

Welcome to your CDP Water Security Questionnaire 2019

W0. Introduction

W0.1

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

Zorlu Energy(ZE) is under umbrella of Zorlu Holding AŞ (ZH) which is one of the biggest companies of Turkey. ZH companies operating in the consumer electronics, household appliances, textiles and energy sectors. The founding pillar of ZH, textile remains one of the key sectors of the Group today. With Korteks, Turkey's largest integrated polyester yarn manufacturer and exporter, and Zorluteks, Europe's leading household linen producer, under its fold, Zorlu Textiles Group is constantly growing and enhancing its position in domestic and international markets. The main investments in energy sector started with the energy needs of textile sector.

ZH as a company that produces goods and services in different sectors ranging from energy to textiles, white goods to technology, have the mindset and the tools that are necessary for building a better future.

As an innovative institution that adapts rapidly to technological developments and transfers knowledge to all its stakeholders; ZH focused on producing "**sustainable solutions**" based on the future prosperity of people, society and the planet.

We dream of a better future, fed by innovative and technological changes. ZH call this transformation "**Smart Life - 2030**". And for this reason, ZH began a journey to **inspire** our employees, to **strengthen** our environment and to **create value for our society**.

Beyond energy needs of Zorlu Textile, ZH's Energy Group (ZHEG) was founded in 1993 to decrease the energy needs of Turkey in 90's as group of companies serving at a global scale in different fields of the energy sector especially "Electricity Generation", "Electricity Distribution", "Electricity Sales and Trade". ZHEG makes difference among its rivals with its integrated structure which combines engineering, supply and construction services with maintenance, repair and operation services. ZHEG is a major player in the domestic market with 1086 MW of installed capacity in Turkey and its portfolio comprises 7 hydroelectric, 3 wind, 4 geothermal and 3 natural gas power plants. ZHEG 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."

Zorlu Energy(ZE) which is the scope of this report, owner of 3 wind power power plants and 3 Natural gas power plants. The company continues investing in projects supporting security of supply and sustainability thanks to its high capacity production power, qualified human resources, balanced

portfolio, resource diversity and competency to introduce innovative solutions. Natural gas power plants started to its operations due to Zorlu Textile energy needs in its production sites. Textile sector has different sustainability priorities and for ZH its important to provide holistic perspective on sustainability. While providing sustainable production in textile through natural gas power plants, with the wind power plant investments, renewable energy shares increased to reduce Zorlu Energy emissions. In 2018 Zorlu Energy water data has been managed through ISO 14046 Water Management System, verified and certified by third party.

With the reflection of ZH's sustainability vision, ZE defines its sustainability strategy as to be among the front runners of the global innovation economy of the future. The targets based on ZE strategy are;

- Increasing the R&D investments by 50%
- Prioritize energy efficiency with the vision of natural resource efficiency and investment on renewable energy sources to decrease 50% GHG intensity of the company's energy source mixture
- Promoting responsible consumption and production awareness to manage supply chain in line with "Zorlu Supply Chain Principles" issued in 2018.

As described above, sustainability is not only in the strategy of ZE it is all ZH and ZHEG strategy to be in line with developing low carbon economy. To manage and keep this structure strong ZE has a sustainability committee which led by Sustainability Manager and members are , chief risk officer, business unit managers, audit manager, and other support function managers. This wide range and high level of committee provide holistic and comprehensive perspective, bring expansion of sustainability knowledge and behavior change in the company. Sustainability committee reports to ZE CEO whose review the climate change performance and directing long term strategy. CEO reports to ZH executive board. Board chair and sustainability board members are responsible about climate change in terms of strategy and approval of action plans respectively. We have been a pioneer in sustainability in the Turkish energy industry both with our business activities and our projects. As the first company to publish a sustainability report and to calculate its carbon footprint, we are extremely glad to volunteer in participating in the BIST Sustainability Index for the third time.

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 power source.

	Nameplate capacity (MW)	% of total nameplate capacity	Gross generation (MWh)
Coal – hard	0	0	0
Lignite	0	0	0
Oil	0	0	0
Gas	149.52	80	142,751.48
Biomass	0	0	0
Waste (non-biomass)	0	0	0
Nuclear	0	0	0
Geothermal	0	0	0
Hydroelectric	0	0	0
Wind	215.3	52	610,363.91
Solar	0	0	0
Other renewable	0	0	0
Other non-renewable	0	0	0
Total	0	0	0

W0.2

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

	Start date	End date
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Reporting year	January 1, 2018	December 31, 2018
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W0.3

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

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. 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 produced water available for use	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. 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.

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 ZE is also responsible for its targets and less natural resource consumption is defined as a target. Performance is monitoring by ZE. In order to track our performance, we monitor

		all water-related data including total volume of water withdrawals especially in our Natural Gas Power Plants (NGPP); Lüleburgaz, Bursa, and Yalova as well as in our Istanbul Headquarters.
Water withdrawals – volumes from water stressed areas	Not relevant	It is not technically feasible to monitor this aspect.
Water withdrawals – volumes by source	100%	Zorlu Holding launched Smart-Life 2030 transformation plan. Under the umbrella of Zorlu Holding ZE is also responsible for its targets and less natural resource consumption is defined as a target. Performance is monitoring by ZE. In order to track our performance, we monitor all water-related data including total volume of water withdrawals especially in our Natural Gas Power Plants (NGPP); Lüleburgaz, Bursa, and Yalova as well as in our Istanbul Headquarters.
Water withdrawals quality	76-99	In our plants, both well and municipal waters are used. All withdrawal water is analyzed before using to ensure that quality parameters are met the limit figure.
Water discharges – total volumes	100%	Zorlu Holding launched Smart-Life 2030 transformation plan. Under the umbrella of Zorlu Holding ZE is also responsible for its targets and less natural resource consumption is defined as a target. Performance is monitoring by ZE. In order to track our performance, we monitor all water-related data including the total volume of water withdrawals where we operate.
Water discharges – volumes by destination	76-99	Zorlu Holding launched Smart-Life 2030 transformation plan. Under the umbrella of Zorlu Holding ZE is also responsible for its targets and less natural resource consumption is defined as a target. Performance is monitoring by ZE. In order to track our performance, we monitor all water-related data including water discharges by destination in each location we operate.
Water discharges – volumes by treatment method	100%	Zorlu Holding launched Smart-Life 2030 transformation plan. Under umbrella of Zorlu Holding ZE is also responsible its targets and less natural resource consumption is defined as a target. Performance is monitoring by ZE. In order to track our performance, we monitor all water-related data including water discharge volumes by treatment method especially in our Natural Gas Power Plants (NGPP); Lüleburgaz, Bursa, and Yalova as well as in our Istanbul Headquarters.
Water discharge quality – by standard effluent parameters	100%	Zorlu Holding launched Smart-Life 2030 transformation plan. Under the umbrella of Zorlu Holding ZE is also responsible for its targets and less natural resource consumption are

		defined as a target. Performance is monitoring by ZE. In order to track our performance, we monitor all water-related data especially in our Natural Gas Power Plants (NGPP) where we have the regulatory obligation to report the standard effluent parameters.
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 ZE is also responsible for its targets and less natural resource consumption is defined as a target. Performance is monitoring by ZE. 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' (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. 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.
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 ZE is also responsible for its targets and less natural resource consumption is defined as a target. Performance is monitoring by ZE. 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.

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	566.87	Much lower	The total withdrawn water amount is decreased by 21% compared to the previous year. In this report, our threshold for "much higher" and "much lower" is 20%.
Total discharges	67.83	Much higher	The total discharged water amount is increased by 90% compared to the previous year. In this report, our threshold for "much higher" and "much lower" is 20%.
Total consumption	499.04	Much lower	The total withdrawn water amount is decreased by 30% compared to the previous year. In this report, our threshold for "much higher" and "much lower" is 20%.

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	0.65	Lower	Fresh surface water withdrawn is decreased by 13% compared to the previous reporting year. In this report, our threshold for "higher" and "lower" is between 4% and %19.
Brackish surface water/Seawater	Not relevant			Brackish surface water or seawater is not withdrawn.
Groundwater – renewable	Not relevant			Renewable ground water is not withdrawn.

Groundwater – non-renewable	Relevant	538.88	Lower	The total withdrawn water from wells is decreased by 18% comparing to the previous year. In this report, our threshold for "higher" and "lower" is between 4% and %19.
Produced/Entrained water	Not relevant			Produced water is not used.
Third party sources	Relevant	26.33	Much lower	Municipality water withdrawn is decreased by 59% 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	0.19	This is our first year of measurement	At the previous year, there was no discharge to fresh surface water.
Brackish surface water/seawater	Not relevant			Our wastewater is not discharged to brackish surface water or seawater.
Groundwater	Not relevant			Our wastewater is not discharged to ground water.
Third-party destinations	Relevant	67.64	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 48% compared to the previous year. In this report, our threshold for "much higher" and "much lower" is 20%.

W1.2j

(W1.2j) What proportion of your total water use do you recycle or reuse?

	% recycled and reused	Comparison with previous reporting year	Please explain
Row 1	26-50	Much higher	In Lüleburgaz, Yalova and Bursa natural gas power plants, recycled water is used. Lüleburgaz facility uses well water and recycled water. The water obtained from Zorlu Textiles' (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. 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. Recycled water amount that is 26.51% for this year, is much more than the previous reporting year. 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: unit of production	Comparison with previous reporting year	Please explain
0.75	Freshwater withdrawals	Other, please specify GWh	About the same	We produced 753.12 GWh electricity and 566.87 megaliter water is withdrawn in this year. The intensity was 0.75 in the previous year.

				Therefore, our intensity is the same as the previous year.
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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, over all 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.

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. Also Zorlu Energy is under umbrella of Zorlu Holding (ZH) and ZH launched transformation plan for low-carbon economy with a holistic view to sustainability. One of the three targets set by Smart Life 2030 the transformation plan, is less natural resource consumption.

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 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.	Measures to prevent spillage, leaching, and leakages	Regularly maintenance are applied and necessary precautions are taken.

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

Six-monthly or more frequently

How far into the future are risks considered?

>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

ZD apply ISO 14001 based on ISO 31000 Risk Management and life cycle approach to manage all value chain. 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 assessing under sustainability and all risks and opportunities are communicated to sustainability committee. Sustainability committee is appointed by CEO overviews and evaluates Zorlu Dogal'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 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.

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?

>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

ZD apply ISO 14001 based on ISO 31000 Risk Management and life cycle approach to manage all value chain. 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.

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

Six-monthly or more frequently

How far into the future are risks considered?

>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

ZD apply ISO 14001 based on ISO 31000 Risk Management and life cycle approach to manage all value chain. 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. As water is vital for our operations mainly in thermal power plants, water related risks in terms of implications in cases of not having water at sufficient amounts are assessed covering the whole lifetime of each plant. While conducting water risks assessment we use WRI Aqueduct tool and internal company knowledge.
Water quality 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. As water is vital for our operations mainly in thermal power plants, water related risks in terms of implications in cases of not having water at sufficient amounts are assessed covering the whole lifetime of each plant. While conducting water risks assessment we use WRI Aqueduct tool and internal company knowledge.
Stakeholder conflicts concerning water resources at a basin/catchment level	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 have minimum or no negative impact on water while considering local stakeholders’ right to have access to water resources. While conducting water risks assessment, we use WRI Aqueduct tool and while addressing the stakeholder concerns (if any) we use our internal company knowledge.
Implications of water on your	Relevant, always	As water is vital for our operations mainly in thermal power plants, water related risks in terms of

key commodities/raw materials	included	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 “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 minimum or no negative impact on water while making sure our employees have access to necessary WASH services. While conducting water risks assessment we use 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 life cycle approach we consider all our value chain including customers’ needs and expectation 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	Local communities Relevant, included We are currently not exposed to any water related risks, however, by engaging with all stakeholders including local communities to make sure we communicate all material aspects of our operations together with our sustainability performance. 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	NGOs Relevant, 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	We have not yet included other users at a local level in our risk assessment, however, at locations with water stress such as Lüleburgaz Natural Gas Power Plant, we consider prioritizing our communications with other users who withdraw or discharge water to the same groundwater source in the near future as the risk level is rising.
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 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 2018 ZH started Smart Life 2030 which covers all Zorlu companies including Zorlu Energy for the transformation to low-carbon economy.

ZE apply ISO 9001:2015 Management System and ISO 14001:2015 Management System and ISO 14046 Water Management System Standards in our company which are 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 has been reviewed in all power generation plants terms of low carbon and less natural resource consumption. We categorize risks as per risk management procedure.

Water related risks and opportunities are assessing under sustainability and all sustainability risks and opportunities are communicated to sustainability committee. 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 are 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. Beside 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?

Zorlu Holding (ZH), the mother company of Zorlu Energy (ZE), as a company that produces goods and services in different sectors ranging from energy to textiles, white goods to technology, have the mindset and the tools that are necessary for building a better future. As an innovative institution that adapts rapidly to technological developments and transfers knowledge to all its stakeholders; ZH focused on producing "**sustainable solutions**" based on the future prosperity of people, society and the planet. We dream of a better future, fed by innovative and technological changes. ZH call this transformation "**Smart Life - 2030**". And for this reason, ZH began a journey to **inspire** our employees, to **strengthen** our environment and to **create value for our society**.

Zorlu Energy(ZE) which is the scope of this report, owner of 3 natural gas power plants and 3 wind power plants. The company continues investing in projects supporting security of supply and sustainability thanks to its high capacity production power, qualified human resources, balanced portfolio, resource diversity and competency to introduce innovative solutions.

In 2018 Zorlu Energy water data managed through ISO 14046 Water Management System and verified by third party.

With the reflection of ZH's sustainability vision, ZE defines its sustainability strategy as to be among the frontrunners of the global innovation economy of the future. The targets based on ZE strategy are;

- Increasing the R&D investments by 50%
- Prioritize energy efficiency with the vision of natural resource efficiency and less consumption
- Investment on renewable energy sources to decrease 50% GHG intensity of the company's energy source mixture
- Promoting responsible consumption and production awareness to manage supply chain in line with "Zorlu Supply Chain Principles" issued in 2018.

As described above, sustainability is not only in the strategy of ZE it is all ZH strategy to be in line with developing low carbon economy. To manage and keep this structure strong ZE has a sustainability committee which led by Sustainability Manager and members are , chief risk officer, business unit managers, audit manager, and other support function managers. This wide range and high level of committee provide holistic and comprehensive perspective, bring expansion of sustainability knowledge and behaviour change in the company. Sustainability committee reports to ZE CEO whose review the sustainability performance including water and directing long term strategy. CEO reports to ZH executive board. Board chair and sustainability board members are responsible about climate change in terms of strategy and approval of action plans respectively. We have been a pioneer in sustainability in the Turkish energy industry both with our business activities and our projects. As the first company to publish a sustainability report and to apply water management standard ISO 14046, we are extremely glad to volunteer in participating in the BIST Sustainability Index for the third time.

In 2018 investment on electrical vehicles and their charging stations has been done to accelerate the efficient and less use of natural resources. It is defined as the long term risks action plan to support the transformation due to expected customer behaviour change.

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 back up 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. Therefore, we define water related substantive change as not having access to water needed for our direct operations.

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	3	26-50	Zorlu Energy water risks defined for natural gas power plants and they represent the 40% percent of the company regarding to total production.

W4.1c

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

Country/Region

Turkey

River basin

Other, please specify

Marmara

Number of facilities exposed to water risk

3

% 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

1-25

Comment

Water risks defined for three natural gas power plants in Marmara Basin.

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/Region

Turkey

River basin

Other, please specify

Marmara

Type of risk

Physical

Primary risk driver

Increased water scarcity

Primary potential impact

Reduction or disruption in production capacity

Company-specific description

As per IPCC 5th assessment report drought is expected all over Turkey. Our natural gas power plants are in Marmara region which is the main manufacturing region in Turkey. The use of water by industry is very high. Potential impact of water scarcity related risks will cause disruption in operations and may also lead to closure of operations in certain locations.

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)

74,904

Potential financial impact figure - minimum (currency)

Potential financial impact figure - maximum (currency)

Explanation of financial impact

The cost of the water might get higher and it will impact our operational costs. In some industrial zones . The total amount of consumed municipality water in natural gas power plants (3745 tonnes) has been multiplied with 20 TRY which is the existing higher water cost in Turkey.

Primary response to risk

Adopt water efficiency, water re-use, recycling and conservation practices

Retreatment Plant

Description of response

As part of costs related to implemented strategy to manage this risk consists of a water treatment plant investment made in Lüleburgaz NGPP.

Cost of response

9,064,000

Explanation of cost of response

Costs related to implemented strategy to manage this risk consists of a water treatment plant investment made in Lüleburgaz NGPP .

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 are producing electricity from natural gas and wind power plant. Our supply chain does not have 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

Efficiency

Primary water-related opportunity

Cost savings

Company-specific description & strategy to realize opportunity

Zorlu Energy Group monitors its water consumption data and has set a target to reduce this amount by 25% until 2022. By implementing measures to achieve this target, Zorlu Enerji will be able to use less water in its operations. This will lead to multiple benefits such as cost savings, improved water efficiency in operations and reduced GHG emissions due to the fact that less energy will be consumed to condition water.

Estimated timeframe for realization

4 to 6 years

Magnitude of potential financial impact

Low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

118,840

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact

The total amount of consumed municipality water in natural gas power plants were 23,771 tonnes. We expect to use 5942 tonnes of water less and this will reduce our operational costs.

W5. Facility-level water accounting

W5.1

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

Facility reference number

Facility 1

Facility name (optional)

Bursa Natural Gas Power Plant

Country/Region

Turkey

River basin

Other, please specify

Marmara Basin

Latitude

40.245104

Longitude

28.955018

Primary power generation source for your electricity generation at this facility

Gas

Total water withdrawals at this facility (megaliters/year)

2.11

Comparison of withdrawals with previous reporting year

Much lower

Total water discharges at this facility (megaliters/year)

1.63

Comparison of discharges with previous reporting year

Much lower

Total water consumption at this facility (megaliters/year)

0.48

Comparison of 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. Water consumption is decreased by 50% compared to the previous year. Our water consumption figure is a calculation using withdrawals minus discharges.

Facility reference number

Facility 2

Facility name (optional)

Yalova Natural Gas Power Plant

Country/Region

Turkey

River basin

Other, please specify

Marmara Basin

Latitude

40.680502

Longitude

29.543672

Primary power generation source for your electricity generation at this facility

Gas

Total water withdrawals at this facility (megaliters/year)

24.3

Comparison of withdrawals with previous reporting year

Higher

Total water discharges at this facility (megaliters/year)

0.42

Comparison of discharges with previous reporting year

Much lower

Total water consumption at this facility (megaliters/year)

23.88

Comparison of consumption with previous reporting year

Higher

Please explain

Yalova facility uses mains water supplied and well water. Water consumption is decreased by 17% compared to the previous year. Our water consumption figure is a calculation using withdrawals minus discharges. Domestic wastewater is collected at the cesspool in line with discharge permit license and transferred by the sewage truck to the municipality treatment plant.

Facility reference number

Facility 3

Facility name (optional)

Lüleburgaz Natural Gas Power Plant

Country/Region

Turkey

River basin

Other, please specify
Meriç-Ergene Basin

Latitude

41.4

Longitude

27.35

Primary power generation source for your electricity generation at this facility

Gas

Total water withdrawals at this facility (megaliters/year)

537.99

Comparison of withdrawals with previous reporting year

Much lower

Total water discharges at this facility (megaliters/year)

64.42

Comparison of discharges with previous reporting year

About the same

Total water consumption at this facility (megaliters/year)

473.57

Comparison of consumption with previous reporting year

Much lower

Please explain

Lüleburgaz facility uses well water and recycled water. The water obtained from Zorlu Textiles' (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. Therefore, there was no discharge to the receiving body in the previous year. Only domestic usage water is discharged to the receiving body in this reporting year.

Facility reference number

Facility 4

Facility name (optional)

Gökçedağ Wind Power Plant

Country/Region

Turkey

River basin

Other, please specify

Ceyhan Basin

Latitude

37.074627

Longitude

36.246399

Primary power generation source for your electricity generation at this facility

Wind

Total water withdrawals at this facility (megaliters/year)

0.81

Comparison of withdrawals with previous reporting year

Much higher

Total water discharges at this facility (megaliters/year)

0.09

Comparison of discharges with previous reporting year

Much lower

Total water consumption at this facility (megaliters/year)

0.72

Comparison of consumption with previous reporting year

Much higher

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 and water well. Domestic wastewater is collected at the cesspool in line with discharge permit license and transferred by the sewage truck to the municipality treatment plant. Water consumption is increased compared to the previous year. Our water consumption figure is a calculation using withdrawals minus discharges.

Facility reference number

Facility 5

Facility name (optional)

Saritepe Wind Power Plant

Country/Region

Turkey

River basin

Other, please specify

Ceyhan Basin

Latitude

37.207462

Longitude

36.681666

Primary power generation source for your electricity generation at this facility

Wind

Total water withdrawals at this facility (megaliters/year)

0.42

Comparison of withdrawals with previous reporting year

Much higher

Total water discharges at this facility (megaliters/year)

0.23

Comparison of discharges with previous reporting year

About the same

Total water consumption at this facility (megaliters/year)

0.19

Comparison of consumption with previous reporting year

Much higher

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 and water well. Domestic wastewater is collected at the cesspool in line with discharge permit license and transferred by the sewage truck to the municipality treatment plant. Water consumption is decreased compared to the previous year. Our water consumption figure is a calculation using withdrawals minus discharges.

Facility reference number

Facility 6

Facility name (optional)

Demirciler Wind Power Plant

Country/Region

Turkey

River basin

Other, please specify
Ceyhan Basin

Latitude

37.246583

Longitude

36.628055

Primary power generation source for your electricity generation at this facility

Wind

Total water withdrawals at this facility (megaliters/year)

0.23

Comparison of withdrawals with previous reporting year

Much higher

Total water discharges at this facility (megaliters/year)

0.13

Comparison of discharges with previous reporting year

About the same

Total water consumption at this facility (megaliters/year)

0.1

Comparison of consumption with previous reporting year

Much higher

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 and water well. Domestic wastewater is collected at the cesspool in line with discharge permit license and transferred by the

sewage truck to the municipality treatment plant. Water consumption is increased compared to the previous year. Our water consumption figure is a calculation using withdrawals minus discharges.

Facility reference number

Facility 7

Facility name (optional)

Istanbul Headquarters

Country/Region

Turkey

River basin

Other, please specify
Marmara Basin

Latitude

40.993661

Longitude

28.699289

Primary power generation source for your electricity generation at this facility

Wind

Total water withdrawals at this facility (megaliters/year)

1.01

Comparison of withdrawals with previous reporting year

Much lower

Total water discharges at this facility (megaliters/year)

0.91

Comparison of discharges with previous reporting year

Much lower

Total water consumption at this facility (megaliters/year)

0.1

Comparison of consumption with previous reporting year

Much lower

Please explain

The water is supplied from the mains water in İstanbul Headquarters. Domestic wastewater is connected to the sewage system and discharged to the municipality treatment plant. The water consumption is decreased by 45% compared to the previous reporting year. Our water consumption figure is a calculation using withdrawals minus discharges.

W5.1a

(W5.1a) For each facility referenced in W5.1, provide withdrawal data by water source.

Facility reference number

Facility 1

Facility name

Bursa Natural Gas Power Plant

Fresh surface water, including rainwater, water from wetlands, rivers and lakes

0

Brackish surface water/seawater

0

Groundwater - renewable

0

Groundwater - non-renewable

0

Produced/Entrained water

0

Third party sources

2.11

Comment

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.

Facility reference number

Facility 2

Facility name

Yalova Natural Gas Power Plant

Fresh surface water, including rainwater, water from wetlands, rivers and lakes

0

Brackish surface water/seawater

0

Groundwater - renewable

0

Groundwater - non-renewable

0.08

Produced/Entrained water

0

Third party sources

24.22

Comment

Yalova facility uses mains water supplied and well water.

Facility reference number

Facility 3

Facility name

Lüleburgaz Natural Gas Power Plant

Fresh surface water, including rainwater, water from wetlands, rivers and lakes

0

Brackish surface water/seawater

0

Groundwater - renewable

0

Groundwater - non-renewable

537.99

Produced/Entrained water

0

Third party sources

0

Comment

Lüleburgaz facility uses well water and recycled water. The water obtained from Zorlu Textiles' (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.

Facility reference number

Facility 4

Facility name

Gökçedağ Wind Power Plant

Fresh surface water, including rainwater, water from wetlands, rivers and lakes

0

Brackish surface water/seawater

0

Groundwater - renewable

0

Groundwater - non-renewable

0.81

Produced/Entrained water

0

Third party sources

0

Comment

Water is withdrawn from surface water.

Facility reference number

Facility 5

Facility name

Saritepe Wind Power Plant

Fresh surface water, including rainwater, water from wetlands, rivers and lakes

0.42

Brackish surface water/seawater

0

Groundwater - renewable

0

Groundwater - non-renewable

0

Produced/Entrained water

0

Third party sources

0

Comment

Water is withdrawn from surface water.

Facility reference number

Facility 6

Facility name

Demirciler Wind Power Plant

Fresh surface water, including rainwater, water from wetlands, rivers and lakes

0.23

Brackish surface water/seawater

0

Groundwater - renewable

0

Groundwater - non-renewable

0

Produced/Entrained water

0

Third party sources

0

Comment

The water is supplied from the mains water in İstanbul Headquarters.

Facility reference number

Facility 7

Facility name

İstanbul Headquarters

Fresh surface water, including rainwater, water from wetlands, rivers and lakes

0

Brackish surface water/seawater

0

Groundwater - renewable

0

Groundwater - non-renewable

0

Produced/Entrained water

0

Third party sources

1.01

Comment

The water is supplied from the mains water in İstanbul Headquarters.

W5.1b

(W5.1b) For each facility referenced in W5.1, provide discharge data by destination.

Facility reference number

Facility 1

Facility name

Bursa Natural Gas Power Plant

Fresh surface water

0

Brackish surface water/Seawater

0

Groundwater

0

Third party destinations

1.63

Comment

Domestic wastewater is connected to the sewage system and discharged to the municipality treatment plant.

Facility reference number

Facility 2

Facility name

Yalova Natural Gas Power Plant

Fresh surface water

0.19

Brackish surface water/Seawater

0

Groundwater

0

Third party destinations

0.23

Comment

Domestic wastewater is collected at the cesspool in line with discharge permit license and transferred by the sewage truck to the municipality treatment plant.

Facility reference number

Facility 3

Facility name

Lüleburgaz Natural Gas Power Plant

Fresh surface water

0

Brackish surface water/Seawater

0

Groundwater

0

Third party destinations

64.42

Comment

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

Facility reference number

Facility 4

Facility name

Gökçedağ Wind Power Plant

Fresh surface water

0

Brackish surface water/Seawater

0

Groundwater

0

Third party destinations

0.09

Comment

Domestic wastewater is collected at the cesspool in line with discharge permit license and transferred by the sewage truck to the municipality treatment plant

Facility reference number

Facility 5

Facility name

Saritepe Wind Power Plant

Fresh surface water

0

Brackish surface water/Seawater

0

Groundwater

0

Third party destinations

0.23

Comment

Domestic wastewater is collected at the cesspool in line with discharge permit license and transferred by the sewage truck to the municipality treatment plant.

Facility reference number

Facility 6

Facility name

Demirciler Wind Power Plant

Fresh surface water

0

Brackish surface water/Seawater

0

Groundwater

0

Third party destinations

0.13

Comment

Domestic wastewater is collected at the cesspool in line with discharge permit license and transferred by the sewage truck to the municipality treatment plant.

Facility reference number

Facility 7

Facility name

İstanbul Headquarters

Fresh surface water

0

Brackish surface water/Seawater

0

Groundwater

0

Third party destinations

0.91

Comment

Domestic wastewater is connected to the sewage system and discharged to the municipality treatment plant.

W5.1c

(W5.1c) For each facility referenced in W5.1, provide the proportion of your total water use that is recycled or reused, and give the comparison with the previous reporting year.

Facility reference number

Facility 1

Facility name

Bursa Natural Gas Power Plant

% recycled or reused

26-50%

Comparison with previous reporting year

Lower

Please explain

In Bursa Natural Gas Power Plant, the wastewater is reused which is supplied from municipality. The recycled water amount is 43% which is decreased compared to the previous year.

Facility reference number

Facility 3

Facility name

Lüleburgaz Natural Gas Power Plant

% recycled or reused

11-25%

Comparison with previous reporting year

Much higher

Please explain

In Lüleburgaz Natural Gas Power Plant, the wastewater is reused which is supplied from Zorlu Textile's wastewater treatment plant. This year, recycled water usage is 19% which is increased compared to the previous reporting year.

Facility reference number

Facility 2

Facility name

Yalova Natural Gas Power Plant

% recycled or reused

76-99%

Comparison with previous reporting year

This is our first year of measurement

Please explain

In Yalova Natural Gas Power Plant, the wastewater is reused which is supplied from the municipality. This year, recycled water amount is 76%.

W5.1d

(W5.1d) 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

What standard and methodology was used?

It has not been 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

What standard and methodology was used?

It has not been 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 natural gas and geothermal power plants. Water is also used in steam generation and cooling systems as well as being one of the essential raw materials for electricity generation in natural gas power plants. Steam, which is sold as a by-product, is also utilized in steam turbines and to generate additional energy. Because of its important role in the steam cycle, water consumption is directly reflected in costs. Therefore, with the vision of creating integrated systems and solutions, the water obtained from Zorluteks' waste-water treatment plant is purified in Lüleburgaz Natural Gas Plant and the resulting clean water is used in the operations. Our main objectives at Zorlu Enerji are; to keep the amount of water we withdraw from natural resources at a minimum level, monitor water consumption at the corporate level annually.

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 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 umbrella of ZH, reports to 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 control of 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	<ul style="list-style-type: none"> Overseeing major capital expenditures Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding strategy Reviewing and guiding corporate responsibility strategy 	<p>ZH executive board has utmost responsibility on management of ZE. The board chair is responsible for the strategy and policies. Board member (Chief Sustainability Officer) has the responsibility for action plans and budgets.</p> <p>2018 with the leadership of executive board Smart Life 2030 has been launched with its targets for 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.</p> <p>With the strategy and guidance of executive board, ZE defined its action plans and present it to the board for the approval.</p>

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.

W-FB6.4/W-CH6.4/W-EU6.4/W-OG6.4/W-MM6.4

(W-FB6.4/W-CH6.4/W-EU6.4/W-OG6.4/W-MM6.4) Do you provide incentives to C-suite employees or board members for the management of water-related issues?

Yes

W-FB6.4a/W-CH6.4a/W-EU6.4a/W-OG6.4a/W-MM6.4a

(W-FB6.4a/W-CH6.4a/W-EU6.4a/W-OG6.4a/W-MM6.4a) 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)?

	Who is entitled to benefit from these incentives?	Indicator for incentivized performance	Please explain
Monetary reward	Chief Executive Officer (CEO)	Efficiency project or target – 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 . -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 behaviour change.
Recognition (non-monetary)	Board chair	Behavior change related indicator	The Board Chairman has an active role in defining strategies and policies including climate change related issues with focus on adaptation & mitigation activities. In 2018 Smart Life - 2030 has been launched for the transition of low-carbon economy. The company started to invest smart grid solutions, electrical vehicles and charging stations in Turkey. This transformation needs behaviour change not only in the company but also in all value chain. To support this transformation collaborations started as listed below; * 7 million TL provided to the social entrepreneurship ecosystem *Scholarships for 2000 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 Dialogue platform that combines different channels, disciplines, people, technology, artists and ideas. * “Our Energy is for Children” project developed to ensure that our children become conscious

			of energy saving, climate change and renewable energy issues.
Other non-monetary reward	No one is entitled to these incentives		

W6.5

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

Yes, 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 TUSİAD (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?

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

W7. Business strategy

W7.1

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

	Are water-related issues integrated?	Long-term time horizon (years)	Please explain
Long-term business objectives	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 2018 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.

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 scenario(s)	Description of possible water-related outcomes	Company response to possible water-related outcomes
Row 1	2DS	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	Monitoring at	Approach to setting and monitoring targets and/or goals
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	and/or goals	corporate level	
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 company 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

% achieved

100

Please explain

We aimed to reduce our total water withdrawals 5% by 2022. In this reporting year, we reduced about 20% 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 company who 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.

Baseline year

2017

Start year

2018

End year

2020

Progress

The target started in 2018 and the progress will be monitored in 2019 for the first time.

W9. Linkages and trade-offs

W9.1

(W9.1) Has your organization identified any linkages or tradeoffs between water and other environmental issues in its direct operations and/or other parts of its value chain?

Yes

W9.1a

(W9.1a) Describe the linkages or tradeoffs and the related management policy or action.

Linkage or tradeoff

Linkage

Type of linkage/tradeoff

Decreased energy use

Description of linkage/tradeoff

As an electricity producer, water is one of the main natural sources required for our operations. Our water consumption directly affects our energy consumption as using more water results in additional energy consumption in order to condition that water as part of our operations.

Policy or action

In order to better manage this linkage, we chose to build new power plants with the most efficient available technology and reduce both energy and water consumption at an optimum level.

W10. Verification

W10.1

(W10.1) Do you verify any other water information reported in your CDP disclosure (not already covered by W5.1d)?

No, we do not currently verify any other water information reported in our CDP disclosure

W11. Sign off

W-FI

(W-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

W11.1

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

	Job title	Corresponding job category
Row 1	Corporate Communications Manager	Environment/Sustainability manager

W11.2

(W11.2) 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

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

Please confirm below

I have read and accept the applicable Terms