cause when they are limiting nutrients which leads to oxygen depletion and/or sunlight blockage to other aquatic species. Nitrogen and phosphorus are unique in that biological systems of Waste Water Treatment Plants need these nutrients in certain amounts for the biomass to break down the other carbon components; however, at the same time one needs to avoid excess use that causes problems for the receiving body of water. From a global perspective, Dow tracks nitrogen and phosphorus as part of total chemical emissions. Chemical emissions are any release or discharge to the air or water of any pollutant from a facility. The chemical emissions category is largely driven by emissions from our wastewater treatment operations at our large integrated sites. These emissions also include the posttreatment chemical emissions from our industrial park tenant companies. In 2022 Emissions to Air and Water decreased (14,422 metric tons) vs. 2021 (15,256 metric tons) due to lower volumes of effluent sent for treatment.

#### Value chain stage

Direct operations Supply chain

#### Actions and procedures to minimize adverse impacts

Requirement for suppliers to comply with regulatory requirements Discharge treatment using sector-specific processes to ensure compliance with regulatory requirements

Upgrading of process equipment/methods

#### **Please explain**

Specific limits associated with nitrogen and phosphorus as a water pollutant are set for each facility. The impacts associated with that water pollutants are considered in discussions with the regulating body in adopting specific discharge limits. The limits are then prescribed by the regulatory body and incorporated as part of the discharge permit for that facility. As part of receiving a permit limit, Dow defines the required water treatment technologies to abide by that limit, the procedures to operate within the limits and the analytical methods associated with tracking of that water pollutant parameter. Excursions are reviewed and appropriate changes are executed. Phosphorus is



measured normally as either total phosphorus or as orthophosphorus. Nitrogen causes problems for the receiving body of water. monitored in a variety of forms such as ammonia, nitrate, total nitrogen, and Total Kjeldahl Nitrogen (TKN) which is the sum of organic nitrogen and ammonia. These are monitored throughout the process. Each operating site is accountable for meeting permit discharge limits and has monitoring capability in place to meet these limits. Dow measures nitrogen and phosphorous at a facility level. We define success by meeting our permitted levels while striving to continuously reduce quantities. Actions taken to minimize adverse impacts include monitoring from both Dow and third party, ensuring treatment levels meets the most effective technology and well maintained.

#### Water pollutant category

Other synthetic organic compounds

#### Description of water pollutant and potential impacts

Organic pollutants can be created directly as part of the production process or as an impurity. While there are processes to limit the amount sent to the wastewater treatment plant (WWTP), residual quantities In most instances the organic molecule is a food source for the aerobic or anaerobic part of the WWTP; however, it is not 100 percent consumed. Dow also accounts on a yearly basis for the total chemical emissions (organic and inorganic). Chemical emissions are any release or discharge to the air or water of any pollutant from a facility. The chemical emissions category is largely driven by emissions from Dow's wastewater treatment operations at its large integrated sites. This data excludes NOx, SOx, carbon monoxide, CO2, particulates, methane, hydrogen, nitrogen, oxygen, water, aluminum and certain salts. These emissions also include the post-treatment chemical emissions from Dow's industrial park tenant companies. The toxicological effect of these components to aquatic life varies and is particular t Within Dow's direct operations, specific limits associated with organic pollutants are managed through specific discharge permits set by the responsible regulatory body. The water discharge permit defines the required water treatment technologies, the procedures to operate within the limits and the analytical methods associated with tracking of that water pollutant parameter to minimize adverse impacts.

#### Value chain stage

Direct operations Supply chain Product use phase

#### Actions and procedures to minimize adverse impacts

Assessment of critical infrastructure and storage condition (leakages, spillages, pipe erosion etc.) and their resilience Resource recovery Beyond compliance with regulatory requirements Implementation of integrated solid waste management systems Industrial and chemical accidents prevention, preparedness, and response Provision of best practice instructions on product use



Water recycling Reduction or phase out of hazardous substances Requirement for suppliers to comply with regulatory requirements Discharge treatment using sector-specific processes to ensure compliance with regulatory requirements Upgrading of process equipment/methods

#### **Please explain**

Any excursion is reviewed, and mitigation measures executed which includes unintentional releases of organic compounds. Guidelines, policies, best practices and procedures for hazard assessment and risk mitigation aligned to Responsible Care® and in compliance with OSHA 18001 or ISO 45001 standards to minimize impacts are defined within Dow's Operating Discipline Management System. Organic pollutants are measured at a facility level and tracked as part of total chemical emissions at a corporate level. Chemical emissions are any release or discharge to the air or water of any pollutant. The chemical emissions category is largely driven by emissions from our wastewater treatment operations. These emissions also include emissions from our industrial park tenants. In 2022, chemical emissions decreased due to lower process issues caused by severe weather events that occurred in 2021. Other factors include increased plant reliability, a decrease in planned maintenance activities compared and reduced production. Success is defined by meeting regulatory requirements while striving to continuously reduce quantities. For example, the Safe Materials for a Sustainable Planet goal prioritizes substances of concern by taking strategic actions within our businesses to address all parts of the product life cycle, from investing in upstream manufacturing technologies to reducing facility emissions to restricting downstream uses of some substances and devising products with safer alternatives.

### W3.3

(W3.3) Does your organization undertake a water-related risk assessment?

Yes, water-related risks are assessed

# W3.3a

(W3.3a) Select the options that best describe your procedures for identifying and assessing water-related risks.

Value chain stage Direct operations Supply chain

Coverage Full

**Risk assessment procedure** 



Water risks are assessed as part of an established enterprise risk management framework

#### Frequency of assessment

Annually

#### How far into the future are risks considered?

More than 6 years

#### Type of tools and methods used

Tools on the market Enterprise risk management International methodologies and standards Other

#### Tools and methods used

Internal company methods External consultants

#### Contextual issues considered

Water availability at a basin/catchment level Water quality at a basin/catchment level Stakeholder conflicts concerning water resources at a basin/catchment level Water regulatory frameworks Status of ecosystems and habitats Access to fully-functioning, safely managed WASH services for all employees

#### Stakeholders considered

Customers Employees Investors Local communities NGOs Regulators Other water users at the basin/catchment level

#### Comment

A global water risk screening for at-risk and key water stressed sites using the most up to date World Resource Institute Aqueduct tool is completed annually. The frequency of analysis was modified in 2022 from the previous five years' time frame to reflect the heighten level and frequency of significant events tied to water. The full review will determine if the priority sites have changed (either to declassify or add a site). We are using tools such as Aqueduct<sup>™</sup> Water Risk Atlas and WWF water risk filter. The Site Water Stress and Risk Evaluation Methodology will also be completed if: A site has experienced water stress (quality and/or quantity) or anticipates growth at site which will demand significantly more freshwater or a change in water quality needs; Sites that are on the watch list will perform, with the support of the environmental technology center, a site-held water stress review on a yearly basis. Sites that are tagged as water stressed



(either Key Water Stressed or watched list) will advise the water SME of any changes. As one of the largest manufacturing companies in the world, we depend on a steady supply of water to create the products we manufacture. Both water availability and water quality are critical to Dow's operation. The global challenge of protecting this supply is addressed through a broad range of activities by the company - from understanding the specific watershed stressors to recognizing the needs of other water users which includes securing environmental flows. We have made significant progress in quantifying the risk and translating this into potential financial impact to our operations and embedding it in business decisions. Dow's Corporate Water Strategy defines best practices and technology advances while aligning business strategies and operation needs to meet water demands in concert with an understanding of each local water basin and key stakeholders. The Corporate Water Strategy is built to help drive the current programs and four water-based goals within Dow's 2025 Sustainability Goals: World Leading Operations, Advancing a Circular Economy, Leading the Blueprint and Valuing Nature. At Dow's six key water-stressed sites, recycling and reuse have been emphasized to reduce the water footprint, and the freshwater intake intensity with a clearly defined goal of 20% reduction by 2025 based on a 2015 base year.

# W3.3b

(W3.3b) Describe your organization's process for identifying, assessing, and responding to water-related risks within your direct operations and other stages of your value chain.

		Rationale for approach to risk assessment	Explanation of contextual issues considered	Explanation of stakeholders considered	Decision-making process for risk response
R 1	tow.	Dow completes a global water risk screening of all sites using the most up-to- date World Resource Institute Aqueduct tool and WWF Water Risk Filter every two years, every year for key water stress sites. Water stress sites. Water stress evaluations are performed if a site has experienced water quality and/or quantity stress or anticipates growth	Dow's water bodies risk assessment considers key critical contextual issues to review as the following: Water availability at a basin/catchment level, Water quality at a basin/catchment level, Stakeholder conflicts concerning water resources at a basin/catchment level, Water regulatory frameworks Status of ecosystems and habitats and Access to fully-	Recognizing that water is a resource requiring shared action, Dow is working to advance water stewardship across the enterprise – from supply chains to operations to product offerings. It is important to continue advancements in restoring watersheds and protecting ecosystems by exploring new opportunities with existing partnerships	Dow's water risk management approach recognizes that every site and every business is accountable for water while certain watersheds require additional measures to address specific water stress challenges. Dow locations have specific water action plans to address risk to operations given their dependence on
		that could impact	functioning, safely managed WASH	and collaborating across customers,	a stressed watershed. These



freshwater quantity	services for all	suppliers, communities	action plans include
or quality needs.	employees.	and other companies.	mitigations for local
			water scarcity or
			quality issues and
			consider the needs of
			other local users for
			freshwater.

# W4. Risks and opportunities

# W4.1

(W4.1) Have you identified any inherent water-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes, both in direct operations and the rest of our value chain

# W4.1a

# (W4.1a) How does your organization define substantive financial or strategic impact on your business?

Definition of substantive impact:

When assessing whether or not a water related risk or opportunity is substantive, Dow evaluates impacts related to elements such as the cost of water appropriation, impact on operating cost (e.g. raw water treatment costs, costs of complying with regulation), cost of investment in new technology to reduce water discharges, 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 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 waterrelated 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).

An example of a substantive water impact on our business is the availability of sufficient water. Several of Dow's production facilities are located in water-scarce areas and water shortages could impact normal production. Changes in average precipitation could have an impact on the availability and price of water. The Company has also put in place contingency plans and investment in infrastructure assets, particularly on the U.S. Gulf Coast, to better withstand severe weather and rising sea levels, and continues to study the long-term implications of changing climate parameters on water availability, plant siting issues and other impacts.



# W4.1b

# (W4.1b) What is the total number of facilities exposed to water risks with the potential to have a substantive financial or strategic impact on your business, and what proportion of your company-wide facilities does this represent?

	Total number of facilities exposed to water risk	% company- wide facilities this represents	Comment
Row 1	6	1-25	Dow has identified six of our manufacturing locations where its operations are located in a water-stressed watershed, have local water quality issues, have competition among local users for water, have some local knowledge of watershed challenges, and long-term projections.

# W4.1c

(W4.1c) By river basin, what is the number and proportion of facilities exposed to water risks that could have a substantive financial or strategic impact on your business, and what is the potential business impact associated with those facilities?

#### Country/Area & River basin

United States of America Brazos River

Number of facilities exposed to water risk

1

% company-wide facilities this represents 1-25

% company's total global revenue that could be affected

1-10

#### Comment

The site in Freeport is associated with seasonal water stress related risks that have a potential substantive financial impact. Financial impact studies on the impact of Freeport operations on global revenue have been completed and put the margin risk in the 1-5% range.


United States of America Other, please specify Guadalupe River

#### Number of facilities exposed to water risk

1

#### % company-wide facilities this represents

1-25

#### % company's total global revenue that could be affected

Less than 1%

#### Comment

The site in Seadrift is associated with water stress related risks mainly from salt intrusion during low river flows that have a potential substantive financial impact.

#### Country/Area & River basin

Argentina Other, please specify Sauce River

Number of facilities exposed to water risk

% company-wide facilities this represents 1-25

#### % company's total global revenue that could be affected

Less than 1%

#### Comment

The site in Bahia Blanca is associated with water stress related risks. The Sauce Chico River basin is located in the southwestern region of the Buenos Aires province in Argentina. The river originates in the Ventania Mountain system, and it runs through a huge plain without any permanent tributary. This river constitutes one of the major surface water resources which supplies to the agricultural livestock and human activities and industry in the region. The basin displays a large variability in its climatic conditions. Impacts in the past have been associated with low water quality from droughts.

#### Country/Area & River basin

Germany Other, please specify River Weiße Elster

Number of facilities exposed to water risk



1

#### % company-wide facilities this represents

1-25

#### % company's total global revenue that could be affected

Less than 1%

#### Comment

The site is located in Böhlen, Germany. It is associated with water stress related risks. The site's water supply from the "Weiße Elster" river is limited due to high sulfate concentrations especially in the summer months, The water in the "Witznitz" storage basin has a high biological load. The wastewater from the Böhlen site is discharged into a small river called "Faule Pfütze", where it represents the main water source. The legal requirements and thresholds for the discharge of wastewater have become increasingly strict over the years and are currently defined within the framework of the new water law permit. The targets and thus the implementation of the European Water Framework Directive will further tighten these specific water management condition.

#### Country/Area & River basin

Spain Ebro

#### Number of facilities exposed to water risk

1

#### % company-wide facilities this represents

1-25

### % company's total global revenue that could be affected

Less than 1%

#### Comment

The site is located in Tarragona, Spain. Roughly 25% of the freshwater withdrawal for the site originates from reclaimed water from two urban WWTP (Vila-Seca and Tarragona). The remaining freshwater demand originates from the Ebro River delta which suffers at times from salt intrusion.

#### Country/Area & River basin

Netherlands Other, please specify Rivers Rhine and Meuse

#### Number of facilities exposed to water risk

1



## % company-wide facilities this represents

1-25

### % company's total global revenue that could be affected

Less than 1%

#### Comment

The site is located in Terneuzen, Netherlands. Roughly 75% of the freshwater requirement from the site originates from reused/recycled water. The remaining 25% originates from the Biesboch River an important wetlands area identified as a water stress basin. The site aims to reach 100% circularity on freshwater withdrawal by 2025 which means that it would no longer withdraw any water from the Biesboch river.

## W4.2

(W4.2) Provide details of identified risks in your direct operations with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.

#### Country/Area & River basin

United States of America Brazos River

#### Type of risk & Primary risk driver

Acute physical Drought

#### Primary potential impact

Impact on company assets

#### **Company-specific description**

Dow's Freeport site in the Brazos River basin is the largest manufacturing site the company operates globally. It accounts for roughly 17% of Dow's total production. The Brazos River is subject to seasonal droughts on occasion. Dow's Freeport site, which sources its freshwater supply from the Brazos River, is at risk of experiencing production curtailments from potential limitations in freshwater supply. The site uses contract water purchases from storage reserves upstream but with additional water demand in the basin those contract reserves are becoming strained, in some years unavailable. To mitigate the financial risk, Dow has been and continues to: 1) Assess the current and future water demand versus availability in the Brazos River. 2) Investigate other additional water sources and intensive internal and external re-use 3) Conduct pilot projects of advanced water treatment options 4) Conduct economic assessments of alternative water supply options.

#### Timeframe

4-6 years



### Magnitude of potential impact

Medium-high

#### Likelihood

About as likely as not

## 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)

315,000,000

Potential financial impact figure - maximum (currency) 1,800,000,000

#### **Explanation of financial impact**

The quantification of the risk is based on the following scenario: Loss revenue for the Freeport site due to restrictions of water supply for the average duration of the drought. There is a production "load shedding" as the duration of the drought impact continues. further details regarding the figures are subject to confidentiality

#### Primary response to risk

Secure alternative water supply

#### **Description of response**

The first level of response to low flows in the river are to request releases from purchased storage reserves. Through agreements as part of the purchased contract, the site tactically releases the reservoir capacity during low flow conditions to keep the site water supply secure. To date this approach has been successful in preventing any drought impact events. Long term, Dow is actively investigating other alternatives to secure additional water (ex. reservoir capacity etc.).

#### Cost of response

5,000,000

#### **Explanation of cost of response**

Storage reserves are purchased at the system rate price of the Brazos River Authority who is the owner of the storage reserves. In, 2022 Dow purchased 66,000 acre-ft of storage reserves. Through the 2022 drought season roughly 38,000 acre-ft of those reserves were released from storage at Dow's request.

#### Country/Area & River basin

United States of America Other, please specify Guadalupe Watershed



#### Type of risk & Primary risk driver

Acute physical Drought

#### **Primary potential impact**

Increased operating costs

#### **Company-specific description**

Water flow was an issue with Texas rivers in the summer of 2022 amid record drought and stretches of 100-degree temperatures . The Seadrift manufacturing process withdraws water from the Guadalupe River for its water needs which include cooling, steam generation, potable water, fire water and other process water. Additional water treatment equipment was leased to address declining water quality in the river, primarily from elevated content of silica. The equipment was brought to the site starting on August 17th, 2022, and remained on site until the end of the reporting year. The site was also required to lower production due to high cooling water temperature within the cooling ponds.

#### Timeframe

1-3 years

#### Magnitude of potential impact

Low

#### Likelihood

About as likely as not

## 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)

0

#### Potential financial impact figure - maximum (currency)

18,500,000

#### **Explanation of financial impact**

The financial impact reported represents the additional costs associated with the leased equipment, required power and chemicals to operate the water treatment units to ensure the water quality met the required specs. and impact to production tied to high cooling temperature. This year's drought was reported to cost approximately \$11MM USD (of which approximately \$2MM USD was associated with additional water treatment). The site is still leasing the additional water treatment units with a forecasted cost for 2023 of approximately \$5.5MM USD for a total potential impact of \$18.5MM USD. Further details regarding the figures are subject to confidentiality.

#### Primary response to risk



Other, please specify Lease water treatment equipment, Lower production rates

#### **Description of response**

The initial response strategy (leasing of additional water treatment equipment) was initiated on August 17th, 2022, and remains on site as the quality of the river water is still inadequate. The additional water treatment equipment was sufficient to meet the water quality requirement of the manufacturing processes. This response was put in place as a temporary solution. The other aspect of this approach was to lower production rates as a response to the high cooling temperature. Dow is currently also investigating the need and economic justification for alternative technologies and storage capacity to prevent future financial and operational cost impacts. This strategy involves discussions with other water users within the watershed and may result in collective action initiatives.

#### **Cost of response**

2,257,956.3

### Explanation of cost of response

Cost of equipment lease.

### W4.2a

(W4.2a) Provide details of risks identified within your value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.

#### Country/Area & River basin Germany

Rhine

Stage of value chain

Supply chain

#### Type of risk & Primary risk driver

Acute physical Drought

#### **Primary potential impact**

Increased production costs due to changing input prices from supplier

#### **Company-specific description**

Dow's Lauterbourg, France (France S.A.S Port du Rhin - BP 30026) site manufactures products associated with the Dow Coatings Materials and Dow Plastic Additives businesses. The site depends on the adjacent river Rhine for receiving raw materials via barges. Barges are the preferred mode of transportation from a cost and carbon footprint perspective. Climatic conditions are causing events of both high and low water



levels in the Rhine River, making parts of it unnavigable during certain times. Max water levels prevent us from sailing on the river. Low water levels either reduce the capacity of shipments or prevent sailing. The level and intensity of these events is increasing. In such cases, products are shipped by truck. In recent years, this has occurred for 10-15 weeks per year where truck mode is required. Shipments by truck are in general 5 times more expensive than barge (ie. On average spending \$150/MT versus \$35/MT ). The primary response and mitigation measures by the site have limited the overall impacts (financial, EH&S, reliability of operation) to the site. A switch in raw material supply chain has also lowered the overall financial impact. Dow continues to monitor the situation closely. The site is also evaluating rail transportation. It is important to note that the site has not suffered from any other water related impacts. It does not use water from the Rhine River for any other manufacturing activity.

Suppliers such as BASF are also implementing mitigation plans that lowers the associated risk with Dow's raw material appropriation. The existing mitigation measures are therefore appropriate.

#### Timeframe

1-3 years

#### Magnitude of potential impact

Low

#### Likelihood

Likely

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)

0

#### Potential financial impact figure - maximum (currency)

1,200,000

#### **Explanation of financial impact**

The potential financial impact is increased costs due to transporting via trucks versus barges. The potential financial impact was calculated using the difference in shipping from truck to barges per metric ton for a given year. (Roughly 115\$/MT delta) for the worst year on record to date (2020). This is potential so there may be years without drought or floods and all raw materials is received via barges and the financial impact would be \$0. The potential financial impact value was derived by increasing the worst case to date by 20% Further details regarding the figures are subject to confidentiality Life cycle thinking and tools are used to support changes to processes including transportation selection to ensure that the environmental profile is understood. E.g. a change from truck to barge transportation may impact carbon footprint.



#### Primary response to risk

Supplier engagement

Other, please specify

Selecting alternative more of transport for product and raw material

#### **Description of response**

The primary response includes:

Close monitoring of the water levels of the Rhine by Dow's Marine Team. They are using two measurement sources to stay aware of the water level changes. -Direct communication with our barge carrier, Interstream Barging. As soon as water levels are reached that might impact our operations, they reach out to the Marine planner and advise us on options.

-Monitor daily the current level as well as the forecasted levels of the Rhine River. Secondly, switch to truck shipment during those situations.

The site has mitigated the risk by switching from barges to trucks when the level in the Rhine is too low. A switch in raw material supply chain has also lowered the overall financial impact. Measures have been taken in limiting this risk in the future by defining another mode of transportation by rail. The total financial impact was calculated by comparing the price difference between shipping and receiving materials by trucks compared to barges. The response and measures in place continue to be appropriate for the associated impacts to date. This response has been very effective and easily put in place. Dow stands ready to move to a rail system should the financial burden justify it. The capital investment associated with the system is roughly \$3 Million.

#### **Cost of response**

1,000,000

#### Explanation of cost of response

The figure of \$1,000,000 represents the potential additional costs paid per year associated with receiving raw materials by truck as opposed to barges.

### W4.3

## (W4.3) Have you identified any water-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes, we have identified opportunities, and some/all are being realized

### W4.3a

(W4.3a) Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business.

Type of opportunity Resilience



#### Primary water-related opportunity

Other, please specify

Preserving shared resources through circular water

#### Company-specific description & strategy to realize opportunity

At our Terneuzen site in The Netherlands, progress continues in achieving 100% water circularity by 2025. This would eliminate withdrawals of fresh river water from the Biesbosch area near the confluence of the Rhine and Meuse Rivers, which is also the location of a Ramsar wetland. By eliminating the dependency on virgin freshwater from the Biesboch River, Dow secures a consistent source of water, reducing the physical risk to ongoing operations. Additionally, as the Biesboch River is also used as drinking water for the local community, the circularity actions also reduce the reputational risk aligned to the sensitivity of the habitat and freshwater availability. As part of this long-term plan, Dow conducted a project in partnership with Evides and the regional water board, who are owners of Terneuzen's wastewater treatment facility (WWTF). The pilot objective was to process sources of water, which included Dow's private wastewater treatment plant and Terneuzen's municipal WWTF. The pilot ran through August 2022. Full-scale implementation is planned for the end of 2024.

In June 2020, Dow, Evides, U Gent and HZ University of Applied Sciences (Vlissingen, The Netherlands) launched a new EU Horizon 2020 project entitled AquaSPICE. This project involves 29 partners throughout Europe who aim to materialize circular water use in European process industries, foster awareness in resource efficiency and deliver solutions for industrial applications. The project will eliminate the use of 4.5MM m3/yr of freshwater intake, moving the site to nearly 100% of its 22.5MM m3/yr present demand to recycled water sources. Two of Dow's sites will be participating: Terneuzen, Dow's largest site in Europe, and Böhlen (Germany). Böhlen and Terneuzen are striving to reduce their freshwater intake intensity by enhancing the internal recycle of various process streams, including cooling tower blowdown and dilution steam blowdown streams and treating a next level of site water management by using smart monitoring algorithms and control on raw water, discharge and recycle streams.

#### Estimated timeframe for realization

1 to 3 years

#### Magnitude of potential financial impact

Medium-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) 6,000,000
- Potential financial impact figure maximum (currency) 8,000,000



#### **Explanation of financial impact**

The \$6-8 Million refers to Dow's portion of the capital investment which will be in place by 2025. This is defined within Dow's contract with a third party (Evides). The new water treatment facilities which make use of alternative sources of water will get us close (~ 95%) to the goal of 100% circularity on water withdrawal. Dow will also pay an annual fee and have long term lease of assets. The investment and annual fees result in a positive Net Present Value as it results in a higher water quality to Dow enabling significant savings.

## W5. Facility-level water accounting

### W5.1

(W5.1) For each facility referenced in W4.1c, provide coordinates, water accounting data, and a comparison with the previous reporting year.

## Facility reference number Facility 1 Facility name (optional) **Freeport Texas** Country/Area & River basin United States of America Brazos River Latitude 28.95372 Longitude -95.358498 Located in area with water stress Yes Total water withdrawals at this facility (megaliters/year) 850,325 Comparison of total withdrawals with previous reporting year About the same Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes 118,778 Withdrawals from brackish surface water/seawater 688,854



Withdrawals from groundwater - renewable 336

- Withdrawals from groundwater non-renewable
- Withdrawals from produced/entrained water
- Withdrawals from third party sources 42,357
- Total water discharges at this facility (megaliters/year) 915.526
- Comparison of total discharges with previous reporting year About the same
- Discharges to fresh surface water

0

- Discharges to brackish surface water/seawater 858,556
- **Discharges to groundwater**

#### 0

Discharges to third party destinations 56.970

## Total water consumption at this facility (megaliters/year)

34,013

## Comparison of total consumption with previous reporting year

#### Much lower

#### **Please explain**

Changes: water consumption is lower due to a methodology change. In 2022, Dow conducted a study on metered, calculated and estimated water consumption associated with both evaporative losses and process activities at representative and critical water sites. The results of the study indicated that on average, Dow consumes 4% of total water withdrawn. Dow uses this 4% as a generally accepted estimate to calculate total water consumption for all sites. This approach is preferred as the simple equation of water consumption = water withdrawal – water discharge is not representative due to the aggregation of measurement uncertainties of water withdrawals and water discharges and unallocated water inflows/outflows in open conveyance systems. Freeport's water consumption is mainly tied to cooling activities. Dow uses both seawater and freshwater to perform cooling activities. The facilities use one-pass cooling and cooling towers. There is inherent large variability within this sites water accounting due to the large volume of open conveyance systems. It also supplies water



to third-party tenants. This year continued effort in water conservation includes lower water footprint water treatment technologies. We define changes below 15% as "about the same", 15%-30% as "higher or lower" and >30% as "much higher or lower". Future Trends: At this time, no significant changes are expected but future growth activities or changes in product manufacturing may occur.

#### Facility reference number

Facility 2

#### Facility name (optional)

Terneuzen, Netherlands

#### Country/Area & River basin

Netherlands Other, please specify Biesboch River

#### Latitude

51.3323

#### Longitude

3.8324

#### Located in area with water stress

Yes

## Total water withdrawals at this facility (megaliters/year) 361,077

#### Comparison of total withdrawals with previous reporting year About the same

## Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes

8

## Withdrawals from brackish surface water/seawater 346.970

### Withdrawals from groundwater - renewable

0

## Withdrawals from groundwater - non-renewable

Withdrawals from produced/entrained water 0

#### Withdrawals from third party sources



#### 14,099

## Total water discharges at this facility (megaliters/year) 357,791

Comparison of total discharges with previous reporting year About the same

#### Discharges to fresh surface water

0

## Discharges to brackish surface water/seawater 357,246

**Discharges to groundwater** 

0

#### Discharges to third party destinations

545

#### Total water consumption at this facility (megaliters/year)

14,443

#### Comparison of total consumption with previous reporting year

Much lower

#### **Please explain**

Changes: much lower due to a methodology change in water accounting. In 2022, Dow conducted a study that analyzed metered, calculated and estimated water consumption associated with both evaporative losses and process activities at representative and critical water sites. The results of the study indicated that on average, Dow consumes 4% of total water withdrawn. Dow uses this 4% as a generally accepted estimate to calculate total water consumption for all sites. This approach is preferred as the simple equation of water consumption = water withdrawal - water discharge is not representative due to the aggregation of measurement uncertainties of water withdrawals and water discharges and unallocated water inflows/outflows from open conveyance systems. Terneuzen has the lowest freshwater intake intensity of all the six key water stressed sites. It covers roughly 75% of its water demand with reuse/recycled water from both internal and external sources. The goal is to reach 100% water circularity by 2025. Future trends (2030-): the site is analyzing a potential growth project that may result in an increased in water withdrawal. The site is investigating supplying that growth water with sustainable water such as additional internal/external recycling (ex. increased recycling of both internal and external process waters)

Facility reference number Facility 3

Facility name (optional)



#### Bahia Blanca

#### Country/Area & River basin

Argentina

Other, please specify Municipality supplied water from Sauce River

#### Latitude

-38.7183

### Longitude

-62.2663

Located in area with water stress

#### Yes

**Total water withdrawals at this facility (megaliters/year)** 29,010

Comparison of total withdrawals with previous reporting year About the same

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes

0

#### Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

#### 0

- Withdrawals from groundwater non-renewable
- Withdrawals from produced/entrained water 0
- Withdrawals from third party sources 29.010

## Total water discharges at this facility (megaliters/year) 25,508

Comparison of total discharges with previous reporting year About the same

## Discharges to fresh surface water

Discharges to brackish surface water/seawater



#### 25,502

**Discharges to groundwater** 

0

Discharges to third party destinations

6

Total water consumption at this facility (megaliters/year)

1,160

Comparison of total consumption with previous reporting year Much lower

#### Please explain

Changes: much lower due to a methodology change in water accounting. In 2022, Dow conducted a study that analyzed metered, calculated and estimated water consumption associated with both evaporative losses and process activities at representative and critical water sites. The results of the study indicated that on average, Dow consumes 4% of total water withdrawn. Dow uses this 4% as a generally accepted estimate to calculate total water consumption for all sites. This approach is preferred as the simple equation of water consumption = water withdrawal - water discharge is not representative due to the aggregation of measurement uncertainties of water withdrawals and water discharges and unallocated water inflows/outflows from open conveyance systems. Terneuzen has the lowest freshwater intake intensity of all the six key water stressed sites. It covers roughly 75% of its water demand with reuse/recycled water from both internal and external sources. The goal is to reach 100% water circularity by 2025. Future trends (2030-): the site is analyzing a potential growth project that may result in an increased in water withdrawal. The site is investigating supplying that growth water with sustainable water such as additional internal/external recycling (ex. increased recycling of both internal and external process waters)

Facility reference number

Facility 4

Facility name (optional)

Dow Böhlen Germany

#### Country/Area & River basin

Germany Other, please specify River Weisse Elster and Lake Witznitz

#### Latitude

51.18862

Longitude

12.35431



Located in area with water stress Yes	
Total water withdrawals at this facility (megaliters/year) 6,397	
Comparison of total withdrawals with previous reporting year About the same	
Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes 713	
Withdrawals from brackish surface water/seawater	
Withdrawals from groundwater - renewable	
Withdrawals from groundwater - non-renewable	
Withdrawals from produced/entrained water	
Withdrawals from third party sources 5,684	
Total water discharges at this facility (megaliters/year) 4,923	
Comparison of total discharges with previous reporting year Much lower	
Discharges to fresh surface water 3,900	
Discharges to brackish surface water/seawater	
Discharges to groundwater	
Discharges to third party destinations 1,023	
Total water consumption at this facility (megaliters/year) 256	
Comparison of total consumption with previous reporting year Much lower	



#### **Please explain**

Changes: Water withdrawal is slightly lower due to lower production. Water consumption is much lower due to updated global water accounting methodology which reports consistently across all external reporting. In 2022, Dow conducted a study on metered, calculated and estimated water consumption associated with both evaporative losses and process activities at representative and critical water sites. The results of the study indicated that on average, Dow consumes 4% of total water withdrawn. Dow uses this 4% as a generally accepted estimate to calculate total water consumption for all sites. This approach is preferred as the simple equation of water consumption = water withdrawal – water discharge is not representative due to the aggregation of measurement uncertainties of water withdrawals and water discharges and unallocated water inflows/outflows in open conveyance systems. The Böhlen facility uses freshwater mainly for cooling activities. Future Trends: At this time, no significant changes are expected in total water withdrawal. However future growth activities or changes in products manufactured may occur.

### Facility reference number

Facility 5

## Facility name (optional)

Dow Seadrift Texas

#### Country/Area & River basin

United States of America Other, please specify Guadalupe River

#### Latitude

51.18862

#### Longitude

12.35431

#### Located in area with water stress

Yes

#### Total water withdrawals at this facility (megaliters/year) 15,903

#### Comparison of total withdrawals with previous reporting year About the same

## Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes

15,903

#### Withdrawals from brackish surface water/seawater



0

Withdrawals from groundwater - renewable 0
Withdrawals from groundwater - non-renewable 0
Withdrawals from produced/entrained water 0
Withdrawals from third party sources 0
Total water discharges at this facility (megaliters/year) 12,613
Comparison of total discharges with previous reporting year About the same
Discharges to fresh surface water 0
Discharges to brackish surface water/seawater

12,318

Discharges to groundwater

Discharges to third party destinations

295

Total water consumption at this facility (megaliters/year) 636

Comparison of total consumption with previous reporting year Much lower

#### **Please explain**

Changes: Water consumption is much lower due to updated global water accounting methodology which reports consistently across all external reporting. In 2022, Dow conducted a study that analyzed metered, calculated, and estimated water consumption associated with both evaporative losses and process activities at representative and critical water sites. The results of the study indicated that on average, Dow consumes 4% of total water withdrawn. Dow uses this 4% as a generally accepted estimate to calculate total water consumption for all sites. This approach is preferred as the simple equation of water consumption = water withdrawal – water discharge is not representative due to the aggregation of measurement uncertainties of water withdrawals and water discharges and unallocated water inflows/outflows in open conveyance systems. Seadrift uses freshwater mainly for cooling and energy/steam



generation. Future trends: water requirements may increase slightly with an expected growth project requiring additional cooling capacity. The associated proposed advanced small modular reactor ("SMR") nuclear project executed in a joint development with X-Energy Reactor Company, LLC is focused on optimizing water use. The project is focused on providing the Seadrift site with safe, reliable, zero carbon emissions power and steam as existing energy and steam assets near their end-of-life.

Facility reference number Facility 6
Facility name (optional) Dow Tarragona Spain
<b>Country/Area &amp; River basin</b> Spain Ebro
Latitude 41.1189
Longitude 1.2445
Located in area with water stress Yes
Total water withdrawals at this facility (megaliters/year) 8,125
Comparison of total withdrawals with previous reporting year Lower
Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes
Withdrawals from brackish surface water/seawater
Withdrawals from groundwater - renewable
Withdrawals from groundwater - non-renewable
Withdrawals from produced/entrained water
Withdrawals from third party sources



#### 8,125

## Total water discharges at this facility (megaliters/year) 5,889

Comparison of total discharges with previous reporting year Lower

#### Discharges to fresh surface water

0

#### Discharges to brackish surface water/seawater 3.835

**Discharges to groundwater** 

0

#### Discharges to third party destinations

2,054

#### Total water consumption at this facility (megaliters/year)

325

## Comparison of total consumption with previous reporting year

Much lower

#### Please explain

Changes: Water consumption is much lower due to updated global water accounting methodology which reports consistently across all external reporting. In 2022, Dow conducted a study ton metered, calculated and estimated water consumption associated with both evaporative losses and process activities at representative and critical water sites. The results of the study indicated that on average, Dow consumes 4% of total water withdrawn. Dow uses this 4% as a generally accepted estimate to calculate total water consumption for all sites. This approach is preferred as the simple equation of water consumption = water withdrawal - water discharge is not representative due to the aggregation of measurement uncertainties of water withdrawals and water discharges and unallocated water inflows/outflows in open conveyance systems. Tarragona uses water mainly for cooling purposes. It uses both seawater and freshwater. In 2022, Tarragona's lower water discharge can be mainly attributed to lower seawater use associated with Dow's terminal activities. Terminal activities are not related to actual production activities but rather raw material storage. Future Trends: At this time, no significant changes are expected in total water withdrawal. However future growth activities or changes in products manufactured may occur.

### W5.1a

(W5.1a) For the facilities referenced in W5.1, what proportion of water accounting data has been third party verified?



#### Water withdrawals - total volumes

#### % verified

76-100

#### Verification standard used

We engaged Deloitte & Touche LLP (Deloitte) to perform a review relating to the environmental, social, and governance disclosures referenced or included in the Global Reporting Initiative ("GRI") Content Index included within the accompanying Dow's 2022 INtersections Progress 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. See Deloitte's review report within our 2022 INtersections Progress Report for a description of procedures performed relating to the environmental, social, and governance disclosures.

The 76-100% selected herein reflects that 100% of the water data was subject to the review.

#### Water withdrawals - volume by source

#### % verified

76-100

#### Verification standard used

We engaged Deloitte & Touche LLP (Deloitte) to perform a review relating to the environmental, social, and governance disclosures referenced or included in the Global Reporting Initiative ("GRI") Content Index included within the accompanying Dow's 2022 INtersections Progress 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. See Deloitte's review report within our 2022 INtersections Progress Report for a description of procedures performed relating to the environmental, social, and governance disclosures.

The 76-100% selected herein reflects that 100% of the water data was subject to the review.

#### Water withdrawals - quality by standard water quality parameters

% verified

76-100

#### Verification standard used



We engaged Deloitte & Touche LLP (Deloitte) to perform a review relating to the environmental, social, and governance disclosures referenced or included in the Global Reporting Initiative ("GRI") Content Index included within the accompanying Dow's 2022 INtersections Progress 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. See Deloitte's review report within our 2022 INtersections Progress Report for a description of procedures performed relating to the environmental, social, and governance disclosures.

The 76-100% selected herein reflects that 100% of the water data was subject to the review.

#### Water discharges – total volumes

#### % verified

76-100

#### Verification standard used

We engaged Deloitte & Touche LLP (Deloitte) to perform a review relating to the environmental, social, and governance disclosures referenced or included in the Global Reporting Initiative ("GRI") Content Index included within the accompanying Dow's 2022 INtersections Progress 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. See Deloitte's review report within our 2022 INtersections Progress Report for a description of procedures performed relating to the environmental, social, and governance disclosures.

The 76-100% selected herein reflects that 100% of the water data was subject to the review.

#### Water discharges - volume by destination

#### % verified

76-100

#### Verification standard used

We engaged Deloitte & Touche LLP (Deloitte) to perform a review relating to the environmental, social, and governance disclosures referenced or included in the Global Reporting Initiative ("GRI") Content Index included within the accompanying Dow's 2022 INtersections Progress 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. See Deloitte's review report within our 2022 INtersections Progress Report for a description of procedures performed relating to the environmental, social,



and governance disclosures.

The 76-100% selected herein reflects that 100% of the water data was subject to the review.

#### Water discharges - volume by final treatment level

#### % verified

Not verified

#### **Please explain**

We engaged Deloitte & Touche LLP (Deloitte) to perform a review relating to the environmental, social, and governance disclosures referenced or included in the Global Reporting Initiative ("GRI") Content Index included within the accompanying Dow's 2022 INtersections Progress Report. Water Discharges by treatment level is not an element of GRI (unique to CDP), therefore was not subject to assurance. While this disaggregated data was not subject to review, the aggregated Total Water Discharged was reviewed and assured. The validity of the data has been confirmed by Dow water SME's as being representative.

#### Water discharges - quality by standard water quality parameters

#### % verified

76-100

#### Verification standard used

We engaged Deloitte & Touche LLP (Deloitte) to perform a review relating to the environmental, social, and governance disclosures referenced or included in the Global Reporting Initiative ("GRI") Content Index included within the accompanying Dow's 2022 INtersections Progress 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. See Deloitte's review report within our 2022 INtersections Progress Report for a description of procedures performed relating to the environmental, social, and governance disclosures.

The 76-100% selected herein reflects that 100% of the water data was subject to the review.

#### Water consumption - total volume

% verified 76-100

#### Verification standard used



We engaged Deloitte & Touche LLP (Deloitte) to perform a review relating to the environmental, social, and governance disclosures referenced or included in the Global Reporting Initiative ("GRI") Content Index included within the accompanying Dow's 2022 INtersections Progress 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. See Deloitte's review report within our 2022 INtersections Progress Report for a description of procedures performed relating to the environmental, social, and governance disclosures.

The 76-100% selected herein reflects that 100% of the water data was subject to the review.

## W6. Governance

## W6.1

#### (W6.1) Does your organization have a water policy?

Yes, we have a documented water policy that is publicly available

## W6.1a

	Scope	Content	Please explain
Row 1	Company- wide	Description of the scope (including value chain stages) covered by the policy Description of business dependency on water Description of business impact on water Commitment to align with international frameworks, standards, and widely-recognized water initiatives Commitment to prevent, minimize, and control pollution Commitment to reduce water withdrawal and/or consumption volumes in direct operations Commitment to safely managed Water, Sanitation and Hygiene (WASH) in the workplace	As Dow's business security is tied having access to water, water stress including water quality on both water withdrawals and water discharges from manufacturing facilities pose a significant financial risk to the company. Our publicly available environmental policies, 2025 sustainability goals, our commitment to helping end plastic waste and commitment to protect the climate define how Dow intends make the appropriate business decisions to meet those commitments. Dow has three global environmental policies addressing Dow's responsible water stewardship practices. Responsible Care® Initiative, a voluntary initiative of the global chemical industry to make continual progress towards our goal of no accidents, injuries or harm to human health and the environment from our products and operations and openly report our health, safety, environmental and security

## (W6.1a) Select the options that best describe the scope and content of your water policy.



	Commitment to safely managed	performance, Chemical Management Policy.
	Water, Sanitation and Hydiene	defining efforts and practices ensuring the
	(WASH) in local communities	safe and environmentally sound
	Commitment to water stewardship	manufacturing, distribution, handling, and
	and/or collective action	disposal of chemical products. Environmental
		Health and Safety Policy, which defines the
	Reference to company water-	responsibility that each employee has in
	related targets	ensuring that our products and operations
	Other, please specify	meet applicable government or Dow
	Dow's 2025 sustainability goal	standards, whichever is more stringent. The
	tied to nature includes the pillar	water policies are translated into water-related
	indicating positive	performance standards for direct operations
	improvements to ecosystems	The following goals and targets drive action
	across the entire value chain.	towards water resiliency:
	The projects must also deliver	-Reduce the freshwater intake intensity at key
		water-stressed sites by 20% by 2025 from
		2015 baseline
		- In 2022 Developed publicly available
		sustainable societal blueprints on nature and
		water. The blueprints establish how
		collaboration can be a path to addressing
		water stress
		-By 2025, deliver \$1 hillion in value through
		projects that are good for business and better
		for ecosystems (e.g. Seadrift Texas Dow site
		ungraded to the state-of-the-art Steamizer®
		$XP^{TM}$ flare with a reduction of 50% in steam
		Dow is involved in several pilots of technology
		to increase the ability of water reuse and
		recycling (ex Dow's Kankakee Illinois site is
		reusing effluent from a reverse esmosis unit
		reducing 20% in appual wastewater
		apportion and a 14% reduction in water
		consumption) watershed level improvement
		(ex. Dow's water body risk assessment led to
		the funding of long term effordable ecocos to
		asfe water to fomilies in Quarátoro Mavies in
		sale water to families in Queretaro, Mexico, in
		partnersnip with vvater.org)

## W6.2

### (W6.2) Is there board level oversight of water-related issues within your organization?

Yes



## W6.2a

## (W6.2a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for water-related issues.

Position of individual or committee	Responsibilities for water-related issues
Chief Executive Officer (CEO)	Dow's CEO facilitates the Board's governance oversight of strategy and safe and effective business operation including water-related issues. Furthermore, Dow's CEO has a long history of leadership in reporting transparency and sustainability disclosures and leads the Company's extensive strategy and environmental, social and governance priorities. The CEO has direct responsibility and accountability for the corporate strategy for water, including oversight of teams that assess future trends in water demand, water-related risks and opportunities and water-related risks and opportunities. The CEO also ensures that the Company is conducting water-related scenario analysis, has set relevant, measurable and actionable water-related corporate targets, and that progress is monitored against these targets. The CEO also oversees and prioritizes public policy engagement that may impact water security / access and water quality.
Board-level committee	The Board actively engages with management in oversight and stewardship of the Company's strategy; environmental, social and governance leadership; risk management; and overall performance. Committees comprised of independent Directors assist the Board in carrying out its responsibilities. Committees operate pursuant to a written charter with clearly defined areas of responsibility and risk oversight as outlined below. Each Committee reports to the Board on the topics discussed and actions taken at each Committee meeting for consideration by the full Board. The Environment, Health, Safety and Technology (EHS&T) committee is responsible for assessing current aspects of the Company's environment, health and safety policies and performance and makes recommendations to the Board and the management of the Company to promote and maintain superior standards of performance, including processes to ensure compliance with applicable laws and regulations. They also assess risk management associated with environment, health and safety policies and operations, emerging regulatory developments, reporting and compliance as well as oversee and advise the Board on the Company's sustainability commitments and progress including efforts to protect the climate, reduce GHG emissions, eliminate plastic waste and deliver circular economy solutions.

## W6.2b

#### (W6.2b) Provide further details on the board's oversight of water-related issues.

Frequency that	Governance	Please explain
water-related	mechanisms into	
issues are a	which water-related	



	scheduled	issues are	
	agenda item	integrated	
Row 1	Scheduled - some meetings	Monitoring implementation and performance Overseeing acquisitions, mergers, and divestitures Overseeing major capital expenditures Providing employee incentives Reviewing and guiding business plans Reviewing and guiding corporate responsibility strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding strategy Reviewing innovation/R&D priorities Setting performance objectives	Water-related strategic decisions are raised in Board discussions. This includes 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 environmental, social and governance priorities of the Company, ensuring transparency and accountability, including water- related issues. Each Committee is responsible for oversight of specific strategic and environmental, social and governance areas relevant to their respective Charters. The Board appoints the Company's officers, assigns to them responsibility for management of the Company's operations, and reviews their performance. 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 environmental, social and governance priorities including sustainability targets and ID&E initiatives. The Board and management review the Company's short-term and long-term strategic priorities throughout the year and dedicate time at each Board meeting for appropriate discussion. Dow held six Board meetings and the Committees of the Board collectively held 24 meetings for a total of 30 meetings in 2022 during which economic, environmental, and social topics were discussed. The EHS&T Committee of the Board (which held five meetings in 2022) oversees strategy and action plans developed by Dow's Leadership Team as they relate to sustainability, carbon, and climate change, including water-related issues. The CEO is a member of the 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



	Human Resources Officer, Senior VP of Corporate
	Development and Chief Information and Digital
	Officer. Under the advisement of the Leadership
	Team, sub-teams direct specific efforts related to
	CO2 reduction and climate which includes water-
	related issues, such as reporting, policy advocacy,
	evaluating climate risks and opportunities,
	technology investment, and capital planning.
	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.

## W6.2d

(W6.2d) Does your organization have at least one board member with competence on water-related issues?

	Board member(s) have competence on water-related issues	Criteria used to assess competence of board member(s) on water- 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), education, and board-level accountability, as well as the frequency and structure of review of the relevant subject matter and substantive information provided from internal and external subject matter experts to the Board. Dow also utilizes a questionnaire that is sent to each Director to provide additional support for the assessment. Based on the 2022 assessment of Directors, 100% have strategic planning and enterprise risk management experience and 50% (6 out of 12 Directors) have water-related experience which both provide a strong oversight to the Company's sustainability ambitions.

## W6.3

(W6.3) Provide the highest management-level position(s) or committee(s) with responsibility for water-related issues (do not include the names of individuals).



#### Name of the position(s) and/or committee(s)

Chief Executive Officer (CEO)

#### Water-related responsibilities of this position

Managing water-related risks and opportunities Monitoring progress against water-related corporate targets Managing public policy engagement that may impact water security Managing value chain engagement on water-related issues Managing annual budgets relating to water security

#### Frequency of reporting to the board on water-related issues

Quarterly

#### **Please explain**

The highest level of responsibility for water-related issues lies with the CEO. 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 Lead Director, the CEO ensures that topics related to sustainability, including water-related issues, 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. An example action is the decision to continue our engagement on water stewardship through our commitment to the "CEO Water Mandate".

### W6.4

## (W6.4) Do you provide incentives to C-suite employees or board members for the management of water-related issues?

	Provide incentives for management of water-related issues	Comment
Row 1	Yes	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 the World Leading Operations (WLO) Index, which includes a measurement of environmental stewardship and specifically includes our freshwater intake intensity target.

### W6.4a

(W6.4a) What incentives are provided to C-suite employees or board members for the management of water-related issues (do not include the names of individuals)?

Role(s) entitled to incentive	Performance indicator	Contribution of incentives to the achievement of your	Please explain
-------------------------------------	--------------------------	---	----------------



			organization's water commitments	
Monetary reward	Chief Executive Officer (CEO) Chief Financial Officer (CFO) Chief Sustainability Officer (CSO) Other, please specify All employees	Reduction of water withdrawals – direct operations	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 the World Leading Operations (WLO) Index, which includes a measurement of environmental stewardship and specifically includes our freshwater intake intensity target.	Dow's WLO metrics which includes the Company water intensity goal are part of the Environmental, Social, and Governance metrics that account for 20% of the Annual Performance Award.
Non- monetary reward	No one is entitled to these incentives			

### W6.5

(W6.5) Do you engage in activities that could either directly or indirectly influence public policy on water through any of the following?

- Yes, direct engagement with policy makers
- Yes, trade associations
- Yes, funding research organizations

### W6.5a

# (W6.5a) What processes do you have in place to ensure that all of your direct and indirect activities seeking to influence policy are consistent with your water policy/water commitments?

Process: The Board is responsible for overseeing the Company's strategy development and planning process including annual review of the corporate business plan. Each Board Committee is responsible for oversight of specific strategic and environmental, social and governance areas relevant to their respective charters. 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. The full Board is regularly updated by the Committees, management and senior leaders. Dow's Leadership Team (LT) a diverse, cross-functional team representing each of Dow's businesses, functions and geographic regions regularly review all aspects of water policies and processes used to assess, monitor and control water aspects. Specific risks are also reviewed.



Additionally, Dow meets on a regular basis with Dow's Sustainability External Advisory Council (SEAC) to review critical issues regarding our sustainability objectives. The SEAC brings external insights such as views on biodiversity, environmental justice or changes in the sustainability landscape. Any known inconsistency is managed by the required critical experts to ensure a consistent approach for all direct and indirect engagement activities, consistent with our policies on sustainable water management across all functions and geographies.

## W6.6

## (W6.6) Did your organization include information about its response to water-related risks in its most recent mainstream financial report?

Yes (you may attach the report - this is optional)

## W7. Business strategy

## W7.1

## (W7.1) Are water-related issues integrated into any aspects of your long-term strategic business plan, and if so how?

	Are water- related issues integrated?	Long-term time horizon (years)	Please explain
Long-term business objectives	Yes, water- related issues are integrated	> 30	As Dow operates mature, capital-intensive assets, water is treated as a critical raw material evaluated and managed on long-term timelines (> 30 year) involving multi-decade assessments within individual businesses and the overall Company. These assessments are site specific and include water withdrawals, consumption and availability, water quality, costs associated with water withdrawal and treatment, regulatory drivers, reputational risks and technology trends. In the short- to medium-term timeframe (<10 years), water withdrawals and effluents are managed through a combination of technological, commercial, and operational activities aligned to watershed level assessments. Dow's business objective is to secure business continuity i.e. having sufficient water of quality at an affordable price while maintaining our right to operate within a water shed. As a founding member of the CEO Water Mandate and signatory of the Water Resilience Coalition, Dow recognizes the need to address urgent water challenges related to scarcity, quality, governance and access to water and sanitation in order to secure



			business continuity. Dow's business plans are built to address the site-specific water stress. As an example, all capital investments >\$10 million are required to account for any impacts on water as part of the request for capital authorization. As an example: As we grow our Fort Saskatchewan site, an analysis of water demands and development of conservation measures was required.
Strategy for achieving long-term objectives	Yes, water- related issues are integrated	> 30	Dow's current water strategy is outlined in our 2025 World Leading Operations which commits us to maintaining world-leading operations performance in natural resource efficiency, environment, health and safety. This is achieved by pursuing efficient operations that drive environmental benefits for our communities and help us lead the transition to a sustainable planet and society. One of the specific goals directly addressing water stipulates to reduce the freshwater intake intensity at key water stressed sites by 20% by 2025. Key water stress sites are responsible for defining a site-specific water action plan to achieve this goal. As an example, Terneuzen, identified as a key water stress site as further defined its objective to source 100% of its freshwater intake from reuse streams by 2025. As an example of actions, the site is actively working with farmers and the regional water board to store freshwater underground, collecting it in the winter and using it in the summer, so farmers can benefit during droughts. As 2025 is approaching, the Company and sites are actively involved in defining the next level of strategy to carry them into 2050. As such, we believe that collaboration is a path to address scarcity. As an example, via the CEO Water Mandate's Water Resilience Coalition, Dow worked with The Nature Conservancy, National Fish and Wildlife Foundation, and others to restore more than 4,500 wetland acres in the Mississippi Alluvial Valley.
Financial planning	Yes, water- related issues are integrated	11-15	Water related issues are integrated into Dow's financial planning process for growth strategy, capital allocation process and achieving on Dow's publicly disclosed strategies and targets driving water resilience improvements projects planning. In key water stress sites, investments have been made and business cases are actively being pursued to address challenges such as avoiding loss in revenue due to anticipated lower water availability over the longer term, to define the



	optimal water provisioning to meet long-term carbon
	emission reductions, to invest in upgrading of water
	assets, to increase funding of new technologies. The
	process of financial planning also includes assessment
	of future financial risk tied to water beyond just current
	costs of water which is used utilized in business case
	analysis. As an example: 100% of capital investments
	greater than \$10 Million were screened in 2022 for
	water use with special attention to key water stressed
	sites.
	Explanation of chosen time horizon: Horizon of 11-15
	years. Since Dow operates mature, capital-intensive
	assets, water consumption and effluents are evaluated
	and managed on long-term timelines (10+ years)
	involving multi-decade assessments.
	, i i i i i i i i i i i i i i i i i i i

## W7.2

(W7.2) What is the trend in your organization's water-related capital expenditure (CAPEX) and operating expenditure (OPEX) for the reporting year, and the anticipated trend for the next reporting year?

Row 1

Water-related CAPEX (+/- % change)

22

#### Anticipated forward trend for CAPEX (+/- % change)

35

Water-related OPEX (+/- % change)

13

#### Anticipated forward trend for OPEX (+/- % change)

-6

#### Please explain

CAPEX for sustainability aligned projects increased in 2022 aligned with our commitment to increase sustainable CAPEX and is anticipated to trend higher dependent on economic conditions. OPEX excludes expenses tied to CAPEX and represents expenses tied to assets. For 2022, OPEX increased slightly and projected to decrease slightly for 2023. The trends between CAPEX and OPEX indicate Dow's forward look in investments tied to water allowing the control of OPEX. Dow's approach to water management includes ensuring adequate capital investments are made and involve scaling proven water advantaged solutions in both water assets and chemical manufacturing (ex. energy modernization in Plaquemine moving from water to air



cooling; advanced treatment wetlands to recycle water in Boehlen), advancing innovation of both process and product (ex. upgrade MDI production capacity; EVOWASH biodegradable detergents), upkeep of water infrastructure (upgrade in water production).

## W7.3

#### (W7.3) Does your organization use scenario analysis to inform its business strategy?

	Use of scenario analysis	Comment
Row 1	Yes	Dow partnered with S&P Trucost to obtain an independent water risk assessment of the company's exposure to physical risks associated with our manufacturing sites. Against a 2020 baseline, the assessment included water stress, heat waves, cold waves, droughts, hurricanes, wildfires and flooding. Dow was assessed at moderate exposure in 2050 under all scenarios, with a weighted average that is lower than the average of the materials industry. Dow's water team will review the assessment as part of the current action plans associated with our six key water stress sites with a defined target of 20% reduction of freshwater intake intensity by 2025 using 2015 baseline. Dow has and continues to engage with The Nature Conservancy, S&P Global Trucost, WBCSD, Water Resource Institute, CEO Water Mandate, Water Resilience Coalition & other public/private organizations in developing robust standard for water and defining Dow's plans for 2030 and 2050.

## W7.3a

(W7.3a) Provide details of the scenario analysis, what water-related outcomes were identified, and how they have influenced your organization's business strategy.

	Type of scenario analysis used	Parameters, assumptions, analytical choices	Description of possible water-related outcomes	Influence on business strategy
Row	Water-	Dow partnered with S&P	Dow recognizes that water	Dow develops site-
1	related	Global Trucost to obtain an	availability can change. The	specific response to
	Climate-	independent climate	complexity and	water security
	related	physical risk analysis of our	consequences of the water	challenges which
		manufacturing sites. The	cycle are closely monitored	include both operational
		climate hazard indicators	to ensure the ability to	and strategic short- and
		specific to water included:	operate safely and	long-term actions in
		water stress (projected	efficiently is maintained.	response to the specific
		future ratio of water	Results from the scenario	risk - acute physical,
		withdrawals to total	analysis has enabled Dow	chronic physical,
		renewable water supply in a	to identify and evaluate	regulatory and
		given area – data source	potential outcomes for	reputational. Water



	WRI Aqueduct/ Trucost	different scenarios and their	stress sites also have in
	Anlaysis), flood risk (the risk	effects on business	place water sourcing
	of flood at a given location	continuity based on a	contingency plans that
	in a given year- data source	variety of assumptions/input	can go into effect should
	WRI Aqueduct/Trucost	variables. Outcomes are	a shortage or water
	Analysis), sea level rise	very different for each site	quality issue arise.
	(extent and depth of coastal	depending on the local	Water stress analysis
	inundation due to sea level	watershed conditions,	are integrated within the
	rise at a given location in a	Dow's use of water and	strategic business plans
	given year- data source	other water users. Each	of sites. This can
	Climate Central/TruCost	water stress site defines	influence location of
	analysis), hurricane risks	possible or probable water-	future growth
	(Composite index	related outcomes along with	opportunities,
	representing the historical	mitigation plans. Examples	replacement of key
	incidence and severity /	of probable water-related	assets such as high
	strength of hurricane,	outcomes include water	performing water units,
	typhoon or cyclone activity	restrictions due to drought	updating steam and
	at a given location,	such as modelled for	power generation
	weighted in favour of recent	Freeport, TX, Tarragona,	technologies or retiring
	events- data source NOAA/	Spain and Terneuzen, NL	of water intensive
	Trucost Analysis) were part	site. Disruption to	assets. The overall
	of the overall climate risk	operations due to elevated	focus remains on
	scenario analysis. The	temperature impacting the	developing water
	analysis included an	site's ability to provide the	security action plans
	assessment of the physical	required cooling capacity	with our six key water
	risks using a baseline year	which in turns affects	stress sites with a
	of 2020 with time periods	production capacity such as	defined target of 20%
	for medium (year 2030) and	Seadrift, TX. Declining	reduction of freshwater
	long term (year 2050) using	water quality which impacts	intake intensity by 2025
	the Intergovernmental	ability to provide required	using 2015 baseline.
	Panel on Climate Change	high-quality water for	Dow also explores
	(IPCC) representative	specific processes such as	alternatives water
	concentration pathways	Seadrift, TX, water stress	sources, investments in
	(RCP): RCP 2.6, RCP 4.5	due to population change	research project
	and RCP 8.5. These	reducing available river flow	developing novel
	pathways represent varying	such as Freeport, TX,	treatment technologies
	degrees of global	tightening of water	to increases water
	atmospheric GHG	discharge permissible limits	recycling and seeking
	concentrations (low,	(ex. Terneuzen, NL),	process advancements
	medium and high,	modifications of extreme	to reduce water
	respectively), and thus	weather event response	requirements,
	different expectations on	(ex. pre-emptive shut down	investment in watershed
	global temperature rise.	of operation due to storm	health such a
	Water stress is identified to	events such as Deer Park,	reconnecting of
	be the largest contributor of	TX).	wetlands in Mississippi
	the climate-related physical		River basin. Dow's risk



risks. Dow's water team	assessment extends to
continues to perform	key suppliers and novel
internal water body risk	product development.
assessment according to a	Dow has and continues
defined methodology which	to engage with external
does consults both WRI	stakeholders driving
Aqueduct and WWF Water	water resiliency at a
Risk Filter while engaging	watershed level to
higher level watershed data	define collective action
and site expertise.	projects (ex. The Nature
	Conservancy, WBCSD,
	CEO Water Mandate
	Water Resilience
	Coalition).

## W7.4

#### (W7.4) Does your company use an internal price on water?

#### Row 1

#### Does your company use an internal price on water?

Yes

#### Please explain

Each location has a water pricing strategy that is specific to that site that incorporates raw water cost, treatment cost and capital requirements for water treatment facilities. For water stressed facilities such as Freeport, Texas, the projected future price of water has been used to justify water conservation projects.

## W7.5

## (W7.5) Do you classify any of your current products and/or services as low water impact?

	Products and/or services classified as low water impact	Definition used to classify low water impact	Please explain
Row 1	Yes	Dow's Corporate Water Strategy defines best practices and technology advancing while aligning business strategies and operation needs to meet water demands in concert with an understanding of each local water basin and key stakeholders.	Example of such low impact water products: - Dow's silicone antifoams used in household detergents have been a key enabler for the reduction of water usage during the washing


The Corporate Water Strategy is built to cycle with formulas in the market help drive the current programs and for powder and liquid detergents of water-based goals within Dow's 2025 all concentrations, as well as for Sustainability Goals with four goals single-unit-dose applications like directly connected to water: World pods. Leading Operations, Advancing a Circular Economy, Leading the Blueprint, and Valuing Nature. Under the Valuing Nature goal, the definition used for low impact water products uses the following basis: - The product owner defines the significance of the water related positive contribution. It may relate to water volumes at any stage of the product cycle- from raw materials having a lower water profile to manufacturing to product use stage or final disposal. It can also include lower water quality impacts or improved access to quality water to water users within a specific watershed. - The total water footprint of a product is compared using a lifecycle basis to the best incumbent existing product(s) providing the same functionality. An example of innovation in Dow's water advantaged product is EVOWASH<sup>™</sup>. To ensure high-quality PCR plastic resins, recycled plastics must be cleaned. The optimization of this process can be challenging, especially removing contaminants and properly separating materials such as labels, as well as controlling foam during the required washing steps. EVOWASH is a range of biodegradable, industrial-grade detergents and antifoams designed to maximize adhesive removal, improve the optical quality of plastic resins, and reduce foam generation in the mechanical recycling of PET, HDPE, LDPE and PP. Because EVOWASH<sup>™</sup> detergents are biodegradable and generate low foam, they also have no impact on discharge water. The technology is an example of how Dow is using its materials science expertise to help accelerate the global



	transition to a circular economy for	
	plastics.	

# W8. Targets

# **W8.1**

(W8.1) Do you have any water-related targets?

Yes

# W8.1a

# (W8.1a) Indicate whether you have targets relating to water pollution, water withdrawals, WASH, or other water-related categories.

	Target set in this category	Please explain
Water pollution	Yes	
Water withdrawals	Yes	
Water, Sanitation, and Hygiene (WASH) services	No, and we do not plan to within the next two years	Although Dow currently does not have a specific target tied to WASH, providing access to safe drinking water and hygiene services is ensured by all facilities for all Dow colleagues. Dow has also signed the pledge of the Water Resilience Coalition which includes a WASH commitment of enabling equitable and resilient water access, sanitation, and hygiene (WASH). Part of Dow's action towards this commitment realized in 2022 is the funding of long-term affordable access to safe water to families in Querétaro, Mexico, in partnership with Water.org. Dow is not anticipating having a specific target while it does not mean it won't be an important part of the watershed collection actions pursued.
Other	Yes	

### W8.1b

(W8.1b) Provide details of your water-related targets and the progress made.

Target reference number Target 1

Category of target Water withdrawals The Dow Chemical Company CDP Water Security Questionnaire 2023 Monday, July 24, 2023



#### **Target coverage**

Company-wide (direct operations only)

#### **Quantitative metric**

Reduction in withdrawals per unit of production

Year target was set

2015

Base year 2015

Base year figure 6.6

Target year 2025

**Target year figure** 5.3

#### **Reporting year figure**

6.1

% of target achieved relative to base year

38.4615384615

#### Target status in reporting year

Underway

#### **Please explain**

The freshwater intake intensity at six key water-stressed sites (KWSS) is aligned with the physical risk of climate change and changing weather patterns. The changing patterns in supply of water, caused by events such as extended droughts, have led to low river levels posing challenges for some manufacturing sites (e.g., ability to ship products). This metric was adopted in recognition of the criticality of fresh water as a shared resource 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 fresh water); 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 before the end of 2025. Dow's freshwater intake intensity increased in 2022 due drought conditions at three KWSS and reduced water quality associated with low water availability. Because certain processes such as cooling systems operate at the same rate regardless of reduced production rate, water intensity increases. Although the freshwater intake intensity was higher this year than the previous years, efforts are continuing to develop water resiliency in key water stress sites. This includes



implementing projects to increase water circularity and improve water quality. Through the AquaSpice project, we are partnering to reduce our freshwater intake intensity at two water-stressed sites – Böhlen, Germany, and Terneuzen, the Netherlands – by enhancing the recycle of various process water streams and using smart monitoring on raw water, discharge and recycle streams to improve water management.

#### Target reference number

Target 2

#### **Category of target**

Other, please specify R&D Portfolio alignment to sustainability

#### Target coverage

Product level

#### **Quantitative metric**

Other, please specify % Portfolio alignment to sustainability

# Year target was set

2020

Base year 2020

# Base year figure

80

#### Target year 2025

**Target year figure** 90

### Reporting year figure

87

#### % of target achieved relative to base year

70

#### Target status in reporting year

Underway

#### **Please explain**

On an annual basis, R&D project leaders, who are the subject matter experts and trained in sustainability fundamentals, assess the alignment of their projects to Dow's sustainability goals. Those goals align with the following major pillars of Protect the Climate, Transform the Waste, Resource Efficiency and Protect Earth & Life. Water is



an integral part of all identified pillars. Responses are approved by leadership and, for continuing projects, compared with the previous year's response. More mature projects are expected to have more rigorous assessments, which can include formal LCAs. A multi-generational plan is being executed to increase accuracy and transparency. Dow is collaborating with customers to drive innovation providing market-based solutions to water challenges. In 2022, Dow received an R&D 100 Award and Edison Award for our Multi-Functional Sorbent Technology (MUST) in collaboration with the U.S. Department of Energy's National Energy Technology Laboratory. MUST is a suite of sorbents that offers a practical, affordable and more sustainable approach to removing heavy-metal contaminants from waterways and manufacturing processes.

#### Target reference number

Target 3

#### Category of target

Other, please specify NPV achieved on projects that are better for nature

#### Target coverage

Company-wide (direct operations only)

#### **Quantitative metric**

Other, please specify NPV achieved on projects that are better for nature

#### Year target was set

2015

Base year 2015

Base year figure

Target year 2025

**Target year figure** 1,000,000,000

### Reporting year figure

766,000,000

% of target achieved relative to base year 76.6

Target status in reporting year Underway

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#### Please explain

In 2022, Dow realized a Net Present Value of \$119 million from projects that enhance nature, bringing the total to \$766 million since goal launch in 2015.

Dow derives enormous value from the ecosystems in which it operates. We rely on and impact freshwater, climate regulation, flood control, water purification, wastewater treatment and other ecosystem services.

Dow and other companies need to secure long-term access to ecosystem services that support our operations and reduce our exposure to risks.

The valuing nature goal drives a "win-win" way of business thinking that Dow is leading today.

Screening capital decision across our global business units with respect to impacts on nature such as water provisioning and water quality impacts drives progress towards our commitment to water stewardship.

#### Target reference number

Target 4

#### **Category of target**

Other, please specify Waste Intensity

#### Target coverage

Company-wide (direct operations only)

#### **Quantitative metric**

#### Other, please specify

Waste Intensity (including waste to wastewater) is measured year over year as part of Dow's 2025 World Leading Operation goal. The goal was set in 2015 to achieve a 20% reduction in waste intensity.

#### Year target was set

2015

#### **Base year** 2015

# **Base year figure**

0.04

Target year 2025

**Target year figure** 0.03

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#### **Reporting year figure**

0.02

% of target achieved relative to base year 200

#### Target status in reporting year

Underway

#### Please explain

In 2015 Dow set a target of reaching 20% reduction in waste intensity by 2025. Waste reporting provides the quantity and type of waste produced (including waste to wastewater treatment), and when used with production quantities across each business portfolio, it yields waste intensities. This provides measurable data to drive improvements, recycling and projects to improve environmental performance. In 2015, the waste intensity was 0.035. The target to be achieved by 2025 was 0.028. In 2022, our waste intensity was 0.023 which means we have achieved our goal.

#### Target reference number

Target 5

#### Category of target

Water pollution

#### **Target coverage**

Company-wide (direct operations only)

#### **Quantitative metric**

Other, please specify Water Pollution

Year target was set

2015

Base year 2015

Base year figure

268

Target year 2025

Target year figure 267

**Reporting year figure** 

197

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# % of target achieved relative to base year 7,100

#### Target status in reporting year

Underway

#### **Please explain**

The 2025 World-Leading Operations Goal commits us to maintaining world-leading operations performance in natural resource efficiency, environment, health and safety. Pursuing efficient operations that drive environmental benefits for our communities and help us lead the transition to a sustainable planet and society. One specific target under this goal specifically drives lower water pollution. It stipulates: Dow will grow, but offset emissions of Priority Compounds, Volatile Organic Compounds (VOCs) and nitrogen oxides (NOx).

Priority Compounds to Air and Water are a subset of VOCs that contain carcinogenic, mutagenic and reproductive hazards and/or are persistent and bioaccumulative in the environment. Emissions of Priority Compounds to Air and Water decreased in 2022 compared with 2021 due to continuous improvement of our operation excellence program and discipline. The reduction of priority compounds is tied to a reduction in unplanned events, a decrease in required maintenance activities compared with 2021 and production changes. In 2022, Dow also enhanced its safer materials strategy by creating three tracks to focus on various aspects of safer materials. The second track is focused on management of currently identified priority chemicals. Management plans include substituting with safer alternatives, reducing the level of priority substances in products, tightening emissions control at facilities or phasing out products containing the substances.

# **W9. Verification**

# W9.1

(W9.1) Do you verify any other water information reported in your CDP disclosure (not already covered by W5.1a)?

Yes

### W9.1a

(W9.1a) Which data points within your CDP disclosure have been verified, and which standards were used?

Disclosu re module	Data verified	Verification standard	Please explain
W1 Current state	Total water withdrawal (W1.2b),	Other, please specify	Dow engaged Deloitte & Touche LLP to perform a review relating to the environmental, social, and governance disclosures referenced or included in the Global Reporting



		-
Fresh surface water withdrawal, including rainwater, water from wetlands, rivers, and lakes (W1.2h), Groundwat er - renewable (W1.2h), Third party sources (W1.2h), Fresh surface water discharge (W1.2i), Total	attestation standards established by the American Institute of Certified Public Accountants (AICPA) in AT-C section 105, Concepts Common to All Attestation Engagemen ts, and AT- C section 210, Review Engagemen ts.	Initiative ("GRI") Content Index (the "environmental, social, and governance disclosures") included within the accompanying Dow 2022 INtersections Progress 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. See Deloitte's review report within our 2022 INtersections Progress Report for a description of procedures performed relating to the environmental, social, and governance disclosures. The data verified (as converted) relates to the GRI Standard disclosures that were subject to Deloitte & Touche LLP's review are related to GRI standard 303: Water and Effluents 2018. The disclosures are presented on pages 118-122 of the 2022 INtersections Progress Report. https://corporate.dow.com/content/dam/corp/documents/ab out/066-00432-01-2022-progress-report.pdf
(W1.2h), Fresh surface water discharge (W1.2i), Total Consumptio n, seawater withdrawal and other discharge values.	ts.	Report. https://corporate.dow.com/content/dam/corp/documents/ab out/066-00432-01-2022-progress-report.pdf

# W10. Plastics

# W10.1

# (W10.1) Have you mapped where in your value chain plastics are used and/or produced?

	Plastics mapping	Value chain stage	Please explain
Row 1	Yes	Direct operations Supply chain	Dow is a producer and supplier of raw materials for products in a wide variety of industries, including packaging, mobility and transportation, agricultural, chemical processing, electronics, oil and gas, and infrastructure to name a few. Among its diversified portfolio,



	Product	Dow's businesses deliver a range of technology-based products and
	use phase	solutions into the plastics value chain including amongst others
		polyethylene, silicone and polyurethane.

(W10.2) Across your value chain, have you assessed the potential environmental and human health impacts of your use and/or production of plastics?

	Impact	Value chain	Please explain
	assessment	stage	
Row 1	Yes	Direct operations Supply chain Product use phase Other, please specify LCA approach incl. after use phase.	Dow has amongst others participated life cycle assessments of LDPE, LLDPE, and HDPE by American Chemistry Council and PlasticEurope. These studies evaluated the cradle-to-gate environmental impact of plastic resins. Through ACC, Dow also supported the Trucost study - Plastics and Sustainability: A Valuation of Environmental Benefits, Costs, and Opportunities for Continuous Improvement, which found that the environmental cost of using plastics in consumer goods and packaging is nearly four times less than it would be if plastics were replaced with alternative materials. Dow also conducted various third party verified life cycle assessments on specific plastic products. For example, INNATE <sup>™</sup> TF Polyethylene Resins for Tenter Frame Biaxial Orientation (TF- BOPE), is designed to enable recycling and is officially certified by TÜV Rheinland in China to reduce GHG emissions by 35 percent compared to traditional unrecyclable packaging materials, supporting brand owners in achieving their carbon reduction goals.

### W10.3

(W10.3) Across your value chain, are you exposed to plastics-related risks with the potential to have a substantive financial or strategic impact on your business? If so, provide details.

	Risk exposure	Value chain stage	Type of risk	Please explain
Row 1	Yes	Direct operations Supply chain Product use phase	Regulatory Reputational Technology Physical	• Health and Safety: Concerns regarding the safe use of chemicals and plastics in commerce and their potential impact on health and the environment reflect a growing trend in societal demands for increasing levels of product safety and environmental protection. These concerns could manifest themselves in stockholder proposals, preferred purchasing, delays or failures in



	obtaining or retaining regulatory approvals, delayed
	product launches, lack of market acceptance, product
	deselection and continued pressure for more stringent
	regulatory intervention and litigation. These concerns
	could also influence public perceptions, the viability or
	continued sales of certain of the Company's products,
	its reputation and the cost to comply with regulations.
	<ul> <li>Plastic Waste: Local, state, federal and foreign</li> </ul>
	governments have been increasingly proposing
	regulations to address the global plastic waste
	challenge, including, but not limited to, extended
	producer responsibility fees, a Global Plastics Treaty
	and bans on non-essential items. These regulations on
	plastic waste drive demand toward plastic solutions that
	are recyclable, reusable, made with recycled content
	and/or renewable raw materials. In addition, without
	proper waste collection and recycling infrastructure at
	scale, plastics have faced increased public scrutiny due
	to negative coverage of plastic waste in the
	environment, including the world's oceans and rivers.
	As Dow is one of the world's largest producers of
	plastics, increased pressure on the use of plastics,
	despite positive carbon benefits and essential functions
	such as food preservation and medical uses, could
	cause reduced demand for polyethylene products which
	could negatively impact the Company's financial
	condition, results of operations and cash flows.
	Alternatively, addressing the root problem of plastics
	waste through enhanced management and collection of
	waste for use as circular feedstocks has the potential to
	improve Dow's sales and market share.

#### (W10.4) Do you have plastics-related targets, and if so what type?

	Targets in place	Target type	Target metric	Please explain
Row 1	Yes	Plastic polymers Plastic packaging Waste management	Increase the proportion of post- consumer recycled content in plastic polymers Increase the proportion of renewable content	- By 2030, Dow will transform plastic waste and other forms of alternative feedstock to commercialize 3 million metric tons of circular and renewable solutions annually. To do this, Dow will expand its efforts to stop the waste* by building industrial ecosystems to collect, reuse or recycle waste and expand its portfolio to meet rapidly growing demand.



#### (W10.5) Indicate whether your organization engages in the following activities.

	Activity applies	Comment
Production of plastic polymers	Yes	Dow is a producer and supplier of raw materials for products in a wide variety of industries, including packaging, mobility and transportation, agricultural, chemical processing, electronics, oil and gas, and infrastructure to name a few. Among its diversified portfolio Dow's businesses deliver a range of technology-based products and solutions into the plastics value chain including amongst others polyethylene, silicone and polyurethane.



Production of durable plastic components	No	Not applicable
Production / commercialization of durable plastic goods (including mixed materials)	No	Not applicable
Production / commercialization of plastic packaging	No	Not applicable. Dow manufactures polymers which are used in many applications, including packaging, however, Dow does not itself manufacture polymer films or containers sold alone as packaging to other manufacturers. Dow has targets to significantly increase the number of circular solutions we bring to market as noted under W10.4. which will help enable packaging producers meet their circularity targets.
Production of goods packaged in plastics	Yes	Several of Dow's products are being used in plastic packaging. Dow seeks to use the most practical and environmentally friendly packaging for each application and is continuously improving our solutions to reflect this, for example through designs for recyclability, downgauging (stronger resins allowing less volume to be used), and increased use of recycled materials in the fabrication.
Provision / commercialization of services or goods that use plastic packaging (e.g., retail and food services)	No	Not applicable

(W10.6) Provide the total weight of plastic polymers sold and indicate the raw material content.

#### Row 1

Total weight of plastic polymers sold during the reporting year (Metric tonnes)

Raw material content percentages available to report

#### Please explain

Renewable content: Dow employs renewable raw materials across a large portfolio of products. These materials can directly substitute fossil-based resources using the mass balance approach, allowing us to allocate renewables in a wide variety of products. We work closely with suppliers to ensure that these materials are ethically sourced and do not have negative impacts such as deforestation, displacing local communities or harm to biodiversity.



Recycled content: It is our strategy to significantly increase our recycled inputs. Dow is expanding its recycling efforts through internal innovation, partnerships and scaling of production. We are working on new technologies; new value chain ecosystems and designing our products to enable recyclability in the value chain.

While renewable/recycled content are important, fossil-based feedstocks (not combusted) will still be needed as raw materials to fully realize demand and the low-carbon and sustainability benefits of plastic polymers.

# W10.8

(W10.8) Provide the total weight of plastic packaging sold and/or used, and indicate the raw material content.

	Total weight of plastic packaging sold / used during the reporting year (Metric tonnes)	Raw material content percentages available to report	Please explain
Plastic packaging used			Dow works on decreasing the amount of material used, increasing the amount of reuse of and increasing the amount of renewable materials and recycled content in the packaging of our own products.

### W10.8a

(W10.8a) Indicate the circularity potential of the plastic packaging you sold and/or used.

	Percentages available to report for circularity potential	Please explain
Plastic packaging used		Dow is advancing solutions to increase the reuse of, and recycling potential of the packaging of our own products.

# W11. Sign off

### W-FI

(W-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 water-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 water-related issues.

#### **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; any global and regional economic impacts of a pandemic or other public health-related risks and events on Dow's business; any sanctions, 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, 2022 and the Company's subsequent Quarterly Reports on Form 10-Q. These are not the only risks and uncertainties that Dow faces. There may be other 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 Inc. and The Dow Chemical Company ("TDCC") assume 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.

# W11.1

# (W11.1) Provide details for the person that has signed off (approved) your CDP water response.

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

# Submit your response

#### In which language are you submitting your response?

English

#### Please confirm how your response should be handled by CDP

	I understand that my response will be shared with all requesting stakeholders	Response permission
Please select your submission options	Yes	Public

# Please indicate your consent for CDP to share contact details with the Pacific Institute to support content for its Water Action Hub website.

Yes, CDP may share our Main User contact details with the Pacific Institute

#### Please confirm below

I have read and accept the applicable Terms