Module: Introduction

Page: W0. Introduction

W0.1

Introduction

Please give a general description and introduction to your organization

EDP – Energias de Portugal, S.A. (EDP) is a listed company whose ordinary shares are publicly traded in the Eurolist by NYSE Euronext Lisbon. The company is established and headquartered in Portugal, being organized under Portuguese laws.

EDP is a vertically integrated utility company, with operational activities in power generation, distribution and supply of electricity and gas. It is the largest generator, distributor and supplier of electricity in Portugal, the third largest electricity generation company in Spain and has significant operations in gas in the Iberian Peninsula. In Brazil, EDP is the fifth largest private operator in electricity generation, has two electricity distribution concessions and is the fourth largest private supplier in the liberalised market.

Through its subsidiary EDP Renewables, EDP is also one of the largest wind power operators worldwide, with wind farms in the Iberian Peninsula, United States of America, Canada, Brazil, France, Belgium, Italy, Poland, Romania and Mexico and developing wind projects in the United Kingdom. Additionally, EDP generates power from photovoltaic plants in Portugal, Romania and the United States of America.

EDP has a significant presence in the world energy scene and is present in 14 countries, with 9.8 million electricity customers, 1.5 million gas customers and about 12 thousand employees worldwide. In 2016, the company generated 70 TWh of electricity worldwide, of which about 65% from renewable energy sources. At the end of and, by the year end, had a total an installed capacity of 25.1 GW, (72.4% of which renewable).

EDP's vision is to be a global energy providing company, leader in creating value, innovation and sustainability. The company addresses water related issues both at a strategic and operational level, having published its Water Management Policy in November 2012, conducting water risk assessment procedures and monitoring relevant quantitative parameters in order to optimise water use. EDP responds to CDP Water Programme since 2010.

Key figures 2016:

Turnover	14595 M€
EBITDA	3759 M€
Net profit	1200 M€
Net investment	1212 M€
Net debt	15923 M€

Total assets	44084 M€
Employees	11992 #
ISIN	PTEDP0AM0009
SEDOL	4103596

EDP publishes detailed information on its financial and sustainability performance and governance practices in its Annual Report, available at www.edp.pt.

W0.2

Reporting year

Please state the start and end date of the year for which you are reporting data

Period for which data is reported
Fri 01 Jan 2016 - Sat 31 Dec 2016

W0.3

Reporting boundary

Please indicate the category that describes the reporting boundary for companies, entities, or groups for which water-related impacts are reported

Companies, entities or groups over which financial control is exercised

W0.4

Exclusions

Are there any geographies, facilities or types of water inputs/outputs within this boundary which are not included in your disclosure?

Yes

W0.4a

Exclusions

Please report the exclusions in the following table

Exclusion	Please explain why you have made the exclusion
Smaller office facilities and remote controlled hydropower plants (exclusion of quantitative water parameters only)	We do not monitor quantitative water parameters (withdrawals, discharges and consumption) in our smaller office facilities in Spain and Brazil, and in remoted controlled hydropower plants. Most of these facilities use water supplied by municipal water systems and consumption is considered immaterial (estimated to represent under 1% of the Group's total water withdrawals), thus not justifying the implementation of dedicated monitoring procedures. Water use for hydropower generation is included in our response, notably in the risk and opportunities assessment sections. It is a non-consumptive use that does not involve withdrawals and is therefore not included in the quantitative indicators.

Further Information

Module: Current State

Page: W1. Context

W1.1

Please rate the importance (current and future) of water quality and water quantity to the success of your organization

Water quality and quantity	Direct use importance rating	Indirect use importance rating	Please explain
Sufficient amounts of good quality freshwater available for use	Vital for operations	Not very important	Direct use: cooling water in thermal power plants (80% of total withdrawals), process water for thermal generation (18%) and general uses (human consumption, irrigation) in all facilities (2%). Also used for electricity generation in hydro power plants, although this does not involve withdrawals and is not included in quantitative indicators. Sufficient water quantity and quality is essential for optimal operation of these assets. Indirect use: main supply chain water use is in fossil fuel extraction. Restrictions to suppliers' operation in water stress areas can potentially impact supply and price in international markets. Characterization of EDP's purchases showed that 30% of supply chain water footprint comes from raw materials, including but not limited to fuels. Less than 30% of our generation capacity is thermal and all planned investment is on renewables. Risk is further mitigated by working with a vast range of alternative suppliers active in different geographies.
Sufficient amounts of recycled, brackish and/or produced water available for use	Vital for operations	Not very important	Direct use: seawater use as cooling water in the refrigeration circuits of two thermal power plants located on coastal areas. Although seawater is not a scarce resource, sufficient quality (e.g. low seaweed levels) of water available at such locations is essential for the optimal operation of these generation assets. Indirect use: main supply chain water use is in fossil fuel extraction. Restrictions to suppliers' operation in water stress areas can potentially impact supply and price in international markets. Characterization of EDP's purchases showed that 30% of supply chain water footprint comes from raw materials, including but not limited to fuels. Less than 30% of our generation capacity is thermal and all planned investment is on renewables. Risk is further mitigated by working with a vast range of alternative suppliers active in different geographies.

W1.2

For your total operations, please detail which of the following water aspects are regularly measured and monitored and provide an explanation as to why or why not

Water aspect	% of sites/facilities/operations	Please explain
Water withdrawals- total volumes	76-100	We monitor total water withdrawal volumes at facilities estimated to represent over 99% of our direct operations' total withdrawal volumes: all thermal power plants, wind farms, electricity and gas

Water aspect	% of sites/facilities/operations	Please explain
		distribution assets and almost all offices. Water use for electricity generation in hydro power plants, be it stored in reservoirs or turbinated, is not considered as a water withdrawal and is thus excluded from the indicator. Monitored facilities include all of those where water is a significant environmental aspect or where such monitoring is either a legal requirement or an environmental management system requirement. Water indicators for EDP Group are published in our Annual Report and subject to independent third party verification.
Water withdrawals- volume by sources	76-100	We monitor water withdrawal volumes by source, at facilities estimated to represent over 99% of our direct operations' total withdrawal volumes: all our thermal power plants, wind farms, electricity and gas distribution assets and almost all offices. Water use for electricity generation in hydro power plants, be it stored in reservoirs or turbinated, is not considered as a water withdrawal and is thus excluded from the indicator. Monitored facilities include all of those where water is a significant environmental aspect or where such monitoring is either a legal requirement or an environmental management system requirement. Water indicators for EDP Group are published in our Annual Report and subject to independent third party verification.
Water discharges- total volumes	76-100	We monitor total water discharge volumes at facilities estimated to represent over 99% of our direct operations' total discharge volumes: all our thermal plants, electricity and gas distribution assets, wind farms and almost all offices. Monitored facilities include all of those where water is a significant environmental aspect or where such monitoring is either a legal requirement or an environmental management system requirement. Water indicators for EDP Group are published in our Annual Report and subject to independent third party verification.
Water discharges- volume by destination	76-100	We monitor water discharge volumes by destination at facilities estimated to represent over 99% of our direct operations' total discharge volumes: all our thermal plants, electricity and gas distribution assets, wind farms and almost all offices. Monitored facilities include all of those where water is a significant environmental aspect or where such monitoring is either a legal requirement or an environmental management system requirement. Water indicators for EDP Group are published in our Annual Report and subject to independent third party verification.
Water discharges- volume by treatment method	76-100	We monitor water discharge volumes by treatment method at facilities estimated to represent over 99% of our direct operations' total discharge volumes: all our thermal plants, electricity and gas distribution assets, wind farms and almost all offices. Monitored facilities include all of those where water is a significant environmental aspect or where such monitoring is either a legal requirement or an environmental management system requirement. Water indicators for EDP Group are published in our Annual Report and subject to independent third party verification.
Water discharge quality data- quality by standard effluent parameters	76-100	We monitor water discharge quality parameters (e.g. Vanadium and Chromium), at all thermal power plants. These facilities represent 99,9% of our direct operations' total discharge volume that are subject to specific effluent discharge parameters.
Water consumption- total	76-100	We monitor water consumption at facilities estimated to represent over 99% of our direct operations'

Water aspect	% of sites/facilities/operations	Please explain
volume		total consumption: all our thermal power plants, wind farms, electricity and gas distribution assets and almost all offices. Water returned to the same water body with minimal changes is accounted for as used but not consumed. This includes discharged cooling water; effluents that, according to licensing permit, do not need treatment; and effluents discharged within the quality parameters of said permits, provided they are returned to the same water body. Monitored facilities include all of those where water is a significant environmental aspect or where such monitoring is either a legal requirement or an environmental management system requirement. Water indicators for EDP Group are published in our Annual Report and subject to independent third party verification.
Facilities providing fully-functioning WASH services for all workers	76-100	We provide access to clean water and suitable sanitation conditions to all employees in 100% of our facilities. This is a legal requirement in the geographies where EDP operates and is a company commitment under its participation in the United Nations' Global Compact.

W1.2a

Water withdrawals: for the reporting year, please provide total water withdrawal data by source, across your operations

Source	Quantity (megaliters/year)	How does total water withdrawals for this source compare to the last reporting year?	Comment
Fresh surface water	16037	Much lower	80% of withdrawn freshwater is used as cooling water in thermal power plants' refrigeration circuits. The reduction was due to the shutdown of the Soto de Ribera Thermal Power Plant (Spain) generating unit 2. This power plant has a semi-open refrigeration circuit, thus withdrawing and discharging large quantities of river water.
Brackish surface water/seawater	1477099	Lower	Seawater is used as cooling water in the refrigeration circuits of coastal coal power plants in Portugal and Spain. The reduction was due to the decrease in our coal-based electricity generation in Iberia in 2016, given the weather conditions in the region that favoured hydro and wind generation (higher Hydro and Wind Capability Indexes).

Source	Quantity (megaliters/year)	How does total water withdrawals for this source compare to the last reporting year?	Comment
Rainwater	0	Not applicable	EDP does not use rainwater.
Groundwater - renewable	12	Much lower	Dedicated reporting of renewable (withdrawal from wells) vs non-renewable groundwater (withdrawal from deep water holes) started in 2016. 32 megaliters were withdrawn from wells in 2015. Decrease in 2016 was mainly due to variations in human consumption and general uses.
Groundwater - non-renewable	149	Higher	Dedicated reporting of renewable (withdrawal from wells) vs non-renewable groundwater (withdrawal from deep water holes) started in 2016. 111 megaliters were withdrawn from water holes in 2015. Decrease in 2016 was mainly due to increased generation, and thus process water needs, in one of our CCGT thermal plants.
Produced/process water	0	Not applicable	EDP does not use produced or process water.
Municipal supply	16980	Higher	Increase is due to the first full-year consolidation of Pecém coal fired power plant (Brazil), which uses water supplied by the local water supply concessionaire.
Wastewater from another organization	0	Not applicable	EDP does not use waste water from another organization.
Total	1510277	Lower	Despite the full-year consolidation of the Pecém power plant, a lower total volume of water was withdrawal mainly due to reduced needs of cooling water resulting from the partial shutdown of the Soto de Ribera power plant and to decrease in our coal-based electricity generation in Iberia in 2016, given the weather conditions that favoured hydro and wind generation in the region.

W1.2b

Water discharges: for the reporting year, please provide total water discharge data by destination, across your operations

Destination	Quantity (megaliters/year)	How does total water discharged to this destination compare to the last reporting year?	Comment
Fresh surface water	4502	Much lower	Discharges to fresh surface water are mainly of cooling water used in thermal power plants refrigeration circuits. Reduction in discharged volumes is due to the shutdown of the Soto de Ribera Thermal Power Plant (Spain) generating unit 2. This power plant has a semi-open refrigeration circuit, thus withdrawing and discharging large quantities of river water.
Brackish surface water/seawater	1481107	Lower	Discharges to seawater are mainly of cooling water used in the refrigeration circuits of EDP's coal power plants. Reduction in discharged volumes is due to the decrease in our coal-based electricity generation in Iberia in 2016, given the weather conditions in the region that favoured hydro and wind generation (higher Hydro and Wind Capability Indexes).
Groundwater	0	Not applicable	EDP does not make discharges to groundwater.
Municipal/industrial wastewater treatment plant	9	About the same	The effluents sent to municipal treatment concerns the domestic wastewater produced in all activities within the reporting boundary.
Wastewater for another organization	0	Not applicable	EDP does not send wastewater to another organization to be reused.
Total	1485618	Lower	Despite the full-year consolidation of the Pecém power plant, a lower total volume of water was discharged mainly due to reduced needs of cooling water resulting from the partial shutdown of the Soto de Ribera power plant and to the decrease in our coal-based electricity generation in Iberia in 2016, given the weather conditions that favoured hydro and wind generation in the region.

W1.2c

Water consumption: for the reporting year, please provide total water consumption data, across your operations

Consumption (megaliters/year)	How does this consumption figure compare to the last reporting year?	Comment
26813	Lower	Despite the full-year consolidation of the Pecém power plant (Brazil), a lower total volume of water was consumed mainly due to reduced water needs for power generation resulting from the partial shutdown of the Soto de Ribera power plant (Spain) and from the decrease in our coal-based electricity generation in Iberia in 2016, given the weather conditions that favoured hydro and wind generation in the region. Consumption represents under 2% of our total water withdrawals, as the majority of our operation's water uses are non-consumptive. Consumption comes mainly from water losses through evaporation in refrigeration and water-steam circuits of power plants, human consumption and general uses (irrigation, cleaning), as well as water that is not returned to the same water body.

W1.3

Do you request your suppliers to report on their water use, risks and/or management?

W1.3a

Please provide the proportion of suppliers you request to report on their water use, risks and/or management and the proportion of your procurement spend this represents

Proportion of suppliers %	Total procurement spend %	Rationale for this coverage

W1.3b

Please choose the option that best explains why you do not request your suppliers to report on their water use, risks and/or management

Primary reason	Please explain

W1.4

Has your organization experienced any detrimental impacts related to water in the reporting year?

No

W1.4a

Please describe the detrimental impacts experienced by your organization related to water in the reporting year

Country	River basin	Impact driver	Impact	Description of impact	Length of impact	Overall financial impact	Response strategy	Description of response strategy

W1.4b

Please choose the option below that best explains why you do not know if your organization experienced any detrimental impacts related to water in the reporting year and any plans you have to investigate this in the future

Primary reason	Future plans

Further Information

Module: Risk Assessment

Page: W2. Procedures and Requirements

W2.1

Does your organization undertake a water-related risk assessment?

Water risks are assessed

W2.2

Please select the options that best describe your procedures with regard to assessing water risks

Risk assessment procedure	Coverage	Scale	Please explain
Comprehensive company-wide risk assessment	Direct operations and supply chain	All facilities and suppliers	Assessment of water risks is integrated into EDP's risk procedures, in accordance with its Water Management Policy and Strategy. Risk identification and management is undertaken in a four layer process: i) EDP's Corporate Business Risk model – Evaluates the company's main risks, including business risks like hydro volume and regulatory risks like water related rules, taxes and fees; ii) Thematic risk assessment – For physical risks: current and forecasted water stress exposure assessment by mapping electricity generation assets location against recognized water indicators, at watershed level, and further downscaling the analysis to local level, using national agencies

Risk assessment procedure	Coverage	Scale	Please explain
			information. For regulatory risks: water-related regulation follow-up at corporate, business unit and asset level (identification of emerging issues, participation in public consultations and active involvement in River Basin Management Plans); iii) Water Risk Map – Extensive risk identification and quantification analysis encompassing all the business, regulatory, strategic (including supply chain) and operational risks related to water, be they driven by physical availability, regulatory or other issues like stakeholder conflicts; iv) Water Management WG analyses – Involves corporate and business units (thermal, hydro and renewable generation and electrical distribution) and supports the implementation of the Water Management Policy by developing specific water risk identification and management analyses.

W2.3

Please state how frequently you undertake water risk assessments, at what geographical scale and how far into the future you consider risks for each assessment

Frequency	Geographic scale	How far into the future are risks considered?	Comment
Every two years	River basin	>6 years	There are major differences in water availability at country level in the geographies where our generation and distribution assets are located so our water stress exposure assessment is undertaken at river basin level. The analysis is updated on a 2-3-year basis or whenever a new project requires it. The water risk map, developed in 2015, is currently being reviewed to account for relevant changes in hydro volume exposure and to expand the geographic coverage to all generation assets locations.

W2.4

Have you evaluated how water risks could affect the success (viability, constraints) of your organization's growth strategy?

Yes, evaluated over the next 10 years

W2.4a

Please explain how your organization evaluated the effects of water risks on the success (viability, constraints) of your organization's growth strategy?

Water related business risks (e.g. increase in competitive water uses), regulatory risks (e.g. changes in water pricing) and strategic risks (e.g. structural change in long term water availability due to climate change) are embedded into EDP's risk management model, including taxonomy, phases and responsibilities. Such risks are taken into account in the company's development strategy (analysis of climate change impacts on structural hydro electricity volumes and activity disruption), business plan preparation (scenario analysis featuring water availability and water related regulation effects in energy prices and volumes) and project investment analysis (hydro resource evaluation encompassing scenario analysis of price volatility and changes due to volume fluctuations in new hydroelectric generation capacity projects). The 2016-2020 Business Plan focusing 70% of its investment in wind and solar generation is an example of how EDP's strategy is influenced by the overall risk assessment, where water risks are included.

EDP's Water Risk Map, first developed in 2015 for Iberia and currently being extended to all geographies where the Group operates thermal and hydro generation assets, identifies and quantifies all key water risks. Risks are aggregated taking into account their expected frequency and impact and applying Monte Carlo simulation. Analysis uses EDP's risk model taxonomy and considers both short/medium term (up to 5 years) and long term time horizons (5-50 years).

W2.4b

What is the main reason for not having evaluated how water risks could affect the success (viability, constraints) of your organization's growth strategy, and are there any plans in place to do so in the future?

Main reason	Current plans	Timeframe until evaluation	Comment

W2.5

Please state the methods used to assess water risks

Method	Please explain how these methods are used in your risk assessment
CEO Water Mandate's 'Understanding Key Water Stewardship Terms' Internal company knowledge Life Cycle Assessment Regional government databases WBCSD Global Water Tool WRI Aqueduct Other: EEIO data	EDP uses the CEO Water Mandate's terminology (Corporate Water Disclosure Guidelines and Harmonization of Water Related Terminology Discussion Paper) for its working definition of key water-related concepts (withdrawals, discharges and consumption). EDP's Corporate Business Risk model uses standard risk identification and quantification methodologies to evaluate hydro volume and water regulation risks. For water stress exposure assessment (current and forecast) EDP uses the WBCSD Global Water Tool (version 2015) and WRI Aqueduct to conduct a first high level risk assessment, by mapping all its thermal and hydro generation assets against widely recognized water availability indicators (Annual Renewable Water Supply per Person and Baseline Water Stress). Wind generation and distribution assets are excluded given their low dependency on water availability. Analysis is conducted at watershed level, using both current state indicators and projections. Screening is then downscaled to local level, using information gathered from National Governmental Agencies (location specific water availability indicators) and company's operational teams (asset water dependency, constraints from local competitive uses). This is done for all geographies where EDP has generation activities (Portugal, Spain and Brazil). Assessment is updated on a 2-3-year basis or whenever a new project requires it. Water regulation follow-up is supported by a proprietary Regulation Database information system, managed under the corporate EMS. EDP's Water Risk Map is a specific risk analysis developed by EDP's risk and sustainability teams, identifying and quantifying all the company's key water risks, be they driven by physical availability, regulatory or other issues, including stakeholder conflicts. Risks (internal and external) are aggregated taking into account their expected frequency and impact and, applying Monte Carlo simulation, analysed in different time frames - short and long term. Financial implications are expressed by the value of maximum loss (95% percentile). Assets identified as being potentially exposed to water availability risks in the water availability assessment are given special attention in revisions of the Water Risk Map. Indirect (supply chain) water risks were also addressed: i) through water footprint calculations (Group level and site level for two generation sites) conducted in 2013 and 2014 using Life Cycle Assessment methodologies; ii) through the extensive characterization study of EDP's purchases, conducted in 2015, aiming a deeper knowledge about the economic, social and environmental impacts of our supply chain. Analysis included supply chain water consumption and was conducted using procurement data, environmentally extended input-output data and a global water resources model.

W2.6

Which of the following contextual issues are always factored into your organization's water risk assessments?

Issues	Choose option	Please explain
Current water availability and quality parameters at a local level	Relevant, included	Current and future water availability (quantity and quality) is assessed within: i) EDP's Corporate Business Risk model using standard risk identification and quantification methodologies (short and long term impact on EBITDA of hydro volume volatility); ii) EDP's Specific water stress exposure assessment using the WBCSD Global Water Tool and WRI Aqueduct to conduct a first high level risk assessment, followed by a local level screening using information gathered from National Governmental Agencies (generation asset exposure to water stress locations); and iii) EDP Water Risk Map analysing risk expected frequency and impact, applying statistical simulation techniques and quantifying financial implications (maximum loss 95% percentile associated with hydro interannual volatility, competitive uses, structural decrease in hydro flows due to climate change).
Current water regulatory frameworks and tariffs at a local level	Relevant, included	Current and future water related regulatory and tariff risks are assessed within: i) EDP's Corporate Business Risk model using standard risk identification and quantification methodologies (short and long term impact on EBITDA water related rules, taxes and fees); ii) EDP's specific water-related regulation follow-up at corporate, business unit and asset level through the identification of emerging issues, participation in public consultations and active involvement in River Basin Management Plans and; iii) EDP Water Risk Map analysing risk expected frequency and impact, applying statistical simulation techniques and quantifying financial implications (maximum loss 95% percentile associated with hydro generation taxes, ecological flows legal requirements and regulation of the EU Water Framework Directive).
Current stakeholder conflicts concerning water resources at a local level	Relevant, included	Current and future stakeholder conflicts – of which the most relevant are competitive uses – are integrated into our water risk identification and management process mainly through the activities of the Water Management WG. In Brazil, for Pecém Thermal Power Plant (located in water-stressed area), water issues in the region of Ceará are accompanied periodically through meetings with State entities, like Infra-Structure Secretariat, COGERH and with Hydrographic Basin Committee, in order to anticipate future conflicts. In Portugal, some of EDP's hydro power plant reservoirs are multipurpose, thus creating an additional challenge to planning and operation activities for conciliation of the needs of the different water users. Examples include Castelo de Bode Hydro Power Plant, which reservoir is also the main water supplier to the city of Lisbon. EDP has an open channel with the Portuguese main water supply company, which owns the local water uptake, to support the engagement process. EDP also works with the competent authorities in water resource management, addressing issues such as: flood regularization, ecological flows or flow supply for touristic activities. Additionally, all generation facilities have emergency operating procedures addressing extreme events (e.g. floods) including company employees and community engagement, but also articulate with external support, like emergency authorities. All these procedures are subjected to regular drills.
Current implications of water on your key commodities/raw materials	Not relevant, included	The most relevant commodities for EDP's operation are fossil fuels (coal and natural gas) for electricity generation. Extraction of such commodities is water intensive and potential restrictions to supplier operation in water stress areas have been identified as EDP's most relevant water related supply chain risk, as it can impact supply and price in international markets. Currently, only under 30% of our installed generation capacity is fossil-fuel based and the 2015 characterization study of

Issues	Choose option	Please explain
		EDP’s purchases showed that 30% of our purchases’ water footprint comes from raw materials, including, but not limited to, fuels. Risk is further mitigated by working with a vast range of alternative suppliers active in different geographies.
Current status of ecosystems and habitats at a local level	Relevant, included	Current and future local ecosystem and habitat status is integrated into EDP’s water risk assessment through the activities of our Corporate Water Management Working Group and risk is managed mostly by the electricity generation Business Units (Iberia and Brazil). EDP has in place several monitoring plans to assess any material changes on the water biodiversity potentially affected by new facilities, mainly hydropower plants. Examples of such monitoring plans include: i) water quality monitoring of reservoirs, encompassing biological quality parameters, physicochemical and hydromorphological; ii) use of limnological information collected under the monitoring of reservoirs to support the implementation process of environmental flow regimes; iii) Monitoring programs on water communities and fresh water habitats at the project stage of a new facility, as well as construction and operation stages.
Current river basin management plans	Relevant, included	Potential restrictions to operation resulting from river basin plans are integrated into EDP’s water risk assessment through the activities of our Corporate Water Management Working Group and risk is managed mostly by the electricity generation Business Units (Iberia and Brazil). EDP cooperates with local and national competent authorities in the development of River Basin Management Plans and further to their approval, in implementing action plans addressing issues such as: flood regularization, ecological flows, flow supply for touristic activities and waterbodies continuity.
Current access to fully-functioning WASH services for all employees	Not relevant, explanation provided	We provide access to clean water and suitable sanitation conditions to all employees in 100% of our facilities. This is a legal requirement in the geographies where EDP operates and is a company commitment under its participation in the United Nations' Global Compact. The issue therefore poses no risks to our operations and, as such, is not included in our water risk assessment.
Estimates of future changes in water availability at a local level	Relevant, included	Current and future water availability (quantity and quality) is assessed within: i) EDP’s Corporate Business Risk model using standard risk identification and quantification methodologies (short and long term impact on EBITDA of hydro volume volatility); ii) EDP’s Specific water stress exposure assessment using the WBCSD Global Water Tool and WRI Aqueduct to conduct a first high level risk assessment, followed by a local level screening using information gathered from National Governmental Agencies (generation asset exposure to water stress locations); and iii) EDP Water Risk Map analysing risk expected frequency and impact, applying statistical simulation techniques and quantifying financial implications (maximum loss 95% percentile associated with hydro interannual volatility, competitive uses, structural decrease in hydro flows due to climate change).
Estimates of future potential regulatory changes at a local level	Relevant, included	Current and future water related regulatory and tariff risks are assessed within: i) EDP’s Corporate Business Risk model using standard risk identification and quantification methodologies (short and long term impact on EBITDA water related rules, taxes and fees); ii) EDP’s specific water-related regulation follow-up at corporate, business unit and asset level through the identification of emerging issues, participation in public consultations and active involvement in River Basin Management Plans and; iii) EDP Water Risk Map analysing risk expected frequency and impact, applying statistical

Issues	Choose option	Please explain
		simulation techniques and quantifying financial implications (maximum loss 95% percentile associated with hydro generation taxes, ecological flows legal requirements and regulation of the EU Water Framework Directive).
Estimates of future potential stakeholder conflicts at a local level	Relevant, included	Current and future stakeholder conflicts – of which the most relevant are competitive uses – are integrated into our water risk identification and management process mainly through the activities of the Water Management WG. In Brazil, for Pecém Thermal Power Plant (located in water-stressed area), water issues in the region of Ceará are accompanied periodically through meetings with State entities, like Infra-Structure Secretariat, COGERH and with Hydrographic Basin Committee, in order to anticipate future conflicts. In Portugal, some of EDP's hydro power plant reservoirs are multipurpose, thus creating an additional challenge to planning and operation activities for conciliation of the needs of the different water users. Examples include Castelo de Bode Hydro Power Plant, which reservoir is also the main water supplier to the city of Lisbon. EDP has an open channel with the Portuguese main water supply company, which owns the local water uptake, to support the engagement process. EDP also works with the competent authorities in water resource management, addressing issues such as: flood regularization, ecological flows or flow supply for touristic activities. Additionally, all generation facilities have emergency operating procedures addressing extreme events (e.g. floods) including company employees and community engagement, but also articulate with external support, like emergency authorities. All these procedures are subjected to regular drills.
Estimates of future implications of water on your key commodities/raw materials	Not relevant, included	The most relevant commodities for EDP's operation are fossil fuels (coal and natural gas) for electricity generation. Extraction of such commodities is water intensive and potential restrictions to supplier operation in water stress areas have been identified as EDP's most relevant water related supply chain risk, as it can impact supply and price in international markets. We do not anticipate a substantive impact. We do not consider risk to be relevant. Currently, only under 30% of our installed generation capacity is fossil-fuel based and our 2016-2020 business plan does not include further investment in thermal generation. The 2015 characterization study of EDP's purchases showed that 30% of our purchases' water footprint comes from raw materials, including but not limited to fuels. Risk is further mitigated by working with a vast range of alternative suppliers active in different geographies.
Estimates of future potential changes in the status of ecosystems and habitats at a local level	Relevant, included	Current and future local ecosystem and habitat status is integrated into EDP's water risk assessment through the activities of our Corporate Water Management Working Group and risk is managed mostly by the electricity generation Business Units (Iberia and Brazil). EDP has in place several monitoring plans to assess any material changes on the water biodiversity potentially affected by new facilities, mainly hydropower plants. Examples of such monitoring plans include: i) water quality monitoring of reservoirs, encompassing biological quality parameters, physicochemical and hydromorphological; ii) use of limnological information collected under the monitoring of reservoirs to support the implementation process of environmental flow regimes; iii) Monitoring programs on water communities and fresh water habitats at the project stage of a new facility, as well as construction and operation stages.

Issues	Choose option	Please explain
Scenario analysis of availability of sufficient quantity and quality of water relevant for your operations at a local level	Relevant, included	Scenario analysis of water availability (quantity and quantity) is performed within EDP's Corporate Business Risk model (short and long term impact on EBITDA of hydro volume volatility) and EDP Water Risk Map (maximum loss 95% percentile associated with hydro interannual volatility, competitive uses, structural decrease in hydro flows due to climate change).
Scenario analysis of regulatory and/or tariff changes at a local level	Relevant, included	Scenario analysis of regulatory and/or water tariff changes is performed within EDP's Corporate Business Risk model (short and long term impact on EBITDA) and EDP Water Risk Map (maximum loss 95% percentile).
Scenario analysis of stakeholder conflicts concerning water resources at a local level	Relevant, included	Scenario analysis of stakeholder conflicts concerning water resources at local level is performed within EDP's Corporate Business Risk model (short and long term impact on EBITDA) and EDP Water Risk Map (maximum loss 95% percentile).
Scenario analysis of implications of water on your key commodities/raw materials	Not relevant, explanation provided	No scenario analysis undertaken, as issue is not considered relevant. The most relevant commodities for EDP's operation are fossil fuels (coal and natural gas) for electricity generation. Extraction of such commodities is water intensive and potential restrictions to supplier operation in water stress areas have been identified as EDP's most relevant water related supply chain risk, as it can impact supply and price in international markets. Currently, only under 30% of our installed generation capacity is fossil-fuel based and our 2016-2020 business plan does not include further investment in thermal generation. The 2015 characterization study of EDP's purchases showed that 30% of our purchases' water footprint comes from raw materials, including, but not limited to, fuels. Risk is further mitigated by working with a vast range of alternative suppliers active in different geographies.
Scenario analysis of potential changes in the status of ecosystems and habitats at a local level	Relevant, not yet included	No scenario analysis currently undertaken for this issue.
Other	Not relevant, explanation provided	No other issues factored into EDP's water related risk assessment.

W2.7

Which of the following stakeholders are always factored into your organization's water risk assessments?

Stakeholder	Choose option	Please explain
Customers	Not relevant, explanation provided	Our water risk assessment does not directly factor customers as EDP does not provide water-consuming products or services.
Employees	Relevant, included	EDP has an internal ongoing project - Econnosco - targeting employees, which aims to raise awareness and promote ecoefficiency on the use of resources, including water. Since 2015 the project is also implemented in Brazil and important reductions on water consumption have been obtained.
Investors	Relevant, included	Our water risk assessment includes the quantification of the potential financial impact of each identified risk on the company's EBITDA. We report the issue in CDP Water Programme and also during ESG road shows or other investor surveys, when the topic is raised.
Local communities	Relevant, included	Local communities are a key group in our stakeholder management procedures and are factored in our risk assessment process through the activities of the Water Management WG. These involves direct engagement in the planning and operation phases and the design and implementation of compensation measures, whenever required.
NGOs	Relevant, included	NGO's contributions are integrated in the discussion process undertaken at all new projects planning phase.This has led to several joint projects on nature conservation. The most recent is the voluntary support of Olhos d'Água Project in EDP Brazil. The aim of this partnership is to recover and protect 13 springs located in small rural properties close to the Guandu River through the reforestation of the surrounding areas. The project involves local farmers through awareness raising and training for more sustainable production patterns.
Other water users at a local level	Relevant, included	Current and future stakeholder conflicts – of which the most relevant are competitive uses – are integrated into our water risk identification and management process mainly through the activities of the Water Management WG. This involves active engagement in River Basin Management Plan discussions and implementation processes and cooperation with the competent authorities to ensure adequate management of shared water resources by addressing issues such as: flood regularization, ecological flows or flow supply for touristic activities. There is also a special Project – edp+perto,that addresses current and future stakeholder conflicts, including those related to water, in large projects.
Regulators	Relevant, included	Water regulation issues are closely followed both at corporate and Business Unit level. EDP cooperates with: Eurelectric Hydro Group and Environmental Protection WG; Portuguese Environmental Authorities, in Portugal; Consejo Nacional del Agua (Spain National Water Council) and UNESA, in Spain.
River basin management authorities	Relevant, included	In Portugal, EDP works with the environmental authorities, namely in Public Water Bodies Programs, in ecological flows regimes, in Flood Risk Management Plans, in the Portuguese Commission on Reservoirs Management and in the River Basin Councils. In Brazil, EDP participates in the Ceará State Watershed Committee, the entity that manages local water resources in the water stress area where our Pecém thermal power plant is located.
Statutory special interest groups at a local level	Relevant, included	Special interest groups at a local level are integrated into our stakeholder management procedures. Tourist activities, for example, are object of special attention in hydroelectric power plants with multipurpose reservoirs. In Caniçada Hydropower plant (Portugal) EDP agreed to operate its hydropower plant having in consideration a water level that allows, simultaneously, recreational activities. Another example is in the Castelo de Bode dam (Portugal) where EDP provides water for nautical sports such as kayaking, adjusting its flows to guarantee these activities when needed.

Stakeholder	Choose option	Please explain
Suppliers	Not relevant, included	Assessment of potential supply chain water risks was included in our 2015 characterization study of EDP's purchases. The study identified economic, social and environmental impacts of our supply chain, including water consumption and was conducted using procurement data, environmentally extended input-output data and a global water resources model. Main water use in EDP's supply chain is associated with fossil fuel extraction (coal and natural gas). Our analysis showed that 30% of our purchases' water footprint comes from raw materials, including but not limited to fuels. Restrictions to suppliers' operations in water stress areas can potentially impact supply and price in international markets, thus increasing our operational costs. However, we do not anticipate a substantive impact in our operation as currently only under 30% of our installed generation capacity is fossil-fuel based and our 2016-2020 business plan does not include further investment in thermal generation. Risk is further mitigated by working with a vast range of alternative suppliers active in different geographies.
Water utilities at a local level	Relevant, included	Current and future stakeholder conflicts – of which the most relevant are competitive uses – are integrated into our water risk identification and management process mainly through the activities of the Water Management WG. Special attention is paid to hydro power plants with multipurpose reservoirs, of which we operate several in Portugal, where we strive to conciliate the needs of the different water users. Examples include Castelo de Bode Hydro Power Plant, which reservoir is also the main water supplier to the city of Lisbon. EDP has an open channel with the Portuguese main water supply company, which owns the local water uptake, to support the engagement process.
Other	Not relevant, explanation provided	No other stakeholders factored into EDP's water related risk assessment.

W2.8

Please choose the option that best explains why your organisation does not undertake a water-related risk assessment

Primary reason	Please explain

Further Information

Module: Implications

Page: W3. Water Risks

W3.1

Is your organization exposed to water risks, either current and/or future, that could generate a substantive change in your business, operations, revenue or expenditure?

Yes, direct operations only

W3.2

Please provide details as to how your organization defines substantive change in your business, operations, revenue or expenditure from water risk

EDP defines substantive change as one that:
i) Has a potential financial impact of 1% or more on EBITDA; or
ii) Affects at least one strategic generation asset; or
ii) Creates a reputation impact at least at a local level.

The definition applies to the company's direct operations only.

W3.2a

Please provide the number of facilities* per river basin exposed to water risks that could generate a substantive change in your business, operations, revenue or expenditure; and the proportion of company-widefacilities this represents

Country	River basin	Number of facilities exposed to water risk	Proportion of company-wide facilities that this represents (%)	Comment
Portugal	Other: Cávado-Lima	19	1-5	All hydroelectric power plants in the river basin (both large and mini hydro (<10MW)), considering the percentage of EDP Group generation assets. Identified in EDP Water Risk Map as being exposed to risks of reduced availability of water inflows for electricity generation driven by hydro volatility, revision of ecological flows regime and climate change induced structural decrease in precipitation. Use of water for hydroelectric generation is non-consumptive and the respective volumes (both turbinated and stored in reservoirs) are not accounted as water withdrawals. Water related risks for these facilities are thus not linked to water withdrawals, discharges or consumption volumes.
Portugal	Douro	21	6-10	All hydroelectric power plants in the river basin (both large and mini hydro (<10MW)), considering the percentage of EDP Group generation assets. Identified in EDP Water Risk Map as being exposed to risks of reduced availability of water inflows for electricity generation driven by hydro volatility, revision of ecological flows regime and climate change induced structural decrease in precipitation. Use of water for hydroelectric generation is non-consumptive and the respective volumes (both turbinated and stored in reservoirs) are not accounted as water withdrawals. Water related risks for these facilities are thus not linked to water withdrawals, discharges or consumption volumes.
Portugal	Other: Tejo-Mondego	33	6-10	All hydroelectric power plants in the river basin (both large and mini hydro (<10MW)), considering the percentage of EDP Group generation assets. Identified in EDP Water Risk Map as being exposed to risks of reduced availability of water inflows for electricity generation driven by hydro volatility, revision of ecological flows regime and climate change induced structural decrease in precipitation. Use of water for hydroelectric generation is non-consumptive and the respective volumes (both turbinated and stored in reservoirs) are not accounted as water withdrawals. Water related risks for these facilities are thus not linked to water withdrawals, discharges or consumption volumes.
Brazil	Other: Bacia Hidrográfica do Atlântico Nordeste Oriental	1	Less than 1%	Coal fired thermal power plant, considering the percentage of the total number of EDP production assets. Located in a water stress area identified through the two stage EDP water stress exposure assessment: high level mapping using WBCSD Global Water Tool/WRI Aqueduct and local level assessment using national agencies specific water availability indicators and company's operational teams internal knowledge.

W3.2b

For each river basin mentioned in W3.2a, please provide the proportion of the company's total financial value that could be affected by water risks

Country	River basin	Financial reporting metric	Proportion of chosen metric that could be affected	Comment
Portugal	Other: Cávado-Lima	% generation capacity	6-10	Financial metric refers to % (MW/MW) of total EDP's electricity generation installed capacity.
Portugal	Douro	% generation capacity	11-20	Financial metric refers to % (MW/MW) of total EDP's electricity generation installed capacity.
Portugal	Other: Tejo-Mondego	% generation capacity	6-10	Financial metric refers to % (MW/MW) of total EDP's electricity generation installed capacity.
Brazil	Other: Bacia Hidrográfica do Atlântico Nordeste Oriental	% generation capacity	1-5	Financial metric refers to % (MW/MW) of total EDP's electricity generation installed capacity.

W3.2c

Please list the inherent water risks that could generate a substantive change in your business, operations, revenue or expenditure, the potential impact to your direct operations and the strategies to mitigate them

Country	River basin	Risk driver	Potential impact	Description of potential impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
Portugal	Other: Cávado-Lima, Douro e Tejo	Other: Competitive uses	Reduction in revenue	Water transfers in Spain are expected to increase from 2015 to 2027,	>6 years	Probable	Medium	Engagement with public policy makers Strengthen	Current expenditure cost of follow-up of negotiations	EDP is following the negotiations between the Portuguese

Country	River basin	Risk driver	Potential impact	Description of potential impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
				mainly due to irrigation purposes. This will reduce trans-border river flows to Portugal and thus water inflows to many of EDP's hydroelectric power plants in Portugal, especially in the Douro river basin. This increase in competitive uses has a potential negative impact in the volume of electricity generation from these assets.				links with local community	between Portuguese and Spanish governments on the Iberian Water Convention.	and Spanish governments on the Iberian Water Convention. This international treaty will define national obligations regarding water use in international rivers, including river flows to Portugal. Our generation Business Unit staff has been providing technical information and expertise to the Portuguese negotiators.
Portugal	Other: Cávado-Lima, Douro e Tejo	Physical-Ecosystem vulnerability Regulatory-Mandatory water	Reduction in revenue	Under the implementation of the European Union Water Framework Directive,	1-3 years	Highly probable	Medium	Engagement with public policy makers Infrastructure investment	Current expenditure cost of downstream ecological status	Negotiations are currently being held with Portuguese authorities to

Country	River basin	Risk driver	Potential impact	Description of potential impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
		efficiency, conservation, recycling or process standards		concession contracts signed in 2008 for EDP's hydroelectric power plants in Portugal demand new ecological flow regimes. This implies a significant increase in non-turbinated water relatively to the current situation. Although negotiations on the new regime's implementation details are still undergoing, this is foreseen to have a potential negative impact on our operation: reduced revenues (reduction in the volume of electricity generation from these assets) and increase in investment costs (CAPEX in ecological flow devices in				Infrastructure maintenance	monitoring plan and of engagement with national authorities on the new ecological flows regime definition. Investment costs in ecological flow devices in hydroelectric plants.	establish the new regime details, namely volumes to be released and its relation to yearly hydrological conditions. These are expected to minimize the financial impact risk on the company's operations. Investment is foreseen in ecological flow devices in hydroelectric plants currently not prepared for the new needs. EDP has an ongoing 7-year monitoring plan of the ecological

Country	River basin	Risk driver	Potential impact	Description of potential impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
				hydroelectric plants currently not prepared for the new needs).						status of water bodies downstream of its hydro generation assets. Periodic reports are sent to national authorities and will help inform its final decision on the ecological flows regimes, adjusting the need for new investments to the real ecological conditions of the affected ecosystems.
Portugal	Other: Cávado-Lima, Douro e Tejo	Physical-Climate change Physical-Projected water scarcity	Reduction in revenue	According to IPCC (Intergovernmental Panel on Climate Change) projections, mean precipitation in Iberia is expected to decrease by up to 10% by 2035,	>6 years	Probable	Medium-high	Other: Generation portfolio and geographic diversification	Investment costs in new generation portfolio diversification (technology and geography).	Risk is managed through a diversified generation portfolio in terms of technologies (currently

Country	River basin	Risk driver	Potential impact	Description of potential impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
				compared with the 1986-2005 period. In Longer Term perspective, up to 2100, EEA (European Environment Agency) and IPCC forecast average decreases of annual precipitation in Portugal and Spain that range from 10 to 30%. Hydro generation is an important source of value for EDP in Iberia, mainly in Portugal. A structural decrease in precipitation, and thus in hydro generation, can negatively affect EDP's revenues. A detailed risk assessment analysis was performed for our hydro generation activities in Portugal and is currently being						30% hydro, 40% wind, 30% thermal) and geographies (currently 70% Europe, 20% North America, 10% Brazil). EDP's Business Plan 2016-2020 investments (€ 1.4 bn/year, 70% of which on new renewable generation installed capacity) are also diversified: total 5 GW additions (30% hydro, 65% wind, 5% solar) in Europe (45%), North America (50%) and Brazil (5%). Geographic

Country	River basin	Risk driver	Potential impact	Description of potential impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
				expanded to Brazil, where we also operate relevant hydro generation assets.						diversification, in particular, significantly reduces the risk, as structural reduction in precipitation is not likely to occur in all geographies and with same magnitude. New plant project valuation considers sensitivities to lower inflows scenarios, thus enabling informed decision making.
Brazil	Other: Bacia Hidrográfica do Atlântico Nordeste Oriental	Physical-Increased water stress Regulatory-Higher water prices Other: Competitive uses	Higher operating costs	Pecém coal-fired thermal power plant (Ceará State, Brazil) is EDP's only generation asset located in a water-stressed area. Assessment revealed an	Current-up to 1 year	Probable	Low-medium	Engagement with public policy makers Infrastructure investment Water management incentives	Current expenditure cost of engagement with national authorities. Investment costs in the plant's water	EDP is investing in a water efficiency programme for Pecém power plant, with a total investment

Country	River basin	Risk driver	Potential impact	Description of potential impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
				Annual Renewable Water Supply indicator below 1,700 m3/person/year and a Baseline Water Stress indicator over 20%, according to WBCSD Global Water Tool and WRI Aqueduct. Water stress situation was confirmed by information from Brazil's National Information System on Water Resources (very critical quantitative hydrologic balance). The plant is installed at the industrial and Port Complex of Pecém, where multiple other water users, namely industrial, are also present. Water for plant operation is provided by the municipal water					management measures.	estimated to amount to R$1M. An example is the implemention of circuit optimisation initiatives to reduce the collection of this resource. A project undertaken in 2016 resulted in a decrease of about 12% in water consumption, enhancing the cooling of boilers through chemical stabilisation applied in cooling towers. Also, EDP participates in the region's Watershed Committee, the entity that manages the

Country	River basin	Risk driver	Potential impact	Description of potential impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
				and sewage concessionaire. Projected increase in both water scarcity in the region and competitive uses is foreseen to have a potential negative financial effect for the company: higher operation costs (rising water tariffs and taxes) and limitations to operation. In 2016, the State of Ceará declared an emergency tax on water that would imply a 7-fold increase in the plant’s water costs. The increase was later limited to 3 but negotiations between EDP and the local authorities are currently still underway.						state's water resources, and are involved in negotiations with the local State Government regarding the final value for the water emergency tax announced in the September 2016.

W3.2d

Please list the inherent water risks that could generate a substantive change in your business operations, revenue or expenditure, the potential impact to your supply chain and the strategies to mitigate them

Country	River basin	Risk driver	Potential impact	Description of potential impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs

W3.2e

Please choose the option that best explains why you do not consider your organization to be exposed to water risks in your direct operations that could generate a substantive change in your business, operations, revenue or expenditure

Primary reason	Please explain

W3.2f

Please choose the option that best explains why you do not consider your organization to be exposed to water risks in your supply chain that could generate a substantive change in your business, operations, revenue or expenditure

Primary reason	Please explain

Primary reason	Please explain
Risks exist, but no substantive impact anticipated	Main water use in EDP's supply chain is associated with fossil fuel extraction (coal and natural gas). The 2015 characterization study of EDP's purchases showed that 30% of our purchases' water footprint comes from raw materials, including but not limited to fuels. The study identified economic, social and environmental impacts of our supply chain, including water consumption and was conducted using procurement data, environmentally extended input-output data and a global water resources model. Restrictions to suppliers' operations in water stress areas can potentially impact supply and price in international markets, thus increasing our operational costs. However, we do not anticipate a substantive impact in our operation as currently only under 30% of our installed generation capacity is fossil-fuel based and our 2016-2020 business plan does not include further investment in thermal generation. Risk is further mitigated by working with a vast range of alternative suppliers active in different geographies.

W3.2g

Please choose the option that best explains why you do not know if your organization is exposed to water risks that could generate a substantive change in your business operations, revenue or expenditure and discuss any future plans you have to assess this

Primary reason	Future plans

Further Information

Page: W4. Water Opportunities

W4.1

Does water present strategic, operational or market opportunities that substantively benefit/have the potential to benefit your organization?

Yes

W4.1a

Please describe the opportunities water presents to your organization and your strategies to realize them

Country or region	Opportunity	Strategy to realize opportunity	Estimated timeframe	Comment
Company-wide	Carbon management Climate change adaptation Competitive advantage Increased brand value Increased shareholder value Sales of new products/services	Hydroelectric generation is an important source of renewable, non-air polluting, CO2 free electricity. It is a relevant part of the electricity sector's key role in the transition to a low carbon economy and we expect demand to grow, in-line with both market shifting preferences and increasingly stringent environmental regulations on fossil-based thermal generation. Currently, over 70% of EDP's generation portfolio is based on renewable sources, with hydro making up to 30% of total installed capacity. Under our 2016-2020 Business Plan we will invest € 1.4 bn/year, 70% of which on new renewable generation installed capacity. 30% of the new generation capacity will be hydroelectric power plants, built in Portugal and Brazil. This gives the company a competitive advantage, in particular in geographies with increasing energy demand, as is the case of Brazil.	1-3 years	A part of the additional hydroelectric capacity to be installed in 2016-2020, in particular in Portugal, includes pumping services, which means storage through water pumping upstream to produce electricity again when demand is higher. One of the main benefits of this additional service is to maximize wind generation, pumping water upstream during low load hours, using this energy to pump water back to the reservoir, and storing that water to generate electricity when needed. Another advantage comes from the fact that some of these new hydro plants have a reservoir upstream several run-of-river hydro plants. This improves the resilience of downstream assets, helping to reduce potential long-term climate change impacts. In addition, the installation of hydro micro-generation turbines on ecological flow devices will deliver additional kWh and minimise the impact of the new ecological flows regime on the asset's operation.

W4.1b

Please choose the option that best explains why water does not present your organization with any opportunities that have the potential to provide substantive benefit

Primary reason	Please explain

W4.1c

Please choose the option that best explains why you do not know if water presents your organization with any opportunities that have the potential to provide substantive benefit

Primary reason	Please explain

Further Information

Module: Accounting

Page: W5. Facility Level Water Accounting (I)

W5.1

Water withdrawals: for the reporting year, please complete the table below with water accounting data for all facilities included in your answer to W3.2a

Facility reference number	Country	River basin	Facility name	Total water withdrawals (megaliters/year) at this facility	How does the total water withdrawals at this facility compare to the last reporting year?	Please explain
Facility 1	Portugal	Other: Cávado-Lima	All EDP hydroelectric power plants in Cávado-Lima river basin.	0	About the same	Use of water for hydroelectric generation is non-consumptive and the respective volumes (both turbinated and stored in reservoirs) are not accounted as water withdrawals. Water for general uses (human consumption, irrigation, cleaning) in hydroelectric power plants is immaterial and it is not monitored. Water related risks for these facilities (identified in W3.2a) are thus not linked to water withdrawals, discharges or consumption volumes.
Facility 2	Portugal	Douro	All EDP hydroelectric power plants in Douro river basin	0	About the same	Use of water for hydroelectric generation is non-consumptive and the respective volumes (both turbinated and stored in reservoirs) are not accounted as water withdrawals. Water for general uses (human consumption, irrigation, cleaning) in hydroelectric power plants is immaterial and it is not monitored. Water related risks for these facilities (identified in W3.2a) are thus not linked to water withdrawals, discharges or consumption volumes.
Facility 3	Portugal	Other: Tejo-Mondego	All EDP hydroelectric power plants in Tejo river basin	0	About the same	Use of water for hydroelectric generation is non-consumptive and the respective volumes (both turbinated and stored in reservoirs) are not accounted as water withdrawals. Water for general uses (human consumption, irrigation, cleaning) in hydroelectric power plants is immaterial and it is not monitored. Water related risks for these facilities (identified in W3.2a) are thus not linked to water withdrawals, discharges or consumption volumes.
Facility 4	Brazil	Other: Bacia Hidrográfica do Atlântico Nordeste	Pecém Thermal Power Plant	12374	Higher	Pecém thermal power plant was included in EDP's consolidation perimeter in May 2015. 2016 was the first full year of consolidation This explains the increase in water withdrawal compared to 2015.

Facility reference number	Country	River basin	Facility name	Total water withdrawals (megaliters/year) at this facility	How does the total water withdrawals at this facility compare to the last reporting year?	Please explain
		Oriental				

Further Information

Page: W5. Facility Level Water Accounting (II)

W5.1a

Water withdrawals: for the reporting year, please provide withdrawal data, in megaliters per year, for the water sources used for all facilities reported in W5.1

Facility reference number	Fresh surface water	Brackish surface water/seawater	Rainwater	Groundwater (renewable)	Groundwater (non-renewable)	Produced/process water	Municipal water	Wastewater from another organization	Comment
Facility 1	0	0	0	0	0	0	0	0	Use of water for hydroelectric generation is non-consumptive and the respective volumes (both turbinated and stored in reservoirs) are not accounted for

Facility reference number	Fresh surface water	Brackish surface water/seawater	Rainwater	Groundwater (renewable)	Groundwater (non-renewable)	Produced/process water	Municipal water	Wastewater from another organization	Comment
									as water withdrawals. Water for general uses (human consumption, irrigation, cleaning) in hydroelectric power plants is immaterial and it is not monitored. Water related risks for these facilities (identified in W3.2a) are thus not linked to water withdrawals, discharges or consumption volumes.
Facility 2	0	0	0	0	0	0	0	0	Use of water for hydroelectric generation is non-consumptive and the respective volumes (both turbinated and stored in reservoirs) are not accounted for as water withdrawals. Water for general uses (human consumption, irrigation, cleaning) in hydroelectric power plants is immaterial and it is not monitored. Water related risks for these facilities (identified in W3.2a) are thus not linked to water withdrawals, discharges or

Facility reference number	Fresh surface water	Brackish surface water/seawater	Rainwater	Groundwater (renewable)	Groundwater (non-renewable)	Produced/process water	Municipal water	Wastewater from another organization	Comment
									consumption volumes.
Facility 3	0	0	0	0	0	0	0	0	Use of water for hydroelectric generation is non-consumptive and the respective volumes (both turbinated and stored in reservoirs) are not accounted for as water withdrawals. Water for general uses (human consumption, irrigation, cleaning) in hydroelectric power plants is immaterial and it is not monitored. Water related risks for these facilities (identified in W3.2a) are thus not linked to water withdrawals, discharges or consumption volumes.
Facility 4	0	0	0	0	0.97	0	12373	0	Almost all water used in Pecém power plant (cooling water and process water) is provided by the municipal water and sewage concessionaire. Small volumes groundwater are withdrawn from a water hole and used for human

Facility reference number	Fresh surface water	Brackish surface water/seawater	Rainwater	Groundwater (renewable)	Groundwater (non-renewable)	Produced/process water	Municipal water	Wastewater from another organization	Comment
									consumption.

W5.2

Water discharge: for the reporting year, please complete the table below with water accounting data for all facilities included in your answer to W3.2a

Facility reference number	Total water discharged (megaliters/year) at this facility	How does the total water discharged at this facility compare to the last reporting year?	Please explain
Facility 1	0	About the same	Use of water for hydroelectric generation is non-consumptive and the respective volumes (both turbinated and stored in reservoirs) are not accounted for as water withdrawals. Water for general uses (human consumption, irrigation, cleaning) in hydroelectric power plants is immaterial and it is not monitored. Water related risks for these facilities (identified in W3.2a) are thus not linked to water withdrawals, discharges or consumption volumes.
Facility 2	0	About the same	Use of water for hydroelectric generation is non-consumptive and the respective volumes (both turbinated and stored in reservoirs) are not accounted for as water withdrawals. Water for general uses (human consumption, irrigation, cleaning) in hydroelectric power plants is immaterial and it is not monitored. Water related risks for these facilities (identified in W3.2a) are thus not linked to water withdrawals, discharges or consumption volumes.
Facility 3	0	About the same	Use of water for hydroelectric generation is non-consumptive and the respective volumes (both turbinated and stored in reservoirs) are not accounted for as water withdrawals. Water for general uses (human consumption, irrigation, cleaning) in hydroelectric power plants is immaterial and it is not monitored. Water related risks for these facilities (identified in W3.2a) are thus not linked to water withdrawals, discharges or consumption volumes.

Facility reference number	Total water discharged (megaliters/year) at this facility	How does the total water discharged at this facility compare to the last reporting year?	Please explain
Facility 4	1824	Higher	Pecém started to be considered into EDP Group's consolidation perimeter in May 2015. This explains the increase in water discharged in 2016, its first full-year consolidation.

W5.2a

Water discharge: for the reporting year, please provide water discharge data, in megaliters per year, by destination for all facilities reported in W5.2

Facility reference number	Fresh surface water	Municipal/industrial wastewater treatment plant	Seawater	Groundwater	Wastewater for another organization	Comment
Facility 1	0	0	0	0	0	Use of water for hydroelectric generation is non-consumptive and the respective volumes (both turbinated and stored in reservoirs) are not accounted for as water withdrawals. Water for general uses (human consumption, irrigation, cleaning) in hydroelectric power plants is immaterial and it is not monitored. Water related risks for these facilities (identified in W3.2a) are thus not linked to water withdrawals, discharges or consumption volumes.
Facility 2	0	0	0	0	0	Use of water for hydroelectric generation is non-consumptive and the respective volumes (both turbinated and stored in reservoirs) are not accounted for as water withdrawals. Water for general uses (human consumption, irrigation, cleaning) in hydroelectric power plants is immaterial and it is not monitored. Water related risks for these facilities (identified in W3.2a) are thus not linked to water withdrawals, discharges or consumption volumes.
Facility 3	0	0	0	0	0	Use of water for hydroelectric generation is non-consumptive and the respective volumes (both turbinated and stored in reservoirs)

Facility reference number	Fresh surface water	Municipal/industrial wastewater treatment plant	Seawater	Groundwater	Wastewater for another organization	Comment
						are not accounted for as water withdrawals. Water for general uses (human consumption, irrigation, cleaning) in hydroelectric power plants is immaterial and it is not monitored. Water related risks for these facilities (identified in W3.2a) are thus not linked to water withdrawals, discharges or consumption volumes.
Facility 4	0	0.35	1824	0	0	Domestic wastewater is discharged to the local municipal water and sewage concessionaire. Cooling water ends up being discharged into the ocean.

W5.3

Water consumption: for the reporting year, please provide water consumption data for all facilities reported in W3.2a

Facility reference number	Consumption (megaliters/year)	How does this compare to the last reporting year?	Please explain
Facility 1	0	About the same	Use of water for hydroelectric generation is non-consumptive and the respective volumes (both turbinated and stored in reservoirs) are not accounted for as water withdrawals. Water for general uses (human consumption, irrigation, cleaning) in hydroelectric power plants is immaterial and it is not monitored. Water related risks for these facilities (identified in W3.2a) are thus not linked to water withdrawals, discharges or consumption volumes.
Facility 2	0	About the same	Use of water for hydroelectric generation is non-consumptive and the respective volumes (both turbinated and stored in reservoirs) are not accounted for as water withdrawals. Water for general uses (human consumption, irrigation, cleaning) in hydroelectric power plants is immaterial and it is not monitored. Water related risks for these facilities (identified in W3.2a) are thus not linked to water withdrawals, discharges or consumption volumes.
Facility 3	0	About the same	Use of water for hydroelectric generation is non-consumptive and the respective volumes (both turbinated

Facility reference number	Consumption (megaliters/year)	How does this compare to the last reporting year?	Please explain
			and stored in reservoirs) are not accounted for as water withdrawals. Water for general uses (human consumption, irrigation, cleaning) in hydroelectric power plants is immaterial and it is not monitored. Water related risks for these facilities (identified in W3.2a) are thus not linked to water withdrawals, discharges or consumption volumes.
Facility 4	12374	Higher	Pecém started to be considered into EDP Group's consolidation perimeter in May 2015. This explains the increase in water consumption in 2016, its first full-year consolidation.

W5.4

For all facilities reported in W3.2a what proportion of their water accounting data has been externally verified?

Water aspect	% verification	What standard and methodology was used?
Water withdrawals- total volumes	76-100	EDP monitors these indicators according with the environmental permit and other legal requirements. Water indicators (withdrawals, discharges and consumption) for EDP Group are published in our Annual Report and subject to independent third party verification with reasonable assurance level, for all facilities included in consolidation perimeter.
Water withdrawals- volume by sources	76-100	EDP monitors these indicators according with the environmental permit and other legal requirements. Water indicators (withdrawals, discharges and consumption) for EDP Group are published in our Annual Report and subject to independent third party verification with reasonable assurance level, for all facilities included in consolidation perimeter.
Water discharges- total volumes	76-100	EDP monitors these indicators according with the environmental permit and other legal requirements. Water indicators (withdrawals, discharges and consumption) for EDP Group are published in our Annual Report and subject to independent third party verification with reasonable assurance level, for all facilities included in consolidation perimeter.
Water discharges- volume by destination	76-100	EDP monitors these indicators according with the environmental permit and other legal requirements. Water indicators (withdrawals, discharges and consumption) for EDP Group are published in our Annual Report and

Water aspect	% verification	What standard and methodology was used?
		subject to independent third party verification with reasonable assurance level, for all facilities included in consolidation perimeter.
Water discharges- volume by treatment method	76-100	EDP monitors these indicators according with the environmental permit and other legal requirements. Water indicators (withdrawals, discharges and consumption) for EDP Group are published in our Annual Report and subject to independent third party verification with reasonable assurance level, for all facilities included in consolidation perimeter.
Water discharge quality data-quality by standard effluent parameters	76-100	EDP monitors these indicators according with the environmental permit and other legal requirements. Water indicators (withdrawals, discharges and consumption) for EDP Group are published in our Annual Report and subject to independent third party verification with reasonable assurance level, for all facilities included in consolidation perimeter.
Water consumption- total volume	76-100	EDP monitors these indicators according with the environmental permit and other legal requirements. Water indicators (withdrawals, discharges and consumption) for EDP Group are published in our Annual Report and subject to independent third party verification with reasonable assurance level, for all facilities included in consolidation perimeter.

Further Information

Module: Response

Page: W6. Governance and Strategy

W6.1

Who has the highest level of direct responsibility for water within your organization and how frequently are they briefed?

Highest level of direct responsibility for water issues	Frequency of briefings on water issues	Comment

Highest level of direct responsibility for water issues	Frequency of briefings on water issues	Comment
Board of individuals/Sub-set of the Board or other committee appointed by the Board	Scheduled-quarterly	Rui Teixeira is the member of EDP's Corporate Executive Board with formal responsibility over electricity generation and sustainability issues, including water.

W6.2

Is water management integrated into your business strategy?

Yes

W6.2a

Please choose the option(s) below that best explains how water has positively influenced your business strategy

Influence of water on business strategy	Please explain
Establishment of a clear water strategy	In 2012, EDP published its corporate Water Management Policy and accompanying commitments and strategy. This has allowed the company to align processes and people towards a more sustainable water management, delivering strategic and operational benefits. At a strategic level, water related risks (e.g. physical risks like exposure to water stress locations or regulatory risks like new water taxes or fees) are now subject to periodic assessment processes, contributing to the company's low risk profile. At an operational level, under the Corporate Environmental Management System, EDP now sets water management improvement actions that contribute to a more efficient asset operation and reduced operational costs.
Water resource considerations are factored into location planning for new operations	All EDP new investments go through a detailed analysis in which key sustainability factors are integrated, including those related to water. For new electricity generation projects, analysis considerers water dependency vs exposure to water stress locations, as well as water related regulatory and reputational risks, namely those arising from competitive uses. For new hydroelectric installed capacity, project investment analysis undergoes hydro resource evaluation encompassing scenario

Influence of water on business strategy	Please explain
	analysis of price volatility and changes due to volume fluctuations.

W6.2b

Please choose the option(s) below that best explains how water has negatively influenced your business strategy

Influence of water on business strategy	Please explain
Other: Increased costs and limitations to operation due to severe drought	In Brazil, the extreme drought context of recent years (2014 drought is considered the worst in over 80 years), forced power producers to meet their short positions through electricity purchases at high market spot prices. EDP has hydroelectric generation assets in that country and joined the hydro risk renegotiation deal (with retroactive effects to January 2015) proposed by the Brazilian regulator, which materially limits the level of risk associated to the volatility in hydro generation. We also operate a thermal power plant in the country, in Ceará State, a water stress region, where we face potential limitations to operation due to increasing competitive water uses and increased costs due to rising water tariffs and taxes. EDP is implementing a water management programme to increase the plant's water efficiency and is actively engaging with local authorities on water regulation and taxation. We are currently expanding to Brazil our detailed risk identification and quantification analysis on the potential impact on our generation activities of long term structural reduction in precipitation due to climate change.

W6.2c

Please choose the option that best explains why your organization does not integrate water management into its business strategy and discuss any future plans to do so

Primary reason	Please explain

W6.3

Does your organization have a water policy that sets out clear goals and guidelines for action?

Yes

W6.3a

Please select the content that best describes your water policy (tick all that apply)

Content	Please explain why this content is included
Publicly available Company-wide Performance standards for direct operations Incorporated within group environmental, sustainability or EHS policy Acknowledges the human right to water, sanitation and hygiene Other: Water risk assessment	EDP Group's Water Management Policy is publicly available on our website and widely shared with stakeholders via complimentary media. It covers all our activities, worldwide, and sets requirements for our direct operations, aiming to improve water management towards an efficient use of all facilities without significant impact on their surroundings. The commitments set out in the policy are incorporated in EDP's Sustainable Development Principles and Environmental Policy. In addition, the Water Management Policy is part of the scope of our Environmental Management Systems. The policy explicitly states its aim to contribute to the worldwide goal of promoting access to drinking water and acknowledges access to water as a fundamental and universal human right. Our water policy and strategy explicitly supports the identification and assessment of water-related risks in all business phases and its integration in corporate decision-making. EDP's Water Management Policy does not set performance standards for suppliers, since water-related supply chain risks are not considered relevant. However, our commitments and guidelines do include encouraging sustainable water use in EDP Group's supply chain as well as the development of initiatives to share water management best practices in the supply chain. The policy does not address customer education on water as EDP does not provide water-related products.

W6.4

How does your organization's water-related capital expenditure (CAPEX) and operating expenditure (OPEX) during the most recent reporting year compare to the previous reporting year?

Water CAPEX (+/- % change)	Water OPEX (+/- % change)	Motivation for these changes
-12.0	-3.8	CAPEX reduction was mainly due to the conclusion of construction works of hydropower plants in Portugal and Brazil: Baixo Sabor, Salamonde II, Cachoeira Caldeirão. These plants entered in operation in 2016. OPEX reduction is not material.

Further Information

Page: W7. Compliance

W7.1

Was your organization subject to any penalties, fines and/or enforcement orders for breaches of abstraction licenses, discharge consents or other water and wastewater related regulations in the reporting year?

No

W7.1a

Please describe the penalties, fines and/or enforcement orders for breaches of abstraction licenses, discharge consents or other water and wastewater related regulations and your plans for resolving them

Facility name	Incident	Incident description	Frequency of occurrence in reporting year	Financial impact	Currency	Incident resolution

W7.1b

What proportion of your total facilities/operations are associated with the incidents listed in W7.1a?

W7.1c

Please indicate the total financial impacts of all incidents reported in W7.1a as a proportion of total operating expenditure (OPEX) for the reporting year. Please also provide a comparison of this proportion compared to the previous reporting year

Impact as % of OPEX	Comparison to last year

Further Information

Page: W8. Targets and Initiatives

W8.1

Do you have any company wide targets (quantitative) or goals (qualitative) related to water?

Yes, targets only

W8.1a

Please complete the following table with information on company wide quantitative targets (ongoing or reached completion during the reporting period) and an indication of progress made

Category of target	Motivation	Description of target	Quantitative unit of measurement	Base-line year	Target year	Proportion of target achieved, % value
Other: Leakage control	Water stewardship	Control of potable water consumption in the thermal power plants in Portugal to minimize leakages through early action.	Other: < 25 thousand m3	2016	2016	100%
Reduction in consumptive volumes	Water stewardship	11.4% reduction of potable water consumption in the Castejón Thermal Power Plant Building through low water consumption diffusers on taps and shower heads.	% reduction of water sourced from municipal supply	2015	2016	100%
Reduction in wastewater	Water stewardship	20% decrease of wastewater in the wastewater treatment plant of Castejón Thermal Power Plant due to an additional regeneration line of cationic resins.	% reduction per unit of production	2015	2016	100%
Reduction in consumptive volumes	Water stewardship	Establishment of an absolute maximum value for freshwater consumption used in the water-steam circuits for all thermal power plants in Portugal.	Other: < 3,156 million m3	2016	2016	100%
Reduction in consumptive volumes	Water stewardship	25% reduction target of freshwater from the Castelo de Bode dam reservoir to the Water Treatment Facility, through the installation of a level control device in a water tank.	% reduction of water sourced from surface water	2015	2016	100%
Reduction in consumptive volumes	Water stewardship	For all facilities in EDP Brasil, be it officies or production/distribution facilities, a 2% reduction in water consumption each year, between 2015-2020, was established.	Other: % total water reduction from several sources	2015	2016	100%

W8.1b

Please describe any company wide qualitative goals (ongoing or reached completion during the reporting period) and your progress in achieving these

Goal	Motivation	Description of goal	Progress

W8.1c

Please explain why you do not have any water-related targets or goals and discuss any plans to develop these in the future

Further Information

Module: Linkages/Tradeoff

Page: W9. Managing trade-offs between water and other environmental issues

W9.1

Has your organization identified any linkages or trade-offs between water and other environmental issues in its value chain?

Yes

W9.1a

Please describe the linkages or trade-offs and the related management policy or action

Environmental issues	Linkage or trade-off	Policy or action
GHG emissions and natural watersheds conservancy	Trade-off	Hydroelectric generation is an important source of renewable, non-air polluting, CO2 free electricity, and is a relevant part of the electricity sector's key role in the transition to a low carbon economy. Currently, over 70% of EDP's generation portfolio is based on renewable sources, with hydro making up to 30% of total installed capacity. Under our 2016-2020 Business Plan we will invest € 1.4 bn/year, 70% of which on new renewable generation installed capacity. 30% of the new generation capacity will be hydroelectric power plants. However, hydro generation (in particular through reservoir power plants) requires land flooding and changes the river's natural freshwater systems from lotic to lentic. Depending on specific ecosystem conditions, these changes can have a potential negative impact on local biodiversity. EDP has a comprehensive programme to monitor, mitigate and compensate these impacts, in all geographies where it operates hydro generation assets (Portugal, Spain and Brazil). A corporate Biodiversity Report is published every two years, disclosing actions and results. In-depth impact assessment studies are conducted previous to construction of new projects and we are also involved in several research and development projects, such as that associated with the Baixo Sabor Dam (Portugal), that became a Long-term Ecological Research Site, to help science better understand the long-term impacts of such an infrastructure and inform future decision making.

Further Information

Module: Sign Off

Page: Sign Off

W10.1

Please provide the following information for the person that has signed off (approved) your CDP water response

Name	Job title	Corresponding job category

Name	Job title	Corresponding job category
Rui Teixeira	Member of EDP's Corporate Executive Board.	Board/Executive board

W10.2

Please indicate that your organization agrees for CDP to transfer your publicly disclosed data regarding your response strategies to the CEO Water Mandate Water Action Hub.

Note: Only your responses to W1.4a (response to impacts) and W3.2c&d (response to risks) will be shared and then reviewed as a potential collective action project for inclusion on the WAH website.

By selecting Yes, you agree that CDP may also share the email address of your registered CDP user with the CEO Water Mandate. This will allow the Hub administrator to alert your company if its response data includes a project of potential interest to other parties using water resources in the geographies in which you operate. The Hub will publish the project with the associated contact details. Your company will be provided with a secure log-in allowing it to amend the project profile and contact details.

Yes

Further Information

CDP 2017 Water 2017 Information Request