

W0. Introduction

W0.1

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

Kazan Soda Elektrik Üretim A.Ş., part of Ciner Group, was established in Ankara in 2011 and starts production in 2018 with the aim of contributing to the national economy and becoming a world leader in the production of Sodium Carbonate and Sodium Bicarbonate via its sustainable, eco-friendly, innovative and growing value chain. 1.6 billion tons of trona ore, 2.5 million tons of Heavy Soda Ash, 200,000 tons of Sodium Bicarbonate are produced annually in our 20 km2 facilities and we produce soda ash with a purity of 99.8%, the purest soda ash in the world. Sodium Carbonate and Sodium Bicarbonate are used in a wide variety of sectors from glass production to baking powder and have a significant contribution to the country's economy through export income since they are exported all around the world, mainly to the EU.

Kazan Soda Elektrik's logistics network delivers products to more than 40 countries and has an export target of 600 million dollars. Strategically, Kazan Soda maintains its leadership in the global Soda Ash industry in terms of production volume, product quality and supply chain reliability, technology and process innovation, safety and environmental standards, all of which are supported via ISO 9001, ISO 14001 Environmental Management System Standard Certification, ISO 50001,2700,22000,45001,10002,14046 Energy Management System, ISO/IEC 17025, ISO 14064, EcoVadis, LCA, Zero Waste Management,(ISO 14044 management systems and certification). To provide safety of the chemical products exported upon the human health and environment, Kazan Soda has completed the regulations determined in the REACH Legislation, which is effective in the European Union Countries. Moreover, KKDIK (Turkish Reach) studies are conducted.The electricity and steam energy required for production is supplied by the natural gas cogeneration plant within the factory and the excess electricity meets 2.3 billion kW/hours' worth of Ankara's electricity needs. As of 2018 we are calculating our Scope 1, Scope 2 and Scope 3 emissions calculated according to ISO 14064-1 Standards and our carbon dioxide equivalent emissions per ton of product was 0.418 in 2018. Until 2020, we started to calculate our Scope 1, Scope 2 and Scope 3 emissions according to ISO 14064-1 Standards and verified according to ISO 14064-3 Standards. For 2021, we achieved to decrease our emission intensity to 0.334 tCO2e/t, which means an emission reduction of 20%. With the aim of carbon reduction and awareness of importance of carbon emissions, carbon emissions of individual activities of Kazan Soda's employees the offset in 2020 via carbon offset projects. Verra does hereby certify that on 05 Feb 2021, 3,500 Verified Carbon Units (VCUs) were retired on behalf of 700 employees. We took 93,681 MWh of renewable energy YEK-G certificate.Kazan Soda also giving high priority to biodiversity activities with beekeeping, wildlife conservation and monitoring and endemic plant area projects. Within the scope of sustainability studies, natural life mammals and aquatic creatures, birds, ecosystem plants, endemic and indicator species were determined and recorded by field observations and camera traps by expert academicians.Kazan Soda Botanical Garden is the first botanical garden in Turkey, established in its natural habitat within the scope of biodiversity studies. It has been determined that 255 species belonging to 51 different families show natural distribution in the Botanical Garden area. 6 of these identified species are local or regional endemic;A total of 23 species are endemic to our country.Moreover, in 2021, approximately 3,605 trees were planted around the factory to reduce carbon emissions. Kazan Soda disclosed its sustainability activities via publishing year ending sustainability report since 2018. With LCA, Kazan Soda defined the systematic analysis of the potential environmental impacts of products or services during its entire life cycle. In 2021, Kazan Soda has achieved Silver Status at the EcoVadis platform via its environmental performance. By science-based target commitment, Kazan Soda put a set of goals to provide a clear route to reduce greenhouse gas emissions. In addition to be a signatory to the UN Global Compact, Kazan Soda endorsed CEO Water Mandate by implementing water stewardship it aimed to identify and reduce water risks, seize water-related opportunities, and contribute to water security and the sustainability development goals.Kazan Soda facility has received "zero waste" certificate at the end of 2020. Moreover, Kazan Soda is signatory of SBTi and to set a target we join the program The Climate Ambition Accelerator program is a six-month accelerator programme.

W-MM0.1a

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

Activity	Details of activity
Mining	Other mining, please specify (Trona ore)

W0.2

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

	Start date	End date
Reporting year	January 1 2021	December 31 2021

W0.3

(W0.3) Select the countries/areas in which you operate.

Turkey

W0.4

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

TRY

W0.5

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

Companies, entities or groups over which operational control is exercised

W0.6

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

No

W0.7

(W0.7) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization.	Provide your unique identifier
No	<Not Applicable>

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	<p>Water is a precious resource which is gradually getting scarcer. More than half of the world's population will be living with water shortage within 49 years because of a worldwide water crisis, according to a report issued by the United Nations Environment Program.</p> <p>Direct Use: We apply solution mining method, therefore, we need good quality water during the Trona mine extraction process. In addition to that, steam is used in sodium carbonate and sodium bicarbonate producing processes. Therefore, water supply is a vital issue for our production and for WASH purposes. If sufficient amount of water is not supplied, the production activities will be directly affected negatively.</p> <p>To mitigate this risk; Kazan Soda uses Kirmir River, Groundwater, Rainwater and Çamlidere and Kurtboğazı Dam (the water sources are leased from the government by Kazan Soda) as water sources. As a stakeholder engagement, Kazan Soda does not withdraw water from Kirmir River during the agricultural irrigation period, an average of 2 months in summer.</p> <p>If water can not be supplied, then the production will stop in almost 1 day. For this reason, a dam with a capacity of 1 million cubic meters was established by Kazan Soda inside the Kazan Soda field. In addition, with a well drilled in the Kazan Soda field, we started to use groundwater in Kazan Soda for the sake of business continuity.</p> <p>As our mining methodology, the solution mining, will remain the same in the future and our operational activities will be dependent on water, the importance of direct use of water will remain as vital.</p> <p>Indirect use: Our suppliers and customers use freshwater in their production processes and for WASH purposes. Sufficient amounts of good quality freshwater availability is rated as important for our value chain. As climate scenarios predict an increase in water stress in most of the world for future scenarios, we believe the importance will increase and the rating will be vital.</p>
Sufficient amounts of recycled, brackish and/or produced water available for use	Vital	Important	<p>Water is a precious resource which is gradually getting scarcer. More than half of the world's population will be living with water shortage within 49 years because of a worldwide water crisis, according to a report issued by the United Nations Environment Program. We apply solution mining method; therefore, we need good quality water during the Trona mine extraction process. In addition to that, steam is used in sodium carbonate and sodium bicarbonate producing processes. On the other hand, water is an important asset for WASH purposes.</p> <p>Recycled water counts for 37,53% percent of our water demand. For this reason, recycled water is "important". to increase our water efficiency and for the sake of our future.</p> <p>Indirect: In our value chain, however our product, being a raw material for many industries is at the very start of the life cycle. Both for our suppliers and our customers the efficient use of water is important. In addition to production, water is also important for WASH purposes. Therefore our importance rating for the indirect use is important.</p> <p>As mentioned above, water stress and scarcity are expected to increase year by year. For that reason, for both production and WASH purposes, we expect that the importance rating will increase and reach to vital. expected to be increased due to our recycling rate improvement targets.</p>

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%	Water withdrawn by all our operations (100% facilities) on a monthly basis are being monitored and recorded by water meters and flowmeters.
Water withdrawals – volumes by source	100%	Our water resources, which are Kirmir river owned by DSI, Çamlidere and Kurtboğazi dam owned by ASKİ and groundwater and rainwater by Kazan Soda are measured 100% by water meters.
Entrained water associated with your metals & mining sector activities - total volumes [only metals and mining sector]	Not relevant	No entrained water is associated with Trona Ore.
Produced water associated with your oil & gas sector activities - total volumes [only oil and gas sector]	<Not Applicable>	<Not Applicable>
Water withdrawals quality	100%	We monitor the quality of 100% of the water we were withdrawn by our facility. We analyze the water in our ISO 17025 certified in the laboratory. The chemical analysis of the water is performed daily, and microbiologic analysis are performed monthly. The analyzed parameters are: pH, conductivity, total hardness, p-m alkalinity, sodium chloride, TOC, total iron, sulphate, silica, free CO2, Suspended solids, turbidity, total chlorine and E.coli.
Water discharges – total volumes	100%	Water discharges –total volumes discharged from both industrial and domestic wastewater treatment plants are monitored continuously via flowmeters by 100%. The discharge volume is recorded daily from these flowmeters.
Water discharges – volumes by destination	100%	Water discharges – volumes by destination We continuously monitor 100% of our discharge volumes by destination via flowmeters.
Water discharges – volumes by treatment method	100%	Waste water from different processes is treated in different production facilities. Depending on the pollution load, different degrees of treatment may be required. We continuously measure the amount of water treated at and discharged by 100%.
Water discharge quality – by standard effluent parameters	100%	Water discharged volumes and the pollutant load are monitored, measured by test methods in line with the Water Quality Parameters by Water Quality Control Regulation and recorded on monthly basis or more regularly as required.
Water discharge quality – temperature	100%	The discharge water temperature from both treatment plants is monitored continuously 100% with online analyzers. The temperature measurements from both wastewater treatment plants are recorded daily.
Water consumption – total volume	100%	Water consumption by all our operations and 100% of facilities on a monthly basis are being monitored and recorded by water meters and flowmeters.
Water recycled/reused	100%	Water recovery by all our operations and 100% of facilities on a monthly basis are being monitored and recorded by water meters and flowmeters. Recycling is an important issue in our factory. This is stated in our company policy. All water is recycled in our factory. Kazan Soda has the permission of 20 m3/ day and it is not use.
The provision of fully-functioning, safely managed WASH services to all workers	100%	Access to clean water and a hygienic working environment are an integrated part of Health and Safety management approach. The primary concern is health of our workers and local people affected by our mining operation within the mining site. Even though, Kazan Soda uses solution mining method to extract the Trona ore from the underground that requires water. Water parameters are monitored and measured on monthly basis. 100% of our workers has free access to fully functioning, safely managed WASH services. Our water parameters are monitored and measured regularly. We always analyze the quality of withdrawn water and make sure that water that doesn't fit our high sanitation standards is not sent to tap water. Drinking water is also tested regularly.

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	6212.89	Higher	In this reporting year water withdrawal from the Çamlidere and Kurtboğazi Dam, rainwater, groundwater, and Kirmir Dam was measured by flow meters and the withdrawn amount has been monitored instant. Comparing to the previous reporting year consumption of water per ton product have been reduced. In 2021, total withdrawals are 6,212.89 m3/year. The increase in the amount of water withdrawal was occurred due to the effective water management planning and operational improvement workings even though the increase in the production amount comparing with the previous year. Withdrawals increase of Kazan Soda is %14,96 in 2021. Natural Sodium Carbonate and Sodium Bicarbonate production highly depends on water. Water is an essential part of our processes. Therefore, for the future projection, water consumption decreases and increases in line with the production amount. However, water management is the integral part of our risk management and production management approaches. Water withdrawal volumes in the mining sector can be difficult to estimate. It is not possible to predict whether future consumption volumes will increase or not. Thresholds for comparison: +/-5% "about the same"; +/-15% "higher/lower" and +/-70% "much higher/much lower". No significant uncertainty has been detected with the water withdrawal amount since our flow meters have always been calibrated.
Total discharges	75.44	About the same	At Kazan Soda, Water discharges – total volumes at both industrial and domestic wastewater treatment plants are being measured and recorded. Comparing to the previous reporting year water withdrawal and the consumption of water per ton product have been reduced and the change can be described as 1.59%. The decrease in the amount of water withdrawal was occurred due to the effective water management planning and operational improvement workings even though the increase in the production amount comparing with the previous year. Natural Sodium Carbonate and Sodium Bicarbonate production highly depends on water. Water is an essential part of our processes. Therefore, for the future projection, water consumption decreases and increases in line with the production amount. However, water management is the integral part of our risk management and production management approaches. Water withdrawal volumes in the mining sector can be difficult to estimate. It is not possible to predict whether future consumption volumes will increase or not. Thresholds for comparison: +/-5% "about the same"; +/-15% "higher/lower" and +/-70% "much higher/much lower". No significant uncertainty has been detected with the water withdrawal amount since our flow meters have always been calibrated.
Total consumption	6257.8	About the same	In 2021, total consumption is 6,257.8 megaliters/year. In 2020, this value was 5976.4. Thresholds for comparison: +/-5% "about the same"; +/-15% "higher/lower" and +/-70% "much higher/much lower". No significant uncertainty has been detected with the water withdrawal amount since our flow meters have always been calibrated.

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	100%	About the same	WRI Aqueduct	In this reporting period, 2021, water footprint of our water consumption and contaminated water footprint have been conducted aligned with Global Water Footprint Standard and per ISO 14046. Water stress of all activities at Kazan Soda is analyzed on an annual basis. The location of Kazan Soda's operations' water stress location has had from Çamlidere and Kurtboğazi Dam and Kirmir River. Baseline water stress indicator is used in the WRI Aqueduct Water Risk Atlas for the purpose of disclosure to CDP. According to the WRI Aqueduct Water Risk Atlas Ankara (Kazan Soda location) is defined Baseline Water Stress as "high (3-4)"

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	6212.89	Higher	In this reporting year water withdrawal from the Çamlidere and Kurtboğazi Dam Groundwater and Kirmir River were measured by flow meters and the withdrawn amount has been monitored instant. Water withdrawal increased as production increased by 40% compared to the previous reporting year. However, water consumption per ton of product has decreased and the change is up to 20%. The decrease consumption of water per ton product was occurred due to the effective water management planning and operational improvement workings even though the increase in the production amount comparing with the previous year. Water is an essential part of our processes. Water management approaches is the integral part of our risk management and production management.
Brackish surface water/Seawater	Not relevant	<Not Applicable>	<Not Applicable>	Kazan Soda has not used any brackish surface water/ seawater in this reporting period.
Groundwater – renewable	Relevant	38.58	This is our first year of measurement	Kazan Soda has used groundwater- renewable for only 5 months in this reporting period.
Groundwater – non-renewable	Not relevant	<Not Applicable>	<Not Applicable>	Kazan Soda has not used any groundwater-non-renewable in this reporting period.
Produced/Entrained water	Relevant	2317.21	This is our first year of measurement	As Kazan Soda, we brought our water to our business in the 2021 reporting year. We used this recycled water in the "backwash" processes.
Third party sources	Not relevant	<Not Applicable>	<Not Applicable>	Çamlidere and Kurtboğazi Dam, Groundwater, Rainwater and Kirmir River are the water source of Kazan Soda. Kazan Soda has only four water sources in the reporting period.

W1.2i

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

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Fresh surface water	Not relevant	<Not Applicable>	<Not Applicable>	Kazan Soda does not discharge into fresh surface water.
Brackish surface water/seawater	Relevant	75.43	About the same	At Kazan Soda, Water discharges – total volumes at both industrial and domestic wastewater treatment plants are being measured and recorded. Compared to the previous reporting year water withdrawal and the consumption of water per ton product have been reduced and the change can be described as %1.59 lower. The decrease in the amount of water withdrawal occurred due to the effective water management planning and operational improvement workings even though the increase %40 production amount comparing with the previous year. Natural Sodium Carbonate and Sodium Bicarbonate production highly depends on water. Water is an essential part of our processes. Therefore, for the future projection, water consumption decreases and increases in line with the production amount. However, water management is an integral part of our risk management and production management approaches. Water withdrawal volumes in the mining sector can be difficult to estimate
Groundwater	Not relevant	<Not Applicable>	<Not Applicable>	Kazan Soda does not discharge into groundwater.
Third-party destinations	Not relevant	<Not Applicable>	<Not Applicable>	Kazan Soda does not discharge to third-party destinations.

W1.2j

(W1.2) 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	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	We do not need any tertiary treatment. That's why we don't do tertiary treatment.
Secondary treatment	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	We do not need any tertiary treatment. That's why we don't do secondary treatment.
Primary treatment only	Relevant	75.43	About the same	100%	We use primary treatment as we need the settling process in our processes. 75.435 megaliter/year water discharge is monitored and treatment.
Discharge to the natural environment without treatment	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	As Kazan Soda, we do not discharge to the natural environment.
Discharge to a third party without treatment	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	As Kazan Soda, we does not discharge to third party.
Other	Not relevant	<Not Applicable>	<Not Applicable>	<Not Applicable>	As Kazan Soda, we haven't

W1.3

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

	Revenue	Total water withdrawal volume (megaliters)	Total water withdrawal efficiency	Anticipated forward trend
Row 1	20135008	6212.89	3240.8441160233	Thanks to our efforts, we expect that our water efficiency will improve by year by year.

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
Sodium Carbonate and Sodium Bicarbonate	Total water withdrawals	Ton of final product	Lower	Water intensity metric is used internally for tracking water performance. Water intensity for both product group is 2.43 m3 water / 1 ton of sodium carbonate/sodium bicarbonate in 2020 and 2.14 m3 water / 1 ton of sodium carbonate/sodium bicarbonate in 2021. Water intensity is decreased %11.9 while comparing previous year. Sodium carbonate and sodium bicarbonate production lines are integrated together. Both products are manufactured from the same Trona solution. Water is used to make the Trona solution. TRONA ore is extracted from the ground by the solution mining method

W1.4

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

Yes, our suppliers

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

51-75

% of total procurement spend

76-100

Rationale for this coverage

In order for Kazan Soda's business and operations to be continued with no interruption, we have to manage supply chain processes efficiently. To manage an efficient procurement process, we make regular supplier assessments. In the scope of our approved supplier list, we monitor our main suppliers in environmental issues, including water-related issues. We engage our suppliers through our Procurement policy, our Sustainability Reports, Contract negotiations, and Supplier Sustainability Assessment Questionnaire. According to our procurement policy, a supplier has to complete our Supplier Sustainability Assessment Questionnaire. Our supplier engagement method creates an opportunity to better understand our influence over our supply chain and gives as an understanding of what is needed by our suppliers in terms of sustainability.

Impact of the engagement and measures of success

As Kazan Soda request information from our suppliers about their company quality systems (ISO 9001, ISO 14001, ISO 22000, BRC, ISO27001 etc.) and their product certifications (TSE, CE, etc.) and water withdrawals by source by sending them questionnaires. Those questionnaire results are evaluated by Kazan Soda and site visits are arranged to control whether the information provided from our suppliers is correct and valid. According to our Procurement policy, we assess our suppliers per Supplier Sustainability Assessment Questionnaire results with 4 categories. We can find out Corrective and Preventive Actions (CAPA) for our suppliers and we give training at supplier engagement days. Our suppliers are given time to accommodate identified CAPAs in a good time. Also, we evaluate the information provided and determine/continue to work with our suppliers according to questionnaire results.

Comment

W1.4b

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

Type of engagement

Innovation & collaboration

Details of engagement

Educate suppliers about water stewardship and collaboration

% of suppliers by number

1-25

% of total procurement spend

26-50

Rationale for the coverage of your engagement

In order for Kazan Soda's business and operations to be continued with no interruption, we have to manage supply chain processes efficiently. To manage an efficient procurement process, we make regular supplier assessments. In the scope of our approved supplier list, we monitor our main suppliers in environmental issues, including water-related issues. We engage our suppliers through our Procurement policy, our Sustainability Reports, Contract negotiations, and Supplier Sustainability Assessment Questionnaire. According to our procurement policy, a supplier has to complete our Supplier Sustainability Assessment Questionnaire. Our supplier engagement method creates an opportunity to better understand our influence over our supply chain and gives as an understanding of what is needed by our suppliers in terms of sustainability

Impact of the engagement and measures of success

According to our Procurement policy, we assess our suppliers per Supplier Sustainability Assessment Questionnaire results with 4 categories. We can find out Corrective and Preventive Actions (CAPA) for our suppliers and we give training at supplier engagement days. Our suppliers are given time to accommodate identified CAPAs in a good time. Also, we evaluate the information provided and determine/continue to work with our suppliers according to questionnaire results. If the supplier cannot establish improvements regarding the identified CAPA, our Education&Training Departments arrange a meeting and training specific to that supplier to train their management in terms of water security, water consumption and importance of water and techniques how to reduce water withdrawal. The supplier engagement days are very significant opportunities for those initiatives.

Comment

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

Turkey	Sakarya
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Number of tailings dams in operation

0

Number of inactive tailings dams

0

Comment

Kazan Soda does not have any active or inactive tailing dams.

W3.3

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

Yes, water-related risks are assessed

W3.3a

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

Value chain stage

Direct operations

Coverage

Full

Risk assessment procedure

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

Frequency of assessment

Annually

How far into the future are risks considered?

More than 6 years

Type of tools and methods used

Tools on the market

Enterprise risk management

International methodologies and standards

Databases

Other

Tools and methods used

WRI Aqueduct

ISO 31000 Risk Management Standard

Environmental Impact Assessment

Life Cycle Assessment

IPCC Climate Change Projections

Regional government databases

Internal company methods

External consultants

Nation specific databases, tools, or standards

Other, please specify (WRI Aqueduct)

Contextual issues considered

Water availability at a basin/catchment level

Water quality at a basin/catchment level

Stakeholder conflicts concerning water resources at a basin/catchment level

Water regulatory frameworks

Status of ecosystems and habitats

Access to fully-functioning, safely managed WASH services for all employees

Stakeholders considered

Customers

Employees

Investors

Local communities

NGOs

Regulators

Suppliers
Other water users at the basin/catchment level

Comment

Both stakeholders and the contextual issues are considered in our water related risk assessments.

Value chain stage

Supply chain

Coverage

Partial

Risk assessment procedure

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

Frequency of assessment

Annually

How far into the future are risks considered?

More than 6 years

Type of tools and methods used

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

Tools and methods used

WRI Aqueduct
ISO 31000 Risk Management Standard
Environmental Impact Assessment
Life Cycle Assessment
IPCC Climate Change Projections
Internal company methods
External consultants
Nation specific databases, tools, or standards
Other, please specify

Contextual issues considered

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

Stakeholders considered

Customers
Employees
Investors
Regulators
Suppliers
Other water users at the basin/catchment level

Comment

Both stakeholders and the contextual issues are considered in our suppliers' water related risk assessments.

W3.3b

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

At Kazan Soda, water-related risks is carried out under Environmental Risk Assessment in the scope of ISO 31000. The risk assessment calculations are made with the formula below.

Risk = Probability x Impact (5x5 matrix)

Risk rating is classified as very high, high, medium, low, very low. For the risks determined as medium and/or higher level, work programs (activity / action / responsible person / term and realization) are applied.

In addition, in the scope of ISO 14001: 2015 revision, procedures for company and process-based environmental risks and opportunities have been established and relevant assessments have been made in accordance with these procedures.

Direct Operations:

We use WRI Aqueduct Water Risk Atlas to assess the baseline water stress on our direct operations. Our manufacturing plant and our only main water source Çamlıdere and Kurtboğazi Dam and Kirmir river within the same river basin, Sakarya River Basin. WRI Aqueduct Water Risk Atlas provides Overall Water Risk and baseline water stress in an explanatory way and helps to identify and respond to local water risks.

Turkey experienced the worst drought of the last 44 years in 2017 due to a substantial decrease in rain levels. Since 2018, we have been calculated our water footprint and get verified by a third-party in order to manage the water related risk emerging from stakeholders, current regulations and reputational risks. WRI Aqueduct Water Risk Atlas helps us to understand the significance of the impact.

Supply chain:

In order to understand and manage the water related risk, we started our LCA studies in 2019 because we are startup in 2018. We use Berger et al 2014 (Water Scarcity) methodology for our supply chain water stress analysis. This method analyses the vulnerability of basins to freshwater depletion over our supply chain. Also, we use Pfister et al 2009 (Water Scarcity) method - water scarcity indicator (WSI) - which is based on a withdrawal to availability (WTA) ratio and modeled using a logistic function (S-curve) in order to fit the resulting indicator to values between 0.01 and 1 m3 deprived/m3 consumed. The curve is tuned using OECD water stress thresholds, which define moderate and severe water stress as 20% and 40% of withdrawals, respectively. Data for water withdrawals and availability were obtained from the Water Gap model. This water risk approach enables us to early detect any potential improvement over our suppliers.

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, only within our direct operations

W4.1a

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

By the view of the Board of Management, substantive impact would be anything that can significantly affect our ability to meet business goals and material importance for our stakeholders. Water-related risks are evaluated (in terms of violence/impact and probability) by analyzing any expected and unexpected factors that may affect the company's achievement of its goals and objectives. Substantive financial or strategic impacts can be caused by Physical risk, Regulatory risk and Reputational risk.

Physical risk

Relates to water quantity (scarcity and flooding) and water quality that is unfit for use (pollution). Physical risk means that Kazan Soda might not have sufficient amounts of good quality water for their business operations and supply chains.

Regulatory risk

Relates to the imposition of restrictions on water use by the government. This may include the pricing of water supply and waste discharge, licenses to operate, water rights, quality standards etc.

Reputational risk

Relates to the impact on Kazan Soda's brand & image and can influence customer purchasing decisions. Reputational risk manifests itself through tensions and conflict around access to water or the degradation of local water resources. In a highly globalized information economy, public perceptions can emerge rapidly around business decisions that are seen to impact on aquatic ecosystems or local communities' access to clean water.

At Kazan Soda probability and effects of risks are evaluated between 1-5. Number 1 represents the lowest risk realization rate for probability and 5 is the value for the highest probability. In terms of impact, the number 1 indicates that the outcome of the risk is of little importance; The number 5 means that this result is very important. It is determined by which value the risks take between 1 and 5 in terms of probability and effect.

Definition of substantive impact:

Risks to be evaluated according to severity impact definition;

Substantive impact on financial loss defined as ≥ 500000 TRY.

Substantive impact as strategic defined as discontinuation of national and / or international product sales and discontinuation of production. ($\geq 50\%$ of market share).

Example:

We apply solution mining method; therefore, we need water during the Trona mine extraction process. In addition to that, water vapor is used in sodium carbonate and sodium bicarbonate producing processes. Therefore, water supply is a vital issue for our production. If sufficient amount of water is not supplied, the production activities will be directly affected negatively (Production capacity will decrease thus results in a financial impact).

In the case of no water supply, the production will stop in a short time. For this reason, a dam with a capacity of 1 million cubic meters was established by Kazan Soda inside the Kazan Soda field.

The defined strategic impact of our factory applies both direct operations and supply chain. For example, in the case of the cancellation of the protocol signed with "General Directorate of State Hydraulic Works (permit for water supply from Kirmir River)" and "Ankara Water and Sewerage Administration General Directorate (permit for water supply from Çamlidere and Kurtboğazı Dam)", the water cannot be supplied and the production will be stop.

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	1	100	We only have one facility; therefore, it represents 100% of our company-wide facilities.

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

Turkey	Sakarya
--------	---------

Number of facilities exposed to water risk

1

% company-wide facilities this represents

100%

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

2900000

% company's annual electricity generation that could be affected by these facilities

<Not Applicable>

% company's global oil & gas production volume that could be affected by these facilities

<Not Applicable>

% company's total global revenue that could be affected

100%

Comment

Because Kazan Soda process and mining sections has water-depending production methods, water problems could have a substantive financial or strategic impact on our all business studies.

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

Turkey	Sakarya
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Type of risk & Primary risk driver

Chronic physical	Changing precipitation patterns and types (rain, hail, snow/ice)
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Primary potential impact

Reduced revenues from lower sales/output

Company-specific description

According to our risk assessment using the WRI Aqueduct Water Risk Atlas, there is a decrease in average precipitation levels in Turkey. As a result of stresses caused by climate change, such as increased incidence and severity, the government may set statutory water withdrawal limits.

Water use is extremely important to our production process. A limitation in the availability of water may result in a reduction or interruption of our production capacity. According to the protocol signed with ASKI, our water usage as of 2021 is currently approximately 25% below the specified limit. For this reason, the risk of restriction has been evaluated as low risk. A possible worst-case scenario analysis example is given below, which assumes further (>50%) reductions in water availability

Significant water restriction scenario

If the government significantly restricts us in withdrawing water, our production capacity may decrease. We estimate that our currently agreed AKSI water withdrawal can be reduced by a further approximately 25% without impact, due to our additional water source (DSI) and our additional projects to improve water efficiency. A restriction of 50-55% imposed by DSI will impact our production. With the decrease in production, our revenues will decrease in the same proportion.

Timeframe

More than 6 years

Magnitude of potential impact

Medium-low

Likelihood

Likely

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure - minimum (currency)

100000000

Potential financial impact figure - maximum (currency)

150000000

Explanation of financial impact

Scenario financial impact: If 50%-55% water withdrawal restriction is imposed by DSI
50% water withdrawal restriction - no financial impact (after planned water efficiency projects)
55% water withdrawal - after the planned water efficiency projects, there will be a production reduction of 2 - 3% compared to 2021.
Our revenue for 2021 : 4,987,742,311 TL. A 2 - 3 % reduction of your income is equivalent to a decrease of 99,754,846 -149,632,269 TL
Approximate financial impact: 100,000,000 TL - 150,000,000 TL

Primary response to risk

Adopt water efficiency, water reuse, recycling and conservation practices

Description of response

We constantly work on projects to reduce water consumption and withdrawal. We have targets on reducing the solution required for production, which in turn reduces the amount of water used.

We are aware of this risk and we also include this risk in our long-term financial and strategic planning, so that we will be ready financially. In case of restrictions, there are projects for water efficiency. We also look for ways to increase the amount of water recycled.

Cost of response

5000000

Explanation of cost of response

In 2021 we have completed the replacement of 130 membrane of reverse osmosis system and replacement of 500 1 µm spoon filters in the pretreatment system, which will affect our discharge amounts in 2021.

Country/Area & River basin

Turkey	Sakarya
--------	---------

Type of risk & Primary risk driver

Chronic physical	Water stress
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Primary potential impact

Reduced revenues from lower sales/output

Company-specific description

According to World Meteorology Organization's (WMO) recent report published in 2021, the mean temperatures have increased by 1.2°C in comparison to the years before 1900. Global warming impacts mean temperatures and the level of precipitation. Therefore, one of the main risks that global warming brings is rising mean temperatures and changing weather patterns including heat waves, drought and water scarcity.

Our operations are electricity generation and natural soda ash production using the solution extraction production process, an environment-friendly closed-loop process , which is implemented by injecting pressurized high-temperature water to dissolve the sub-surface trona ore, and which is then pumped to the surface and processed into natural soda ash at a central processing facility. For these reasons, our operations are highly dependent on the availability of water and our access to water.

Due to global warming there is a risk of water scarcity and a risk of disruption to our production activities which could reduce our production capacity and consequently our revenue.

If we experience significant water shortages, this could cause production loss.

Timeframe

More than 6 years

Magnitude of potential impact

High

Likelihood

Virtually certain

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure - minimum (currency)

500000000

Potential financial impact figure - maximum (currency)

1000000000

Explanation of financial impact

Within our CHP Cogen unit, our daily average electricity energy generation is approximately 270 MWh. We sell approximately 140 MWh to the grid, and we use the remaining power we generate within our CHP unit for our soda ash production operations, in the form of steam and electricity. Our sales price for 1 MWh electricity is 62 USD. Therefore, the potential sales loss per day if we are unable to generate electricity is 140 MWh*24 hours*62USD= 208,320 USD/day

We produce approximately 8,000 tonnes of soda ash per day. Our sales price per 1 tonne of product is 168 USD. Therefore, the potential sales loss per day if we are unable to make production is 168 USD/ton*8000 t/day= for our product is 1,344,000 USD*tonnes/day.

If our production stops for a day due to water shortage, our total sales loss will be 1,552,320 USD per day. With the USD/TL currency rate as of average of 2021 at 8.89, our total sales loss will be 13,800,124 TL per day.

We have taken many measures in response to this risk. Our estimated loss of production is between 36.5 and 73 days (10 to 20% of annual production capacity), which is between 503,704,555 TL and 1,007,409,000 TL.

Electrical Data

Approximate amount of electricity sold per day = 140MW
Average of Sales price for 1MW electricity = 62\$
Total Electricity Energy Sales loss: 208,320 USD/day

Production Data

Approximate amount of product produced per day = 8,000 tonnes
Average of selling price for 1 tonne of Product = 168 \$
Total Product Sales loss: 1,344,000 USD/day

Total Sales Loss per day= 1,552,320 USD / day
2021 average exchange rate is 8.89 TL/\$

Approximate minimum financial impact: 500,000,000 TL
Approximate maximum financial impact: 1,000,000,000 TL

Primary response to risk

Adopt water efficiency, water reuse, recycling and conservation practices

Description of response

As we defined the risk of water scarcity as a significant risk, we have undertaken multiple mitigating measures as a response to this risk.

- We are able to withdraw water from two different dams, which are Kurtboğazi and Çamlidere Dams.
- We established 30 kms of water pipeline to Kirmir Creek.
- We use a dam area for a reservoir of 1,000,000 m3 of water.
- We got the permission from State Hydraulic Works to drill a well to access groundwater and withdraw 60 m3/h of water. Additionally, we have applied for permission to drill 7 more wells to withdraw water.

In addition to these strategies to ensure access to water supply, we have focussed on improving water efficiency and the re-use of water by reverse osmosis technology. Thanks to reverse osmosis, we are recovering 80 m3 of water per hour and thanks to resin tanks we process 150 m3 of water per hour. As a result of these water management strategies Kazan Soda now recovers approximately 30% of its water use and has reduced its external water dependency.

The overall cost of pipelines is 189,000,000 TL

The cost of reverse osmosis system is 1,000,000 Euros, and the cost of resin tank is 55,000 Euros, where the sum is 1,055,000 Euros. With the Euro/TL exchange rate as average of 2021: 10.47 this is equivalent to 11,045,850 TL.

As a result, the overall cost of response is 200,045,850 TL

Cost of response

200045850

Explanation of cost of response

As we defined the risk of water scarcity as a significant risk, we have undertaken multiple mitigating measures as a response to this risk.

- We are able to withdraw water from two different dams, which are Kurtboğazi and Çamlidere Dams.
- We established 30 kms of water pipeline to Kirmir Creek.
- We use a dam area for a reservoir of 1,000,000 m3 of water.
- We got the permission from State Hydraulic Works to drill a well to access groundwater and withdraw 60 m3/h of water. Additionally, we have applied for permission to drill 7 more wells to withdraw water.

In addition to these strategies to ensure access to water supply, we have focussed on improving water efficiency and the re-use of water by reverse osmosis technology. Thanks to reverse osmosis, we are recovering 80 m3 of water per hour and thanks to resin tanks we process 150 m3 of water per hour. As a result of these water management strategies Kazan Soda now recovers approximately 30% of its water use and has reduced its external water dependency.

The overall cost of pipelines is 189,000,000 TL

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As a result, the overall cost of response is 200,045,850 TL

Country/Area & River basin

Turkey	Sakarya
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Type of risk & Primary risk driver

Acute physical	Drought
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Primary potential impact

Increased production costs

Company-specific description

Our business meets its water needs from ASKI and DSI dam lake. The raw water quality we receive is controlled by daily analyses.

Considering the WRI atlas, an increase in the water pollution load as a result of the decrease in water levels due to climate change is possible. In such a case, the pollution load of the raw water entering the plant will increase, the existing equipment will not be able to perform the required performance for raw water treatment, thus operating costs will increase and production loss will occur.

Scenario: With the decrease in the water level in the reservoir, the water pollution load is expected to increase. In case of further pollution in addition to the existing pollution and our existing ultrafiltration system is insufficient, it may be required to install an additional ultrafiltration system.

Timeframe

4-6 years

Magnitude of potential impact

Medium-low

Likelihood

Likely

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

8500000

Potential financial impact figure - minimum (currency)

<Not Applicable>

Potential financial impact figure - maximum (currency)

<Not Applicable>

Explanation of financial impact

Scenario: The cost of the ultrafiltration system (0.02µm filter) is estimated at 8,500,000 TL

Primary response to risk

Improve pollution abatement and control measures

Description of response

To purchase an additional ultrafiltration system (0.02µm filter) to maintain better quality water.

Cost of response

10000000

Explanation of cost of response

Scenario: The cost of an additional ultrafiltration system (0.02µm filter) is estimated at 10,000,000 TL

W4.2c

(W4.2c) Why does your organization not consider itself exposed to water risks in its value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact?

	Primary reason	Please explain
Row 1	Risks exist, but no substantive impact anticipated	Overall water-related risks are evaluated for Kazan Soda's value chain during the risk assessment procedure. Since the risk level was determined as low risk for other than direct operations, no operations are planned. Kazan Soda has been conducting a life cycle assessment study with a cradle to grave approach including its raw material and water supply, transportation of materials, core processes and downstream distribution, use and end of life phases of its value chain. Even though Kazan Soda is assessed under the Metals Mining sector in CDP, Kazan Soda's 2 end products sodium carbonate and sodium bicarbonate are inorganic chemicals and defined as sodium salts. Kazan Soda has had environmental and water impact assessment via life cycle assessment study. Delay of raw materials purchased from abroad can be evaluated as a risk however, with the current precautions this risk defined as very low. Current precautions include: <ul style="list-style-type: none">• Material / raw material stock quantity control and follow-up are performed.• The purchasing process is monitored.• Demand type is determined according to deadline status.• Material stock is made for critical equipment. Likewise, downstream processes that defined as the processes after the product leaves our factory gate, have no substantive financial or strategic impact. Our products are used in several different sectors and our products are input materials for our customers. As inorganic chemicals, our products are being converted into other materials in customer's manufacturing line for example glass.

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

Products and services

Primary water-related opportunity

Reduced impact of product use on water resources

Company-specific description & strategy to realize opportunity

We use the solution extraction production process requiring the use of water during the underground mining of trona ore. Steam is also used in the production process of soda ash and sodium bicarbonate.

We will use less water as we improve the water efficiency of our production processes and with increased water efficiency, we will reduce our operating costs.

By utilizing a closed-loop production process, water loss is minimized and water-related costs are reduced. We have a CHP cogen plant that requires pure water. After we use the energy of the steam we produce and this becomes condensate, we use the condensate water again in our process. Additionally, as a result of scientific studies carried out with Gebze Technical University, the recovery of water used in the field has been greatly increased. If we did not have the opportunity to reuse the water used in the plant, we would have to draw more water from DSI and ASKI.

This would result in more water use and more energy use as a result.

Strategy example: We saved 2,317,218 m³ of fresh water; natural source with water recovery/recycling within the 2021 processes. Compared to 2020, our recycling/recovery rate has increased by approximately 15%.

Estimated timeframe for realization

Current - up to 1 year

Magnitude of potential financial impact

Low-medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

20854962

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact

ASKI Cost of Raw Water: 2,317,218 * Unit Price of Raw Water Paid to ASKI in 2021 = 20,854,962 TL

Total Savings: 20,854,962 TL

Type of opportunity

Efficiency

Primary water-related opportunity

Improved water efficiency in operations

Company-specific description & strategy to realize opportunity

According to World Meteorology Organization's (WMO) recent report published in 2021, the mean temperatures have increased by 1.2°C in comparison to the years before 1900. Global warming impacts mean temperatures and the level of precipitation. Therefore, one of the main risks that global warming brings is rising mean temperatures and changing weather patterns including heat waves, drought and water scarcity.

Our operations are electricity generation and natural soda ash production using the solution extraction production process, an environment-friendly closed-loop process, which is implemented by injecting pressurized high-temperature water to dissolve the sub-surface trona ore, and which is then pumped to the surface and processed into natural soda ash at a central processing facility. For these reasons, our operations are highly dependent on the availability of water and our access to water.

Due to global warming there is a risk of water scarcity and a risk of disruption to our production activities which could reduce our production capacity and consequently our revenue.

Estimated timeframe for realization

1 to 3 years

Magnitude of potential financial impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

12000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact

We estimate that we can reduce water consumption allowances by up to 50% without financial impact. We have numerous projects to reduce water consumption and withdrawal. We have targets to reduce the water required for production and to increase the amount of water recycled, which will reduce the amount of water used. We include this risk in our long-term financial and strategic planning

We have completed the replacement of 130 membrane of reverse osmosis system and replacement of 500 1 µm spoon filters in the pretreatment system, which will affect our discharge amounts in 2021. We are planning to replace 100 membrane of reverse osmosis system, 180 m³ activated carbon in the pretreatment unit and revise the design of sand filters in 2022

Scenario: We withdraw 2,634,100 m³ from ASKI. If 50% can be reduced the financial impact will be: 1,317,050 m³*9 TL/m³= 11,853,450 TL saved (Approximately: 12,000,000 TL

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)

Kazan Soda

Country/Area & River basin

Turkey	Sakarya
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Latitude

40.10741

Longitude

32.5023

Located in area with water stress

Yes

Primary power generation source for your electricity generation at this facility

<Not Applicable>

Oil & gas sector business division

<Not Applicable>

Total water withdrawals at this facility (megaliters/year)

6212.89

Comparison of total withdrawals with previous reporting year

Higher

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

6212.89

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

38.58

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

2317.2

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

75.43

Comparison of total discharges with previous reporting year

About the same

Discharges to fresh surface water

0

Discharges to brackish surface water/seawater

75.43

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

6257.8

Comparison of total consumption with previous reporting year

About the same

Please explain

Comparing to the previous reporting year consumption of water per ton product have been reduced . In 2021, total withdrawals are 6,212.89 megaliters/year.The increase in the amount of water withdrawal was occurred due to the effective water management planning and operational improvement workings even though the increase in the production amount comparing with the previous year. Production increase of Kazan Soda is %17.60 in 2021. So, while increase of production is %17.60, increase of water withdrawals is only %8.14

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

Water withdrawals – total volumes

% verified

76-100

Verification standard used

Water Footprint Network: Water Footprint Assessment Manual

Please explain

<Not Applicable>

Water withdrawals – volume by source

% verified

76-100

Verification standard used

Water Footprint Network: Water Footprint Assessment Manual

Please explain

<Not Applicable>

Water withdrawals – quality by standard water quality parameters

% verified

76-100

Verification standard used

Water Footprint Network: Water Footprint Assessment Manual

Please explain

<Not Applicable>

Water discharges – total volumes

% verified

76-100

Verification standard used

Water Footprint Network: Water Footprint Assessment Manual

Please explain

<Not Applicable>

Water discharges – volume by destination

% verified

76-100

Verification standard used

Water Footprint Network: Water Footprint Assessment Manual

Please explain

<Not Applicable>

Water discharges – volume by final treatment level

% verified

76-100

Verification standard used

Water Footprint Network: Water Footprint Assessment Manual

Please explain

<Not Applicable>

Water discharges – quality by standard water quality parameters

% verified

76-100

Verification standard used

Water Footprint Network: Water Footprint Assessment Manual

Please explain

<Not Applicable>

Water consumption – total volume

% verified

76-100

Verification standard used

Water Footprint Network: Water Footprint Assessment Manual

Please explain

<Not Applicable>

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 Description of water-related performance standards for direct operations Description of water-related standards for procurement Reference to international standards and widely-recognized water initiatives Company water targets and goals Commitment to align with public policy initiatives, such as the SDGs Commitments beyond regulatory compliance Commitment to water-related innovation Commitment to stakeholder awareness and education Commitment to water stewardship and/or collective action Acknowledgement of the human right to water and sanitation Recognition of environmental linkages, for example, due to climate change	New policies and institutional reforms, adaptation strategies, effective financial and technological innovations are needed to adapt water management strategies to global changes and to address water problems from a broad perspective for sustainable and efficient production. At Kazan Soda, Water Management Strategy Plan articulates our water commitments and challenges, and the ways that action to meet those commitments will be driven. The scope of Water Management Strategy Plan constitutes the scope of this strategic plan to carry out the studies to be conducted in accordance with the strategic plan, methods to be followed, to carry out coordinated works in cooperation with all units, to present the current situations and the setting of targets by developing a strategy for the next years and acting in line with this strategic plan constitute the scope of this strategic plan. At Kazan Soda, Water Management Strategy Plan has been developed as company-wide and consists of a swot analysis (strengths weaknesses-opportunities-threats), targets and strategies. The Water Management Strategy Plan covers companywide water related risks understanding, education regarding to water risks. Also, Kazan Soda has a water policy and it is integrated with Sustainability approach. Kazan Soda participates water management strategy, targets, performance via Sustainability Reports. The aim of the policy is to minimise the impact of our activities on water through product lifecycle. In addition, the plan complying with the Sustainability Committee's risk opportunities in line with climate change affect and UN SDGs in corporate sustainability expectation. In this plan principles have been identified including OHS and environmental requirements, personnel awareness training and changes of the system according to the variability of raw water parameters. PR.32 Strategic Planning Procedure.pdf PR.32.F.04 Risk and Opportunity Determination Form - Water Supply and Treatment Department.pdf

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
Director on board	Water-related issues are integrated aspects of Kazan Soda management approach and a very significant strategic issue due to the company's responsible management code. The Board is the highest level of authority and decision-maker at Kazan Soda and responsible for reviewing water related policies, strategies and targets. Through the Sustainability Committee, the Board manages all the water risk topic at regular meetings. Sustainability Committee Director reports directly to the (CEO) Chairman of the Board. The Boards tasks include considering the social, environmental and economic interests of the company as well as the water related risks and opportunities that the company will face. Water is a vital component of the company strategy and managed at the highest level at Kazan Soda.

W6.2b

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

	Frequency that water-related issues are a scheduled agenda item	Governance mechanisms into which water-related issues are integrated	Please explain
Row 1	Scheduled - all meetings	Monitoring implementation and performance Overseeing acquisitions and divestiture Overseeing major capital expenditures Providing employee incentives 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	Likewise climate change risks, The Board – the highest level of the company are responsible to manage, monitor and take action for the water-related issues and its impacts over the Board strategy discussions, portfolio review and investment decisions. With the assist of the Sustainability Committee, the Board is the decision maker on water-related issues, risks and opportunities. The Sustainability Committee works to identify potential risk before the company face. In order to enhance this work, the Board has decided to receive support from experts and academicians. The Sustainability Committee schedule its regular meetings with those climate change, GHG emission, socio-economic, biodiversity experts. One of the most significant risks the company is facing is the water scarcity and the water stress. The Sustainability Committee works towards reducing all those risks regarding to the water with sector experts. The committee review current situation regarding to water risks, land management and rehabilitation of the used areas and makes GAP analysis to take actions and informs the Board and The Board monitors water related issues through the committee. During the reporting year, the followings are the examples of water-related issues the Board discussed: • Activities to protect water source and prevent water source pollution. • Decisions to ensure the elimination of washing wastewater without disturbing the ecological balance. • For the water withdraw to be used at Soda Ash, Sodium Bicarbonate Production Plant and Auxiliary Unit protocols to be taken from Saryar Dam Lake with the additional line and the recovery of the flow rate. • CDP scores were the other main issue for the Board. The Board has decided to get verified the company's water consumption, water withdrawal and water discharges for the reporting period. With the support of the Sustainability Committee, The Board considers all topics during its meetings with water-related issues. This includes, new investments, suppliers, customers, portfolio and financial risks.

W6.2d

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

	Board member(s) have competence on water-related issues	Criteria used to assess competence of board member(s) on water-related issues	Primary reason for no board-level competence on water-related issues	Explain why your organization does not have at least one board member with competence on water-related issues and any plans to address board-level competence in the future
Row 1	Yes	<p>Likewise climate change risks, The Board – the highest level of the company are responsible to manage, monitor and take action for the water-related issues and its impacts over the Board strategy discussions, portfolio review and investment decisions. With the assist of the Sustainability Committee, the Board is the decision maker on water-related issues, risks and opportunities. The Sustainability Committee works to identify potential risk before the company face. In order to enhance this work, the Board has decided to receive support from experts and academicians. The Sustainability Committee schedule its regular meetings with those climate change, GHG emission, socio-economic, biodiversity experts. One of the most significant risks the company is facing is the water scarcity and the water stress. The Sustainability Committee works towards reducing all those risks regarding to the water with sector experts. The committee review current situation regarding to water risks, land management and rehabilitation of the used areas and makes GAP analysis to take actions and informs the Board and The Board monitors water related issues through the committee. During the reporting year, the followings are the examples of water-related issues the Board discussed:</p> <ul style="list-style-type: none"> • Activities to protect water source and prevent water source pollution. • Decisions to ensure the elimination of washing wastewater without disturbing the ecological balance. • For the water withdraw to be used at Soda Ash, Sodium Bicarbonate Production Plant and Auxiliary Unit protocols to be taken from Sariyar Dam Lake with the additional line and the recovery of the flow rate. • CDP scores were the other main issue for the Board. The Board has decided to get verified the company's water consumption, water withdrawal and water discharges for the reporting period. With the support of the Sustainability Committee, The Board considers all topics during its meetings with water-related issues. This includes, new investments, suppliers, customers, portfolio and financial risks. 	<Not Applicable>	<Not Applicable>

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

Assessing water-related risks and opportunities
 Managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues

More frequently than quarterly

Please explain

At Kazan Soda The Board is the highest level of authority. Through the Sustainability Committee, the Board manages all the water-related issues at regular meetings. Sustainability Committee Director reports directly to the Chairman of the Board who has also been assigned as CEO. Sustainability Committee consist of one Board member, a Vice General Manager, QA/QC HSE Department Manager. CEO, who is also the Chairman of the Board, is the top management and responsible level over water-related issues. The Board is responsible for setting quality policy and objectives, assessing the performance of management systems, providing resources for improvements, and approving this procedure.

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	Director on board Corporate executive team Chief Executive Officer (CEO)	Reduction of water withdrawals	As a result of purposeful and planned activities, award rules ensure that people who contribute to water objectives are brought to the forefront in order to carry out the operations on a regular basis within the framework of water safety, to raise awareness and achieve the desired results. These objectives are focused on ensuring water safety for our operations and moving towards our goals of attracting and consuming less water, resulting in more water recycling. Kazan Soda employees are obliged to obey targets have been identified and achievement of those criteria and target are recorded in the score cards. Individuals are evaluated in teams with monthly periods. A scaled weighting is applied to the achievement of these indicators.
Non-monetary reward	Please select	Please select	

W6.5

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

Yes, direct engagement with policy makers

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?

A protocol has signed between Kazan Soda and Ankara Water and Sewerage Administration on 3rd June 2016 and signed between General Directorate of State Hydraulic Works on 20th March 2020. Moreover, the amount and the quality of discharged water is reported to the Ministry of Environment and Urbanization once a month.

W6.6

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

No, but we plan to do so in the next two years

W7. Business strategy

W7.1

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

	Are water-related issues integrated?	Long-term time horizon (years)	Please explain
Long-term business objectives	Yes, water-related issues are integrated	> 30	Since the quantity and quality of production are both directly and indirectly related to water, the water-related issues have been evaluated for 30 years of operation in the long-term strategic business plan. At Kazan Soda, Water Management Strategy Plan articulates our water commitments and challenges. Water Management Strategy Plan constitutes the scope of this strategic plan to carry out the studies to be conducted in accordance with the strategic plan, methods to be followed, to carry out coordinated works in cooperation with all units, to develop a strategy for the next 30 years and to determine goals and act in line with this strategic plan. At Kazan Soda, Water Management Strategy Plan has been developed as company-wide and consists of a swot analysis (strengths weaknesses-opportunities-threats), targets and strategies. Also, the plan complying with the Sustainability Committee's risk opportunities in line with climate change affect and UN SDGs in corporate sustainability expectation. In this plan principles have been identified, • OHS and environmental requirements, • personnel awareness training, • changes of the system according to the variability of raw water parameters, • to protect water source and prevent pollution, • to ensure the elimination of washing wastewater without disturbing the ecological balance, • providing uninterrupted water supply.
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	> 30	Since the quantity and quality of production are both directly and indirectly related to water, the water-related issues have been evaluated for 40 years of operation in the long-term strategic business plan. At Kazan Soda, Water Management Strategy Plan articulates our water commitments and challenges. Water Management Strategy Plan constitutes the scope of this strategic plan to carry out the studies to be conducted in accordance with the strategic plan, methods to be followed, to carry out coordinated works in cooperation with all units, to develop a strategy for the next 40 years and to determine goals and act in line with this strategic plan. At Kazan Soda, Water Management Strategy Plan has been developed as company-wide and consists of a swot analysis (strengths weaknesses-opportunities-threats), targets and strategies. Also, the plan complying with the Sustainability Committee's risk opportunities in line with climate change affect and UN SDGs in corporate sustainability expectation. In this plan principles have been identified, • OHS and environmental requirements, • personnel awareness training, • changes of the system according to the variability of raw water parameters, • to protect water source and prevent pollution, • to ensure the elimination of washing wastewater without disturbing the ecological balance, • providing uninterrupted water supply.
Financial planning	Yes, water-related issues are integrated	> 30	Since the quantity and quality of production are both directly and indirectly related to water, the water-related issues have been evaluated for 40 years of operation in the long-term strategic business plan. At Kazan Soda, Water Management Strategy Plan articulates our water commitments and challenges. Water Management Strategy Plan constitutes the scope of this strategic plan to carry out the studies to be conducted in accordance with the strategic plan, methods to be followed, to carry out coordinated works in cooperation with all units, to develop a strategy for the next 40 years and to determine goals and act in line with this strategic plan. At Kazan Soda, Water Management Strategy Plan has been developed as company-wide and consists of a swot analysis (strengths weaknesses-opportunities-threats), targets and strategies. Also, the plan complying with the Sustainability Committee's risk opportunities in line with climate change affect and UN SDGs in corporate sustainability expectation. In this plan principles have been identified, • OHS and environmental requirements, • personnel awareness training, • changes of the system according to the variability of raw water parameters, • to protect water source and prevent pollution, • to ensure the elimination of washing wastewater without disturbing the ecological balance, • providing uninterrupted water supply.

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)

8.7

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

10

Water-related OPEX (+/- % change)

370

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

70

Please explain

Our operational expenditures increased by 370% in TL from 2020 to 2021. The main reason is the increased water expense. Due to dry season, water level in the Kirmir river was low and as we consider our stakeholders in the basin who are occupied with agriculture we withdrawn water from third party, which is ASKİ. The unit price of water purchased from ASKİ is much more expensive than the unit cost of water withdrawn from Kirmir River. For the next year, our expectation is 70% increase in the OPEX, due to inflation rate and the price increase in unit water price.

Our capital expenditures increased by 8.7% in TL from 2020 to 2021. If the inflation effect is excluded, there is a slight decrease in water-related capital expenditures. For the next year, we are expecting an increase like 10% in our water-related CAPEX.

W7.3

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

	Use of scenario analysis	Comment
Row 1	Yes	

W7.3a

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

	Type of scenario analysis used	Parameters, assumptions, analytical choices	Description of possible water-related outcomes	Influence on business strategy
Row 1	Other, please specify (IPCC-A2 Scenario)	Mixed scenario	Based on the IPCC A2 scenario It is anticipated that 50% of the surface waters in Basins in the middle Anatolia and in western side will be lost by the end of the century and that water scarcity will be faced in industrial water usages. According to the IPCC A2 scenario the magnitude of precipitation decreases (5%-25%) in Turkey during the first half of 21st century. ECHAM5 model's A2 scenario simulation shows that by the end of the twenty first century, surface temperature increases are projected to reach to around 3.5 °C in winter and 6 °C in summer. Likewise, ECHAM5 model's A2 scenario simulation shows that precipitation is projected to decrease in the southern and western parts of Turkey by up to 20% in the second half of 21th century. According to the A2 scenario, the middle Anatolia where Kazan Soda is located and our river basin Sakarya, the basin's water potential may decrease around 10% by 2070 and 30% by 2100. There is currently around 112 billion m3 of available water, around 1,387 m3/capita-yr, which means Turkey is a water-stressed country. It is expected that available water will be around 1,267 m3/capita-yr by 2030. According to the A2 scenario the amount of water per capita, which is estimated to be less than 1,000 m3/yr by 2070. We use A2 climate scenario of IPCC because some climate studies focused on Turkey and regional climate change simulation based on the IPCC A2 scenario over Eastern Mediterranean has been investigated for Turkey.	Cooling tower improvement work will be carried out in order to reduce the cooling tower waste water generation and to ensure energy efficiency. It is aimed to use the pools with a total capacity of 5000 m3 continuously and to circulate and renew the water by using it continuously, in order to avoid possible problems in accessing water and to increase the amount of stock we have. In addition, reverse osmosis membrane replacement and resin replacement will be carried out in the facility. Along with these, the amount of waste water produced will be reduced.

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

Water can be sufficient for the entire sector and cost is low for today. According to the approach of the basic economy, the price will always increase in direct proportion with the increasing demand to a scarce resource. That means water will be precious according to our climate-related scenario analyses by 2041 for Turkey. At present, at Kazan Soda there is not an internal price process on water. However, the Sustainability Committee and the Board are evaluating the internal price on water and its implementation within the company. A new mythology is to be developed for Kazan Soda to bring an internal price on water. Internal price on water will ensure Kazan Soda to over come the increasing water prices when the scenario analysis' result will occur.

W7.5

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

	Products and/or services classified as low water impact	Definition used to classify low water impact	Primary reason for not classifying any of your current products and/or services as low water impact	Please explain
Row 1	No, but we plan to address this within the next two years	<Not Applicable>	Please select	

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 Business 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	Water-related issues are integrated aspects of Kazan Soda management approach and a very significant strategic issue due to the company's responsible management code. The Sustainability Committee and Sustainability Team are responsible for reviewing water related policies, strategies and targets. Through the Sustainability Committee, the Board manages all the water risk topic at regular meetings. Sustainability Committee Director reports directly to the (CEO) Chairman of the Board. The Boards tasks include considering the social, environmental and economic interests of the company as well as the water related risks and opportunities that the company will face. Water is a vital component of the company strategy and managed at the highest level at Kazan Soda. Therefore, company-wide targets&goals are assessed by the SC and evaluated by the Board in the regular meetings. Likewise, monitoring of water-related goals and targets is carried out via the "Strategic Target Tracking Form" within our "Water Management Strategy Plan". The progress for all company-wide targets and goals and monitoring results are reported in the internal "Management Review Performance Report". Water related goals and targets of company-wide, business level and facility/site level are set through the following policy as stated in the "Water Management Strategy Plan". > Establishing a system for the determination of methods and controls for the supply of water to be supplied to the factory and production processes (Mining, Process, Energy) in the specified conditions and amounts, > To ensure production by following technological developments and conducting research and development activities, > Ensuring the detection and control of risky situations in our activities and preventing the occurrence of occupational accidents, ensuring that the personnel of the unit are trained to raise OHS awareness, > To fulfil the responsibilities regarding the environment and to carry out the necessary works to prevent environmental pollution, > To protect water resources and to minimise water withdrawal, > To ensure the disposal of washing wastewater without disturbing the ecological balance, > To ensure the goals and targets cover the climate related scenario analysis water related results and potential water risks.

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

Supplier engagement

Level

Company-wide

Primary motivation

Risk mitigation

Description of target

We request water-related data from our suppliers in our sustainability assessment surveys. Sustainability assessment questionnaires are sent to all our approved suppliers and we calculate the ratio of suppliers who provide us with water data (including water-related risks) as a proportion of all approved suppliers.

Our goal is to increase the ratio of suppliers providing water data by 10% each year. We have 54 approved suppliers in total. The ratio of approved suppliers providing water data (stating risks, opportunities and targets related to water) was 46% in 2021.

In 2021, 25 of our 54 approved suppliers (25/54) = 46% returned on this issue. This target is part of our long-term goal of having at least 80% of our approved suppliers report on water-related risks, opportunities and company targets by 2030.

Quantitative metric

% increase in proportion of suppliers engaged

Baseline year

2021

Start year

2021

Target year

2030

% of target achieved

0

Please explain

In 2021, 25 of our 54 approved suppliers (25/54) = 46% returned on this issue. This target is part of our long-term goal of having at least 80% of our approved suppliers report on water-related risks, opportunities and company targets by 2030.

Target reference number

Target 2

Category of target

Product water intensity

Level

Company-wide

Primary motivation

Cost savings

Description of target

To reduce water use, which is 2.43 m3 water / tonne of product in 2020, by 12% in 2021, to 2.14 m3 water / tonne of product

2020: 2.43 m3 / t product

2021: 2.14 m3 / t product

2020 production amount: 2,466,000 tonne

2020 total water withdrawal: 5,998,597 m3

2.43 m3/tonne

2021 production amount: 2,900,000 tonne

2021 total water withdraw: 6,212,891 m3

2.14 m3/tonne

1H 2022 production amount: 1,475,500 tonne

1H 2022 total water withdraw: 3,352,376 m3

2.27 m3/tonne

Quantitative metric

% reduction per product

Baseline year

2021

Start year

2021

Target year

2022

% of target achieved

0

Please explain

If the amount of water withdrawn in the first 6 months of 2022 had been drawn with the rate in the target year, we would have drawn 233,89 m3 less water for the same production. According to the unit water prices of 2022, an additional payment of 3,496,335 TL to ASKI was required for the extra water drawn.

Target reference number

Target 3

Category of target

Water recycling/reuse

Level

Company-wide

Primary motivation

Reduced environmental impact

Description of target

Our recovered water ratio was 30.5% in 2020, and this increased by 7% to 37.5% in 2021

2020 recovered water amount: 1,933,467 m3

2020 total water withdrawal: 5,998,597 m3

2020 recovery ratio: 30.5%

2021 recovered water amount: 2,317,218 tonne

2021 total water withdrawal: 6,212,891 m3

2021 recovery ratio: 37.5%

Quantitative metric

% increase in water use met through recycling/reuse

Baseline year

2021

Start year

2021

Target year

2022

% of target achieved

0

Please explain

We aim that our recovered water ratio will increase.

W8.1b

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

Goal

Improve wastewater quality beyond compliance requirements

Level

Company-wide

Motivation

Reduced environmental impact

Description of goal

The Goal of Kazan Soda is that reducing water-related environmental impacts via accomplishing all water-related targets in 2021 in order to improve wastewater quality. With the aim of this, we are monitoring our water consumption originating from our activities, reporting it in our sustainability report every year, to ensure efficient use of water and to raise awareness in this regard both among our employees and our stakeholders.

In the scope of the production activities, our water-related targets constitute about 25 % of our overall environmental targets with regard to reducing environmental impacts.

Monitored at the corporate level since the goal related to the entire manufacturing plant and the value of Kazan Soda as company level. The goal is the same for all basins/facilities, located in Sakarya river basin. This goal contributes to water security by achieving all water-related targets.

This goal is carried out via the Strategic Target Tracking Form within our Water Management Strategy Plan. The progress for all company-wide goals and monitoring results are reported in the internal Management Review Performance Report.

Baseline year

2021

Start year

2021

End year

2023

Progress

This goal is carried out via the Strategic Target Tracking Form within our Water Management Strategy Plan. The progress for all company-wide goals and monitoring results are reported in the internal Management Review Performance Report.

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, water consumption and water discharge water (of 2019 figures.)	Other, please specify (ISO 14046:2014.)	Water Footprint Network: Water Footprint Assessment Manual.

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

Please confirm below

I have read and accept the applicable Terms