Welcome to your CDP Water Security Questionnaire 2021

W0. Introduction

W0.1

(W0.1) Give a general description of and introduction to your organization.

Hindustan Zinc is a company in zinc, lead and silver business. We are one of the world's largest integrated producers of zinc and are among leading global lead and silver producers. We are one of the lowest cost producers in the world and are well placed to serve the growing demand of Asian countries.

We are a subsidiary of Vedanta Limited which owns 64.9% stake in the Company while the Government of India retains a 29.5% stake. We are listed on the NSE and BSE.

Our core business comprises of mining and smelting of zinc and lead along with captive power generation. We have a metal production capacity of over one million tonnes per annum with our key lead-zinc mines in Rampura Agucha and Sindesar Khurd; and key modern smelting complexes in Chanderia and Dariba, all in the state of Rajasthan in India. We are focused on operational excellence and long-term sustainability on the back of our high-quality assets, long mine life of over 25 years and low cost base.

With a reserve base of 150 million MT and mineral resources of 298 million MT, our exploration programme is integral to our growth and future expansions. Successful exploration and subsequent development of mineral assets underlines our mission and business strategy. We own 474 MW of coal based thermal captive power plants in Rajasthan to support our metallurgical operations. In addition, our environment friendly power generation includes 273.5 MW of wind energy, 40.42 MW Solar power and 35.27 MW from waste heat generation. The solar power projects have been installed on waste dumping yard, tailing dam, Jarosite pond and waste land and these land can’t be used for any other purpose. We have saved the useful land this has showcased our commitment towards creating positive impact on the environment.

We are renowned globally for the high purity refined metals that we supply. Marketed under various brand names, our product line also includes LME registered Special High Grade (SHG) zinc and lead. Our business entails mines, smelters and refineries.

Our operations are now becoming increasingly digitalised and we are automating processes to reduce the level of human intervention. Ours is a transformational business, fuelled by data-driven decision-making and a holistic approach to value creation. Our constant focus is on making our operations safer, utilising our natural resources prudently and enhancing our sustainability quotient constantly. During FY 2019-20, our water accounting assessment was carried out by DNV GL, a globally renowned risk management and quality assurance company, and we were certified 2.41 times water positive company. Initiatives such as rainwater

harvesting, recharge to ground water and the use of treated sewage water have enabled us to achieve this distinction. This reinforces our commitment to the journey of water stewardship.
In 2020, India's first dry tailing plant was commissioned at Zawar Mine to reduce fresh water consumption by enhancing recovery of process water up to 90%, improving tailing Storage Facility structural stability and reducing water footprint.
The company has constructed an additional 15 million litres per day (MLD) to the existing 45 MLD Sewage Treatment Plant (STP) in Udaipur. This Sewage Treatment Plant is a significant step towards conservation of fresh water and care for environment by cleaning the water bodies thereby improving overall health & hygiene of Udaipur city.
During the year, a total of 7 RO hub plants and 28 standalone ATMs for providing safe drinking water to 35 of our operating villages/hamlets were installed which stand to benefit over 4,600 households 16,000 villagers. Hindustan Zinc had partnered with the State Government of Rajasthan under their four-year program Mukhyamanthri Jal Swavlamban Yojana and constructed / renovated over 120 water replenishments structures in 50 villages across four districts of Rajasthan.The project structures included construction of Anicuts, check dams, CCTS, Minor percolation Tanks etc..
Some awards received for Water Stewardship are:
· HZL has been awarded the 'Most Sustainable Company in the Mining Industry – 2021' by World finance at their Sustainability Awards 2021
· Debari Smelter won the prestigious **"14th ICC Environment Excellence Award (2020)"** from the Indian Chamber of Commerce in the Large Enterprise category at the 14th Environment Partnership E-Summit
· HZL ranked 1st in Asia – Pacific region, 2nd in the environment dimension and globally overall 7th in Metal and Mining Sector by the Dow Jones Sustainability Index 2020
· HZL won CII-ITC Corporate Excellence Sustainability Award 2020
· Hindustan Zinc's SK Mine received "CII National Award for Excellence in Water Management 2020"
· Dariba CPP and Chanderiya CPP awarded First & Second in "Water Optimization 2020 Awards" under the category of Best Water Efficient Plant <= 500 MW & Best Zero Liquid Discharge Plant

Further details are available in the company's website at ***http://www.hzlindia.com/***

W-MM0.1a

(W-MM0.1a) Which activities in the metals and mining sector does your organization engage in?

Activity	Details of activity
Mining	Zinc Lead
Processing	Silver Zinc Lead

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	April 1, 2020	March 31, 2021

W0.3

(W0.3) Select the countries/areas for which you will be supplying data.

India

W0.4

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

INR

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?

Yes

W0.6a

(W0.6a) Please report the exclusions.

Exclusion	Please explain
Marketing offices	We have excluded marketing offices where we consider our water footprint and risks to be very small. We do not collect the water input or output data of our offices that do not have a direct association with an operation (for example our marketing offices).

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	Direct: Sufficient amount of good quality freshwater is critical for use at our operations drilling, mining & beneficiation process, smelting and refining process, tailings slurry, dust suppression, sanitation and hygiene, and cooling activities etc. hence, HZL identifies its importance to be 'vital'. Water plays a major role in our industry as the water of a good quality results in more metal recovery in the beneficiation plants, whereas, a bad quality water results in high O&M costs in plants as the equipment corrode due to the presence of high chloride content in the water. Quality of water directly influences the treatment costs i.e. use of better quality water leads to lesser treatment costs. Good quality freshwater is also required for drinking purposes in our offices and at sites. Indirect: We share our resources especially water with the local communities surrounding our operations. Availability of good quality freshwater is important for meeting the domestic and sanitation needs as well as well-being of community residing nearby for maintaining steady relationships and securing social license to operate. Therefore, sufficient amounts of good quality freshwater available for use for local communities and other stakeholders is important for us. We have initiated projects to enhance the water replenishing activity through rain water harvesting, pond deepening and recharge shafts in and around our operating areas. Future: Future dependency on freshwater in direct operations will reduce as we implement initiatives to meet our 2025 freshwater reduction targets. Our target is to reduce our fresh water consumption by 25% by 2025. To achieve this, HZL adopted a multipronged approach to manage water resources and consumption by implementing technologies such as by Multiple Effective evaporator/Mechanical Vapor Recompression (MVR) at all Smelters in place of conventional evaporators which will strengthen the Zero Liquid discharge with improved water recovery

Sufficient amounts of recycled, brackish and/or produced water available for use	Vital	Important	Direct: HZL's operations are in water stressed regions, accentuating the importance of relying on lower quality water. Lower quality water can be used in some of our operations such as for dust suppression, power generation, ore processing. This reduces our need for good quality freshwater. Thus, use of recycled and produced water is vital to maintain water security at our operations. Increased water conservation, demand management and use of third-party grey water as opposed to fresh or potable water use is key to our strategy. Indirect: Communities surrounding our operations, relationship with whom guarantees our license to operate, use freshwater for meeting their domestic and sanitation needs. Availability of recycled water for indirect use is therefore, rated as "not so important". Future: Future dependency on lower quality water in direct operations will increase as we implement initiatives to reduce freshwater and recycle more. This will be done by installing Multiple Effective Evaporator or Mechanical Vapour Recompression in smelters to accelerate water recovery and installation of dry tailing plants. We also plan to use municipal STP treated water across the 5 districts we

W1.2

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

	% of sites/facilities/operations	Please explain
Water withdrawals – total volumes	100%	Our response covers all operations owned by HZL (100%) The term "operations" refers to all HZLs' CPPs, mines and smelters. HZL measures, monitors and reports the total volume of water withdrawn. Total water withdrawals from each source are measured, tested and treated daily to ensure water standard requirements are met.

		Our total water withdrawal estimates include the quantity that we withdraw for use by our community and township though they are not included in the operational boundary. To achieve efficiency, HZL conducts environmental assessments through its ISO14001 standard to assess potential impacts due to excessive water withdrawal. For instance, Water meters are installed at sources, to record water withdrawal quantity daily. Internal water audit is conducted by our water managers which covers the aspect of water withdrawals every year. We also conduct external water audits annually such as, ISO 14001, GRI audit and Vedanta Sustainability Assurance Programme (VSAP) audit.
Water withdrawals – volumes by source	100%	Our response covers all operations owned by HZL (100%). The term “operations” refers to all HZLs’ CPPs, mines, and smelters. We measure and monitor all withdrawals per abstraction source. Total water withdrawals from each source are measured, tested and treated daily to ensure water standard requirements are met. Our total water withdrawal estimates include the quantity that we withdraw for use by our community and township though they are not included in the operational boundary. To achieve efficiency, HZL conducts environmental assessments through its ISO14001 standard to assess potential impacts due to excessive water withdrawal. For instance, Water meters are installed at sources, to record water withdrawal quantity daily. Internal water audit is conducted by our water managers which covers the aspect of water withdrawals every year. We also conduct external water audits annually such as, ISO 14001, GRI audit and Vedanta Sustainability Assurance Programme (VSAP) audit.
Entrained water associated with your metals & mining sector	76-99	Our response covers mines representing 76-99% of all operations owned by HZL . The term “operations” refers to all HZLs’ CPPs,

activities - total volumes [only metals and mining sector]		mines and smelters. HZL measures and monitors entrained water (entailing the production of water in the raw materials that are mined. Water optimization is crucial for HZL and to achieve this HZL monitors the total water withdrawals from ground water intersection during mining of ore on a daily basis using a metered monitoring system. The water is collected and reused in process. It is to note that, only mines are being considered here.
Water withdrawals quality	100%	Our response covers all operations owned by HZL HZL(100%). The term “operations” refers to all HZLs’ CPPs, mines and smelters. To ensure that the water quality meets the standards for domestic use and operational requirements, the total water withdrawals from surface water sources are analyzed, tested and treated on a daily basis. Regular metered monitoring & stewards system in place ensure that water usage is optimized. This is done to track the performance indicators and keep a check on the progress towards meeting the water reduction targets.
Water discharges – total volumes	100%	Our response covers all operations owned by HZL HZL(100%). The term “operations” refers to all HZLs’ CPPs, mines and smelters. Our Consent to Operate under section 21(4) of Prevention & Control of Pollution Act, 1981, is dependent upon our ability to maintain zero discharge status from the premises, meaning no trade effluent shall be discharged outside operations. To comply by these requirements, we strictly monitor our water balance parameters. All our sites are Zero Liquid Discharge (ZLD) plants with no liquid effluent into surface water, groundwater, or third parties, completely eliminating the environmental pollution. To ensure to maintain this process, real time monitoring systems along with flow meters and PTZ camera are installed at the plant outlets for all smelters and captive

		power plants.
Water discharges – volumes by destination	100%	Our response covers all operations owned by HZL(100%). The term “operations” refers to all HZLs’ CPPs, mines and smelters. Our Consent to Operate under section 21(4) of Prevention & Control of Pollution Act, 1981, is dependent upon our ability to maintain zero discharge status from the premises, meaning no trade effluent shall be discharged outside operation. To comply by these requirements, we strictly monitor our water balance parameters. All our sites are Zero Liquid Discharge (ZLD) plants with no liquid effluent into surface water, groundwater, or third parties, completely eliminating the environmental pollution associated with the water discharge To ensure to maintain this process, real time monitoring systems along with flow meters and PTZ camera are installed at the plant outlets for all smelters and captive power plants.
Water discharges – volumes by treatment method	100%	Our response covers all operations owned by HZL(100%). The term “operations” refers to all HZLs’ CPPs, mines and smelters. Our CTO under section 21(4) of Prevention & Control of Pollution Act, 1981, is dependent upon our ability to maintain zero discharge status from the premises, meaning no trade effluent shall be discharged outside operations. To comply by these requirements, we strictly monitor our water balance parameters. All our sites are ZLD plants with no liquid effluent into surface water, groundwater, or third parties. To ensure to maintain this process, real time monitoring systems along with flow meters and PTZ camera are installed at the plant outlets for all smelters and captive power plants. We track the process water which is recycled after undergoing treatment at onsite ETP and a

		two stage RO system. The treated effluent conforms to the prescribed standards and is recycled in the process. MEE and MVR have been provided to ensure ZLD
Water discharge quality – by standard effluent parameters	100%	Our response covers all operations owned by HZL(100%). The term “operations” refers to all HZLs’ CPPs, mines and smelters. Our CTO under section 21(4) of Prevention & Control of Pollution Act, 1981, is dependent upon our ability to maintain zero discharge status from the premises, meaning no trade effluent shall be discharged outside operations. To comply by these requirements, we strictly monitor our water balance parameters. All our sites are ZLD plants with no liquid effluent into surface water, groundwater, or third parties. To ensure to maintain this process, real time monitoring systems along with flow meters and PTZ camera are installed at the plant outlets for all smelters and captive power plants. We track the process water which is recycled after undergoing treatment at onsite ETP and a two stage RO system. The treated effluent conforms to the prescribed standards and is recycled in the process. MEE and MVR have been provided to ensure “Zero Liquid Discharge.
Water discharge quality – temperature	100%	Our response covers all operations owned by HZL (76-99%). The term “operations” refers to all HZLs’ CPPs, mines and smelters. Our Consent to Operate under section 21(4) of Prevention & Control of Pollution Act, 1981, is dependent upon our ability to maintain zero discharge status from the premises, meaning no trade effluent shall be discharged outside operations. To comply by these requirements, we strictly monitor our water balance parameters. All our sites are Zero Liquid Discharge (ZLD)

		plants with no liquid effluent into surface water, groundwater, or third parties, completely eliminating the environmental pollution associated with the water discharge. To ensure to maintain this process, real time monitoring systems along with flow meters and PTZ camera is installed at the plant outlets for all smelters and captive power plants.
Water consumption – total volume	100%	Our response covers all operations owned by HZL (100%). The term “operations” refers to all HZLs’ CPPs, mines and smelters. HZL measures and monitors the volume of water consumed at all of its operations. At HZL, it is important for us to integrate the water management system with decision-making processes and to avoid and minimize any probable impact on water resources. To ensure this, the total water consumption data is recorded on a daily basis through a metered monitoring system. All our sites are having water resource management plans. This plan is updated annually based on actual water consumption. In this exercise, suitable water conservation projects are identified to minimize water losses and implemented. We record consumption in order to ensure compliance and effectively Disclose transparently. We also conduct external water audits annually such as, ISO 14001, GRI audit and Vedanta Sustainability Assurance Programme (VSAP) audit which covers water systems and data.
Water recycled/reused	100%	Our response covers all operations owned by HZL(100%). The term “operations” refers to all HZLs’ CPPs, mines and smelters. Water conservation is a collective responsibility and a non-negotiable aspect for sustainable development at HZL. To ensure this, there is a specified process in place for recycle/reuse of water at all our sites. Water is recycled after undergoing treatment at onsite ETP and a two stage RO system. The

		treated effluent conforms to the prescribed standards and is recycled in the process. MEE and MVR ensure “Zero Liquid Discharge. Major initiatives like recycling of tailing water, dry tailing plant and deep cone thickener initiatives have been implemented at our mines. Further, Sewage treatment plant based on Fluidized Aerobic Bed Reactors (FAB) technology has been provided for all townships. Treated water is reused and the total volumes of recycled and reused water are recorded and monitored for all our operations throughout the year on a daily basis.
The provision of fully-functioning, safely managed WASH services to all workers	100%	Our response covers employees and workers working within the boundary of our operations owned by HZL. The term “operations” refers to all HZLs’ CPPs, mines and smelters. HZL monitors the provision of fully-functioning, safely managed WASH services to all workers at each of its operations (100%). Water network that provides water for WASH services is measured daily by means of appropriate monitoring and recording methodology. HZL is committed to safe water, sanitation and hygiene at the workplace in alignment to the United Nation’s SDG 6. Initiatives taken during the year during Covid-19, : Hand washing facilities at plant gate and all the prominent locations; frequent sanitization of work area; sanitizers and other PPE such as masks made available at all prominent places. Distributed hand gloves, masks , sanitizers , soaps etc. ; Regular awareness through public address system display boards and signage for maintaining social distancing, Easy access to drinking water etc.

W1.2b

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

	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Total withdrawals	28,073.42	Higher	Our response covers all operations owned by HZL(100%). The term “operations” refers to all HZLs’ CPPs, mines and smelters. The withdrawal quantity for our operations also include the quantity of water that we withdraw to supply to our stakeholders such as community who are not part of the operational boundary. We account for these numbers in our operations, since the water after being withdrawn from the source is stored inside our fence and then supplied via a water tankers to the stakeholders. For this reason, our water balance doesn’t align with the definition of Water withdrawal-Water Discharge= Water Consumption. All our units are ensuring Zero discharge. In FY 20-21 our water withdrawal was 28,073.42 ML as against 26730ML in FY 19-20. The water withdrawal is 5% higher than last year due to increase in 7% production and expansion of our mines. Also, due deficient in rainfall in FY 20-21, we had less availability of tailing dam reclaimed water , leading to increase in withdrawal from surface and ground water sources. Deficiency in rain also deteriorates the Water quality leading to higher consumption of water . Thirdly, due to Covid-19 lockdowns there is delay in installation and commissioning of ZLD projects in smelters (like MVR projects) and resulted water savings. Future: Future water withdrawal is expected to reduce by another 25% by 2025 and 5% by 2021 as we aim to further improve our recycling processes and avoid evaporation losses through installing Multiple Effective Evaporator /Mechanical Vapour Recompression, and installing dry tailing plant across the mines.

Total discharges	0	About the same	Our response covers all operations owned by HZL(100%). The term “operations” refers to all HZLs’ CPPs, mines and smelters. Our Consent to Operate under section 21(4) of Prevention & Control of Pollution Act, 1981, is dependent upon our ability to maintain zero discharge status from the premises, meaning no trade effluent shall be discharged outside Mine premises. To comply by these requirements, we strictly monitor our water balance parameters. All our sites are Zero Liquid Discharge (ZLD) plants with no liquid effluent into surface water, groundwater, or third parties, completely eliminating the environmental pollution. To ensure to maintain this process, real time monitoring systems along with flow meters and PTZ camera are installed at the plant outlets for all smelters and captive power plants All measures are in place to ensure that no effluent is discharged out of the premise. We expect total discharges to remain zero in the future as well
Total consumption	25,844.96	Higher	Our response covers all operations owned by HZL(100%). The term “operations” refers to all HZLs’ CPPs, mines and smelters. The water consumption quantity only includes water that we use to manufacture our products. While the water consumption numbers takes into account water consumed only for running operations and some sanitation needs within the premise, water withdrawal quantity includes water that we procure to supply to our stakeholders (community) outside the fence. For this reason, our water balance doesn’t align with the definition of Water withdrawal-Water Discharge= Water Consumption. We use an aggregation of site specific consumption details to quantify our total consumption details. Comparison: The water consumption for the FY 20-21 was 25,844.96 ML, while the previous year the value was 24795 ML. The total water consumption as compared to the previous year has increased by 4%. The total water withdrawal

			includes the water we use in fire services, distribution to community through CSR activities, consumption in township and pipeline losses, and waste water sourced from Udaipur STP. The water consumption for producing metal is 4% higher than last year due to increase in 7% production and expansion of our mines. Also, due deficient in rainfall in FY 20-21, we had less availability of tailing dam reclaimed water, leading to increase in withdrawal from surface and ground water sources. Deficiency in rain also deteriorates the Water quality leading to higher consumption of water . Thirdly, due to Covid-19 lockdowns there is delay in installation and commissioning of ZLD projects in smelters (like MVR projects) and resulted water savings. Future: Future water consumption may continue to reduce (by another 25% by 2025 and 5% by 2021) as we aim to further improve our recycling processes and avoid evaporation losses through installing Multiple Effective Evaporator or Mechanical Vapour Recompression, and dry tailing plants across the mines .

W1.2d

(W1.2d) Indicate whether water is withdrawn from areas with water stress and provide the proportion.

	Withdrawals are from areas with water stress	% withdrawn from areas with water stress	Comparison with previous reporting year	Identification tool	Please explain
Row 1	Yes	76-99	About the same	WRI Aqueduct	Except for the refining plant in Pantnagar, Uttarakhand all our mining and metal production operations are in the state of Rajasthan. All our sites, which contribute to about 99% of all our water withdrawals are in the state of Rajasthan which falls under water stressed region as per the WRI's Aqueduct Country level water risk atlas.

					We conduct a risk scenario analysis to identify operations where water is a critical issue. This enables us to further identify alternative sources of water in-order to reduce our impact on fresh water sources in that area. For this purpose, we engage ourselves with a team of external experts to classify the water stress areas. The Aqueduct tool provides an interactive online map which presents the baseline value percentage that is calculated using the ratio of total water withdrawals to available renewable surface and groundwater supplies of that region further reflecting the category of water stress. Above 80% of baseline value is classified as extremely high water stress region. We continue to improve our approach so as to balance the possible increase in production against the water withdrawals further ensuring to improve efficiency and decrease the water intensity.

W1.2h

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

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Fresh surface water, including rainwater, water from wetlands, rivers, and lakes	Relevant	17,508.71	Higher	Fresh surface water from dams and rainwater harvested in ponds are relevant as 62% of our water needs are met these sources.

				All operations except RAM and KM have a captive dam which makes withdrawal from surface water sources crucial for our production process . Total water withdrawals from each source are measured, tested and treated daily. Metered monitoring ensures optimized water usage. Our total water withdrawal estimates include quantity withdrawn for use by our community and township though they are not included in the operational boundary. In FY20-21 fresh water withdrawal increased by 4 % as compared to last year. Due to 1. Increased production (7%); 2. Low availability of tailing dam reclaimed water , hence increase in withdrawal from other sources. Future: Future dependency on freshwater in direct operations will reduce as we implement initiatives to meet our 2025 freshwater reduction targets. Our target is to reduce our fresh water consumption by 25% by 2025.
Brackish surface water/Seawater	Not relevant			This water parameter is not relevant because no brackish surface water/seawater volumes are withdrawn by any of HZL's operations. This trend is expected to continue in the future.
Groundwater – renewable	Relevant	2,909.54	Higher	The major source of water at Rampura Agucha mine is ground water as there is no other alternative captive dam/ surface water source or CSTP nearby. Also, our Kayad

				mines doesn't have a beneficiation plant and the ore produced at KM is treated at RAM, making RAM important location for us. Therefore, groundwater is relevant for us. Water withdrawals from each source are measured, tested and treated daily to ensure water standards are met. Metered monitoring is in place to ensure optimized water usage. Our ground water withdrawal levels have increased by 10.80 % as compared to FY19-20 due to increase in production by 9 % y-o-y at the RAM. Due insufficient rains, we had less availability of tailing dam reclaimed water, leading to increase in withdrawal from ground water sources. Future dependency on groundwater in direct operations will reduce as we implement initiatives to meet our 2025 freshwater reduction targets. Our target is to reduce our fresh water consumption by 25% by 2025.
Groundwater – non-renewable	Not relevant			This water parameter is not relevant because no non-renewable groundwater volumes are withdrawn by any of HZL's operations. This trend is expected to continue in the future as it also is against our water policy.
Produced/Entrained water	Relevant	467.54	Lower	We work below the ground water table, dewatering of mine intersection water becomes essential to run the operations. HZL measures

				and monitors entrained water (entailing the production of water in the raw materials that are mined. Water optimization is crucial for us and to achieve this we monitor the total water withdrawals from ground water intersection during mining of ore daily using a metered monitoring system. Produced/Entrained water in FY 20-21 decreased by 4 % from FY19-20 due to 21% increase in mine backfilling with tailings and thus reduction in voids resulted in less Entrained water Future dependency on produced water in direct operations will reduce as we implement initiatives to meet our 2025 freshwater reduction targets. Our target is to reduce our fresh water consumption by 25% by 2025. To achieve this, HZL adopted a multipronged approach to manage water resources.
Third party sources	Relevant	7,187.39	Higher	Third party water is relevant for our operations as we depend upon wastewater of other industries. Treated Water from Udaipur STP makes upto 25% of total water withdrawal. Third party water includes water supplied by municipality and the wastewater utilized by the company from other sources.. Water withdrawals from each source are measured, tested and treated daily to ensure water standards are met. Metered monitoring ensures optimized water usage

				Our third party water withdrawal in FY 20-21 increased by 6% as against FY 19-20 due to increase in production by 7%. To meet the needs, we increased the water sourced from Udaipur STP. The STP water is used at RDM, DZS and DSC. We reduced dependency on municipal water by 99%. Municipal water only accounts for 0.24 ML (1%) of total water. Future dependency on third party in direct operations will increase to meet our 2025 freshwater reduction targets. Our target is to reduce our fresh water consumption by 25% by 2025.

W1.2i

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

	Relevance	Please explain
Fresh surface water	Not relevant	Our Consent to Operate under section 21(4) of Prevention & Control of Pollution Act, 1981, is dependent upon our ability to maintain zero discharge status from the premises, meaning no trade effluent shall be discharged outside operations. To comply by these requirements, we strictly monitor our water balance parameters. All our sites are Zero Liquid Discharge (ZLD) plants with no liquid effluent into surface water, groundwater, or third parties, completely eliminating the environmental pollution associated with the water discharge. To ensure to maintain this process, real time monitoring systems along with flow meters and PTZ camera are installed at the plant outlets for all smelters and captive power plants. All measures are in place to ensure that no effluent is discharged out of the premise. We expect total discharges to remain zero in the future as well.
Brackish surface water/seawater	Not relevant	Brackish water is not relevant to our operations as our operations are in Rajasthan, which is land locked state. No sea/brackish water is available nearby.

Groundwater	Not relevant	Our Consent to Operate under section 21(4) of Prevention & Control of Pollution Act, 1981, is dependent upon our ability to maintain zero discharge status from the premises, meaning no trade effluent shall be discharged /outside operations. To comply by these requirements, we strictly monitor our water balance parameters. All our sites are Zero Liquid Discharge (ZLD) plants with no liquid effluent into surface water, groundwater, or third parties, completely eliminating the environmental pollution associated with the water discharge. . To ensure to maintain this process, real time monitoring systems along with flow meters and PTZ camera are installed at the plant outlets for all smelters and captive power plants. All measures are in place to ensure that no effluent is discharged out of the premise. We expect total discharges to remain zero in the future as well.
Third-party destinations	Not relevant	Our Consent to Operate under section 21(4) of Prevention & Control of Pollution Act, 1981, is dependent upon our ability to maintain zero discharge status from the premises, meaning no trade effluent shall be discharged /outside operations. To comply by these requirements, we strictly monitor our water balance parameters. All our sites are Zero Liquid Discharge (ZLD) plants with no liquid effluent into surface water, groundwater, or third parties, completely eliminating the environmental pollution associated with the water discharge. . To ensure to maintain this process, real time monitoring systems along with flow meters and PTZ camera are installed at the plant outlets for all smelters and captive power plants. All measures are in place to ensure that no effluent is discharged out of the premise. We expect total discharges to remain zero in the future as well.

W1.2j

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

	Relevance of treatment level to discharge	Volume (megaliters/year)	Comparison of treated volume with previous reporting year	% of your sites/facilities/operations this volume applies to	Please explain

Tertiary treatment	Relevant	0	About the same	100%	We have an integrated ZLD system that treats process water originating from smelting operations . The effluent is pumped to a cascade tower and reaction tanks to precipitate heavy metals. Effluents from the Hydro plant, Ausmelt and Pyro plant are the main source of fluoride ion with high suspended solids contents. Solids from effluent - oxides of lead and zinc are settled in thickener, Fluoride, gypsum and calcium fluoride are filtered. Effluent of cathode wash water, anode wash water & magnesium bleed are segregated. The effluent and

					precipitated solids are pumped to SRT. ETP treated water comes into reaction tank in which soda ash dosing is given to reduce the hardness. Ultra filtration membranes help in removing hardness salts of Calcium & Magnesium, associated with soleplate. After pretreatment the feed enters into the RO-1 & RO-2. Reject is collected into RO reject tank. The raw and required final treated water quality determines the chemical storage and feed equipment needed for coagulation, pH and flocculation. Reject of RO goes into MVR system.

					The ZLD System installed is a fully integrated automated system incorporating a mechanical vapor compression seeded brine concentrator and a mechanical vapor compressor driven forced circulation crystallizer system. The system concentrates the waste stream to slurry of salt crystals and mother liquor containing about 50% total solids. The 50% slurry is then fed to the belt filter press to separate solids from brine slurry, which is then disposed into secured landfill. We have increased the recycled water volume by 3%

					from previous year. This is due to increase in recycling of effluent generated due to 7% increase in production. Since ours is an integrated system, we don't monitor different input and output values at each filtration stage, In future we anticipate more effluents to be treated as the production will rise. This also means that we would recycle more water as ours is a ZLD.
Secondary treatment	Relevant but volume unknown				Since We have an integrated system, we don't monitor different input and output values at each filtration stage,
Primary treatment only	Relevant	0	About the same	100%	This includes the water reclaimed from tailing dam and

					recovered with Dry tailing plant . Only sedimentation is required to again reuse this water in beneficiation plant . Hence considered as Primary treatment only . Overall there is increase by 4% water recycling in mines compared to previous year . This ensures that we maintain compliance with Zero Liquid Discharge. FUTURE: In future we ancipate more effluents to be treated as the production will rise. This also means that we would recycle more water with commissionin g on Dry tailing plant across the

					mines
Discharge to the natural environment without treatment	Not relevant				Our Consent to Operate under section 21(4) of Prevention & Control of Pollution Act, 1981, is dependent upon our ability to maintain zero liquid discharge status from the premises, meaning no trade effluent shall be discharged outside Mine premises. To comply by these requirements, we strictly monitor our water balance parameters. Therefore, this parameter is not applicable to us as all our sites are zero liquid discharge facilities. We do not discharge any effluent to the natural environment.
Discharge to a third	Not relevant				Our Consent to Operate

party without treatment					under section 21(4) of Prevention & Control of Pollution Act, 1981, is dependent upon our ability to maintain zero liquid discharge status from the premises, meaning no trade effluent shall be discharged outside Mine premises. To comply by these requirements, we strictly monitor our water balance parameters. Therefore, this parameter is not applicable to us as all our sites are zero liquid discharge facilities. We do not discharge any effluent to the natural environment.
Other	Not relevant				Our Consent to Operate under section 21(4) of Prevention & Control of

					Pollution Act, 1981, is dependent upon our ability to maintain zero liquid discharge status from the premises, meaning no trade effluent shall be discharged outside Mine premises. To comply by these requirements, we strictly monitor our water balance parameters. Therefore, this parameter is not applicable to us as all our sites are zero liquid discharge facilities. We do not discharge any effluent to the natural environment.

W-MM1.3

(W-MM1.3) Do you calculate water intensity information for your metals and mining activities?

Yes

W-MM1.3a

(W-MM1.3a) For your top 5 products by revenue, provide the following intensity information associated with your metals and mining activities.

Product	Numerator: Water aspect	Denominator	Comparison with previous reporting year	Please explain
Zinc	Total water consumption	Ton of final product	Lower	At HZL we own and operate zinc mines that produces zinc minerals in ore as its primary product and co-products as minerals of lead and silver. In the pyro-metallurgical process, ore concentrate containing lead, zinc are processed to yield lead, zinc and silver metals. Since the ore processing happens together, it is difficult for us to segregate water consumed for these products, and hence we report our water consumption as water consumed for production of zinc – this includes water consumed for production of lead and silver as well. In FY 20-21,we produced 715445 MT (76.88%) of Zinc, 214399 MT(23.04%) of Lead and 706(0.08%) MT of Silver from a composite zinc ore. The Sp. water consumption (includes Udaipur STP treated water) in FY 20-21 was 13.92m3/ Metric tonne of metal produced while it was 14.51 m3/ metric tonne of metal produced in FY 2019-20. This indicates an approximately 4% reduction in intensity from last year. We are implementing several initiatives to reduce our dependence on freshwater such as recycling from tailing Storage Facility, operating dry tailing plant, installation of ETP, RO and MEE process. All these initiatives have resulted in a reduction in the amount of fresh water thereby balancing the water intensity despite increase in 7% production. These metrics are used internally to set water related targets and long term goals. We have a long-term Target to be 5 Times Water Positive Company and reducing the water consumption by 25% by 2025 from base year 2020. Future: HZL will continue to contribute

				towards water security and efficiency. We would remain focused to include increased efficiency in water use and also explore less water intensive technologies. With these initiatives it is anticipated that our long-term water security will improve and we will continue towards achieving our 2025 targets to become a 5 times positive water company and reduce the water consumption by 25%.

W1.4

(W1.4) Do you engage with your value chain on water-related issues?

Yes, our suppliers

Yes, our customers or other value chain partners

W1.4a

(W1.4a) What proportion of suppliers do you request to report on their water use, risks and/or management information and what proportion of your procurement spend does this represent?

Row 1

% of suppliers by number

76-100

% of total procurement spend

76-100

Rationale for this coverage

As a mining company with operations in Rajasthan & Uttrakhand in India, a significant proportion of our supply chain is also located in these regions for ease of supply. Ours is an integrated business model with mines and smelters being owned and managed by us. Primary raw material for the smelters are sourced from our own captive mines however for the other raw materials like chemicals, cements , fuel, mining equipments etc. we are dependent on external suppliers

HZL has a Responsible Sourcing Policy which delineates the expectations that it has from suppliers on ESG including performance on our climate change goals. The engagement process at HZL is spread out in three stages which include, the first stage where we undertake pre-qualification of all potential business partners through obtaining and monitoring evidence to ensure that a potential partner meets or exceeds our standards, as a pre-condition to be engaged for the supply of products and services to Hindustan Zinc. In order to maintain key supplier status within our procurement strategy, we require all suppliers to report on their compliance with ISO 14001. This screening is

done through a pre-qualification questionnaire (PQ) where various topics related to environmental, social and governance issues are covered..
The pre-screening criterial is applicable to 100% of our suppliers

Impact of the engagement and measures of success

Impact and Outcome: The engagement with suppliers helps HZL to mitigate risks by identifying red flag suppliers, fulfill their commitment, and build a strong relationship. From the information provided in the screening we identify potential risky suppliers. .
.
Success measurement: The success of the engagement is measured using the supplier's adherence to ISO 14001 where water is one of the criteria's. Adherence to international standard is a proxy method to understand supplier's governance, processes & practices to manage adverse environmental impacts. Hence, these criteria must be followed to attain the certification. The success of due diligence process is measured by the identification of high risk, medium risk and low risk suppliers.

Comment

We encourage our suppliers to not just comply by the relevant national & international standards, but ensure on-going improvement in their own standards through regular exchange of knowledge and training. Our supply chain management strategy incorporates to upskill and empower suppliers to share responsibility for integrating sustainability and human rights by building their own management systems and internal controls.

W1.4b

(W1.4b) Provide details of any other water-related supplier engagement activity.

Type of engagement

Incentivizing for improved water management and stewardship

Details of engagement

Water management and stewardship action is integrated into your supplier evaluation
Water management and stewardship is featured in supplier awards scheme

% of suppliers by number

1-25

% of total procurement spend

51-75

Rationale for the coverage of your engagement

HZL has initiated discreet engagement with critical suppliers, one whose goods or services have significant impact upon Hindustan Zinc's operations and/or sustainability, as well as form a large footprint in one or more of our operations in terms of allocated personnel, equipment and resources, making replacement or substitution highly difficult without a detailed plan and a significant replacement process. We have engaged with

214 critical suppliers that represents 20 % of our total supplier base and 68% of procurement spend.

Impact of the engagement and measures of success

Starting this year, we have increased our focus on ESG criteria as a part of our drive to become a sustainable business. We conduct regular risk assessments as an important part our supplier sustainability and engagement. The main objective is to ensure that our suppliers have sustainability processes in place and can guarantee safety of their employees as well as conservation of their local community and environment. The function of this risk assessment is to segment the supplier base through a formal methodical approach; to assess business and sustainability risks associated with existing supplier base and to incorporate necessary procedures to mitigate risks through continuous monitoring. HZL also recognizes the top 3 suppliers by location for their ESG requirements, compliances through water management and stewardship.

For our critical suppliers, we ensure that any potential and emerging risks are identified through site visits (as a part of due diligence and audits), interviews and information collection. The risk is measured through weighted risk-assessment questionnaire. A supplier will be marked as red-flag if it scores a Risk Score of 50 or below, and that supplier will be monitored for score changes. A Risk Score of over 50 and up to 80 will be categorized as Amber supplier. They will be monitored similar to the high-risk suppliers. These flagged suppliers may be classified either as sustainability high-risk or as critical high-risk. Both, red and amber-flagged, suppliers will be monitored annually to track their score changes.

Beneficial outcome:

By understanding the management of water at our supplier's operations, we de-risk our own operations and protect ourselves from physical and transition risks in our supply chain. Desktop analysis and Site Visit reports capture the assessment, and enable allocation of a risk score for the business partner. Monthly payments are also linked with performance and safety score for partners having long-term agreements. Key personnel from business partners are part of our committees at sites to create a sense of ownership among them.

Success: HZL measures its success by supplier risk score of above 80. A supplier will be marked as red-flag if they have a Risk Score of 50 or below, and that supplier will be monitored for score changes.

Comment

W1.4c

(W1.4c) What is your organization's rationale and strategy for prioritizing engagements with customers or other partners in its value chain?

Our two pronged strategy that involves risk screening and potential impact is our rationale for prioritizing engagements with customers or other partners in its value chain. HZL recognizes that water is a shared resource and hence, we collaborate with municipal authorities/local parties and communities.

Community-. HZL strives to ensure that the community in Rajasthan has adequate access to clean drinking water and therefore has revised its approach from temporary water solutions to community-owned sustainable water management. During the year, a total of 7 RO hub plants and 28 standalone ATMs for providing safe drinking water to 35 of our operating villages. HZL explores the opportunities of alternative low-quality water sourcing, and has developed storm water ponds of total 11.38 lacs m3 capacity at all the major HZL units. It has also initiated a project for deepening a pond of capacity 5.32 Lakh m3 in the vicinity of the RDC. The pond is used for harvesting rainwater and augmentation of ground water quantity and quality in the nearby areas of our operations. We measure our success through the number of implemented initiatives and the amount water stored, reused, recycled and provided an access to.
Customers- We constantly work with our customers to innovate and develop products keeping with the changing preferences and requirements. For example, Continuous Galvanizing Grade (CGG) zinc alloy produced as per customer requirement. HZL conducted a study in collaboration with subject matter expert to establish the techno commercial benefits of CGG to pass on the learnings with our customers for making their operation for efficient in all aspects and saves energy and water, cost, reduce bottom crossing, increase in fluidity of liquid zinc, better surface finish etc. are the list of few. Also, Zinc in Jumbo size JSHG helps to minimize the zinc wastage, ease of handling, and cost efficiency, saves water and energy and better safety in customer's operations.

W2. Business impacts

W2.1

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

No

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?

No

W3. Procedures

W-MM3.2

(W-MM3.2) By river basin, what number of active and inactive tailings dams are within your control?

Country/Area & River basin

India

Mahi River

Number of tailings dams in operation

1

Number of inactive tailings dams

0

Comment

This tailing storage Facility is part of our Zawar mining and beneficiation process. Dry tailing disposal plant at Zawar mill ensures recirculation of more than 90% of the process water present in tailings, near elimination of water losses through seepage and evaporation, virtual stoppage of any probability of groundwater contamination through seepage and significant safety improvement, promotes faster rehabilitation and restoration of storage site at mine closure, and ensures re-availability of water for further use thus reducing the risk of a catastrophic dam failure. It is now possible to extract excess water (recirculation for mill operation) from tailings by introduction of this filtration plants to transform solid fractions into cake containing only 16% moisture. This makes the system a highly efficient technology to treat tailing while also conserving water. We installed an additional pump, line system, and constructed a new 5,000 m3 tailing Storage Facility water reclaim facility at the Zawar mine to mitigate the challenge concerning low recirculation rate and low storage capacity (2,000 m3).

Country/Area & River basin

India

Other, please specify

Banas River Basin

Number of tailings dams in operation

1

Number of inactive tailings dams

0

Comment

This tailing Storage Facility is part of our Dariba mining and beneficiation process. Our tailing Storage Facility area spans ~8.2 lakh m2 and tailing from the SKM and the RDM are stored in the dam. Supernatent water from the storage facility collected in a pit near our pump house, following which its pumped back into the SKM and RDM. This is made possible by transferring large volumes of water into the newly constructed lined storage pond, which has a capacity of 1.25 lakh m3. Water from this pond is diverted to the mines for further use in the ore beneficiation plant. To enhance the levels of monitoring piezometers have been installed. Inclinometer are installed to monitor movement in X & Y axis. Reading from both the instruments is being transferred through GPS to the in charge of Tailing Storage Facility. This aids in taking proactive steps against the occurrence of unfortunate incidents.

Country/Area & River basin

India

Other, please specify

Banas River Basin

Number of tailings dams in operation

1

Number of inactive tailings dams

0

Comment

This tailing storage facility is part of our Dariba mining and beneficiation process, which spans an area of ~8.2 lakh m2. Tailing from Sindesar Khurd Mine (SKM) and the Rajpura Dariba Mine (RDM) are stored in this dam. Supernatant water from the storage facility is collected in a pit, from where it is then pumped back to SKM and RDM. This is made possible by transferring large volumes of water into lined storage pond, with a capacity of 1.25 lakh m3. Water from this pond is diverted to the mines for further use in the ore beneficiation plant. Piezometers and Inclinometers monitor pressure and movement along X & Y axis respectively. Reading from both the instruments is reported through GPS to the in-charge of Tailing Storage Facility. This aids in taking proactive steps against the occurrence of any unfortunate incidents. We plan to install separate dry tailing plant at RDM.

Country/Area & River basin

India

Other, please specify

Luni Basin

Number of tailings dams in operation

1

Number of inactive tailings dams

0

Comment

We erected a water collection reservoir to store excess water accumulating at our tailing Storage Facility. In order to eliminate the need for physical inspections, we commissioned the installation of vibrating wire type piezometers and location-based inclinometers within the embankment. These instrumentation systems provide real-time monitoring information, which boosts overall surveillance. We also have a structured Tailing Storage Facility (TSF) organogram at each site wherein periodic reviews are carried out. In FY2021 Hindustan Zinc has introduced a novel, satellite based InSAR (Interferometric Synthetic Aperture Radar) monitoring technique to provide early warning of surface ground movements. This technique allows mapping deformation using radar images of the ground surface that are collected from orbiting satellites. It enables high precision surface displacement monitoring at a mine scale. InSAR monitoring is carried

out at 13 sites, including Rampura Agucha open pit, all tailings dams and selected waste dumps. InSAR monitoring augments existing stability monitoring systems and provides greater safety and management assurance.

W-MM3.2a

(W-MM3.2a) Do you evaluate and classify the tailings dams under your control according to the consequences of their failure to human health and ecosystems?

Row 1

Evaluation of the consequences of tailings dam failure

Yes, we evaluate the consequences of tailings dam failure

Evaluation/Classification guideline(s)

Australian National Committee on Large Dams (ANCOLD)
Canadian Dam Association (CDA)
Other, please specify
International Commission on Large dams (ICOLD)

Tailings dams have been classified as 'hazardous' or 'highly hazardous'

Yes, tailings dams have been classified as 'hazardous' or 'highly hazardous' (or equivalent)

Please explain

HZL conducted a dam break assessment for all its three tailing storage facilities at the time of dam construction. The consequence category is determined using international guidance on managing large dams- ICOLD, CDA and ANCOLD. Every dam is rated based on the risk associated with potential dam failure and categorized based on the definition of the severity of damage and loss in relation to a number of assets. Factors such as population at risk, potential loss of life, environment and cultural values, infrastructure and economics determine basis of the classification. The rating is expressed using seven Consequence Categories: Very low – dam failure is considered negligible; Low, Significant, High-A, B and C; and Extreme –dam failure is considered severe. Design, monitoring and surveillance requirements are then specified as per the designated consequence category. The CCS rating is evaluated independently from the probability of an unwanted event-taking place. The higher the CCS rating, the more stringent the requirements. Facilities classified as ‘High’ are regarded as ‘hazardous’ and ‘Major’ as ‘highly hazardous’. HZL follows Vedanta Tailing Management Facility Standard which is aligned with other international standards. This standard is developed to focus on the full life-cycle of the tailings process. It is applicable.to all the existing and future tailing facilities in mining operations. HZL also has a dedicated policy(tailing management policy-2018 (hzlindia.com)

W-MM3.2b

(W-MM3.2b) Provide details for all dams classified as 'hazardous' or 'highly hazardous'.

Tailings dam name/identifier

Rampura Agucha Mines Tailing Dam

Country/Area & River basin

India

Other, please specify

Banas Basin

Latitude

25.5

Longitude

74.44

Hazard classification

ICOLD 'IV': Extreme and ANCOLD: Extreme

Guideline(s) used

Australian National Committee on Large Dams (ANCOLD)

Other, please specify

International Commission on Large dams (ICOLD)

Tailings dam's activity

Active

Current tailings storage impoundment volume (Mm3)

60

Planned tailings storage impoundment volume in 5 years (Mm3)

7.5

Please explain

We undertook dam break modelling in 2019 at the Agucha TSF to assist in understanding the risk posed to stakeholders downstream of the TSF. The results of the model determine the arrival times and maximum flow depths of the breach flood wave produced by a hypothetical breach of containment. The results were used to prepare inundation maps. Evaluated the Agucha TSF against the ICOLD hazard rating and determined that the TSF has a rating level of 'IV (Extreme)'. This was mainly due to the high population at risk (PAR) and was consistent for all modeled cases. The hazard rating was also evaluated against the ANCOLD Guidelines and determined that the TSF has a Consequence Category of 'Extreme'. This was mainly due to the high PAR and was consistent for all modeled cases. Recommended designing and constructing mitigation structures to reduce PAR exposure, demarcate safe areas for evacuation in the case of a flood event and demarcate risk zones to prevent new settlements in these areas.

Tailings dam name/identifier

Rajpura Dariba Complex Tailing Dam

Country/Area & River basin

India

Other, please specify

Banas Basin

Latitude

24.57

Longitude

74.08

Hazard classification

ANCOLD (2012a,b) Guidelines: Category of High A CDA (2013) Guidelines: Category of Very High.

Guideline(s) used

Australian National Committee on Large Dams (ANCOLD)

Canadian Dam Association (CDA)

Tailings dam's activity

Active

Current tailings storage impoundment volume (Mm3)

31

Planned tailings storage impoundment volume in 5 years (Mm3)

11.25

Please explain

Dam failure impact assessment of the TSF at Rajpura Dariba location was conducted in 2019-20. Overtopping and piping failure modes were considered for each of the selected breach locations. A Consequence Category Assessment was carried out for the TSF based on both the ANCOLD and CDA guidelines. Based on the ANCOLD guidelines, the TSF has a consequence category of High A and based on the CDA guidelines, the TSF has a consequence category of Very High. Mitigation options have been considered in this assessment for the reduction of impacts resulting from a breach of the Dariba TSF, in terms of impacts to surrounding populations. Engineered levees in the form of protection or diversion berms, placed along the inundated perimeter of the settlements could serve to reduce the potential flood impacts to the predicted inundated areas of the settlements. Further studies are recommended for proper planning, design, modelling, and installation of warning system.

Tailings dam name/identifier

Zawar Tailing Storage Facility

Country/Area & River basin

India

Mahi River

Latitude

24.2

Longitude

73.42

Hazard classification

"Very high" dam classification according to Canadian Dam Association (CDA) guidelines.

Guideline(s) used

Canadian Dam Association (CDA)

Tailings dam's activity

Active

Current tailings storage impoundment volume (Mm3)

32.45

Planned tailings storage impoundment volume in 5 years (Mm3)

26.5

Please explain

Dam Break analysis study of Zawar Tailings Storage Facility Failure was conducted in February 2021. To assess the potential damages associated with the hypothetical failure of the main dams at Zawar TSF. The structure's current consequential risk has been classified as "Very High. Given the significant community downstream and short warning time, these assumptions would place the facility within the "Very high" dam classification according to CDA guidelines. The results from this report will serve to facilitate the path for an Emergency Response Plan so that future design requirements are adjusted. Dry stacking - 8.40 million MT

W-MM3.2c

(W-MM3.2c) To manage the potential impacts to human health or water ecosystems associated with the tailings dams in your control, what procedures are in place for all of your dams?

Procedure	Detail of the procedure	Please explain
Acceptable risk levels	Establishment of site-level guidance and standards for acceptable risk levels based on an evaluation of potential chemical and physical risks Establishment of site-level guidance and standards for acceptable risk levels for third party safety in consultation with	HZL has a tailing management policy that is aligned to the Vedanta Tailing Management Facility Standard (TMFs) following the international standards as well. Dam break stability studies conducted in coordination with global experts. Tailing Storage Facility (TSF) committee is constituted with experts from various functions. We take extensive measures for construction, operation, maintenance and

	potentially affected communities, employees and relevant government bodies Establishment of site-level guidance and standards for acceptable risk levels across all life stages, including post-closure Establishment of company-wide standards for acceptable risk levels that folllow a company policy to eliminate or minimize water-related risks associated with tailings dams	closure of facilities that mitigate risks of tailing dam failure. Wherever possible, we repurpose tailings materials and waste rock as backfill to stabilize our underground mining operations. Remaining tailings are then placed in a specially designed tailings storage to minimize the environmental, social, and economic risks. In regards to the past high impact failures of tailing dams, as a proactive measure, we have decided to build all our future tailing Storage Facility as dry tailing to de-risk from dam failures. Dry tailing technology also helps us to eliminate land requirement for landfills and water recovery. Last year, India's first dry tailing plant was commissioned at Zawar Mine to reduce fresh water consumption by enhancing recovery of process water over 80%, improving tailing dam structural stability and reducing water footprint.
Operating plan	An operating plan that is aligned with your established acceptable risk levels and critical controls framework An operating plan that includes the operating constraints of the dam and its construction method An operating plan that considers the consequences of breaching the operating constraints of the dam An operating plan that includes periodic review of the foundations and slope materials An operating plan that evaluates the effectiveness of the risk management measures and whether performance objectives are being met	HZL has a tailing management policy that is aligned to the Vedanta Tailing Management Facility Standard (TMFs) following the international standards as well. Dam break stability studies conducted in coordination with global experts. Tailing Storage Facility (TSF) committee is constituted with experts from various functions. We take extensive measures for construction, operation, maintenance and closure of facilities that mitigate risks of tailing dam failure. Wherever possible, we repurpose tailings materials and waste rock as backfill to stabilize our underground mining operations. Remaining tailings are then placed in a specially designed tailings storage to minimize the environmental, social, and economic risks. In regards to the past high impact failures of tailing dams, as a proactive measure, we have decided to build all our future tailing Storage Facility as dry tailing to de-risk from dam failures. Dry tailing technology also helps us to eliminate land requirement for landfills and water recovery. Last year, India's first dry tailing plant was commissioned at Zawar Mine to reduce fresh water consumption by enhancing recovery of process water over 80%, improving tailing dam

		structural stability and reducing water footprint.
Life of facility plan	A life of facility plan that identifies minimum specifications and performance objectives for the operating and closure phases A life of facility plan that includes an identification of potential chemical and physical risks from the design and construction phases A life of facility plan that considers post-closure land and water use	A tailing management plan is in place to manage tailings and waste facilities ensuring to protect the health of our employees, community and the natural environment throughout its lifecycle. This plan is developed in accordance to the tailing management and EHS policy s. In addition to this, we are also guided by the tailing management standard, which provides approach and methodology on tailings management at different stages. In FY 20-21, with the commissioning of the Backfill plant at ZM, the use of tailings in backfilling will go up, thus in turn increasing the life of the tailing dam. The commissioning of backfill plants at Zawarmala and Mochia mines will de-risk operations and provide opportunity to mine left-out high-grade ore in pillars. We are in process to commissioning dry tailing plant at Rajpura Dariba Mine, due in March 2022.
Assurance program	An assurance program for each phase of the facilities' life that includes the scope of the various levels of inspections, audits and reviews An assurance program that includes an external audit covering the life of facility or the operating plans	We conduct stability tests for all our three tailing storage facility with the help of global experts. In addition, comprehensive internal audits by cross-functional teams are conducted and further the recommendations from these are addressed on a priority basis. Independent assessment by Golder Associates/ ATC Williams, global experts, also conducted to review the integrity/ stability of our storage facilities and their associated management practices
Approval	A policy to eliminate or minimize water-related risks associated with tailings dams is approved by a C-suite officer The operating plan and the life of facility plan are approved by the EHS manager The results of the assurance program and the change management process are approved by the EHS manager The results of the assurance program and the change	At HZL, we have a tailing management policy, which is approved by CEO. We have three active tailing storage facilities and all sites have a dedicated Tailing Storage Facility (TSF) manager and a TSF committee. The committee consists of team members from the design, operations, construction and environmental departments. All TSFs, as well as associated pipeline and pumping infrastructure, are subjected to a regular audit and inspection

	management process are approved by a C-suite officer	
Change management process	Inclusion of a formal change management process for the construction phase of the facility Inclusion of a formal change management process for the operating phase of the facility Inclusion of a formal change management process for the closure and decommissioning phase of the facility Inclusion of a change management process in the assurance program Inclusion of the results from external audits of operating plans or life of facility plans into the change management process	At HZL, we have three active tailing storage facilities and all sites have a dedicated TSF manager and a TSF committee. The committee consists of team members from the design, operations, construction and environmental departments. All TSFs, as well as associated pipeline and pumping infrastructure, are subjected to a regular audit and inspection.

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.

Direct operations

Coverage

Full

Risk assessment procedure

Water risks are assessed as part of other company-wide risk assessment system

Frequency of assessment

More than once a year

How far into the future are risks considered?

More than 6 years

Type of tools and methods used

Tools on the market
International methodologies
Databases

Tools and methods used

WRI Aqueduct
IPCC Climate Change Projections
Regional government databases

Comment

HZL identifies and assesses strategic & financial impacts through a formal monitoring process at the unit level and at the corporate level, which identifies and categorizes existing and emerging climate-related risks and opportunities with respect to both Physical and Transitions risks. These risks are prioritized based on frequency of its occurrence or recurrence and on the degree of its impact on revenue & cost including its ability to disrupt our primary operations. To assess the water related risks we have a robust Enterprise Risk Management (ERM) system in place. IN FY 20-21, we conducted Climate Change risk scenario assessment, where drought and extreme rainfall were identified as top risks.

A risk review committee is present at all sites and quarterly reviews the identified risks and mitigation measures. Each of the site has a water manager who is responsible for water risk assessment, management and planning. Water risk analysis and calculation of risks for current and future trends were conducted for 9 sites of HZL. The assessment took in account internal site surveys, external data sets and third party expertise to predict future water risks (up to 3 to 5 years). HZL also engages with a group of experts using the WRI's Aqueduct risk atlas to assess the water stress prioritization and carries out an internal water risk assessment as well.

Supply chain

Coverage

Full

Risk assessment procedure

Water risks are assessed as part of other company-wide risk assessment system

Frequency of assessment

Annually

How far into the future are risks considered?

3 to 6 years

Type of tools and methods used

Tools on the market
Enterprise Risk Management
International methodologies
Databases

Tools and methods used

WRI Aqueduct
COSO Enterprise Risk Management Framework
Environmental Impact Assessment
IPCC Climate Change Projections

Regional government databases

Comment

We continuously engage with our supply chain partners like suppliers, regulators other water users, local communities, investors, consumers to reduce their impact on water stress. We consider the feedback of our supply chain partners through stakeholder engagement process during materiality analysis stage water is one of our material issues.

Other stages of the value chain

Coverage

None

Comment

W3.3b

(W3.3b) Which of the following contextual issues are considered in your organization's water-related risk assessments?

	Relevance & inclusion	Please explain
Water availability at a basin/catchment level	Relevant, always included	We consider water availability at the basin/catchment level as highly relevant as 99% of our operations exist in Rajasthan where water availability is a significant concern due to the area being a water stress zone identified using the WRI Aqueduct Tool. Availability of water is also categorized as a top 10 organizational risks. HZL conducts extensive tracking and monitoring of water availability at regional level and local level to understand and identify the water stress levels for all its facilities. HZL has also established a Water Management Community as a taskforce under the Executive Sustainability Committee, at the corporate level, to ensure strong governance for water conservation, water risk assessment, formulation of mitigation strategies, and continual improvement in water management processes. The community is comprised of Water manager from each site. The community meets on monthly basis, appraise the Chairman of Executive Sustainability Committee on the various water management projects progress, and seek guidance as and when required. Furthermore, for measuring water quantity we have installed water meters at all suitable locations of all our sites and use an online monitoring system for measuring the quality. We

		have a monitoring program that focuses on quality wastewater generated and treated, water consumption trend and quality of surface & ground water in surrounding villages. Water consumption is tracked on daily basis and reviewed in a morning meeting. HZL conducts in-depth water audits, water conservation projects are identified, and reduction targets are developed on a yearly basis for all our sites. Parameters such as quantum of wastewater generated, surface and ground water quality are tracked daily and monitored on a monthly basis. Potable water quality monitoring is also conducted at each location with a specific schedule. Periodic internal monitoring is done on Daily Weekly, Monthly, basis and a third party monitoring is done on a half-yearly basis. We are also required to report these parameters to the regional authorities as part of our license requirements. These initiatives helps us in achieving our long-term water intensity targets and we anticipate further improvement in these levels. We will also continue towards achieving our 2025 targets to become 5 times positive water company and reduce the water consumption by 25%.
Water quality at a basin/catchment level	Relevant, always included	Water quality at a basin/catchment level is important and relevant to our operations as the availability of good quality water directly affects our costs, production, and employee health and safety (drinking water, etc.). HZL undertakes assessments such as internal site surveys, external data sets and third party expertise for having a better understanding of the water quality. We also factor current river basin management plans into our risk assessments and water management plan to ensure to understand any potential limitations or opportunities that may arise in relation to these plans. This is in terms of both quality and quantities. We use this data and our internal expertise to feed into the risk assessments that we conduct on site regularly. We also have a risk review committee at all sites with water managers responsible for water risk assessment and management planning. Moving forward, HZL anticipates the quality of water to remain a prominent part of our risk assessment.
Stakeholder conflicts concerning water resources at a basin/catchment level	Relevant, always included	Stakeholder conflicts concerning water resources are relevant to our operations as the inability to provide inclusive growth to the communities and any disruption to their lives caused due to the Company's operations will lead to discontentment and negatively influence the Company's reputation and social license to operate. We have always been conscious of this fact and having operations in water

		stress region our focus on communities' water and sanitation need has only grown with time. We deliver strong water stewardship for the sustainability of our operation and nearby communities. We ensure to include communities around water stress areas in our stakeholder management process. To avoid stakeholder conflicts we conduct the environment and social impact assessment for all new projects as part of our Sustainability framework. Through our risk assessment process, we also identify opportunities to work in partnership with the water utilities and community to manage the water supply. We have constantly been prioritizing the re-use of water at our site to make fresh water resources available for the community. This year, Hindustan Zinc had partnered with the State Government of Rajasthan under their four-year program Mukhyamanthri Jal Swavlamban Yojana and constructed / renovated over 120 water replenishments structures in 50 villages across four districts of Rajasthan thereby enhancing the accessibility to the communities
Implications of water on your key commodities/raw materials	Relevant, always included	HZL considers the implications of water on key commodities and raw materials important as these raw materials are the basis of our operations. For instance, any delays caused by water issues affecting the production of commodities like chemicals; diesel, explosive etc. will reduce production levels. As a result, to assess the implications we have we conduct risk assessment of our captive mines, and the water scarce operations are identified using the WRI aqueduct tool. Water scarcity has a direct impact on availability of raw materials from mines. The issue surrounding future water implications on key commodities/raw materials are factored into the risk assessment process through engagements and the dissemination of questionnaires to suppliers requesting environmental and water related information. Starting this year, we will have increased our focus on ESG criteria as a part of our greening the supply chain initiative. We have initiated risk assessments to ensure that our suppliers have sustainability processes in place and can guarantee safety of their employees as well as conservation of their local community and environment. The function of this risk assessment is to segment the supplier base through a formal methodical approach, to assess business and sustainability risks associated with existing supplier base and to incorporate necessary procedures to mitigate risks through continuous monitoring. The criteria included in

		assessment are- health and safety, environment policies, air emissions, water stewardship, and biodiversity policies of suppliers. For our critical suppliers, we ensure that any potential and emerging risks are identified through site visits (as a part of due diligence and audits), interviews and information collection. The risk is measured through weighted risk-assessment questionnaire. A supplier will be marked as red flag if it scores a Risk Score of 50 or below, and that supplier will be monitored for score changes. They will be monitored similar to the high-risk suppliers. These flagged suppliers may be classified either as sustainability high-risk or as critical high-risk. Both, red and amber-flagged, suppliers will be monitored annually to track their score changes. Monthly payments are also linked with performance and safety score for partners having long-term agreements. We also use the feedback from our internal engagement with our suppliers to feed into our risk management processes
Water-related regulatory frameworks	Relevant, always included	Water related regulatory frameworks are relevant to us and HZL has always adhered to the changes in regulations and pricing structure and will continue to do so in future as well. We report certain water information to the regional authorities as part of our consent requirements. We maintain records and regulatory registers to ensure our compliance to the required frameworks and incorporate in-house expertise to stay up to date with current regulatory information and tariffs.
Status of ecosystems and habitats	Relevant, always included	The status of ecosystems is important to our organization and due responsibility is taken during conceptual stage that there is no impact to the natural ecosystem and habitat exhibiting at project location. We have a biodiversity management plan and all measures are taken to enhance the ecosystem. HZL conducts an IBAT tool assessment to ensure that none of the HZL sites is located in or near any ecological sensitive areas. Impact assessment for all biodiversity projects are conducted to further put in an action plan in place. HZL has always prioritized the need to protect the biodiversity and in FY 21, HZL has developed a Bio Diversity Park in Rajpura Dariba Complex by planting around 42 species of sapling to attract local and migratory birds. HZL in collaboration with The Energy and Research Institute of India (TERI) has also managed to restore a

		wasteland created by dumping Jarofix in its designated yard to a green cover. It is the biggest example of Greening Industrial Wasteland where mycorrhiza technology was used for development of green area on existing Jarofix waste dump.
Access to fully-functioning, safely managed WASH services for all employees	Relevant, always included	Access to fully functioning, safely managed WASH services for all employees is highly important to us as unhygienic conditions pose a risk to public health and inherently the health and safety of our employees. HZL is reaching out to 4.20 lakhs beneficiaries at Rajasthan state level through COVID measures and 61% of CSR investment is focused on Health & COVID response. HZL is committed to implementing access to safe water, sanitation and hygiene at the workplace at an appropriate level of standard for all employees in all premises under direct control within three years. Furthermore, it is aligned to Sustainable Development Goal 6 (To ensure access to safe water sources and sanitation for all). Initiatives taken during the year: • HZL currently has 4 Mobile Health Vans covering 108 villages at 4 of its locations in Rajasthan & Uttarakhand. The health care facilities include OPD, special health camps, Awareness sessions through IEC activities (Information, Education, and Communication), and Lab tests. During the year FY 2020-21, HZL has installed 7 RO hub plants, 28 standalone ATMs benefiting 35 operating villages/hamlets and over 2500 villagers.
Other contextual issues, please specify	Relevant, always included	Hydrogeological studies - to assess the availability of groundwater and comment on aspects of depth to potential aquifers, aquifer availability and type, possible yields and water quality. For this purpose, all available hydrogeological information of the areas has been analyzed, and a geophysical survey was done. Implementation of adequate recharge measures proposed in the hydrological and hydrogeological study. Piezometers are installed at all locations to monitor the trend of quality of water table.

W3.3c

(W3.3c) Which of the following stakeholders are considered in your organization's water-related risk assessments?

	Relevance & inclusion	Please explain
Customers	Relevant, always included	We consider this stakeholder group to be relevant in our water risk assessments. Water is an essential raw material for our mining processes and operations. Water stress or scarcity can

		cause production delays and, thus, cause delays in product delivery to customers. Consequently, customers are always included in our water-related risk assessment. We engage with our customers in various ways through proactive communications on company's aspirations, strategies, and goals with our customers and key external stakeholders to further demonstrate that each site is an active participant in community/watershed issues. Conduct stakeholder engagements with our customers to get their views on water management at their operations to design our product in such a way to reduce water and energy consumption at customer end. For example, HZL produce HZDA, a Die-Casting alloy that is a premix of Zn, Al, and Mg/Cu in certain ratio to get best output of product at customer's side. Readily available premix saves the energy, time and cost to the customers. Thus, customer does not need to re-melt the zinc ingot to make an alloy; they can directly use the premix for their product.
Employees	Relevant, always included	Employees are an integral part of the community within which HZL operates. Considering employee views, interests and concerns is key to maintaining our social license to operate. As a result, employees are considered relevant and key stakeholder in HZL's water-related risk assessment. Our employees are vital as they live in the accommodation provided to them near the company sites (our colony). Water is being supplied to them for daily uses. Therefore, it is our prime responsibility, to inform them about the sustainable use of water in our operations and at domestic front as well. We engage with our employees on a continuous basis through workplace surveys. Our water related targets on water savings, etc., are also communicated to the employees with responsibilities allocated to each business unit/segment. Water targets are also included as Key performance KPIs of relevant managers. Any relevant feedback on water that we receive from our employees is subsequently used in the risk management process.
Investors	Relevant, always included	Investor concerns related to water are increasingly important, as they are aware of the water dependency of our operations; therefore we include them as they now consider water as a key material issue. The loss of investor confidence would affect our share price and access to capital; therefore, the views expressed by investors are through meetings, such as the AGM, investor calls etc. are taken into account. We incorporate the views of these investors into the risk assessment, where relevant. As water related issue also poses a potential physical risk for the company, we communicate on our water related risks and mitigation measures taken against the same with our investors through our website.

		https://www.hzlindia.com/wp-content/uploads/Integrated-Annual-Report-2020-21.pdf HZL-TCFD-Report-20-21.pdf
Local communities	Relevant, always included	The concerns of local communities are important to our water risk assessments as the risk of stakeholder conflict in a catchment can directly impact our operations. Water stewardship is a key pillar to our water management policy, availability of good quality potable water is a significant concern to the communities and us. We engage with communities through Stakeholder engagement programs and specific opportunity like the social impact assessment, Base line need assessment undertaken by third party. Through these channels, local communities are consulted on the aspect of water and the views expressed by these communities factor into our water risk assessments. Our water related performance poses a reputational risk for the company. We engage with the communities around our operations to build local capacity for water-related community engagement. For example, we provide access to quality water through an installed central RO plant, which produces 1000 LPH of clean and pure drinking water. Water dispensing ATMs with storage tanks and a vehicle act as a hub. During the year FY 2020-21, we installed 7 RO hub plants, 28 standalone ATMs benefiting 35 operating villages/hamlets and over 2500 villagers.
NGOs	Relevant, always included	NGOs are included in our water risk assessments as the concerns and perspectives of key NGOs are important considerations in assessments. They help to acquire details locally and helping spread awareness among the surrounding area through programs and workshops. For improving our social and reputational risks related to water management, we engage with the NGOs around our operations to evaluate opportunities for community leadership, including watershed protection related educational partnerships, research support, and/or donation of technical skills like reduction in water requirement during agriculture , raising awareness on water harvesting technologies etc.
Other water users at a basin/catchment level	Relevant, always included	We operate in water scarce area and the competition for scarce resources is increasing therefore, needs and rights of other users are central to our legal and social license to operate. Hence, water demands from municipalities as water service authorities, mining and agricultural entities are assessed along with the local communities and government to calculate the overall water demand in order to mitigate the risk of stakeholder conflict in a catchment. We also Monitor prioritized stakeholders at the catchment level as a means by which to keep track of water-

		related community issues, concerns, and opportunities. Accordingly, we meet with the concerned authority and discuss the issues & mitigation plan. HZL conducts regular meetings with community representatives
Regulators	Relevant, always included	Regulators are taken into account as new legislation, regulations, and laws on water aspects (tariff, water/wastewater compliance aspects/legal/regulatory updates, any restrictions/conditions notified for industries) may affect our operations. Regulatory risks are critical and thus their inputs are critical to our water risk assessments. We engage with regulatory authorities throughout the year. We also engage with local municipalities (municipal corporations' authorities) to have partnerships to improve the overall water availability in the regions in which we operate. We provide assistance (financially and technical) and participate in management and water conservation programmes as well as infrastructure development. Commissioning of 60 MLD STP to treat sewage of Udaipur City in Public Private partnership is the unique example to set win-win situation for municipality and industry. In addition, pond deepening of Fatehsagar lake in collaboration with Urban improvement trust is another example of engagement with local regulatory authorities.
River basin management authorities	Relevant, always included	Even though there is no major impact on river basins, as we are withdrawing most of the water from our captive dams, which are, situated on tributaries of river basins we have categorized river basin management authorities as relevant. HZL works with river basin management authorities to conduct various analysis of the basin and catchment area; this includes analysis pertaining to sewage treatment and wastewater management. For instance through our engagement with the river basin authorities HZL has set up a 60 million litres per day Sewage Treatment Plant (STP) which treated water is being used in our operation as a substitute of fresh water. We engage with authorities such as the Water Resource Department of Rajasthan when the need arises.
Statutory special interest groups at a local level	Relevant, always included	Water demand from other interest groups in the catchments we operate, can create risks such as community conflict for those operations. Hence, they will be consulted in specific cases. Special interest groups like local influencers are identified around the operational units to identify their concerns related to water management in order to manage expectations of the communities and reduce our reputation risks. Engagement methods for statutory special interest groups include face to face meetings are conducted as and when it is required.
Suppliers	Relevant, always included	Suppliers are key components of value chain. There is risk of increase in the price of supply material or could be interruption of supply material in case of non-availability of water, hence taking

		their critical inputs on our water risk assessment becomes relevant. Suppliers are consulted through stakeholder consultation as part of our overall sustainability strategy. Suppliers can provide feedback during suppliers meet. Suppliers are also engaged every year through stakeholder engagement process. Starting this year, we will have increased our focus on ESG criteria as a part of our greening the supply chain initiative. We have initiated risk assessments to ensure that our suppliers have sustainability processes in place and can guarantee safety of their employees as well as conservation of their local community and environment. The function of this risk assessment is to segment the supplier base through a formal methodical approach; to assess business and sustainability risks associated with existing supplier base and to incorporate necessary procedures to mitigate risks through continuous monitoring. The criteria included in assessment are- health and safety, environment policies, air emissions, water stewardship, and biodiversity policies of suppliers. For our critical suppliers, we ensure that any potential and emerging risks are identified through site visits (as a part of due diligence and audits), interviews and information collection. The risk is measured through weighted risk-assessment questionnaire. A supplier will be marked as red-flag if it scores a Risk Score of 50 or below, and that supplier will be monitored for score changes. A Risk Score of over 50 and up to 80 will be categorized as Amber supplier. They will be monitored similar to the high-risk suppliers. These flagged suppliers may be classified either as sustainability high-risk or as critical high-risk. Both, red and amber-flagged, suppliers will be monitored annually to track their score changes. Other suppliers will be monitored once every three years. Monthly payments are also linked with performance and safety score for partners having long-term agreements. Key personnel from business partners are part of our committees at sites to create a sense of ownership among them. .
Water utilities at a local level	Relevant, always included	HZL has included water utilities at a local level into its risk assessment, as the continued supply of water to communities is crucial. As a result, we engage with water utilities at local level on a need basis to discuss on the issues related to water and companies views on the same. One of the examples of effective engagement is our engagement with Udaipur local body whereby we have set up a STP to treat 60 MLD of water. In this case, we regularly engage with them on topics related to water treatment, quality, flow and other commercial requirements. Our engagement methods include meetings with them..

Other stakeholder, please specify	Not considered	Not Applicable

W3.3d

(W3.3d) 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.

HZL leverages enterprise risk management framework to identify, assess, and respond to climate-related risks. The risk management framework is built on Vedanta Risk Management Standard that delineates process of risk assessment, the compilation of risk registers and associated action plans, mapping of events and its mitigation. The framework is integrated through a three-tier governance structure that includes HZL's board-level risk management committee with a primary responsibility of oversight on key business risks and its risk mitigation, Risk Officer at the corporate level with an overall responsibility to monitor risks and co-ordinate with the sites and the Site level risk team with the responsibility to identify risks at local level and identifying the mitigation efforts and implementing the actions to reduce the risk . HZL's risk management committee is comprised of cross-functional and diverse group of directors with expertise in the areas of finance, strategy, risk, sustainability, climate change, and EHS. Additionally, this year we appointed third party to help us understand Climate change associated risks and opportunities across 5 mining sites, 3 smelting plants and a refinery to check the preparedness of mitigation and adaption in 'well below 2 degree scenario', modeled for two time zones i.e. Time period I (2020-2039) and Time period II (2040-2059). Scenario analysis considering RCP 4.5 and NDC for transition risks is in accordance with the Financial Stability Board Task Force on Climate-related Financial Disclosures (TCFD) recommendations. Our risk management process is built on good governance and a well-designed risk management framework. The management of all types of risks take place through the risk management framework including climate change risk. The HZL's Risk Management Committee is a cross-functional group that meets regularly and is responsible for reporting progress on risk mitigation efforts to the Board. Agendas for these meetings include various governance mechanisms including reviewing HZL's progress on climate-related risks and risk mitigation strategy. The Risk Committee also reviews potential impacts to production disruptions due to climate-related physical and transition risks that may impact HZL's core business. It reviews key risks along with a mitigation plan and guides on strengthening the overall risk management framework.

Management

This year, the (ESC) at HZL was established. The committee consisting of CEO, CFO, functional heads, plant heads, all 8 sub community chairman and SUB Directors are key in implementing the climate change related mitigation and adaptation strategies; coordinating business transactions and focusing on process improvements at mines and smelters. The roles and responsibilities of the Group include but not limited to identifying climate-related issues and foster cross-functional collaboration within the company. The group addresses a broad range of Sustainability issues from data center operations to employee engagement, which they identify through detailed materiality assessment. The ESC is also responsible for identifying strategic business opportunities related to climate change. For example, ESC members have been

working to embed sustainability into HZL's business—from water efficient technologies, to partnering with experts on water related risks and opportunities identification and areas for improvement and review the performance and effectiveness of the initiatives.
HZL has also established a **Water Management Community as a taskforce under the ESC**, at the corporate level, to ensure strong governance for water conservation, water risk assessment, formulation of mitigation strategies, and continual improvement in water management processes. The community is comprised of water managers from each site. The community meets on monthly basis and appraise the Chairman of Executive Sustainability Committee on the various Water Management projects progress and seek guidance as and when required.
Execution-
The Company follows a decentralized decision-making process, with the responsibility of overall execution and empowerment resting with the Strategic Business Units (SBUs). Functional teams represented by individuals from EHS, Production, Maintenance, HR etc.)meet via monthly meetings to monitor progress and collaborate on outstanding issues. The action items include issues related to business continuity, including exposure to physical climate events that could potentially disrupt our business, water risks and deviations from action plan and new risk identified.

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?

HZL identifies and assesses strategic & financial impacts through a formal monitoring process at the unit level and at the corporate level, which identifies and categorizes existing and emerging climate-related risks and opportunities with respect to both Physical and Transitions risks. These risks are prioritized based on frequency of its occurrence or recurrence and on the degree of its impact on revenue & cost including its ability to disrupt our primary operations. Any issue that brings a change of ±5% to the EBITDA; causes > 15% production capacity ramp down in major product category, results into Fatality or serious nature and irreversible injury, causes long term serious reversible environmental impact (typically 3 months) or may result into Category IV incident; results into significant breaches, financial penalties & prosecution of staff / stoppage of business, negative media coverage are defined as having substantive financial or strategic impact on the business. In the expansion projects above 250 million USD, cost overrun by > 10% and Time overrun of > 12 months is considered to have a substantive financial and strategic impact.

We measure substantive financial impact by computing the number of production days lost or the economic cost the said risk has on our organization during the impact period. For instance, the non-availability of water can lead to a prospective loss of INR 292000000 due to shutdown of one of the CPP for a month

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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	8	76-99	Although 90% of our operational sites (i.e. 8/9 of our sites) fall under water stressed region of the country. We have responded appropriately for risk mitigation at these sites so that none of these facilities is exposed to the water risks with the potential to have a substantive financial or strategic impact on our business. HZL always focuses on taking preventive policy measures to manage its water related risks. The Company has undertaken several water conservation and harvesting initiatives for reducing fresh water intake and maintaining zero discharge. Installation of ETP, two staged RO plant and a MEE and some of the initiatives taken to recycling and reuse water at the facility.

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

India

Mahi River

Number of facilities exposed to water risk

1

% company-wide facilities this represents

1-25

Production value for the metals & mining activities associated with these facilities

27,154,800,000

% company's total global revenue that could be affected

11-20

Comment

Country/Area & River basin

India

Other, please specify

Banas Basin

Number of facilities exposed to water risk

6

% company-wide facilities this represents

76-99

Production value for the metals & mining activities associated with these facilities

183,294,900,000

% company's total global revenue that could be affected

81-90

Comment

Country/Area & River basin

India

Other, please specify

Luni Basin

Number of facilities exposed to water risk

1

% company-wide facilities this represents

1-25

Production value for the metals & mining activities associated with these facilities

15,840,300,000

% company's total global revenue that could be affected

1-10

Comment

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

India

Other, please specify

Rajasthan based operations considered

Type of risk & Primary risk driver

Physical

Drought

Primary potential impact

Increased operating costs

Company-specific description

Climate change may cause or result in increase in extreme weather events and subsequent resource shortages. Our operations are located in Rajasthan which is one of the designated water stressed regions in the country based on WRI's Aqueduct tool. There is a high probability of experiencing situations of drought and extreme heat waves. Since water is a critical input to our business, both for mining and smelting operations, these factors have the potential to disrupt operations, to impact productivity of staff as well as to impact our revenues and logistics. To mitigate the risk, several mitigation measures such as utilizing STP water, implementing water efficiency and saving initiatives projects are or have to be implemented which have a financial impact for the organization. For example, this year we faced drought like situation in Chanderia, Rajasthan, where one of our zinc smelters is situated. Withdrawal of water from the captive surface water source (Gosunda Dam) was restricted to 5000 m3 /day as against the ~30000 m3 allowance, by the authorities. This resulted into temporary closure of CPP with a financial loss of INR 292000000 / month and increase in cost to channelize water from alternative sources etc.

Timeframe

1-3 years

Magnitude of potential impact

Medium

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)

292,000,000

Potential financial impact figure - maximum (currency)

1,369,000,000

Explanation of financial impact

Range covering minimum and the maximum financial impact is based on costs incurred due to water stress related operational disruption in FY 20-21 and future projected costs in the FY 26. This range is based on the assumption that non-availability of water for a month results into complete shutdown of CPP. There is a substantial impact on the cost if the stress continues for more than a month, leading to shutdown of 2 CPP. Only in such situations, we realise a production loss. The minimum range value is based on the cost implication due to complete shutdown of 1 CPP and the maximum range value considers cost implications due to complete shutdown of 2 CPP (INR 409000000) and production loss i.e. (5000 MT/month * 2500 Dollars= INR 967500000 /month)

Primary response to risk

Adopt water efficiency, water reuse, recycling and conservation practices

Description of response

To mitigate this risk, we are continuously maximizing our approach of using secondary water. We commissioned second STP project taking the total to 45 MLD. The Company is planning to be 5 Times Water Positive Company and reducing the water consumption by 25% by 2025 from base year 2020. Various multi-pronged strategy is institutionalized within the operations and various strategic actions / initiatives that are initiated and undertaken. We undertake following measures. a. identify and reduce water consumption - undertake water conservation projects across our operations b. identify alternate sources of water – Undertake alternate water source and vulnerability assessment studies c. move towards disruptive changes in water management like dry tailing process. In order to enhance the water retention capacity of the areas where operations are located we carry out extensive plantation to implement these we have a well-established policy and process in place. A business plan and implementable action plan followed by periodic monitoring at operational and company levels.

Cost of response

4,570,000,000

Explanation of cost of response

A budget is allocated for addressing such risks. The strategy for risk mitigation encompasses a prefeasibility study nearby 5 districts around our operations at the cost of INR 16 lakhs. To strengthen the water recycling The Company is planning to be 5 Times Water Positive Company and reducing the water consumption by 25% by 2025 from base year 2020. Cost of response of INR 457 crores (based on cost for installation of water recycling plants, Udaipur STP installation and installation of dry tailing plant. Estimates also include cost for the future projected years. Estimates also include cost

for the future projected years. Water is an inherent risk due to the location of our sites. It gets further enhanced due to climate change. For example, 1. Using deep cone decanter to reduce water content in mine tailing disposal 2. Installing air cooled condenser. It saves water consumption up to 95% when compared to traditional water-cooled condenser. 3. Reducing freshwater use at the Demineralized (DM) water plant at DSC-Lead plant by condensing the steam generated at the Captive Power Plant (CPP) at DSC Zinc plant 4. Using harvested rainwater in operation 5. Integrated Effluent treatment plant at all smelters 6. Technological up-gradation by installation of Multiple Effective evaporator/ Mechanical Vapour Recompression (MVR) at Debari and Chanderia Smelters in place of conventional evaporators will strengthen Zero discharge with improved water recovery 7. Phase 2 of CSTP of 25MLD completed. 7. Water reservoir in Dariba smelter by reducing out consumption, withdrawal, and overall impact on freshwater we will be able to meet new regulations and ensure there is low pressure from regulatory authorities. These initiatives will also ensure that we remain water positive

M/s Hindustan Zinc Limited has undertaken groundwater recharge intervention in Hurda, Shahpura, Kotri and Jahazpur blocks of Bhilwara district. Under this recharge project, following work have been executed in 83 village ponds and 358 recharge shafts. Recharge work includes De-silting, Repairing & Strengthening of ponds and Installation of recharge shafts. We have invested INR 170000000 to create water infrastructure with a potential to harvest 8.5 MCM of water per year. This will secure water needs of the communities

Country/Area & River basin

India

Other, please specify

Rajasthan based operations considered

Type of risk & Primary risk driver

Physical

Flooding

Primary potential impact

Increased operating costs

Company-specific description

Climate change may cause or result in increase in extreme weather events and resource shortages. Our operations are located in Rajasthan, which is prone to erratic precipitation leading to flooding. For example, few locations have witnessed upto 400 mm of rainfall in a single day. These factors have the potential to cause breach of tailings dam, to disrupt operations at our mines and to impact our revenues and logistics. The company has a financial impact towards implementing mitigation measures such as dewatering from underground, keeping in sumps, designing flood resilient structures, implementing technologies for surveillance, setting up instrumental

monitoring and enhanced insurance. For example tailing dam breach due to excessive rain in RA mines can result into financial impact of ~INR 1500000000 for the reclamation of area of 7 KM, which includes cost of reclamation and remediation measures.

Timeframe

More than 6 years

Magnitude of potential impact

Medium

Likelihood

More likely than not

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

1,500,000,000

Potential financial impact figure - minimum (currency)

Potential financial impact figure - maximum (currency)

Explanation of financial impact

Financial impact is based on costs incurred due to destruction of the asset and reclamation cost due to flooding/ heavy rainfall. The estimates are based on tailing dam break assessment conducted by global experts and based on the assumption that any of the tailing dam breach will impact the surrounding areas up to 10 kilometers. The average cost of remediation would be approximately around INR 1500000000. . The cost is assumed to reflect complete damage of the asset especially tailing dam in an event of extreme rainfall.

Primary response to risk

Increase investment in new technology

Description of response

During construction, operation, maintenance and closure of the tailings facilities, it is vital to take extensive measures to mitigate the risk of tailings dam failures and incorporate the best available technology to minimize the environmental impact. Continuous operational and stability monitoring plays a major role in ensuring the safety of tailing dam storage facilities. We conduct regular physical inspections of the structural integrity of the dams, regular instrumental monitoring through Geodetic surveys of pillar-prisms, measurements of pore water pressure, installation of satellite based InSAR (Interferometric Synthetic Aperture Radar) monitoring technique to provide early warning of surface ground movements etc. to ensure that the risk of breach of tailing dams facilities is minimized to the maximum extent possible.

Cost of response

7,300,000,000

Explanation of cost of response

During construction, operation, maintenance and closure of the tailings facilities, it is vital to take extensive measures to mitigate the risk of tailings dam failures and incorporate the best available technology to minimize the environmental impact. Continuous operational and stability monitoring plays a major role in ensuring the safety of tailing dam storage facilities. We conduct regular physical inspections of the structural integrity of the dams, regular instrumental monitoring through Geodetic surveys of pillar-prisms, measurements of pore water pressure, installation of satellite based InSAR (Interferometric Synthetic Aperture Radar) monitoring technique to provide early warning of surface ground movements etc. to ensure that the risk of breach of tailing dams facilities is minimized to the maximum extent possible. For example, We invested ~INR 1300000000 (INR1270000000– height raising ,15000000– Diversion structure , INR 2500000 - Geotechnical monitoring studies , INR 10000000 - Surveillance equipment) at our Rampura mine and approximately INR 6000000000 (INR 1000000000 - Height raising , INR 5000000000 - Dry tailing plant, INR 15000000 other expenditure including studies , surveillance equipment etc.) at RDM mine. The cost to response takes into consideration the cost to implement mitigation measures

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

India

Other, please specify

Rajasthan based operations considered

Stage of value chain

Supply chain

Type of risk & Primary risk driver

Physical

Increased water scarcity

Primary potential impact

Closure of company operations

Company-specific description

Raw material supplies which have their source from the region near water scare area may get affected. Gap in raw material supply may lead to direct operational threats for our company. For e.g. our raw material like cement, coal, etc. require water for their processing and in worst scenario. Non-availability of cement due to non-availability of

water at the supplier end can impact our paste fill plant operation, backfilling and mine rock strengthening process. In the similar way, unavailability of coal may impact our captive power plant process which can result in purchasing electricity on higher cost from state grid.

Timeframe

More than 6 years

Magnitude of potential impact

Low

Likelihood

Unlikely

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

7,505,820,000

Potential financial impact figure - minimum (currency)

Potential financial impact figure - maximum (currency)

Explanation of financial impact

Unavailability of coal will directly impact our CPP operations. In worst scenario we will have to shut down the CPP operation and will take the electricity directly from state grid and this will lead to direct cost implication of 2.32 crore per day (total electricity cost generated from CPP 4.5 INR/kwh and total electricity cost of state grid is 6.3 INR/ kwh. The current cost estimates include the net difference in cost on power multiplied by the total % of power required in FY 26. Formula (Cost of Power purchase from Grid - Cost of CPP) * total % of energy use in FY 26) (6.3-4.55)* 4289= 7505820000. The financial opportunity is based on the assumption that cost of renewable power will remain constant or decline by FY 26

Primary response to risk

Upstream

Map supplier water risk

Description of response

We have identified regions where supply gaps may arise due to water scarcity issue for our suppliers. A mitigation plan to avoid such risks comprises: 1. continuous mapping of supplier water risks 2. Engagement with suppliers to carry out capacity building sessions 3. Incentivizing top suppliers for improved ESG performance in the next three year

Cost of response

2,630,220

Explanation of cost of response

Expenditure of INR 2630220 is anticipated to occur in implementing a mitigating strategy adopted as follows: 2) Raw material source auditing is done by the procurement team to analyze the future risk. 3) Developing contacts with alternate suppliers. 4) Carrying out supplier sustainability assessment

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

Efficiency

Primary water-related opportunity

Improved water efficiency in operations

Company-specific description & strategy to realize opportunity

This opportunity is strategic for HZL as we aim to reduce the fresh water dependencies of our operation as we operate in Rajasthan, a water scare area (90% of our sites are in Water stress area). With water scarcity an increasingly prominent issue in Rajasthan, being a responsible water steward Hindustan Zinc puts a lot of emphasis on conserving water, with strategies focusing on reduction of water at source, recycling of water, exploring alternative sources of water and replenishing water through various structures. Hindustan Zinc has put persistent efforts into water sustainability. The Company has state-of-the-art effluent treatment plants & recycling facilities, sewage treatment plant, increased water efficiency and rainwater harvesting structures; Advancements in which have significantly contributed to this water stewardship drive. For Example - Hindustan Zinc has already commissioned Sewage Treatment Plant of 45 MLD capacity and two decentralized Sewage Treatment Plants with combined capacity of 15 MLD. The company had invested INR. 2500000000 that involved expenditure pertaining to laying the pipelines for carrying the sewage to the plant. In addition, we have implemented 80 different water conservation projects. For example, 1. Deep cone decanter to reduce water content in mine tailing disposal 2. Installed air-cooled condenser 3. Reduced freshwater use at the Demineralized (DM) water plant at DSC-Lead plant by condensing the steam generated at the Captive Power Plant (CPP) at DSC Zinc plant 4. Used harvested rainwater in operation 5. Integrated Effluent treatment plant at all smelters 6. Technological up-gradation by installation of Multiple Effective evaporator/ Mechanical Vapour Recompression (MVR) at Debari and Chanderia Smelters in place of conventional evaporators will strengthen Zero discharge with improved water recovery 7. Phase 2 of CSTP of 25MLD completed.

Water efficiency will lead to greater availability of water for the communities surrounding our sites; improve efficiency, and lower costs. In FY 20-21, we saved 4.05 million m3 of water through our projects. We are 2.41 times water positive and are well on the path to be 5 Times Water Positive Company and reducing the water consumption by 25% by 2025 from base year 2020.

Estimated timeframe for realization

1 to 3 years

Magnitude of potential financial impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

49,410,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact

We are heavily dependent on water availability mainly in smelting and CPP process. As water is critical, we take several initiatives to conserve process water, fresh water and/or third-party water. During the year, we undertook 80 water saving initiatives, which has led to savings of 4.05 million m3. We estimated the potential financial impact of these initiatives in terms of cost savings due to reduced water withdrawal or consumption. We treat all the water that we procure before we feed into the system. By saving water through our initiatives, we reduce the treatment cost. The average cost of treatment of Raw water is INR 12.20 per m3. Therefore, financial impact of opportunity is (Per unit cost of treatment * Water Savings). [12.20*4050000]= INR 49410000/year.

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)

Chanderiya Lead and Zinc Smelter

Country/Area & River basin

Latitude

24.83

Longitude

74.82

Located in area with water stress

Yes

Total water withdrawals at this facility (megaliters/year)

10,543.67

Comparison of total withdrawals with previous reporting year

Higher

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

10,543.67

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)

0

Comparison of total discharges with previous reporting year

About the same

Discharges to fresh surface water

0

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

10,170.93

Comparison of total consumption with previous reporting year

Higher

Please explain

At Chanderiya Lead Zinc Smelter our water consumption has increased by 8% from previous year due to increase in production by 1%, deficiency in rainfall attributed to deterioration in available water quality that leads to increase in blow down of water and there is water loss in further treatment . There is also 3.19% increase in power generation from Chanderia CPP to meet the requirement of increased production that has also contributed to increase in water consumption at CPP.
Our Consent to Operate under section 21(4) of Prevention & Control of Pollution Act, 1981, is dependent upon our ability to maintain zero discharge status from the premises, meaning no trade effluent shall be discharged inside/outside operational premises. To comply by these requirements, we strictly monitor our water balance parameters. Therefore, discharge parameter is not applicable to us as all our sites are zero liquid discharge facilities.

Facility reference number

Facility 2

Facility name (optional)

Dariba Smelting Complex

Country/Area & River basin

India

Other, please specify

Banas Basin

Latitude

24.95

Longitude

74.13

Located in area with water stress

Yes

Total water withdrawals at this facility (megaliters/year)

7,020.82

Comparison of total withdrawals with previous reporting year

Higher

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

1,100.61

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

5,920.21

Total water discharges at this facility (megaliters/year)

0

Comparison of total discharges with previous reporting year

About the same

Discharges to fresh surface water

0

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

6,557.95

Comparison of total consumption with previous reporting year

Higher

Please explain

Water withdrawal levels have increased by 5% as compared to the previous year due to increase in production by 16% also to meet the requirement of high production there is increase in power generation from Dariba CPP by 5.5 % In comparison of production increase the water has not increase in same ratio due to increase in water recycling. Our Consent to Operate under section 21(4) of Prevention & Control of Pollution Act,

1981, is dependent upon our ability to maintain zero discharge status from the premises, meaning no trade effluent shall be discharged inside/outside operational premises. To comply by these requirements, we strictly monitor our water balance parameters. Therefore, discharge parameter is not applicable to us as all our sites are zero liquid discharge facilities.

Facility reference number

Facility 3

Facility name (optional)

Debari Zinc smelter

Country/Area & River basin

India

Other, please specify

Banas Basin

Latitude

24.6

Longitude

73.83

Located in area with water stress

Yes

Total water withdrawals at this facility (megaliters/year)

1,731.79

Comparison of total withdrawals with previous reporting year

Lower

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

985.24

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

746.55

Total water discharges at this facility (megaliters/year)

0

Comparison of total discharges with previous reporting year

About the same

Discharges to fresh surface water

0

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

1,731.79

Comparison of total consumption with previous reporting year

About the same

Please explain

Water consumption and withdrawal has reduced as compared to the previous year by 2% , during the year for DZS effectively involved the usage of treated sewage water, improvement in recycling of due to installation of Jarosite filer press and recovery of water from Jarosite has further reduces the dependencies on fresh water.
Our Consent to Operate under section 21(4) of Prevention & Control of Pollution Act, 1981, is dependent upon our ability to maintain zero discharge status from the premises, meaning no trade effluent shall be discharged inside/outside operational premises. To comply by these requirements, we strictly monitor our water balance parameters. Therefore, discharge parameter is not applicable to us as all our sites are zero liquid discharge facilities.

Facility reference number

Facility 4

Facility name (optional)

Rampura Agucha Mine

Country/Area & River basin

India

Other, please specify

Banas Basin)

Latitude

25.83

Longitude

74.74

Located in area with water stress

Yes

Total water withdrawals at this facility (megaliters/year)

2,930.6

Comparison of total withdrawals with previous reporting year

Higher

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

2,861.33

Withdrawals from produced/entrained water

69.28

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

0

Comparison of total discharges with previous reporting year

About the same

Discharges to fresh surface water

0

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

2,740.84

Comparison of total consumption with previous reporting year

Higher

Please explain

There is increase in Water withdrawal by 11% due to increase in production by 9% from last year . Due to deficiency in rains this year the availability of tailing dam reclaimed water was also less. .
Our Consent to Operate under section 21(4) of Prevention & Control of Pollution Act, 1981, is dependent upon our ability to maintain zero discharge status from the premises, meaning no trade effluent shall be discharged inside/outside operational premises. To comply by these requirements, we strictly monitor our water balance parameters. Therefore, discharge parameter is not applicable to us as all our sites are zero liquid discharge facilities.

Facility reference number

Facility 5

Facility name (optional)

Rajpura Dariba Mine

Country/Area & River basin

India
Other, please specify
Banas Basin

Latitude

24.95

Longitude

74.13

Located in area with water stress

Yes

Total water withdrawals at this facility (megaliters/year)

1,179.94

Comparison of total withdrawals with previous reporting year

Higher

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

1,016.97

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

162.97

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

0

Comparison of total discharges with previous reporting year

About the same

Discharges to fresh surface water

0

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

228.72

Comparison of total consumption with previous reporting year

Lower

Please explain

There is increase in Water withdrawal. Due to less rains this we have increase our water withdrawal by 40% to cater the need of nearby communities as our water withdrawal includes the water consumed in organization , distributed to township and communities.. Water recycling and conservation initiatives reduced the water consumption by 7%. Our Consent to Operate under section 21(4) of Prevention & Control of Pollution Act, 1981, is dependent upon our ability to maintain zero discharge status from the premises, meaning no trade effluent shall be discharged inside/outside operational premises. To comply by these requirements, we strictly monitor our water balance parameters. Therefore, discharge parameter is not applicable to us as all our sites are zero liquid discharge facilities.

Facility reference number

Facility 6

Facility name (optional)

Sindesar Khurd Mine

Country/Area & River basin

India

Other, please specify

Banas Basin

Latitude

25

Longitude

74.16

Located in area with water stress

Yes

Total water withdrawals at this facility (megaliters/year)

666.89

Comparison of total withdrawals with previous reporting year

Lower

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

107.41

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

38.84

Withdrawals from third party sources

520.63

Total water discharges at this facility (megaliters/year)

0

Comparison of total discharges with previous reporting year

About the same

Discharges to fresh surface water

0

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

666.89

Comparison of total consumption with previous reporting year

Lower

Please explain

Both water consumption and water withdrawal reduced due to use of more recycling water 9% increase in recycling water from last year . SKM uses 78% water from treated sewage water only. Also there was more focus on backfilling there is 44% increase in backfilling from last year resulted in recovery of more water .
Our Consent to Operate under section 21(4) of Prevention & Control of Pollution Act, 1981, is dependent upon our ability to maintain zero discharge status from the premises, meaning no trade effluent shall be discharged inside/outside operational premises. To comply by these requirements, we strictly monitor our water balance parameters. Therefore, discharge parameter is not applicable to us as all our sites are zero liquid discharge facilities.

Facility reference number

Facility 7

Facility name (optional)

Zawar Mines complex

Country/Area & River basin

India
Other, please specify
Mahi Basin

Latitude

24.35

Longitude

73.71

Located in area with water stress

Yes

Total water withdrawals at this facility (megaliters/year)

3,794.65

Comparison of total withdrawals with previous reporting year

Lower

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

3,640.16

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

154.49

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

0

Comparison of total discharges with previous reporting year

About the same

Discharges to fresh surface water

0

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

3,640.16

Comparison of total consumption with previous reporting year

Higher

Please explain

Both water consumption and water withdrawal reduced due to use of more recycling water increase by 22% through installation of Dry tailing plant.
Our Consent to Operate under section 21(4) of Prevention & Control of Pollution Act,

1981, is dependent upon our ability to maintain zero discharge status from the premises, meaning no trade effluent shall be discharged inside/outside operational premises . To comply by these requirements, we strictly monitor our water balance parameters. Therefore, discharge parameter is not applicable to us as all our sites are zero liquid discharge facilities.

Facility reference number

Facility 8

Facility name (optional)

Kayad Mine

Country/Area & River basin

India

Other, please specify

Luni Basin

Latitude

29.96

Longitude

78.06

Located in area with water stress

Yes

Total water withdrawals at this facility (megaliters/year)

42.2

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

0

Withdrawals from produced/entrained water

41.96

Withdrawals from third party sources

0.24

Total water discharges at this facility (megaliters/year)

0

Comparison of total discharges with previous reporting year

About the same

Discharges to fresh surface water

0

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

41.84

Comparison of total consumption with previous reporting year

Lower

Please explain

Water Consumption has reduced due to improved recycling and decrease in production by 18%
Our Consent to Operate under section 21(4) of Prevention & Control of Pollution Act, 1981, is dependent upon our ability to maintain zero discharge status from the premises, meaning no trade effluent shall be discharged inside/outside operational premises. To comply by these requirements, we strictly monitor our water balance parameters. Therefore, discharge parameter is not applicable to us as all our sites are zero liquid discharge facilities.

W5.1a

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

Water withdrawals – total volumes

% verified

76-100

What standard and methodology was used?

This is reported as per AccountAbility's AA1000 standard

Water withdrawals – volume by source

% verified

76-100

What standard and methodology was used?

This is reported as per AccountAbility's AA1000 standard

Water withdrawals – quality

% verified

76-100

What standard and methodology was used?

This is reported as per AccountAbility's AA1000 standard

Water discharges – total volumes

% verified

76-100

What standard and methodology was used?

This is reported as per AccountAbility's AA1000 standard

Water discharges – volume by destination

% verified

76-100

What standard and methodology was used?

This is reported as per AccountAbility's AA1000 standard

Water discharges – volume by treatment method

% verified

76-100

What standard and methodology was used?

This is reported as per AccountAbility's AA1000 standard

Water discharge quality – quality by standard effluent parameters

% verified

76-100

What standard and methodology was used?

This is reported as per AccountAbility's AA1000 standard

Water discharge quality – temperature

% verified

76-100

What standard and methodology was used?

This is reported as per AccountAbility's AA1000 standard

Water consumption – total volume

% verified

76-100

What standard and methodology was used?

This is reported as per AccountAbility's AA1000 standard

Water recycled/reused

% verified

76-100

What standard and methodology was used?

This is reported as per AccountAbility's AA1000 standard

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

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

	Scope	Content	Please explain
Row 1	Company-wide	Description of business dependency on water Description of business impact on water	Our water policy is a forward looking document which provides the direction in which the company would like to move with respect to water. The policy recognizes that water is a vital requirement of our operations and that of our stakeholders. The policy is applicable to all our operations, staff, contractors, and relevant business partners. It follows the Water Management Standard (TS-

		Description of water-related performance standards for direct operations Commitment to water-related innovation Commitment to stakeholder awareness and education Commitment to water stewardship and/or collective action Recognition of environmental linkages, for example, due to climate change	14) of Vedanta Sustainability Framework which is aligned to international IFC performance standards, Water Quality Standards in India (IS 2296:1992 and Drinking Water Specifications (IS 10,500:1991)) and reflects our commitment towards global water security, efficiency, and stewardship. Our policy recognizes the social, economic, and environmental value of water and the increasing global concern with regards to water security. We have outlined our policy in order to effectively communicate our intent and goal of water conservation across all our operations, staff, contractors, and relevant business partners. The intent we communicate is to be a global leader in water reuse and recycling, as well as work with communities and communicate with all our stakeholders on the progress and performance of water conservation and water management. The aspects that are covered in our water policy include compliance with national, regional and local Identification and implementation of water saving projects, reduction in water consumption, avoid water pollution, maintain zero discharge, help communities for sustainable water resources by rain water harvesting, participate in water catchment planning activities , monitoring and transparent communication of water consumption performance. This includes our 2025 water targets (5 times water positive from current 2.41 times water positive). Our water stewardship targets are focused on completing actions that align with Sustainable Development Goal 6 which is about “Clean water and sanitation for all”. We are also committed for UN Global Compact Water Action Platform (CEO Water Mandate), a commitment to adopt and implement the mandate’s strategic framework and its six core elements for water management Stakeholders, and innovation & implementation of water efficient practices. The policy is reviewed and updated from time to time based on the internal procedures.

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	Please explain
Chief Executive Officer (CEO)	CEO is responsible for matters related to water risks, opportunities and investments. CEO is a member of HZL's Board of Directors and empowers the Executive Sustainability Committee, which provides overall guidance on all identified key ESG issues (water being one among them) and reviews the progress towards sustainability goals 2025. The board is briefed on water related issues, yearly targets, site's performance, and progress of targets by our CEO and the whole time director. CEO is authorized to sanction CAPEX & OPEX budgets and other necessary resources for the implementation of water conservation and management actions. Every month, CEO reviews the progress against water conservation initiatives, water performance during the monthly Environmental Business Group Meeting. He also reviews the performance against sustainability goals 2025 in quarterly sustainability committee. The responsibilities of our CEO are not limited to just ESG or water related, but also include his prowess to execute the matters related to Procurement, Human Resources, Finance, Legal, and Risk Management . Examples of initiatives taken by our CEO: In 2021, under the helm of our CEO,A water community was being created to monitor the performance against the Sustainability goals also Hindustan Zinc has partnered with the State Government of Rajasthan under their four-year program Mukhyamanthri Jal Swavlamban Yojana and constructed / renovated over 120 water replenishments structures in 50 villages across four districts of Rajasthan . We saved 85 lacs through implementing RAM Rain water harvesting projects. HZL has set targets to become 5 times water positive and achieve 25% reduction in freshwater consumption CEO has instructed to setup ZLD facility at each location of Mines & Smelter to ensure zero discharge of Water .So, HZL is installing ZLD Plant at Debari, Dariba, Chanderiaya , Zawar & Agucha location with total ZLD capacity of 15 MLD

W6.2b

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

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

	scheduled agenda item	issues are integrated	
Row 1	Scheduled - all meetings	Monitoring implementation and performance Overseeing acquisitions and divestiture Overseeing major capital expenditures Reviewing and guiding annual budgets Reviewing and guiding business plans Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding strategy Reviewing and guiding corporate responsibility strategy Reviewing innovation/R&D priorities Setting performance objectives	Board Level : The HZL's Risk Management Committee is a cross-functional group that meets regularly and is responsible for reporting progress on risk mitigation efforts to the Board. Agendas for these meetings include various governance mechanisms including reviewing HZL's progress on various topics including climate related physical risks, water-related risks and risk mitigation strategy. The Risk Committee also reviews potential impacts to production disruptions due to climate change physical risks, water related risks that may impact HZL's core business. It reviews key risks along with a mitigation plan and guides on strengthening the overall risk management framework. Risk Management Committee is supported by Corporate Social Responsibility Committee which oversees the community led initiatives of the Company including Udaipur STP project. Management Level: CEO is authorized by the board to take day-to-day decisions related to water risks, opportunities and investments. At executive level, (one level below the board), the Executive Sustainability Committee, led by CEO assists the Board in providing focused oversight of the company's strategy, policies, programs and related risks that concern water related issues including other sustainability matters. The committee, consists of CEO, CFO, functional heads, plant heads, and SBU Directors and involves eight sub community chairman (that includes Water Management Community) along with other committee members, who meet quarterly. The agenda item is a review of HZL's company-wide progress on our goals including our goal to reduce 25% of our freshwater consumption. HZL has also established a Water Management Community under the Executive Sustainability Committee, chaired by a senior leader, at the corporate level, to ensure strong governance for water conservation, water risk assessment, formulation of mitigation strategies, continual

			improvement and innovation in water management processes. The community is comprised of water experts from each site. The community meets on monthly basis and appraise the Chairman of Executive Sustainability Committee on the various Water Management projects' progress and seek guidance as and when required. For Example: HZL has completed a scenario analysis study in line with the TCFD recommendations where water stress and drought has been identified as major risks. As part of the strategy, we are working towards exploring alternative sources of water.

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)

Responsibility

Both assessing and managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues

More frequently than quarterly

Please explain

CEO is has the ultimate responsibility for matters related to water risks, opportunities and investments. CEO is a member of HZL's Board of Directors and empowers the Executive Sustainability Committee, which provides overall guidance on all identified key water related including other sustainability matters and reviews the progress towards sustainability goals 2025. The board is briefed more frequently than quarterly on water related issues, yearly targets, site's performance, and progress of targets by our CEO and the whole time director. CEO is authorized to sanction CAPEX & OPEX budgets and other necessary resources for the implementation of water conservation and management actions. This is done via quarterly reports and through board meetings.

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	

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	Please explain
Monetary reward	Chief Executive Officer (CEO)	Reduction of water withdrawals Reduction in consumption volumes Improvements in efficiency - direct operations Improvements in waste water quality - direct operations Implementation of water-related community project	CEO, whose role also focuses on leading the company's Sustainable Strategy including water related goals, is incentivized based on his performance against the targets set in the specific year. Annual bonuses and related compensation is partially tied to his success in driving HZL's sustainability success and leadership. Sustainability strategy, approved by the board, covers our 2025 water targets. These targets are focused to reduce freshwater consumption by 25% and being 5X water positive through our operational & community led initiatives. Our long-term strategy is to reduce risks related to drought and flooding by making systemic investments in water conversation infrastructure. The indicators (reduction in water withdrawals and consumption, improved efficiency in direct operations, improvement in waste water quality and community programs) for incentivised performance are thus directly linked to these Water targets under the helm of our water policy. 20% of the performance linked bonus pay of CEO is based on the VSAP score, built on the 13 pillars of Vedanta Sustainability Framework. The assurance model has different modules, which cover environment, health, safety, community elements, including water withdrawal, reduction, consumption. The performance bonus of CEO is linked to the VSAP scores covering water related KPIs

Non-monetary reward	Chief Executive Officer (CEO) Chief Financial Officer (CFO) Chief Operating Officer (COO)	Reduction of water withdrawals Reduction in consumption volumes Improvements in efficiency - direct operations Improvements in efficiency - supply chain Improvements in efficiency - product-use	Performance indicators chosen: Water is a shared resource and HZL acknowledges the need to conserve and optimally manage it. HZL has an ambitious target to reduce freshwater consumption by 25% by 2025. Rationale: These indicators (reduction in water withdrawals and consumption, improved efficiency in direct operations, supply chain and product use) are selected in line with the water policy and the goals that HZL aims to achieve. Being a water intrinsic company, HZL understands the significance to conserve, manage and re-use so as to provide a greater access of freshwater to the community. At HZL responsible water stewardship is practiced right from the top level. Water related focus areas are identified at the board meetings and responsibility of management of each focus area is given to board level members. At the subsequent board meetings progress under each of the issue is discussed and for good performance/ targets achievements, the aspect owners are recognized with non-monetary awards such as recognition in external forums, giving Advancement Opportunity –work on more meaningful and challenging projects etc

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, trade associations

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?

We engage in the policy discussions through trade associations whenever the industry opinion is sought after by the government and policy regulators and voice industry opinion in terms of water related policy decisions in India and globally. In doing so, we remain consistent of our company's water commitments and ensure that responsible water usage practices are encouraged through changes in the policy framework. Our water policy is framed in consultation of all relevant stakeholders & is reviewed on a continuous basis in line with the evolving water related scenarios. We ensure that we take initiative on the issues identified in our water policy and ensure that a consistency is maintained in our approach for addressing

these goals. In case any inconsistency is observed, it is discussed in the board meeting and necessary actions regarding the same are taken. Water related policies are publicly available for easy access by all our employees. Periodic training and engagement of senior executives and all key employees on the material risks and important topics like water, helps them understand the way forward, assist them in having engagements and interactions with other stakeholders which are in line with companies stand on water.
This year, we established the **Water Management community** to ensure strong governance for water conservation at source, strengthening Zero Liquid Discharge, replenishing more water and creating positive water footprint and chaired by senior leader

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)

HZL-TCFD-Report-20-21.pdf

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	21-30	HZL aspiration to be a leader in zinc, lead and silver production is underpinned on the principles of Sustainability. One of the key business priorities is Transitioning to Circular Economy (HZL's innovation & technology led approach to lower rates of extraction, reduce use of natural resources for resource efficiency and efficient management of sustainable materials. Water is identified as one of the goals within the long-term business strategy with the specific objective of being able to operate mines in water-scare catchments and create a shared value for all stakeholders. The strategy is modeled to deliver valuable outcomes for the stakeholders by achieving 8 strategic goals such as climate change, water stewardship, responsible sourcing etc. The strategy is being implemented through the development of 5-year. Specific issues integrated into the long term strategy include long-term efficiency, recycling, usage, community water needs as

			well as water-related risks & opportunities. All plans are reviewed quarterly by the ESC. All the identified water issues get reflected in our water policy to further ensure consistency in approach and action. Our water goal is in line with our business strategy to maintain long life of 25+ years. Our operation are in the water-scarce region prone to drought and erratic rainfall. Sufficient availability of water for the communities near our operations ensures our social license to operate while maintaining harmonious relationship.
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	21-30	Integration of water issues: Specific Water related issues such as reduction of water withdrawal; reuse and recycling; water use efficiency; addressing local community water needs; mine dewatering and discharge prevention are integrated into our strategy. This is done through our Sustainability Goals 2025. Our long term water related goal is to become a 5 times water positive company and achieve a reduction of 25% in fresh water consumption. In addition, we conducted climate change risk scenario analysis in line with TCFD , where water stress and drought were identified as one of the key business risks. To achieve this, we ensure to develop water related strategies to meet these goals and mitigate the risk. These strategies include using more water efficient methods of production and consumption, using alternative sources of water to reduce dependency on fresh water, and replenish water within local watersheds through rainwater harvesting. We also strategize for any social or reputational risks that may arise due to water consumption while simultaneously managing regulatory risks and physical climate change risks. While our water goal is line with our business strategy to maintain long life of 25+ years, we have prepared 5 year plans to execute our strategy. We recognize that company's growth and business objectives can be affected considerably in case of shut downs due to unavailability of water, water related legal actions, regulations or reputation loss.
Financial planning	Yes, water-related issues are integrated	5-10	Future financial plans consider the need to have sufficient availability of water at each facility. Our water strategy is embedded in our business plan and considers predicted water demand by all users and potential supply. For instance, we have projected our

			water demand to increase by 15% year on year. The existing water resources can only help meet 80% of our demand. We are involved in partnerships with stakeholders in various infrastructure and development projects to improve water security for our operations and to help supply the needs of communities. Our financial planning includes are projected estimate to manage the long-term risks of flooding & drought; cost of response for building water related infrastructure for communities, low quality water acquisition, water conservation initiatives, dry tailing dam construction etc. While our water goal is line with our business strategy to maintain long life of 25+ years, we have prepared 5-year financial plans to execute our strategy. As our operations also fall under water stressed areas, water poses a physical threat for HZL operations that may have direct financial implications on our business. We engage with experts using the WRI Aqueduct tool to understand the level of water stress in our operational area which also helps us understand and anticipate the financial impact it can further pose to. Strategy for using alternate sources of water in operations in water stressed areas forms a part of financial planning.

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)

-49

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

20

Water-related OPEX (+/- % change)

28

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

10

Please explain

The reduction in Capex is primarily attributed due to the fact that major projects were undertaken in last 2 years which are on the verge of completion this year. Last year the total expenditure on environmental projects was INR 3285300000, this number has fallen to INR 1680000000. This includes major projects like the installation of a dry tailing plant at ZM, INR 23 crore, paste filling plant at ZM INR 53 crore , MVR at DSC INR 41 crores, Fumer Plant installation 17 Crores and 15 MLD STP installation at Udaipur- 31 Crores.
We are planning to expend our water related expenditure in coming years by 20% as MVR is planned at RAM , Dry tailing plant at RDM. Water related OPEX has increased by 28% due to the addition of operations and maintenance cost of 15 MLD STP plant. We are anticipating a further increase of 10% in the Opex due to the inclusion of operations and maintenance cost of the MEE/ MVR .

W7.3

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

	Use of climate-related scenario analysis	Comment
Row 1	Yes	HZL considers the climate-related scenario analysis as an essential tool to develop the de-carbonization pathway & utilizes this to visualize risks, including risks relevant for business continuity, water related risks, climate change mitigation, climate-related stakeholder communications and disclosures. We carried out the Scenario analysis and stress testing for understanding the implications of climate change on our operations across the units and to have longer term strategy about risks and opportunities possessed by climate change. We used RCP 4.5 for climate-related scenarios for physical risks and Nationally Determined Contributions (NDCs) for transition risks. These scenario analysis were in accordance with the Financial Stability Board TCFD. We discovered from this assessment that the assets, safety margins maintained in engineering designs, insurance provisions, and governments' proactive climate change adaptive actions could be sufficient to mitigate much of the impacts.

W7.3a

(W7.3a) Has your organization identified any water-related outcomes from your climate-related scenario analysis?

Yes

W7.3b

(W7.3b) What water-related outcomes were identified from the use of climate-related scenario analysis, and what was your organization's response?

	Climate-related scenarios and models applied	Description of possible water-related outcomes	Company response to possible water-related outcomes
Row 1	RCP 2.6	HZL has identified the following water related risk scenarios that may pose potential risks to our operation from medium to long term. 1. Water supply interruptions 2. Insufficient water supply 3. Groundwater challenges 4. Water related community challenges 5. Social and reputational pressure	HZL has carried out the Scenario analysis and stress testing for understanding the implications of climate change on our operations across the units and to have longer term strategy about risks and opportunities possessed by climate change. We used Representative Concentration Pathway (RCP) 4.5 for climate-related scenarios for physical risks and Nationally Determined Contributions (NDCs) for transition risks. Climate change may cause or result in increase in extreme weather events and subsequent resource shortages. Our operations are located in Rajasthan which is one of the designated water stressed regions in the country based on WRI's Aqueduct tool. There is a high probability of experiencing situations of drought and erratic precipitation leading to flooding. Since water is a critical input to our business, both for mining and smelting operations, these factors have the potential to disrupt operations, to impact productivity of staff as well as to impact our revenues and logistics. To mitigate the risk of drought several mitigation measures such as utilizing STP water, implementing water efficiency and saving initiatives etc. have been considered. Similarly, to mitigate the risk of flooding, organization has a financial impact on the operating costs to implement measures such as dewatering from underground and keeping in sumps, designing flood resilient

			structures, monitoring of dry tailing dams, and enhanced insurance coverage.

W7.4

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

Row 1

Does your company use an internal price on water?

No, but we are currently exploring water valuation practices

Please explain

HZL is conscious about its water use and efficiency. We are in process to set up and implement the internal water pricing policy. The policy is intended to promote efficient use of water in the facilities.

W8. Targets

W8.1

(W8.1) Describe your approach to setting and monitoring water-related targets and/or goals.

	Levels for targets and/or goals	Monitoring at corporate level	Approach to setting and monitoring targets and/or goals
Row 1	Company-wide targets and goals Activity level specific targets and/or goals Site/facility specific targets and/or goals	Targets are monitored at the corporate level Goals are monitored at the corporate level	The company has long term commitment to sustainability, this is reflected through our Sustainability Goals 2025. We take guidance from the Water risk assessment carried out at Vedanta level and the internal water risk assessment that we undertake at corporate level. Based on this, company level water saving targets are defined annually and water conservation initiatives and projects are identified. Site specific water conservations initiatives and projects are identified and share with the board as a part of target setting. In addition, the company also takes view of the global scenario, local regulations etc. and decides on any long-term changes needed in its water management strategy and shares them as goals and targets. HZL takes annual water saving targets and maps its achievements along those targets. In FY 20-21 the target was to achieve specific water consumption of 13.84 ML/MT of product. However, we achieved 13.92 ML/MT of product. We have identified 80 water saving projects to meet the target of water savings of 4 million m3. We have successfully saved 4.05 million m3

			through our initiatives. To meet the requirement of Sustainability goals 2025- 255 reduction – 5 % reduction target is set for every year. The target is being monitor by concerned internal departments and senior management on monthly basis and by the board on quarterly basis. In addition, based on the global incidents related to tailing Storage Facility, we have taken a long-term goal to shift towards dry tailing in our operations to reduce environmental and social risks. Water Management Community under the Executive Sustainability Committee, at the corporate level, ensures strong governance on water conservation, water risk assessment, formulation of mitigation strategies, and continual improvement in water management processes. The community meets on monthly basis and appraise the Chairman of Executive Sustainability Committee on the various Water Management projects progress and seek guidance as and when required.

W8.1a

(W8.1a) Provide details of your water targets that are monitored at the corporate level, and the progress made.

Target reference number

Target 1

Category of target

Other, please specify

Water savings - 4 million m3

Level

Company-wide

Primary motivation

Risk mitigation

Description of target

The company has long term commitment to sustainability. We have taken water saving targets based on the identified water conservation initiatives and projects. The target for FY20-21 was 4 million m3 of saving

Quantitative metric

Other, please specify

million cubic meter

Baseline year

2018

Start year

2020

Target year

2021

% of target achieved

100

Please explain

HZL has achieved a 100% of its target for water savings by saving 4.04 MCM of water. With completion of one target , we will further form suitable targets to improve our water use efficiency

W8.1b

(W8.1b) Provide details of your water goal(s) that are monitored at the corporate level and the progress made.

Goal

Other, please specify

Sustainability Goals 2025

Level

Business

Motivation

Shared value

Description of goal

Access to fully functioning, safely managed WASH services for all employees is highly important to us as unhygienic conditions pose a risk to public health and inherently the health and safety of our employees.

Baseline year

2020

Start year

2020

End year

2023

Progress

We have made a significant progress towards the fulfillment of the goal, HZL has reached out to 4.20 lakhs beneficiaries at Rajasthan state level through COVID measures and 61% of CSR investment is focused on Health & COVID response. HZL

operates 4 Mobile Health Vans covering 108 villages at 4 of its locations in Rajasthan & Uttarakhand. The health care facilities include OPD, special health camps, Awareness sessions through IEC activities (Information, Education, and Communication), and Lab tests. During the year FY 2020-21, HZL has installed 7 RO hub plants, 28 standalone ATMs benefiting 35 operating villages/hamlets and over 2500 villagers. HZL is committed to continue implementing access to safe water, sanitation and hygiene at the workplace at an appropriate level of standard for all employees in all premises under direct control within three years.Improve wastewater quality beyond compliance requirements

Goal

Improve wastewater quality beyond compliance requirements

Level

Business

Motivation

Reduced environmental impact

Description of goal

TAs water is a shared resource, we aim to integrate our water related issues in our long term business objective as we are water dependent and thus it important that it does not impact the water availability of the communities near our operations. Improving wastewater quality is important for us to maintain our ZLD process at all our facilities. Our goal is to 5 times water positive by 2025.

Baseline year

2020

Start year

2020

End year

2025

Progress

All our facilities are zero-liquid discharge plants, Zero liquid discharge (ZLD) refers to a treatment process in which the plant discharges no liquid effluent into surface waters, in effect completely eliminating the environmental pollution associated with treatment. Further, this is strengthened by ensuring technological upgradation, by the installation of Multiple Effective evaporator/Mechanical Vapour Recompression (MVR) at all Smelters in place of conventional evaporators to maintain zero discharge with improved water recovery. Effluent generated at our smelters is treated in Effluent Treatment Plant (ETP) followed by two stages RO plant. The treated effluents conform to the prescribed standards and recycled to the process. Multiple Effect Evaporator (MEE) and MVR have been provided to strengthen “Zero Discharge”.

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?

Disclosure module	Data verified	Verification standard	Please explain
W1 Current state	Water withdrawal , discharge, recycle and consumption verified	AA1000AS	Water withdrawal, discharge, recycle and consumption verified for all units covered in this boundary. water disclosure assurance for FY 2020-21 has been attached in W-F1
W8 Targets	water saving target verified as part of SD report verification	AA1000AS	Water saving target verified as part of SD report verification. water disclosure assurance for FY 2019-20 has been attached in W-F1
W1 Current state	Water withdrawal , discharge, recycle and consumption verified	AA1000AS	Also all the water credit and debit details verified by DNV and HZL certified as 2.41 times water positive company. Assurance letter attached in W-F1

W10. 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.

-

W10.1

(W10.1) 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)

W10.2

(W10.2) Please indicate whether your organization agrees for CDP to transfer your publicly disclosed data on your impact and risk response strategies to the CEO Water Mandate's Water Action Hub [applies only to W2.1a (response to impacts), W4.2 and W4.2a (response to risks)].

Yes

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I am submitting to	Public or Non-Public Submission
I am submitting my response	Investors	Public

Please confirm below

I have read and accept the applicable Terms