

Welcome to your CDP Water Security Questionnaire 2020

W0. Introduction

W0.1

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

Reporting Scope:

Zorlu Energy's CDP Reporting scope has been changed. In previous years only electricity generation companies were reporting as Zorlu Enerji and Zorlu Dođal, based on the energy source of the production. In 2020 reporting all **power plants with electricity trade and sales, electrical charging stations and smart solutions for energy use** are in this Zorlu Energy CDP Report scope.

The main income of Zorlu Energy comes from electricity sales and trade however the water impact of power generation is much more important. As a result, the sustainability and water strategy of the company is based on power generation, not to the electricity sales and trade which is only a service company. In this report 99% of water withdrawal comes from geothermal power plants and hydro power plants. They are both renewable sources in terms of water.

Company Profile:

Zorlu Energy (ZE) was founded in 1993 as one of the Zorlu Holding companies to decrease the energy needs of Turkey in different fields of the energy sector. ZE makes difference among its rivals with its integrated structure which combines engineering, supply and construction services with maintenance, repair and operation services.

Despite the economic fluctuations throughout the world and in our country, while achieving all our sustainability-oriented targets, we achieved a growth of 82% in 2018 compared to the previous year, reaching the highest value of 1.854 million TL in ZE history. By maintaining our performance steadily in 2019, we increased this value to TL 2,034 million. At the same time, we invested approximately 1.888 million TL in 2018-2019.

We managed to achieve many sustainability-oriented principles and signed an agreement with Garanti Bank in 2018 within the scope of green loans that started to become widespread as of 2017 and emerged with the aim of supporting sustainable projects and companies. **We signed the fifth Green Loan Agreement (Loan Green) in the world, it is the first of its kind in Turkey.** With the green loan agreement, its targeted to reduce our financing costs while improving our performance in environmental, social and governance areas.

ZE defines sustainable energy as “generating and using energy in compliance with inter-generational justice approach without causing irreversible damages to environment and destroying the ecological balance” and progressing rapidly with the **goal of becoming “the energy company of the future”**. With this perspective ZE invest in new generation technologies and expand our installed capacity.

Electricity Generation:

ZE is a major player in the domestic market with 779,4 MW of installed capacity in Turkey and Pakistan. Its portfolio comprises 7 hydroelectric, 4 wind(3 in Turkey & 1 in Pakistan), 4 geothermal and 2 natural gas power plants. **By the end of 2019, 89% of our installed power in Turkey comes from renewable energy sources.**

The %66 of our electricity production in renewable energy comes from geothermal power plants. ZE produces more than 20% of geothermal energy in Turkey with 305 Mwh.

Charging Stations:

ZES (Zorlu Energy Solutions) established under ZE and fast charging stations in the city and on intercity roads in 2019 installed. Since now more than 149 charging stations in total are in place and we are the leading company with 35% market share in Turkey for fast charging stations and standard charging stations in residential and business areas with collaborations with municipalities.

Sustainability Strategy:

ZE with a broad range of technologies and fuel types, including coal, solar, hydro-power, geothermal, and wind.

ZE defines its sustainability strategy to be among the front runners of the global innovation economy of the future. Zorlu Energy applies **ISO 14046 Water Management Standard** in its power plants.

The **water related targets** based on ZE strategy are;

- 5% decrease in water withdrawal by 2022 compared to 2016
- ISO 14046 Water Management Certification and the announcement of it to create awareness.

To manage and keep sustainability structure strong ZE has a Sustainability Committee(SC) which led by the Corporate HSEQ Manager . The high level of the committee provides a holistic and comprehensive perspective, bring the expansion of sustainability knowledge and behavior change in the company. SC reports to ZE CEO who review the climate change performance and directing long term strategy. CEO reports to Zorlu Holding executive board. Board chair and sustainability board members are responsible for climate change in terms of strategy and approval of action plans respectively.

W-EU0.1a

(W-EU0.1a) Which activities in the electric utilities sector does your organization engage in?

Electricity generation

W-EU0.1b

(W-EU0.1b) For your electricity generation activities, provide details of your nameplate capacity and the generation for each technology.

	Nameplate capacity (MW)	% of total nameplate capacity	Gross electricity generation (GWh)
Coal – hard	0	0	0
Lignite	0	0	0
Oil	0	0	0
Gas	83.8	11	360
Biomass	0	0	0
Waste (non-biomass)	0	0	0
Nuclear	0	0	0
Fossil-fuel plants fitted with carbon capture and storage	0	0	0
Geothermal	305	39	2,009
Hydropower	118.9	15	362
Wind	271.7	35	673
Solar	0	0	0
Marine	0	0	0
Other renewable	0	0	0



Other non-renewable	0	0	0
Total	779.4	100	3,404

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, 2019	December 31, 2019

W0.3

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

- Pakistan
- 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?

Yes

W0.6a

(W0.6a) Please report the exclusions.

Exclusion	Please explain
Ankara Office	Zorlu Enerji has only 2 employees operating in a small office in a 5 block facility which the Company does not have any access to water consumption data. As it constitutes a considerably small fraction of the overall water accounting data and therefore considered as “not material”, we have not yet taken any measures to include this facility in our water accounting.

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	Not very important	As an electricity producer, freshwater is and will always be a vital component of our production and direct operations both now and in the future since both our Hydroelectric power plants and geothermal power plants use water as the primary input for production. 66% of our power generation is based on geothermal power plant which is directly needs the sufficient amount of water. Compared with our direct operations, freshwater availability in terms of quality and quantity has considerably less importance rating for our indirect operations in general.
Sufficient amounts of recycled, brackish and/or	Important	Not important at all	As an electricity producer, recycled water as a secondary water source is and will always be an important component of our production and direct operations both now and in the future.

produced water available for use			Compared with our direct operations recycled water availability in terms of quality and quantity has considerably less importance rating for our indirect operations in general.
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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%	Zorlu Holding launched Smart-Life 2030 transformation plan. Under the umbrella of Zorlu Holding, Zorlu Energy is also responsible for its targets and less natural resource consumption is defined as a target. Performance is monitoring by Zorlu Energy. In order to track our performance, we monitor all water-related data including total volume of water withdrawals at our power plants as well as in our Istanbul Headquarters.
Water withdrawals – volumes by source	100%	With the vision of Smart Life 2030, Zorlu Holding is in the process of setting water targets in terms of less and efficient use of natural resources, for all its group companies including Zorlu Energy. In order to track our performance, we monitor all water-related data including the total volume of water withdrawals by the source at our power plants as well as in our Istanbul Headquarters. In Alaşehir Plant, both well and municipal waters are used. In Kızıldere Plants water is supplied from wells and surface water. 100% of water withdrawal is measured also in hydropower plants.
Water withdrawals quality	76-99	In Alaşehir Plant, both well and municipal waters are used. In Kızıldere Plants water is supplied from wells and surface water. All withdrawal water is analyzed before using to ensure that quality parameters are met the limit figure.
Water discharges – total volumes	76-99	With the vision of Smart Life 2030, Zorlu Holding is in the process of setting water targets in terms of less and efficient use of natural resources, for all its group companies including Zorlu Energy. In order to track our performance, we monitor all water-related data including the total volume of water discharges in each location we operate. Alaşehir and Kızıldere plant's treated

		wastewater is discharged into the surface water (river) in line with the Discharge Permission Certificate. %78 of discharged water is monitored through meters.
Water discharges – volumes by destination	100%	Zorlu Holding launched Smart-Life 2030 transformation plan. Under the umbrella of Zorlu Holding, Zorlu Energy is also responsible for its targets and less natural resource consumption is defined as a target. Performance is monitoring by Zorlu Energy. In order to track our performance, we monitor all water-related data including water discharges by destination in each location we operate. Alaşehir and Kızıldere plant's treated wastewater is discharged into the surface water (river) in line with the Discharge Permission Certificate. All discharged destination are known and followed.
Water discharges – volumes by treatment method	100%	Zorlu Holding launched Smart-Life 2030 transformation plan. Under the umbrella of Zorlu Holding, Zorlu Energy is also responsible for its targets and less natural resource consumption is defined as a target. Performance is monitoring by Zorlu Energy. In order to track our performance, we monitor all water-related data including the total volume of water discharge volumes by treatment method at our power plants as well as in our Istanbul Headquarters. All treated of wastewater is analyzed periodically by an accredited laboratory to comply with the Turkish Water Pollution Control Regulation. BOD, COD, TSS, and pH parameters are analyzed periodically.
Water discharge quality – by standard effluent parameters	100%	Zorlu Holding launched Smart-Life 2030 transformation plan. Under the umbrella of Zorlu Holding, Zorlu Energy is also responsible for its targets and less natural resource consumption is defined as a target. Performance is monitoring by Zorlu Energy. In order to track our performance, we monitor all water-related data especially in our Geothermal Energy Power Plants (GEPP) where we have the regulatory obligation to report the standard effluent parameters. All treated of wastewater is analyzed periodically by an accredited laboratory to comply with the Turkish Water Pollution Control Regulation. BOD, COD, TSS, and pH parameters are analyzed periodically.
Water discharge quality – temperature	Not relevant	The discharged water is domestic wastewater. Therefore, it does not have thermal pollution impact, and discharged water does not change the temperature of the discharged area.

Water consumption – total volume	100%	Zorlu Holding launched Smart-Life 2030 transformation plan. Under the umbrella of Zorlu Holding, Zorlu Energy is also responsible for its targets and less natural resource consumption is defined as a target. Performance is monitoring by Zorlu Energy. In order to track our performance, we monitor all water-related data including the total volume of water consumption in each location we operate.
Water recycled/reused	76-99	In Lüleburgaz and Bursa natural gas power plants, recycled water is used. Lüleburgaz facility uses well water and recycled water. The water obtained from Zorlu Textiles' (the sister company) wastewater treatment plant is purified and the resulting clean water is used in the operations. Bursa facility supplies water from an organized industrial zone which is two different quality. Organized industrial zone purifies the wastewater and after treatment, it is supplied as second quality water. In our geothermal power plants, the geothermal fluid is reinjected to the reservoir. All reinjected amount is monitored continuously. Geothermal reinjection involves returning some, or even all, of the water produced from a geothermal reservoir back into the geothermal system, after energy has been extracted from the water. Geothermal reinjection, which involves injecting energy-depleted fluid back into geothermal systems, is a sustainable, and environmentally friendly geothermal utilization project.
The provision of fully-functioning, safely managed WASH services to all workers	100%	Zorlu Holding launched Smart-Life 2030 transformation plan. Under the umbrella of Zorlu Holding, Zorlu Energy is also responsible for its targets and less natural resource consumption is defined as a target. Performance is monitoring by Zorlu Energy. In order to track our performance, we monitor all water-related data and make sure we provide fully-functioning WASH services to all Zorlu Enerji employees.

W-EU1.2a

(W-EU1.2a) For your hydropower operations, what proportion of the following water aspects are regularly measured and monitored?

	% of sites/facilities/operations measured and monitored	Please explain
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<p>Fulfilment of downstream environmental flows</p>	<p>76 - 99%</p>	<p>With the aim of preserving the downstream natural habitat, water with a sufficient flow has been released to the river. There are no irrigation areas between the diversion weir and the power plants. Therefore, continuous water flow for the natural wild is assured. Our İkizdere HEPP site is located on the border of the İkizdere district and its surroundings a wide population in terms of species diversity and is a very important region in terms of biodiversity. Through our flora and fauna studies at İkizdere HPP for the detection of rare and threatened species on a global, European, and local scale, we performed land studies for a year mainly in the growing season. Mercan HEPP is located in Munzur Valley National Park. Natural resources such as rivers and springs in this region include vegetation, unique wild and local animals, and endemic plant species. No negative impacts that could affect biological diversity have been identified in our power plants, which continue generating electricity as channel type HEPPs. In addition, no invasive species, insects or pathogens were observed. Among our methods for the identification of endangered and rare species based on the IUCN endangered levels and CITES, Bern and international agreements/local regulations, we followed various procedures; the collection of plant samples for important species with correct methods, transforming collected plant samples to a herbarium and/or recording in a way that would be possible to identify with digital cameras. At Zorlu Enerji, we care about passing on Turkey’s natural and cultural heritage to future generations by preserving them. For this reason, we have started monitoring the living species in our power plant locations. Since the beginning of our operations, we have been monitoring the change in the number of species that are valuable and threatened in terms of biodiversity in the region, especially red-spotted trout in our facilities that do not possess fish passages. We have determined that it is possible to reverse these changes through implementing fish migration practices as well as online sap water monitoring systems and biological monitoring systems, and we are doing the related implementation planning of these measures.</p>
<p>Sediment loading</p>	<p>100%</p>	<p>Necessary precautions including minimum flow, sediment, and fish passage have been included in all of our HEPPs. The weir does not affect the spawning habitat for fish. Through the scouring sluice just by the weir spillway, any sediments accumulating before the weir will be released to downstream. Our run-off river types HEPPs include a sediment passage and involve the</p>

		accumulation of sediment. There is no significant accumulation is expected at our dam type HEPPs, as there exist a sediment passage in the weir design and all sediments are trapped.
Other, please specify	Not relevant	There are no other water aspects.

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	2,689,734	Much higher	<p>Zorlu Enerji is an energy company that aims to operate on different fields of energy sector providing a global scale integrated service. Zorlu Enerji Group has lots of subsidiary companies operates in various fields of the sector with an integrated corporate combination including electricity and steam generation and their retail, electricity sales, solar panel sales and installation, natural gas sales and distribution, construction, management, and maintenance of power plants and EV charging stations network.</p> <p>In line with our target to lead the energy sector in which we operate, we continue to grow by continuing our journey on a global scale. According to Zorlu Holding Smart Life 2030 Strategy, as Energy Group, we set our goals and strategies. We reconsidered our Sustainability Strategy with the “2022 Vision” considering our future-oriented development goals and changing needs and presented them to our stakeholders.</p> <p>In the previous years, only electricity generation companies are reported in two different reports as "Zorlu Doğal Elektrik Uretim A.S." and "Zorlu Enerji Elektrik Uretim A.S.". Zorlu Doğal covers the geothermal and hydropower plants, Zorlu Enerji covers the natural gas power plant and wind power plants.</p> <p>In line with the Zorlu Holding Smart Life 2030 Strategy, the reporting boundary has extended including all companies to be more transparent. Starting from this year, except natural gas sales</p>

			<p>and distribution activities, all companies are reported together in this report. Zorlu Doğal Elektrik Üretim A.S. will not be reported separately anymore. Natural gas sales and distribution activities will be reported under the Gazdaş account. Therefore all figures are increased and comparing it to the previous year is not reasonable.</p> <p>The total withdrawn water amount is increased by 66% compared to the previous year since the reporting boundary has extended, as explained. In this report, our threshold for "much higher" and "much lower" is 20%.</p>
Total discharges	2,538,539	Much higher	The total discharged water amount is increased by 67% compared to the previous year since the reporting boundary has extended, as explained at the top. In this report, our threshold for "much higher" and "much lower" is 20%.
Total consumption	151,195	Much higher	Total water consumption is increased by 52% compared to the previous year since the reporting boundary has extended, as explained at the top. In this report, our threshold for "much higher" and "much lower" is 20%.

W1.2d

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

	Withdrawals are from areas with water stress	% withdrawn from areas with water stress	Comparison with previous reporting year	Identification tool	Please explain
Row 1	Yes	76-99	This is our first year of measurement	WRI Aqueduct	We have production sites on 11 different basins: Aras Basin, Büyük Menderes Basin, Ceyhan Basin, Çoruh Basin, Fırat Basin, Gediz Basin, Indus Basin, Marmara Basin, Meriç-Ergene Basin, Sakarya Basin, and Yeşilirmak Basin. The share of withdrawal water from basins and their risks are as follows:

					<p>70% from the Çoruh Basin = Low-Medium Risk (10-20%) 26% from the Sakarya Basin = Medium-High Risk (20-40%) 3% from the Büyük Menderes Basin = Extremely High Risk (>80%) 1% from Marmara Basin = Extremely High Risk (>80%) The withdrawal water from Ceyhan, Indus, Meriç-Ergene, Gediz, Aras, and Fırat Basin is negligible. We define water stress by applying the WRI Aqueduct tool. The coordinates of each production site are entered into the tool and water stress is analyzed through the WRI Aqueduct Water Risk Atlas. The risk is defined as Low-Medium (10-20%) and Medium-High (20-40%) for the 96% of withdrawal water which shows that our operations are located in medium water-stressed areas.</p>
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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	2,607,916.3	Much higher	The water withdrawn from surface water amount is increased by 48% compared to the previous year since the reporting boundary has extended, as explained at the top. In this report, our threshold for "much higher" and "much lower" is 20%.
Brackish surface water/Seawater	Not relevant			Brackish surface water or seawater is not withdrawn.
Groundwater – renewable	Relevant	81,109.47	Higher	For the geothermal power plants, we use underground water. In our geothermal power plants, the geothermal fluid is re-injected to the reservoir. The water withdrawn from groundwater (renewable) amount

				is increased by 11% compared to the previous year since the geothermal electricity generation has increased. In this report, our threshold for "higher" and "lower" is between 4% and %19.
Groundwater – non-renewable	Relevant	689.73	Much higher	Total withdrawn water from wells is increased by 28% compared to the previous year since the reporting boundary has extended. In this report, our threshold for "much higher" and "much lower" is 20%.
Produced/Entrained water	Not relevant			Produced water is not used.
Third party sources	Relevant	18.72	Much lower	Municipality water withdrawn is decreased by 37% comparing to the previous year. In this report, our threshold for "much higher" and "much lower" is 20%.

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	Relevant	2,477,715	Much higher	In the reporting year, the water discharged to the fresh surface water has increased by 48% compared to the previous year since the reporting boundary has extended. This figure shows the water amount used by our hydropower plant and released to the river again after flowed through the turbines. In this report, our threshold for "much higher" and "much lower" is 20%.
Brackish surface water/seawater	Not relevant			Our wastewater is not discharged to brackish surface water or seawater.
Groundwater	Relevant	60,615	About the same	The water amount discharged to the groundwater is increased by 3% compared to the previous year. In this report, our threshold for "about the same" is 3%. In

				our geothermal power plants, the geothermal fluid is re-injected to the reservoir. This figure represents the amount of re-injected water.
Third-party destinations	Relevant	209	Much higher	Wastewater is transferred to the municipal wastewater treatment plant through the sewerage system. The total amount of discharged water to the municipality wastewater treatment plant is increased by 90% compared to the previous year since the reporting boundary has extended. In this report, our threshold for "much higher" and "much lower" is 20%.

W-EU1.3

(W-EU1.3) Do you calculate water intensity for your electricity generation activities?

Yes

W-EU1.3a

(W-EU1.3a) Provide the following intensity information associated with your electricity generation activities.

Water intensity value (m3)	Numerator: water aspect	Denominator	Comparison with previous reporting year	Please explain
0.79	Total water withdrawals	Other, please specify GWh	About the same	We produced 3,404.27 GWh electricity and 2,690 cubic meter water is withdrawn this year. The intensity was 0.75 in the previous year. Therefore, our intensity is about the same as the previous year.

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-EU3.1

(W-EU3.1) How does your organization identify and classify potential water pollutants associated with your business activities in the electric utilities sector that could have a detrimental impact on water ecosystems or human health?

We take into account our impact on all living species, overall geographies where we operate. During the identification of new investment locations, we conduct comprehensive feasibility studies to identify measures to reduce environmental risks during the investment process and we carry out relevant environmental protection activities from the beginning phase of an investment. In this context, we carry out environmental impact analyses, monitoring studies, biodiversity surveys and biodiversity monitoring-conservation programs, mammalogy and ornithology surveys, ecosystem assessments, habitat restorations, landscape restoration plans, and practices, forestation and planting practices and tree transplantation in order to measure, monitor, evaluate and reduce environmental impacts.

We carried out transplantation operations to transport approximately 1,600 fig and olive trees from the location we picked for our Kızıldere III GPP in the Buharkent district of Aydın to another location without any loss or damage. The project started in October 2015 and was completed in 2017. As a responsible investor, we are still taking care of the fruit trees which are in our investment area.

Some of the habitat management and biodiversity projects that our Company actively pursues include; bat and bird monitoring practices approved by the Ministry of Forestry and Water Affairs in our WPP sites in Osmaniye and Helitrophium Thermophilum Conservation Program that is carried out in cooperation with Ege University in Kızıldere GPP in Denizli.

Rize İkizdere and Tunceli Mercan Hydroelectric Power Plants (HPPs) of Zorlu Doğal stand out with their biodiversity conservation efforts due to their locations.



Our İkizdere HPP site is located in the border of the İkizdere district of Rize province in the Eastern Black Sea Region. İkizdere is located in the western part of the “Lesser Caucasus” area at the “Caucasus” hot spot. The İkizdere water basin and its surroundings, which form the boundaries of our area of operation, house a wide population in terms of species diversity and is a very important region in terms of biodiversity.

Mercan HPP is located in Munzur Valley National Park in the Ovacık district of Tunceli in Eastern Anatolia. Natural resources such as rivers and springs in this region include vegetation, unique wild and local animals, and endemic plant species. We operate in an area of 8.65 Ha (0.0865 km²) as part of our activities in İkizdere & Mercan HPP.

No negative impacts that could affect biological diversity have been identified in our power plants, which continue generating electricity as channel type HPPs. In addition, no invasive species, insects, or pathogens were observed.

Through our flora and fauna studies at İkizdere HPP for the detection of rare and threatened species on a global, European, and local scale, we performed land studies for a year mainly in the growing season.

Among our methods for the identification of endangered and rare species based on the IUCN endangered levels and CITES, Bern and international agreements/local regulations, we followed various procedures; the collection of plant samples for important species with correct methods, transforming collected plant samples to a herbarium and/or recording in a way that would be possible to identify with digital cameras.

At Zorlu Dogal, we care about passing on Turkey’s natural and cultural heritage to future generations by preserving them. For this reason, we have started monitoring the living species in our power plant locations. Since the beginning of our operations, we have been monitoring the change in the number of species that are valuable and threatened in terms of biodiversity in the region, especially red-spotted trout in our facilities that do not possess fish passages. We have determined that it is possible to reverse these changes through implementing fish migration practices as well as online sap water monitoring systems and biological monitoring systems, and we are doing the related implementation planning of these measures.

W-EU3.1a

(W-EU3.1a) Describe how your organization minimizes the adverse impacts of potential water pollutants associated with your activities in the electric utilities sector on water ecosystems or human health.

Potential water pollutant	Description of water pollutant and potential impacts	Management procedures	Please explain
Contaminated cooling water	In our power plants closed-loop water cooling is used. A closed-loop cooling system exchanges heat with the main cooling water system in conventional tube and shell heat exchangers or plate and frame heat exchangers. Chilled water systems (air chillers) exchange heat with the compressor, which in turn uses a cooling tower to throw heat	Measures to prevent spillage, leaching, and leakages	Regularly maintenance are applied and necessary precautions are taken.

	<p>back into the environment. Demineralized water is used for closed-loop cooling water makeup, but chemical treatments are required to prevent corrosion and, in some systems, freezing. In a closed-loop system, oxygen pitting is the most common type of corrosion.</p>		
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W3.3

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

Yes, water-related risks are assessed

W3.3a

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

Direct operations

Coverage

Full

Risk assessment procedure

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

Frequency of assessment

More than once a year

How far into the future are risks considered?

More than 6 years

Type of tools and methods used

Tools on the market

Enterprise Risk Management

International methodologies

Tools and methods used

Water Footprint Network Assessment tool
WRI Aqueduct
Other, please specify
ISO 14046 Water Management System

Comment

Zorlu Energy applies ISO 14001 based on ISO 31000 Risk Management and life cycle approach to managing all value chains. In all facilities stakeholders and their needs and expectations defined. As per operation and stakeholder expectations risks and opportunities defined. Risks are categorized as per risk management procedure. Water related risks and opportunities are assessed under sustainability and all risks and opportunities are communicated to sustainability committee. Sustainability committee is appointed by CEO overviews and evaluates Zorlu's risks & opportunities related to water. Chief Risk Manager is also a member of the committee and COSO taxonomy are used to categorize the risks. The risks and opportunities are discussed and reported to the executive board through CEO who is responsible of sustainability performance including water. Sustainability Committee Coordination meetings, held at quarterly intervals, brings an opportunity to review and discuss data submitted from all plants covering environmental compliance and GHG emissions reduction activities. Beside data from all plants Sustainability committee's other inputs are Swot Analysis and Stakeholder Meeting results. As per data consolidated in the committee climate related risks and opportunities and Sustainability policy are defined and reporting to the CEO and then Executive Board. The Executive Board is authorized to approve the major actions defined in risk analysis and designing the sustainability strategy.

Supply chain

Coverage

Partial

Risk assessment procedure

Water risks are assessed as part of an 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

Tools and methods used

WRI Aqueduct

ISO 31000 Risk Management Standard

Life Cycle Assessment

IPCC Climate Change Projections

Alliance for Water Stewardship Standard

Comment

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Other stages of the value chain

Coverage

Partial

Risk assessment procedure

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

Frequency of assessment

More than once a year

How far into the future are risks considered?

More than 6 years

Type of tools and methods used

Enterprise Risk Management
International methodologies

Tools and methods used

ISO 31000 Risk Management Standard
Life Cycle Assessment
IPCC Climate Change Projections

Comment

Zorlu Energy applies ISO 14001 based on ISO 31000 Risk Management and life cycle approach to managing all value chains. In all facilities stakeholders and their needs and expectations defined. As per operation and stakeholder expectations risks and opportunities defined. Risks are categorized as per risk management procedure.

W3.3b

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

	Relevance & inclusion	Please explain
Water availability at a basin/catchment level	Relevant, always included	While assessing water related risks, we prioritize water availability and quality at each power plant under our operational control. Water availability at basin or catchment level is always relevant in our water related risk assessment

		<p>because we produce electricity and our income is directly linked with the water availability for both our hydro and geothermal power plants.</p> <p>While conducting water risks assessment we use the WRI Aqueduct tool and internal company knowledge.</p>
Water quality at a basin/catchment level	Relevant, always included	Water quality is included to our risk assessment because for both hydro and geothermal power plant we control and manage the water quality. The quality of water may effect the efficiency of our critical equipment's.
Stakeholder conflicts concerning water resources at a basin/catchment level	Relevant, always included	<p>While assessing water related risks, we prioritize water availability and quality. Our operations are planned based on the water resources.</p> <p>For hydro power plants it is control by regulatory and we have to let min. 10% of water to the river. For geothermal power plant we use underground water and our neighbor power plants use the same reservoir. It is under control of government with the production capacities but considered for risk assessment.</p> <p>While conducting water risks assessment, we use the WRI Aqueduct tool and while addressing the stakeholder concerns (if any) we use our internal company knowledge.</p>
Implications of water on your key commodities/raw materials	Relevant, always included	As water is vital for our operations mainly operations both in GEPPs and HEPPs, water related risks in terms of implications in cases of not having water at sufficient amounts are assessed covering the whole lifetime of each power plant. Therefore, while conducting water risks assessment we use both the WRI Aqueduct tool and internal company knowledge in order to make sure we have access to sufficient amount of water for our business continuity.
Water-related regulatory frameworks	Relevant, always included	While assessing water related risks, we make sure we comply with regulations and consider current and possible future tariffs scenarios by using both internal company knowledge and our dialogue with national regulatory bodies as well as local water utilities.
Status of ecosystems and habitats	Relevant, always included	As part of the “environmental and social impact assessment” conducted for all our power plants, numerous ecosystem and local habitat-related current status and potential impacts are assessed including air quality, flora and fauna, soil, groundwater, and underground water sources. We use both WRI Aqueduct Tool and internal & local company knowledge while assessing these risks and impacts.

Access to fully-functioning, safely managed WASH services for all employees	Relevant, always included	While assessing water related risks, we prioritize water availability and quality. However, we also plan our operations in a way to make sure our operations to have a minimum or no negative impact on the water while making sure our employees have access to necessary WASH services. While conducting water risks assessment we use the WRI Aqueduct tool to assess water availability and quality.
Other contextual issues, please specify	Not relevant, explanation provided	We have not identified any other contextual issues regarding water risks.

W3.3c

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

	Relevance & inclusion	Please explain
Customers	Relevant, always included	With the life cycle approach we consider all our value chains including customers’ needs and expectations to our risk assessment. By engaging with our customers we make sure we communicate all material aspects of our operations together with our sustainability performance including water related KPIs.
Employees	Relevant, always included	We are currently not exposed to any water related risks, however, by engaging with our employees we make sure we communicate both our performance against set water targets, but also we constantly seek ways to raise awareness on their role in improving our performance.
Investors	Relevant, always included	By engaging with investors through public platforms such as CDP Water Program, we make sure we communicate all material aspects of our operations together with our sustainability performance.
Local communities	Relevant, always included	Water is a local resource and local communities are the most relevant party of our risk assessment. For hydro power plants we consider seasonality and min water discharge to the river basin for the use of local stakeholders for their use and agricultural activities. In geothermal power plant we give hot water to plant house and hotel. Also our neighbour electricity producers are considered as local communities in our risk assessment.

		Moreover, by conducting local stakeholder consultation meetings, we enable a two-way communication platform and carefully factor in any stakeholder concern regarding our operations.
NGOs	Relevant, always included	By engaging with leading NGOs we make sure we communicate all material aspects of our operations together with our sustainability performance and evaluate any collaboration opportunities to raise awareness.
Other water users at a basin/catchment level	Relevant, not included	Water is a local resource and local communities are the most relevant party of our risk assessment. For hydro power plants we consider seasonality and min water discharge to the river basin for the use of local stakeholders for their use and agricultural activities. In geothermal power plant we give hot water to plant house and hotel. Also our neighbor electricity producers are considered as local in our risk assessment.
Regulators	Relevant, always included	We are currently not exposed to any water related risks, however, by engaging with regulators and policy makers, we make sure we communicate all material aspects of our operations together with our performance. We take necessary measures to comply with environmental and water related regulations.
River basin management authorities	Not relevant, explanation provided	There is no river basin management in Turkey.
Statutory special interest groups at a local level	Not relevant, explanation provided	We have not yet identified any statutory special interest group at local level.
Suppliers	Not relevant, explanation provided	With life cycle approach we consider all our value chain including suppliers needs and expectation to our risk assessment. We produce electricity and get the water directly from natural resources however in terms of technology development for energy generation suppliers are also considered in terms of water risks.
Water utilities at a local level	Relevant, always included	In order to assess current and future tariff scenarios and we communicate with water utilities with whom we have a commercial relationship.
Other stakeholder, please specify	Not relevant, explanation provided	We have not yet identified any other stakeholder group to include in our water risk assessment.

W3.3d

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

In Zorlu Holding (ZH) companies including Zorlu Energy (ZE), all cases that may cause deviation to achieve our aims and objectives are defined as risk. The corporate risk management department is responsible to manage all defined risks consistently, with an overall approach and economically. Identification and managing risks are important in terms of strategical and financial planning. With merging risk management to strategical and financial planning, the company created an awareness for the future possible cases that may cause not to achieve its objectives and also a chance to be proactive. As a result, of this 2018 ZH started Smart Life 2030 which covers all Zorlu companies including Zorlu Energy for the transformation to a low-carbon economy.

Zorlu Energy applies ISO 9001:2015 Management System and ISO 14001:2015 Management System and ISO 14046 Water Management System Standards in our company which is based on ISO 31000 Risk Management and Life Cycle Approach. In all facilities, we define stakeholders and their needs and expectations. As per our operation and stakeholder expectations, we define our risks and opportunities. In 2018 based on Smart-Life 2030 strategy risks have been reviewed in all power generation plants terms of low carbon and less natural resource consumption. We categorize risks as per risk management procedures.

Water related risks and opportunities are assessing under sustainability and all sustainability risks and opportunities are communicated to the sustainability committee. The sustainability committee is appointed by CEO overviews and evaluates Zorlu Enerji's risks & opportunities related to climate change. Chief Risk Manager is also a member of the committee and COSO taxonomy is used to categorize the risks. The risks and opportunities are discussed and reported to the executive board through CEO who is responsible of climate change performance. Sustainability Committee Coordination meetings, held at quarterly intervals, brings an opportunity to review and discuss data submitted from all plants covering environmental compliance and GHG emissions reduction activities. Besides data from all plants Sustainability committee's other inputs are Swot Analysis and Stakeholder Meeting results. As per data consolidated in the committee water related risks and opportunities and Sustainability policy are defining and reporting to the CEO and then Executive Board. The Executive Board is authorized to approve the major actions defined in risk analysis and designing the sustainability strategy.

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?

In Zorlu Holding (ZH) companies including Zorlu Energy (ZE), all cases that may cause to deviation to achieve our aims and objectives are defined as risk. Corporate risk management department is responsible to manage all defined risks consistently, with an overall approach and economically. Identification and managing risks are important in terms of strategical and financial planning. With merging risk management to strategical and financial planning, the company created an awareness for the future possible cases that may cause not to achieve to its objectives and also a chance to be proactive. As a result of this, ZH started Smart Life 2030 which covers all Zorlu companies including Zorlu Energy for the transformation to low-carbon economy. We categorize risks as per risk management procedure.

Categorization on a heat map done as per impact and the frequency of the risk. All benefit/cost ratios are identified for the risks and defined action plans for high risks are sharing with CEO and executive board.

In CDP reporting we focus on gross risk and very high and high impacts about climate related risks are reported.

Very High Impact Definition;

- The cost of the risk is equal or more than 6 million TL or more
- Effect 50% of clients
- Effect 50% of employees
- Bad reputation of company on TV and digital platforms
- Operation shut down by official authorities

High Impact Definition;

- The cost of the risk is between 6 million TL and 3 million TL
- Loss of critical system or process damage that effects operation

- Effect between 25% and 50% of clients
- Effect between 25% and 50% of employees
- Bad reputation in conventional digital platforms and regionally
- Apply sanction by official authorities

Water is of great importance for our direct operations as it is used for cooling and steam production. In the cases of not having access to water, our business continuity will be at high risk. As we do not have any backup water tank to store water to feed our production process, our operations will stop if we cannot withdraw or have access to water at sufficient amounts.

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	5	26-50	Both our geothermal and hydro power plants produce electricity from water with different technologies.

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

Other, please specify

Gediz

Number of facilities exposed to water risk

1

% company-wide facilities this represents

1-25

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

1-25

% company's total global revenue that could be affected

1-10

Comment

Alaşehir GEPP assessed as per electricity generation.

Country/Area & River basin

Turkey

Other, please specify

Büyük Menderes

Number of facilities exposed to water risk

2

% company-wide facilities this represents

1-25

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

26-50

% company's total global revenue that could be affected

41-50

Comment

Kızıldere Geothermal Power Plant assessed

Country/Area & River basin

Turkey

Other, please specify

Yeşilirmak

Number of facilities exposed to water risk

1

% company-wide facilities this represents

1-25

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

Less than 1%

% company's total global revenue that could be affected

Less than 1%

Comment

Ataköy HEPP assessed as per electricity generation.

Country/Area & River basin

Turkey

Sakarya

Number of facilities exposed to water risk

1

% company-wide facilities this represents

1-25

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

1-25

% company's total global revenue that could be affected

1-10

Comment

Beyköy HEPP assessed based on electricity generation

Country/Area & River basin

Turkey

Other, please specify

Aras

Number of facilities exposed to water risk

1

% company-wide facilities this represents

1-25

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

Less than 1%

% company's total global revenue that could be affected

Less than 1%

Comment

Çıldır HEPP has been assessed.

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
Other, please specify
Büyük Menderes

Type of risk & Primary risk driver

Physical
Declining water quality

Primary potential impact

Disruption to sales

Company-specific description

Geothermal power plants produce electricity from underground water and the quality of the water affects the production because in terms of critical equipment efficiency and the well may become useless for production.

Timeframe

More than 6 years

Magnitude of potential impact

Low

Likelihood

About as likely as not

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

45,000

Potential financial impact figure - minimum (currency)

Potential financial impact figure - maximum (currency)

Explanation of financial impact

In our production facility we have around 30 wells. We assumed 1% decrease on production based on water quality. 2019 1% of total electricity generation income from the facility divided to the number of wells to estimate the financial impact of risk.

Primary response to risk

Amend the Business Continuity Plan

Description of response

The ingredient of the water is monitoring strictly. If any change occurs out of the limitations our operation team interfere.

Cost of response

350,000

Explanation of cost of response

The laboratory testings to follow the quality of water defined as cost of the response.

Country/Area & River basin

Turkey
Kizilirmak

Type of risk & Primary risk driver

Physical
Drought

Primary potential impact

Disruption to sales

Company-specific description

We have 7 hydro power plants around the Turkey and as per IPCC 5th assessment report drought is expected all over Turkey with medium confidence. Since production of electricity is based on water level, we may face decreased electricity production.

Timeframe

More than 6 years

Magnitude of potential impact

Medium

Likelihood

About as likely as not

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

3,000,000

Potential financial impact figure - minimum (currency)

Potential financial impact figure - maximum (currency)

Explanation of financial impact

İkizdere HEPP is sampled to define the financial impact. If the production from our hydro power plants decrease 5% with drought our income will decrease at the same level. As per 2019 results, production from İkizdere HEPP were 116,588 MWh. 5% of it multiplied with the gurantee sales price.

Primary response to risk

Adopt water efficiency, water reuse, recycling and conservation practices

Description of response

In order to be better prepared in cases of seasonal or gradual drought or decrease in precipitation averages, we renovate our existing inefficient power plants such as İkizdere HEPP and commissioned in 2018. Investment is done to achieve higher production volumes by using same amount of water available in our HEPP reservoirs.

Cost of response

23,000,000

Explanation of cost of response

Renovation of İkizdere hydropower plant defined as cost of response.

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	We produce electricity from natural resources and they are renewable resources. Our GEPP's are closed cycle and for hydro projects we have run off rivers. Through stakeholder consultations we get needs and expectations from our value chain and it is concluded that we have no substantive impact.

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

Sales of new products/services

Company-specific description & strategy to realize opportunity

We have our hydro and geothermal power plants in our production portfolio and since we are using renewable sources like water to produce electricity the government set guarantee price for 10 years which is higher than the average electricity sales price.

Estimated timeframe for realization

Current - up to 1 year

Magnitude of potential financial impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

551,269,994

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact

Our revenue from commissioning of Kızıldere 3 commissioning defined as financial impact of the opportunity because we sell our produced electricity to YEKDEM (guarantee prices).

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)

Bursa Natural Gas Power Plant

Country/Area & River basin

Turkey

Other, please specify

Marmara Basin

Latitude

40.245104

Longitude

28.955018

Located in area with water stress

Yes

Primary power generation source for your electricity generation at this facility

Gas

Total water withdrawals at this facility (megaliters/year)

0.31

Comparison of total withdrawals with previous reporting year

Much lower

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

0

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0.31

Total water discharges at this facility (megaliters/year)

0.3

Comparison of total discharges with previous reporting year

Much lower

Discharges to fresh surface water

0

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0.3

Total water consumption at this facility (megaliters/year)

0.01

Comparison of total consumption with previous reporting year

Much lower

Please explain

Bursa facility supplies water from an organized industrial zone which is two different quality. First quality water is freshwater. Organized industrial zone purifies the wastewater and after treatment, it is supplied as second quality water. Domestic wastewater is connected to the sewage system and discharged to the municipality treatment plant. Domestic wastewater is connected to the sewage system and discharged to

the municipality treatment plant.

In Bursa Natural Gas Power Plant, the wastewater is reused which is supplied from the municipality.

Water consumption is decreased by 52% compared to the previous year. Our water consumption figure is a calculation using withdrawals minus discharges.

Facility reference number

Facility 2

Facility name (optional)

Lüleburgaz Natural Gas Power Plant

Country/Area & River basin

Turkey

Other, please specify

Meriç-Ergene Basin

Latitude

41.4

Longitude

27.35

Located in area with water stress

Yes

Primary power generation source for your electricity generation at this facility

Gas

Total water withdrawals at this facility (megaliters/year)

684.68

Comparison of total withdrawals with previous reporting year

Much higher

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

0

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

684.68

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

126

Comparison of total discharges with previous reporting year

Much higher

Discharges to fresh surface water

0

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

126

Total water consumption at this facility (megaliters/year)

558.68

Comparison of total consumption with previous reporting year

Higher

Please explain

Lüleburgaz facility uses well water and recycled water. The water obtained from Zorlu Textiles' (the sister company and located at the same area) wastewater treatment plant is purified in Lüleburgaz Natural Gas Plant and the resulting clean water is used in the operations.

Wastewater is transferred back to Zorluteks' wastewater treatment plant. Domestic wastewater is connected to the sewage system and discharged to the municipality treatment plant.

In Lüleburgaz Natural Gas Power Plant, the wastewater is reused which is supplied from Zorlu Textile's wastewater treatment plant.

Water consumption is increased by 18% compared to the previous year. Our water consumption figure is a calculation using with drawals minus discharges.

Facility reference number

Facility 3

Facility name (optional)

Gökçedağ Wind Power Plant

Country/Area & River basin

Turkey

Other, please specify

Ceyhan Basin

Latitude

37.074627

Longitude

36.246399

Located in area with water stress

Yes

Primary power generation source for your electricity generation at this facility

Wind

Total water withdrawals at this facility (megaliters/year)

0.71

Comparison of total withdrawals with previous reporting year

Lower

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

0

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

0.71

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

0.08

Comparison of total discharges with previous reporting year

Lower

Discharges to fresh surface water

0

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0.08

Total water consumption at this facility (megaliters/year)

0.63

Comparison of total consumption with previous reporting year

Lower

Please explain

There is no water need for wind power electricity generation. Therefore, the given figures are for domestic water. Water is withdrawn from water well. Domestic wastewater is collected at the cesspool in line with the discharge permit license and transferred by the sewage truck to the municipality treatment plant.

Water consumption is decreased by 13% compared to the previous year. Our water consumption figure is a calculation using withdrawals minus discharges.

Facility reference number

Facility 4

Facility name (optional)

Saritepe Wind Power Plant

Country/Area & River basin

Turkey

Other, please specify

Ceyhan Basin

Latitude

37.207462

Longitude

36.681666

Located in area with water stress

Yes

Primary power generation source for your electricity generation at this facility

Wind

Total water withdrawals at this facility (megaliters/year)

0.28

Comparison of total withdrawals with previous reporting year

Much lower

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

0.28

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

0.15

Comparison of total discharges with previous reporting year

Much lower

Discharges to fresh surface water

0

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0.15

Total water consumption at this facility (megaliters/year)

0.13

Comparison of total consumption with previous reporting year

Much lower

Please explain

There is no water need for wind power electricity generation. Therefore, the given figures are for domestic water. Water is withdrawn from surface water. Domestic wastewater is collected at the cesspool in line with the discharge permit license and transferred by the sewage truck to the municipality treatment plant. Water consumption is decreased by 33% compared to the previous year. Our water consumption figure is a calculation using withdrawals minus discharges.

Facility reference number

Facility 5

Facility name (optional)

Demirciler Wind Power Plant

Country/Area & River basin

Turkey

Other, please specify

Ceyhan Basin

Latitude

37.246583

Longitude

36.628055

Located in area with water stress

Yes

Primary power generation source for your electricity generation at this facility

Wind

Total water withdrawals at this facility (megaliters/year)

0.15

Comparison of total withdrawals with previous reporting year

Much lower

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

0.15

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

0.08

Comparison of total discharges with previous reporting year

Much lower

Discharges to fresh surface water

0

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0.08

Total water consumption at this facility (megaliters/year)

0.07

Comparison of total consumption with previous reporting year

Much lower

Please explain

There is no water need for wind power electricity generation. Therefore, the given figures are for domestic water. Water is withdrawn from surface water. Domestic wastewater is collected at the cesspool in line with the discharge permit license and transferred by the sewage truck to the municipality treatment plant. Water consumption is decreased by 38% compared to the previous year. Our water consumption figure is a calculation using withdrawals minus discharges.

Facility reference number

Facility 6

Facility name (optional)

Pakistani Wind Power Plant

Country/Area & River basin

Pakistan

Indus

Latitude

25.043613

Longitude

67.999048

Located in area with water stress

No

Primary power generation source for your electricity generation at this facility

Wind

Total water withdrawals at this facility (megaliters/year)

4.34

Comparison of total withdrawals with previous reporting year

This is our first year of measurement

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

0

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

4.34

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

0.27

Comparison of total discharges with previous reporting year

This is our first year of measurement

Discharges to fresh surface water

0

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0.27

Total water consumption at this facility (megaliters/year)

4.07

Comparison of total consumption with previous reporting year

This is our first year of measurement

Please explain

There is no water need for wind power electricity generation. Therefore, the given figures are for domestic water. Water is withdrawn from water well. Domestic wastewater is collected at the cesspool in line with the discharge permit license and transferred by the sewage truck to the municipality treatment plant.

Facility reference number

Facility 7

Facility name (optional)

Alaşehir Geothermal Power Plant

Country/Area & River basin

Turkey

Other, please specify

Gediz Basin

Latitude

38.233

Longitude

28.261

Located in area with water stress

Yes

Primary power generation source for your electricity generation at this facility

Hydropower

Total water withdrawals at this facility (megaliters/year)

20,549.35

Comparison of total withdrawals with previous reporting year

Higher

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

0

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

20,547.08

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

2.27

Total water discharges at this facility (megaliters/year)

17,530.23

Comparison of total discharges with previous reporting year

Higher

Discharges to fresh surface water

2.04

Discharges to brackish surface water/seawater

0

Discharges to groundwater

17,528.19

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

3,019.12

Comparison of total consumption with previous reporting year

Higher

Please explain

In our geothermal power plants, the geothermal fluid is reinjected to the reservoir. Geothermal reinjection involves returning some, or even all, of the water produced from a geothermal reservoir back into the geothermal system, after energy has been extracted from the water. Thus, reinjection geothermal fluid is renewable groundwater. Domestic wastewater is discharged into the river.

Water consumption is increased by 10% compared to the previous year since electricity generation from geothermal resources has increased. Our water consumption figure is a calculation using withdrawals minus discharges.

Facility reference number

Facility 8

Facility name (optional)

Kızıldere I-II-III Geothermal Power Plant

Country/Area & River basin

Turkey

Other, please specify

Büyük Menderes Basin

Latitude

37.956213

Longitude

28.842528

Located in area with water stress

Yes

Primary power generation source for your electricity generation at this facility

Geothermal

Total water withdrawals at this facility (megaliters/year)

60,569.08

Comparison of total withdrawals with previous reporting year

Higher

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

6.7

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

60,562.39

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

43,354.93

Comparison of total discharges with previous reporting year

About the same

Discharges to fresh surface water

199.19

Discharges to brackish surface water/seawater

0

Discharges to groundwater

43,087.08

Discharges to third party destinations

68.66

Total water consumption at this facility (megaliters/year)

17,214.15

Comparison of total consumption with previous reporting year

Much higher

Please explain

In our geothermal power plants, the geothermal fluid is reinjected to the reservoir. Geothermal reinjection involves returning some, or even all, of the water produced from a geothermal reservoir back into the geothermal system, after energy has been extracted from the water. Thus, reinjection geothermal fluid is renewable groundwater. Domestic wastewater is discharged into the DSI channel in line with the Discharge Permission Certificate

Water consumption is increased by 33% compared to the previous year since electricity generation from geothermal resources has increased. Our water consumption figure is a calculation using withdrawals minus discharges.

Facility reference number

Facility 9

Facility name (optional)

Ataköy Hydro Power Plant

Country/Area & River basin

Turkey

Other, please specify

Yeşilırmak Basin

Latitude

40.424004

Longitude

36.884118

Located in area with water stress

Yes

Primary power generation source for your electricity generation at this facility

Hydropower

Total water withdrawals at this facility (megaliters/year)

174,780

Comparison of total withdrawals with previous reporting year

Much lower

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

174,780

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

166,041

Comparison of total discharges with previous reporting year

Lower

Discharges to fresh surface water

166,041

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

8,739

Comparison of total consumption with previous reporting year

Lower

Please explain

The water is withdrawn from the reservoir surface and used for electricity generation. Water consumption is decreased by 17% compared to the previous year. Our water consumption figure is a calculation using withdrawals minus discharges.

Facility reference number

Facility 10

Facility name (optional)

Beyköy Hydro Power Plant

Country/Area & River basin

Turkey

Sakarya

Latitude

40.073156

Longitude

30.755448

Located in area with water stress

Yes

Primary power generation source for your electricity generation at this facility

Hydropower

Total water withdrawals at this facility (megaliters/year)

990,054.7

Comparison of total withdrawals with previous reporting year

Higher

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

990,054

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0.7

Total water discharges at this facility (megaliters/year)

940,551.3

Comparison of total discharges with previous reporting year

Higher

Discharges to fresh surface water

940,551

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0.3

Total water consumption at this facility (megaliters/year)

49,503.4

Comparison of total consumption with previous reporting year

Higher

Please explain

Beyköy is a channel type hydroelectric power plant. Withdrawn water is released to the same river after used for electricity generation. The discharge amount includes domestic purpose water use. Water consumption is increased by 14% compared to the previous year. Our water consumption figure is a calculation using withdrawals minus discharges.

Facility reference number

Facility 11

Facility name (optional)

Çıldır Hydro Power Plant

Country/Area & River basin

Turkey

Other, please specify
Aras Basin

Latitude

40.900774

Longitude

40.551031

Located in area with water stress

Yes

Primary power generation source for your electricity generation at this facility

Hydropower

Total water withdrawals at this facility (megaliters/year)

41,700.67

Comparison of total withdrawals with previous reporting year

Higher

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

41,700.67

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

39,615.64

Comparison of total discharges with previous reporting year

Higher

Discharges to fresh surface water

39,615.64

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

2,085.03

Comparison of total consumption with previous reporting year

Higher

Please explain

The water is withdrawn from the reservoir surface and used for electricity generation. Water consumption is increased by 5% compared to the previous year. Our water consumption figure is a calculation using withdrawals minus discharges.

Facility reference number

Facility 12

Facility name (optional)

İkizdere Hydro Power Plant

Country/Area & River basin

Turkey

Coruh

Latitude

40.795463

Longitude

40.551031

Located in area with water stress

No

Primary power generation source for your electricity generation at this facility

Hydropower

Total water withdrawals at this facility (megaliters/year)

281,754.63

Comparison of total withdrawals with previous reporting year

Much higher

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

281,753.4

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

1.23

Total water discharges at this facility (megaliters/year)

267,666.96

Comparison of total discharges with previous reporting year

Much higher

Discharges to fresh surface water

267,665.73

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

1.23

Total water consumption at this facility (megaliters/year)

14,087.67

Comparison of total consumption with previous reporting year

Much higher

Please explain

İkizdere is a channel type hydroelectric power plant. Withdrawn water is released to the same river after used for electricity generation. The discharge amount includes domestic purpose water use. Water consumption is increased by 35% compared to the previous year. Our water consumption figure is a calculation using withdrawals minus discharges.

Facility reference number

Facility 13

Facility name (optional)

Kuzgun Hydro Power Plant

Country/Area & River basin

Turkey

Coruh

Latitude

40.183631

Longitude

41.063687

Located in area with water stress

No

Primary power generation source for your electricity generation at this facility

Hydropower

Total water withdrawals at this facility (megaliters/year)

108,953.39

Comparison of total withdrawals with previous reporting year

Much higher

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

108,953.39

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

103,505.72

Comparison of total discharges with previous reporting year

Much higher

Discharges to fresh surface water

103,505.72

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

5,447.67

Comparison of total consumption with previous reporting year

Much higher

Please explain

The water is withdrawn from the reservoir surface and used for electricity generation. Water consumption is increased by 26% compared to the previous year. Our water consumption figure is a calculation using withdrawals minus discharges.

Facility reference number

Facility 14

Facility name (optional)

Mercan Hydro Power Plant

Country/Area & River basin

Turkey

Other, please specify

Firat Basin

Latitude

39.413794

Longitude

39.30221

Located in area with water stress

No

Primary power generation source for your electricity generation at this facility

Hydropower

Total water withdrawals at this facility (megaliters/year)

220,876.71

Comparison of total withdrawals with previous reporting year

Much higher

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

220,876.71

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

209,832.87

Comparison of total discharges with previous reporting year

Much higher

Discharges to fresh surface water

209,832.87

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

11,043.84

Comparison of total consumption with previous reporting year

Much higher

Please explain

Mercan HEPP is a channel type hydroelectric power plant. Withdrawn water is released to the same river after used for electricity generation. The discharge amount includes domestic purpose water use. Water consumption is increased by 37% compared to the previous year. Our water consumption figure is a calculation using withdrawals minus discharges.

Facility reference number

Facility 15

Facility name (optional)

Tercan Hydro Power Plant

Country/Area & River basin

Turkey

Other, please specify

Firat Basin

Latitude

39.755985

Longitude

40.40183

Located in area with water stress

No

Primary power generation source for your electricity generation at this facility

Hydropower

Total water withdrawals at this facility (megaliters/year)

789,791.6

Comparison of total withdrawals with previous reporting year

Much higher

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

789,791

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0.6

Total water discharges at this facility (megaliters/year)

750,301.45

Comparison of total discharges with previous reporting year

Much higher

Discharges to fresh surface water

750,301.45

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

39,490.15

Comparison of total consumption with previous reporting year

Much higher

Please explain

The water is withdrawn from the reservoir surface and used for electricity generation. Water consumption is increased by 48% compared to the previous year. Our water consumption figure is a calculation using withdrawals minus discharges.

Facility reference number

Facility 16

Facility name (optional)

Istanbul Headquarters

Country/Area & River basin

Turkey

Other, please specify

Marmara Basin

Latitude

40.993661

Longitude

28.699289

Located in area with water stress

Yes

Primary power generation source for your electricity generation at this facility

Not applicable

Total water withdrawals at this facility (megaliters/year)

8.25

Comparison of total withdrawals with previous reporting year

Much higher

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

0

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

8.25

Total water discharges at this facility (megaliters/year)

7.42

Comparison of total discharges with previous reporting year

Much higher

Discharges to fresh surface water

0

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

7.42

Total water consumption at this facility (megaliters/year)

0.82

Comparison of total consumption with previous reporting year

Higher

Please explain

Our water consumption figure is a calculation using withdrawals minus discharges.

Facility reference number

Facility 17

Facility name (optional)

OEPSAS

Country/Area & River basin

Turkey

Sakarya

Latitude

39.775254

Longitude

30.515913

Located in area with water stress

Yes

Primary power generation source for your electricity generation at this facility

Not applicable

Total water withdrawals at this facility (megaliters/year)

5.37

Comparison of total withdrawals with previous reporting year

This is our first year of measurement

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

0

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

5.37

Total water discharges at this facility (megaliters/year)

4.83

Comparison of total discharges with previous reporting year

This is our first year of measurement

Discharges to fresh surface water

0

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

4.83

Total water consumption at this facility (megaliters/year)

0.54

Comparison of total consumption with previous reporting year

This is our first year of measurement

Please explain

Our water consumption figure is a calculation using withdrawals minus discharges.

W5.1a

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

Water withdrawals – total volumes

% verified

76-100

What standard and methodology was used?

It has been verified according to the "ISO 14046:2014 Environmental management - Water footprint Standard" by an accredited third-party verification body. All data has been verified with reasonable assurance level. Only Natural Gas Power Plants has been verified. Wind Power Plants have not been verified since their water consumption is negligible. 99.64% of water withdrawal has been verified.

Water withdrawals – volume by source

% verified

76-100

What standard and methodology was used?

It has been verified according to the "ISO 14046:2014 Environmental management - Water footprint Standard" by an accredited third-party verification body. All data has been verified with reasonable assurance level. Only Natural Gas Power Plants has been verified. Wind Power Plants have not been verified since their water consumption is negligible. 99.64% of water withdrawal has been verified.

Water withdrawals – quality

% verified

51-75

What standard and methodology was used?

It has been verified according to the "ISO 14046:2014 Environmental management - Water footprint Standard" by an accredited third-party verification body. All data has been verified with reasonable assurance level. Only Natural Gas Power Plants has been verified. Wind Power Plants have not been verified since their water consumption is negligible.

Water discharges – total volumes

% verified

76-100

What standard and methodology was used?

It has been verified according to the "ISO 14046:2014 Environmental management - Water footprint Standard" by an accredited third-party verification body. All data has been verified with reasonable assurance level. Only Natural Gas Power Plants has been verified. Wind Power Plants have not been verified since their water consumption is negligible. 80.55% of water discharge has been verified.

Water discharges – volume by destination

% verified

76-100

What standard and methodology was used?

It has been verified according to the "ISO 14046:2014 Environmental management - Water footprint Standard" by an accredited third-party verification body. All data has been verified with reasonable assurance level. Only Natural Gas Power Plants has been verified. Wind Power Plants have not been verified since their water consumption is negligible. 80.55% of water discharge has been verified.

Water discharges – volume by treatment method

% verified

Not verified

Water discharge quality – quality by standard effluent parameters

% verified

76-100

What standard and methodology was used?

It has been verified according to the "ISO 14046:2014 Environmental management - Water footprint Standard" by an accredited third-party verification body. All data has been verified with reasonable assurance level. Only Natural Gas Power Plants has been verified. Wind Power Plants have not been verified since their water consumption is negligible. 80.55% of water discharge has been verified.

Water discharge quality – temperature

% verified

Not verified

Water consumption – total volume

% verified

76-100

What standard and methodology was used?

It has been verified according to the "ISO 14046:2014 Environmental management - Water footprint Standard" by an accredited third-party verification body. All data has been verified with reasonable assurance level. Only Natural Gas Power Plants has been verified. Wind Power Plants have not been verified since their water consumption is negligible. 99% of water consumption has been verified.

Water recycled/reused

% verified

76-100

What standard and methodology was used?

It has been verified according to the "ISO 14046:2014 Environmental management - Water footprint Standard" by an accredited third-party verification body. All data has been verified with reasonable assurance level. Only Natural Gas Power Plants has been verified. Wind Power Plants have not been verified since their water consumption is negligible. 100% of water recycled has been verified.

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	Select facilities, businesses, or geographies only	Description of business dependency on water Description of water-related performance standards for direct operations Company water targets and goals Commitments beyond regulatory compliance Commitment to water-related innovation Recognition of environmental linkages, for example, due to climate change	Water is one of the fundamental raw materials of energy generation and an indispensable natural resource in order to continue generation processes in our geothermal and hydroelectric power plants. Our main objectives at Zorlu Energy are; to keep the amount of water we withdraw from natural resources at a minimum level, monitor water consumption at the corporate level annually, and provide support for the conservation of water resources. As a result, we are making continuous improvements through water efficiency projects. Our main goal with these projects along with water consumption reduction is to recycle and reuse the water we consume as much as possible. The geothermal fluid used in generation at the geothermal plants is injected back into the ground after being processed. We are currently investigating new technologies for water efficiency during electricity generation, and carrying out studies to integrate innovative technologies that increase the amount of water recovered.

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
Board Chair	The utmost responsibility for the overall management of ZE is on the Board Chair of Zorlu Holding. The Board Chairman has an active role in defining strategies and policies by coinciding with sustainability and renewable energy-related issues. Smart Life 2030 transformation for low carbon economy including efficient and less use of natural resources has been started with the vision of Board Chair and expanded to all ZH companies including ZE.
Chief Sustainability Officer (CSO)	ZE under the umbrella of ZH, reports to the executive board of ZH. ZH chief sustainability officer is responsible to approve the action plans presented by the CEO of ZE. Based on the risk management model of the company high budget required action plans related to sustainability and water are under the control of the Chief Sustainability Officer.

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 - some meetings	Overseeing major capital expenditures	Zorlu Holding executive board has utmost responsibility on management of Zorlu Energy. The board chair is responsible for the strategy and policies. Board member (Chief Sustainability Officer) has the responsibility for action plans and budgets.

		Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding strategy Reviewing and guiding corporate responsibility strategy	In 2019, following the targets for Smart Life 2030 has accelerated the awareness on the transition of low carbon economy and efficient and less consumption of natural resources including water. This strategy and budget of transition has been approved by the executive board. With the strategy and guidance of executive board, ZE defined its action plans and present it to the board for the approval.
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W6.3

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

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

Chief Executive Officer (CEO)

Responsibility

Both assessing and managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues

Quarterly

Please explain

CEO of ZE is responsible for both assessing and managing climate related risks and opportunities through;

- Directing the long-term corporate strategy,
- Performance review about climate change related targets
- Engaging with national and international institutions regarding to climate change negotiations
- Planning of new investments including R&D.

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

Chief Risk Officer (CRO)

Responsibility

Both assessing and managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues

Quarterly

Please explain

Responsibilities of CRO are;
Guidance on risk management methodologies
Assessment and management of the defined risks by the business units.

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

Sustainability committee

Responsibility

Both assessing and managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues

Quarterly

Please explain

CEO is advised and assisted by the “Sustainability Committee” consisting high level executives and managers of various departments as listed below, in the company. This wide range and high level of committee;

- Provide holistic and comprehensive perspective,
- Bring expansion of sustainability knowledge

- Behaviour change in the company.

The establishment of the committee is completed by the end of 2014 and it has started to work actively to integrate these aspects into its corporate business targets and strategies since 2015.

With the vision of Smart Life -2030 , sustainability and climate related issues are reevaluated in terms of risks and opportunities.

W6.4

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

	Provide incentives for management of water-related issues	Comment
Row 1	Yes	

W6.4a

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

	Role(s) entitled to incentive	Performance indicator	Please explain
Monetary reward	Chief Executive Officer (CEO)	Improvements in efficiency - direct operations	Profit is shared as a bonus (monetary reward) by the achievement of the relevant indicators listed below; -Performance indicators include efficiency in electricity production from renewable sources like water for Geothermal power plant and hydro power plants. -Adaptation and mitigation activities in line with sustainability policy of the company. -Reduction in energy consumption and fossil fuel resources consumption -Support Smart Life-2030 and leadership on behavior change.

Non-monetary reward	Board chair	Implementation of employee awareness campaign or training program	<p>The Board Chairman has an active role in defining strategies and policies including climate change related issues with focus on adaptation & mitigation activities. In 2019 Smart Life -2030 has been continued to its studies for the transition of low-carbon economy. The company started to invest electrical vehicles and charging stations in Turkey. This transformation needs behavior change not only in the company but also in all value chain. To support this transformation collaborations started as listed below;</p> <ul style="list-style-type: none"> *2,5 millions TL provided to the social entrepreneurship ecosystem *Scholarships for 334 students per year for training to equip them with the skills and competencies required by the 21st century. *In order to observe and experience the effects of digitalization in lives, ZH have established the Digilogue platform that combines different channels, disciplines, people, technology, artists and ideas.
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W6.5

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

Yes, trade associations

W6.5a

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

Zorlu Energy is a group company of Zorlu Holding. As part of our participation in TÜSİAD (Turkish Industry and Business Association) Environment and Climate Change Working Group, we have actively collaborated to evaluate the possible regulative scenarios. We have supported a research study with the Environmental and Climate Change Working Group, which we are actively involved in TÜSİAD,

W6.6

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

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

W7. Business strategy

W7.1

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

	Are water-related issues integrated?	Long-term time horizon (years)	Please explain
Long-term business objectives	No, water-related issues were reviewed but not considered as strategically relevant/significant	11-15	Since our business based on water quantity and quality our business plan is based on water related issues in terms of operation. With the vision of Smart Life 2030 we have objective to use less and efficient natural resource consumption. Another issue is water related management is monitored through ISO 14046 Water Management System.
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	11-15	Water related risk and opportunities are integrated our business plan to achieve the objectives because all efficiencies, expected income increases are related to our operation and our operation based on water quality and quantity. With the vision of Smart Life 2030 we have objective to use less and efficient natural resource consumption.
Financial planning	Yes, water-related issues are integrated	11-15	Water related risk and opportunities are integrated our business plan in terms of financial planning because all efficiencies, expected income increases are related to our operation and our operation based on water quality and quantity.

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)

0

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

0

Water-related OPEX (+/- % change)

0

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

0

Please explain

In 2019 data management has been continued and water related CAPEX and OPEX data's did not changed. Investments that will cause efficiency are monitoring under CAPEX and OPEX changes of R&D budget.

W7.3

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

Use of climate-related scenario analysis	Comment

Row 1	Yes	Scenario analysis has been used for assessing risks and opportunities. We use 2 degrees of temperature increase scenario based on IPCC 5th assessment report. One of the variables used to define the scenarios were level of drought.
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W7.3a

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

Yes

W7.3b

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

	Climate-related scenarios and models applied	Description of possible water-related outcomes	Company response to possible water-related outcomes
Row 1	2DS IEA 450	As per IPCC 5th assessment report extreme weather events like drought and increased temperatures are expected with medium confidence . Water scarcity may cause increased operational costs and business interruptions.	We are investing efficiency in our production facilities and aim to decrease the water intensity per generated electricity.

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, and we do not anticipate doing so within the next two years

Please explain

Zorlu Energy did not defined any internal price on water.

W8. Targets

W8.1

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

	Levels for targets and/or goals	Monitoring at corporate level	Approach to setting and monitoring targets and/or goals
Row 1	Company-wide targets and goals Activity level specific targets and/or goals	Targets are monitored at the corporate level Goals are monitored at the corporate level	Zorlu Energy is one of the leading companies whose management is based on sustainability and she has a sustainability policy. One of the prioritization of the company is the efficient use of natural resources. We apply ISO 14046 Management System standard since 2016 and the first year we calculated and then we started to manage our water consumptions.

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

Water withdrawals

Level

Company-wide

Primary motivation

Climate change adaptation and mitigation strategies

Description of target

Zorlu Energy defined 5% reduction on water consumption by 2022.

Quantitative metric

% reduction in total water withdrawals

Baseline year

2016

Start year

2017

Target year

2022

% of target achieved

100

Please explain

We aimed to reduce our total water withdrawals by 5% by 2022. In this reporting year, we reduced about 6% compared to the base year which is defined as 2016.

W8.1b

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

Goal

Promotion of water data transparency

Level

Site/facility

Motivation

Corporate social responsibility

Description of goal

Zorlu Energy is one of the leading Energy companies that disclose its climate change and water data through CDP and certification like ISO 14064 and ISO 14046 Water Management System. The company will announce those to create awareness and promote it.

Baseline year

2017

Start year

2018

End year

2020

Progress

The implemented ISO 14046 Water Management System has announced to our stakeholders via our Sustainability Report. 80% of the employee who works on-site and affected water consumption was trained about the water management system.

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 discharge Water consumption	Other, please specify ISO 14046 Water Footprint	ISO 14046 Water Footprint

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	HSEQ Manager	EHS manager

W10.2

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

Yes

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

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

Please confirm below

I have read and accept the applicable Terms