Water Disclosure Project 2013

Information Request

0. Introduction to the document

EDP responds to the Water Disclosure Project since 2010. This activity has enabled us to streamline the available data and reflect upon our water management strategy, targets and projects.

We attach a pdf file in order to provide a more friendly working version.

Please feel free to give us your feedback on any issue (luisa.serra@edp.pt).

0. Introduction to WDP

Please give a general description and introduction to your organization

Following our full disclosure policy, all information about EDP - Energias de Portugal (EDP) can be accessed in www.edp.pt. In addition, EDP strongly recommends the consultation of the 2012 Annual Report.

EDP is a vertically integrated utility company. EDP is the largest generator, distributor and supplier of electricity in Portugal, the third largest electricity generation company in the Iberian Peninsula, and one of the largest gas distributors in the Iberian Peninsula.

EDP is also the third largest wind power operator worldwide with facilities for renewable energy generation in the Iberian Peninsula, the United States, Brazil, France, Belgium, Poland, Romania and Italy. The company is also developing wind farms in the UK and Canada. Additionally, EDP carries out activities of electricity generation, distribution and supply in Brazil and energy generation from solar photovoltaic in Romania.

EDP has a relevant presence in the world energy outlook, being present in 13 countries, with more than 9.8 million electricity customers and 1.3 million gas supply points and over 12,000 employees around the world. On December 31, 2012, EDP had an installed capacity of 23.4GW, generating 54.7TWh, of which 60% comes from wind and hydro plants.

EDP Group includes:

- EDP Produção – The generation company in Portugal

- EDP Distribuição – The electrical distribution in Portugal

- EDP Gás – The natural gas distribution company in Portugal

- EDP Renováveis – The wind power company worldwide

- HC Energia – The generation company in Spain

- Naturgás energia - The natural gas distribution company in Spain

2012 main figures:	
Turnover	16,340 EUR Million
Gross Operating Profit	3,628 EUR Million
Net profit	1,012 EUR Million
Net assets	42,628 EUR Million
Equity	11,432 EUR Million
Net debt	18,233 EUR Million
ISIN	PTEDP0AM0009
SEDOL	4103596
Employees	12,382

EDP's vision is to be a global energy providing company, leader in creating value, innovation and sustainability.

EDP's values are: initiative, innovation, trust, excellence and sustainability. EDP is strongly committed with Sustainability, People, Results, and Clients. In terms of water management EDP is committed to promote its sustainable use and consumption.

0. Reporting year

01.01.2012 – 31.12.2012

0. Currency selection

Euro

Water Management and Governance

1. Water management and governance

1.1 Does your company have a water policy, strategy or management plan?

Yes.

1.1a Please describe your policy, strategy or plan, including the highest level of responsibility for it within your company and its geographical reach

Country or region	Description of Policy, Strategy or plan	Position of responsible person
Company-wide	Part 1 The aim of the EDP Group's Water Management Policy is to contribute to the worldwide goal of promoting access to drinking water. Hence, the EDP Group acknowledges that: 1. Access to drinking water is a fundamental and universal human right; 2. Water is a natural resource that is irreplaceable in environmental, social and economic terms, and it should be protected, safeguarded and managed according to its unique value; 3. The pressures arising from human activities affect the quality and availability of water, impacting on ecosystems and, consequently, on human welfare; 4. Water is a key resource for the generation of electricity. The sector could be significantly affected by water scarcity, constraints on its use or local consumption. Commitments The EDP Group makes the following commitments in its activities, which are embodied in the EDP Sustainable Development Principles and in the particular context of its Environmental Policy: 1. Promote efficiency and continuous improvement of the sustainable management of water and its use in all processes and operations; 2. Include water use risk management in corporate decision-making; 3. Incorporate the need for sustainable water management in the corporate culture; 4. Publish the water management strategy and ensure the regular and transparent reporting of the results; 5. Actively work with all stakeholders to promote mechanisms that foster sustainability in water management; 6. Encourage sustainable water use in the EDP Group supply chain. Note - the Policy was divided in 2 parts due to text length restrictions.	Board/Executive board
Company-wide	Part 2 Water Management Strategy The EDP Group has established the following guidelines to put into practice the Water Policy: 1. Quantify and monitor water use and consumption in the company as well as the possible impact on the surrounding environment of such water use, with the aim of improving performance; 2. Assess and report the company's water footprint, analysing it against water availability in the local environment; 3. Identify and assess key risks for the Group regarding water use and consumption at all business phases;	Board/Executive board

	4. Set goals related to efficient water management for electricity generation; 5. Define goals related to water use other than those of energy generation, particularly those originating wastewater; 6. Promote the implementation in the Group of the best international practices associated with water use and consumption in electricity generation; 7. Foster awareness raising among employees of sustainable water use and support initiatives to encourage water saving;	

1.1b Does the policy, strategy or plan specifies water-related targets or goals?

Yes.

1.1c Please describe these water-related targets or goals and the progress your company has made against them.

Country or region	Category of target or goal type	Description of target or goal	Progress against target or goal
Portugal	Direct operations	Lares power plant Develop nature conservancy actions to prevent the pollution caused by the discharged effluent.	Objective fulfilled
Portugal	Direct operations	Ribatejo power plant Develop nature conservancy actions to prevent the pollution caused by the discharged effluent.	Objective fulfilled
Portugal	Direct operations	Cávado-Lima river basin - Penide hydropower plant - Installation of oil separators equipment in the transformers	Objective fulfilled
Portugal	Direct operations	Cávado-Lima river basin - Andorinhas hydropower plant - Improve operating and maintenance conditions of water gates to avoid spills.	Objective fulfilled
Portugal	Direct operations	Douro river basin - Picote, Bemposta and Pocinho hydropower plants – Improve and install domestic wastewater treatment systems.	Objective fulfilled
Portugal	Direct operations	Tejo-Mondego river basin - Caldeirão hydropower plants – Apply the ecological flows established by law	Objective fulfilled
Portugal	Direct operations	Tejo-Mondego river basin - Bouçã hydropower plants – Improve the control of oil spills from the main transformers	Objective fulfilled
Portugal	Direct operations	Ribatejo power plant Replace the use of hydrazine till 31/12/2012	Objective fulfilled
Brazil	Direct Operations	Implementation of projects and programs that aims to reduce, in a continuous improving basis, the consumption of water.	Historical data shows that the water final consumption per employee has decreased in the past 3(three) years for some business units. For example, in EDP Bandeirante the decrease was from 39 to 30.9 m3 per employee, respectively in 2010 and 2011. For Energest the change was from approximately 157 to 88 m3 per employee from 2010 to 2011, and this number was kept in 2012.

			In absolute terms, water consumption decreased from 2010 to 2011, but it increased from 2011 to 2012. It is important to consider that new plants were acquired and started to operate.
Spain	Direct operations	Aboño power plant Reduction of water supplied use. Savings of 76,827 m3 in 2012 in comparison to 2011.	Objective fulfilled
Spain	Direct operations	Aboño power plant Reuse of water in the FDG. Savings of 229,969 m3 in 2012 in comparison to 2011.	Objective fulfilled
Spain	Direct operations	Aboño power plant Reuse of water for cooling. Savings of 1,524 m3 in 2012 in comparison to 2011.	Objective fulfilled
Spain	Direct operations	Hidro power plants Reduction of water pollution due to oils spills.	Objective fulfilled
Spain	Direct operations	Hidropower plants Substitution of oil by biodegradable oil.	Objective fulfilled
Spain	Direct operations	Hidropower plants Substitution of oil by biodegradable oil in risk situations of oil spill Since the beginning of the project 61% of the situations have been solved.	Objective fulfilled

1.2 Do you wish to report any actions outside your water policy strategy or plan that your company has taken to manage water resources or engage stakeholders in water-related issues?

Country or region	Category of target or goal type	Description of Action and outcome
worldwide		EDP has a Corporate Environmental Policy that is transversal throughout the company and includes all the significant environmental aspects. The Corporate Environmental Policy states "Constantly improve environmental performance" that includes sustainable water management. EDP considers having a significant impact on water resources, namely in the thermal and hydro production assets, so EDP manages water issues in such a way that minimises this impact. This good management is validated by the ISO 14001 and the EMAS certification, both applying the continuous improvement management approach. EDP has water management plans in most of its production assets. By the end of 2012 EDP had world wide76% of its installed capacity certified by ISO 14001, with 91% in Portugal, 97% in Spain and 70% in Brazil EDP Group had also 41% of its installed capacity with EMAS registration EDP has an Environmental Management System applied to corporate management of environmental policies and strategic environmental plans, environmental information and performance of EDP Group organizations that guarantees the adequate management of all relevant environmental aspects, including water issues. Main outcomes: Reduction of water use and consumption Reduction of operating costs
Portugal	Direct operations	Thermal and hydro production - EDP Produção: EDP Produção activities includes the project, construction, exploitation and decommissioning of power plants. All these actions are developed in full compliance with the law and with all the voluntary commitments assumed by EDP such as water use reduction. For new plants, during project phase, EDP incorporates the corporate environmental practices and ensures that the minimization and compensation measures stated by the Environmental Impact Declaration (issued by the environment competent authorities) are effectively implemented. In addition, best (voluntary) practices are added to the project guaranteeing that it will have a good

		environmental performance. Main outcomes: Reduction of water use and consumption Reduction of energy consumption Reduction of operating costs
Portugal	Direct Operations	Examples of good voluntary practices: – In normal operation conditions there are actions regarding the internal control aiming to demonstrate the compliance with legal limits on surface and ground water abstractions. The restrictions covers the water used in cooling and/or process, the discharged effluent volume and quality, and the quality of water body. The water body is monitored with a monthly periodicity. – Depending on the installation characteristics and associated infrastructures, the groundwater quality is also monitored through piezometers. – In Lares power plant, the industrial water supply is a mixture of water from the channel and reused water from: final wash of the treatment sand filters and mixed bed exchangers; the recirculation of mixed bed exchangers (when the water does not achieve the minimum requirements to be send to the demiwater tank, namely high conductivity); good quality condensate and boiler blow down water. The first two are sent to the water treatment plant and the last one is sent to the service water tank. - – In Sines power plant, the boiler slag extraction wet system was replaced by a dry system. One of the main objectives of this substitution was the reduction of water use. The substitution process began in 2004 and ended in 2008. Consequently, the water use associated with the original system, around 532,000 m3/year, was eliminated. Some other environmental, operational and maintenance advantages of this substitution are: cessation of mud production in the liquid effluent treatment installation; cessation of product consumption associated with the hopper water treatment (44 ton/year); reduction of costs associated with the cleaning of the area Main outcomes: Reduction of water use and consumption Reduction of energy consumption Reduction of operating costs
Portugal	Direct Operations	For the distribution activities, there is a special procedure regarding spills. This obliges the communication of spills occurrences within 24 hours to the company environmental department and establishes all the adequate actions to mitigate its impact. The outcome is: Prevention and minimisation of spills impact on the environment
Spain	Direct Operations	HC Energía - Generation and distribution company in northern Spain: *Aboño power plant (Gijon):* (1) Improvement of the Aboño 1 hopper, through the optimization of valves, the plant uses less treated and potable water, (2) Reduction of water use in about 55 000m3/month in the Aboño 2 desulphurization (3) Improvement of water circulation systems for Aboño 1 and 2 (4) Sea water desalinization (5) Recuperation of purge water *Soto de Ribera power plant (Oviedo):* (1) Reuse of harvested rainwater for irrigation (2) Continuous chlorination of the cooling water, preventing water spills. Main outcomes: Reduction of water use and consumption Reduction of energy consumption Reduction of operating costs
Brazil	Direct Operations	An environmental evaluation is made during the viability studies phase for the hydropower plants. In this phase the surface and ground water quality parameters are evaluated. During construction phase the impacts are monitored, and minimization measures are taken, essentially focused on water quality. During operation the water quality and quantity are regulated by the plant operating license, including the establishment of monitoring programs.
Spain and	Other:	In October 2011, an internal working group was created to implement EDP's water policy

Portugal	Water regulatory risk	throughout the company, including the assessment of EDP's water management, the impact of the EU Water Framework Directive on the business, Climate Change impact on water, multi-purpose uses in EDP's dams, among others. Main outcomes: - Control of costs - Mitigation of physical risk - Mitigation of regulatory risk
Worldwide	Community engagement	Econnosco program, an initiative for EDP employees. This programme involves reduction in electricity and water consumption in EDP's office buildings, waste management and the creation of a Sustainability Ambassador – a volunteer employee who encourages sustainability measures in his/her workplace. From 2006 till 2009, in Portugal, the program resulted in a 32% reduction of water use in buildings. Main outcomes: Reduction of water use and consumption Reduction of energy consumption
Worldwide	Public policy	EDP participates in several policy fora, such as BCSD-GT Agua, WBCSD and the European Water Partnership Initiative. Main Outcome: Open discussion of EDP positions and interests on water use, management and sustainability.
Brazil	Direct Operations	All the information regarding water use is collected and mapped annually allowing the analysis of its impacts and mitigation measures. All the actions regarding disposal of wastewater are monitored in order to prevent the pollution of the water bodies. Main Outcomes: Provision of streamlined information for annual reports (GRI, Internal Environmental Systems) Monitoring and assessment of the actions implemented to increase responsible use of water within the Group Reduction of operating costs.
Brazil	Supply Chain	Currently, all environmental aspects are approached by the Index for Supplier Development (Índice de Desenvolvimento do Fornecedor) applied for whole company. The Company is implementing a Supply Chain Management Project which aims to ensure their environmental good practices, including water management, whenever applicable to the suppliers´ context. Outcomes: The enhancement of criteria to select supplier will help the Company to keep track of direct and indirect impacts of its activities, ensuring that its sustainability policies and guidelines are applied within all its partners. This will also raise awareness about importance of water management, and will definitely engage stakeholders. Currently, no question regarding water is used as criteria for the selection of suppliers.
Brazil	Watershed and River Basin Management	All the business units keep diagnosis regarding biodiversity levels and characteristics that are affected by water disposal and draining, monitoring eventual adverse impacts that can either impact the Company or the local communities and ecosystems. Biodiversity indicators are monitored and reported annually. Outcomes: Awareness about environmental and socioeconomic characteristics of the geographies and support for development of Action Plans to enhance water management and ecosystems quality, which is essential for better efficiency of Company´s operation (say, in a Hydro Power Plant, water quality is important for fishes which are important for avoiding operational losses in the turbines)
Brazil	Community Engagement	The Company carries on Environmental Education Programs that aims to raise awareness about correct use of the water and ecosystem services that can impact the river basin, including orientations regarding fishing practices, and water quality and use. The Company conducts campaigns to avoid the fishing during the Piracema (is the name given to the period of the year when fish within the Paraguay River drainage basin reproduce). Outcomes: The community engagement is important for the Company, because it generates acceptance about the projects. For instance, in the region of Pecem Thermal Power Plant, it is important to establish a solid and positive relationship with local communities. No actions undertaken by the Company will have positive impacts, unless communities are aware of the importance of their own actions and their impact on water resources. Moreover, most of the programs bring more levels of acceptance, and based on best practices in Brazil, it is expected that

		the regions become more developed economically, bringing better results for the companies. Examples: In 2012, HPP Eduardo Magalhães celebrated the Water Day, and promoted an event to increase awareness of community. More than 500 members of community participated on the event. The HPP Peixe Angical, located in the State of Tocantins, supported the community investing in the management of water infrastructure and providing water for people consumption in the local communities.
Portugal	Watershed management	Through its biodiversity Fund EDP has supported a national conservation plan for the river lamprey and Brook Lamprey. This work has allowed to: - Confirm the high threat status of the species Develop an explanatory predictive statistical model identifying environmental parameters conditioning the distribution of the species Define classification criteria for priority water courses conservation
Portugal	Watershed management	Through its biodiversity Fund EDP has supported a project for Research, conservation and dissemination of biodiversity in temporary ponds.
Portugal	Watershed management	Through its biodiversity Fund EDP has supported an Atlas of riparian vegetation in mainland Portugal
Portugal	Watershed management	Through its biodiversity Fund EDP has supported a project for Research about biodiversity, endemism and protected species associated with lagoons and watercourses in Serra da Estrêla.
Portugal	Watershed management	Through its biodiversity Fund EDP has supported a research project – ECOFLOW – about the ecological effect of the hydrological system on the fish community in Portuguese rivers.

Risks and Opportunities

RISKS INDICATORS

Operations

2.1 Are any of your operations located in water-stressed regions?

Yes.

2.1a Please specify the method(s) you use to characterize water-stressed regions.

Method	Please add any comments here:
Global Water Tool	The WBCSD Global Water Tool is a tool developed by the WBCSD aiming to help companies to access which of their assets are located in water stress areas or in countries that lack access to improved water and sanitation, and which of its suppliers are in water stress areas.

2.1b Please list the water-stressed regions where you have operations and the proportion of your total operations in that area.

Country	Region within country	Proportion of operations located in this region (%)	Further comments
Spain	Murcia	0-10	Only one site of EDP Group is located in water stress area. It is a small co-generation plant, Central de La Sierra de Tercia, located in Murcia, Spain. This plant represents 0.08% of installed capacity 0.28% of production in 2012 and 0.0033% of total water withdrawals. The main objective of this plant is to use the residues of the local pork industry. This industry produces effluents that have a strong pollutant load and are subject to stringent environmental legislation that drives either the effluent reuse either its treatment. The La Sierra de Tercia Plant was built to treat these effluents. Since the plant is in a water stress region, it was built using the best water saving technologies and processes, such as the reuse of condensates from the effluent treatment, and the reuse of part of the purge in the irrigation of adjacent fields.

2.2 Are there other indicators (besides water stress) which you wish to report which help you to identify which of your operations are located in regions subject to water-related risk?

No.

2.2a Please list the regions at risk where you have operations, the relevant risk indicator and proportion of your total operations in that area.

Na.

2.2.

All other operations are acknowledged to be in regions without water stress.

2.3 Please specify the total proportion of your operations that are located in regions at risk which you identified in questions 2.1 and/or 2.2?

0,28% of electrical production.

2.4 Please specify the basis you use to calculate the proportions used for questions 2.1 and/or 2.2

Basis used to determine percentage	Please add comments here
Production volumes	Only one site of EDP Group is located in a water stressed area. It is a small co-generation unit, located in Murcia, Spain, representing 0,08% of installed capacity, 0.28% of production in 2012, and 0.0036% of total water withdrawals.

Supply Chain

2.5 Do any of your key inputs or raw materials (excluding water) come from regions subject to water related risk?

Do not know.

2.5.b You may explain n here why you are not able to identify if any of your key inputs or raw materials come from regions subject to water-related risk and whether you have plans to explore this issue in the future.

EDP is developing an internal tool to identify the risks to sustainable development existing in the supply chain. Although the direct link of raw materials regions to water related risks is not yet possible, during 2011 EDP examined the impact of different risks in the different supply chain categories, along with its significance, and the adequacy of the current monitoring/mitigation practices in place. In the Environment Section, water related risks were considered, namely water stress and the production of polluted effluents.

EDP also participates in a working group promoted by the Achilles Company, in which an inquiry is being developed for companies to allow for a better identification and understanding of supply chain related risks, in which water is also considered.

Although we cannot estimate proportion, we already Identified relevant Supply Categories with potential water related risks: 1) Primary energy supply such as Coal, gas; oil and refined oil products; 2) Construction, Civil engineering and related services.

3 Risk Assessment

Operations

3.1 Is your company exposed to water-related risks (current or future) that have the potential to generate a substantive change in your business operation, revenue or expenditure?

Yes.

3.1a Please describe (i) current and/or future risks to your operations, (ii) the ways in which these risks affect or could affect your operations before taking action, (iii) the estimated timescale of these risks and (iv) your current or proposed strategies for managing them

Country or geographical description	Risk Type	Potential business impact	Timescale (years)	Risk management strategies
Iberia	Regulatory - other	The purpose of the Water Framework Directive is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater which: (a) prevents further deterioration and; (b) promotes sustainable water use based on a long-term protection of available water resources; (c) aims at enhanced protection and improvement of the aquatic environment; (d) ensures the progressive reduction of groundwater pollution, and (e) contributes to the mitigation of the effects of floods and droughts. The Directive will most probably impact on EDP hydropower plants through stringent constraints on: - Ecological flows - Flood and cleaning discharges - Hydropeaking - Sediment management - Working regime - Water body physical, chemical and ecological quality. These restrictions will probably impact EDP cash flow generation.	Current	In Portugal EDP is represented in the relevant River Basin Councils. These are advisory boards in which all the water users (consumers and non-consumers) are represented amongst many others (government, universities, etc.). This allows EDP to proceed with a close follow up of the activities of the national water management authorities. In Spain EDP closely follows up the activities of the national and regional water management authorities. In 2012 EDP created a working group on water issues in which the main questions regarding water are addressed, from water related risks (physical, regulatory, social, among others) to opportunities to operational efficiency, and so on.
Portugal	Physical: Declining water quality	These risks can occur at Ribatejo and Lares power plants. Decrease or even interruption of the steam generators production, as a consequence of shortcomings in cooling water.	Current	(1) Optimization of continuous monitoring of water quality; (2) Increase the frequency of routine inspections and tests in the critical seasons of the year, namely, spring and summer; (3) Prepare/ensure alternative supply sources for demineralization water process.
Portugal	Physical: Declining water quality	These risks can occur at Sines power plant. Water degradation/contamination by turbidity changes with possible impact on the water pre-treatment necessary for demineralized water production. Algae presence with strong affluence, which can largely affect water pumping equipments and cooling capacity. These risks have a direct negative impact on power plant availability for electricity production, thus impacting the cash flow generation.	Current	(1) Development and use of a algae growing model to identify abnormal algae concentration situations; (2) Implementation of algae detection equipment, in order to minimize impact on the critical periods; (3) Installation of grid cleaning systems, and algae retention systems; (4) Definition of alternative origins for demineralized water.
worldwide	Physical: Flooding	Floods caused by local hydrological conditions and rising sea levels affect the accessibility and/or impact the operations of EDP's infrastructures such as offices, electricity distribution lines or gas distribution pipelines.	Current	EDP manages these risks either through direct corrective actions on its assets or by preventive measures. The direct actions include: - In a new power plant exposed to river overflow – Ribatejo -the equipments were placed at a higher height - In hydropower plants the floodgates circuits were duplicated and in diesel emergency groups were placed in flood protected sites, etc.). The preventive measures are based on using all the relevant information

				to anticipate the floods: - Access to meteorological forecasts, - A dedicated communication channel with the civil protection authorities - Annual detailed equipment maintenance plan - Companies' and sites' emergency plans - "All risks" insurance - Environmental liability insurance - Civil responsibility insurance The concern with physical risks which may affect EDP, including water related risks, is transversal throughout the company. In Portugal, Spain, and Brazil most of the assets are ISO 14001 and EMAS certified, thus guaranteeing that risks related with extreme events and water scarcity are identified and mitigated. In response to physical risks which include water related risks, EDP's hydropower plants are designed to support what is technically named "the flood of the millennium". Also, all plants have emergency plans that are fully operational and address all events that might disrupt normal operation, some of them water related. Water related risks to assets and losses are mostly covered by a range of insurances for the Group's assets in operation, so the maximum risk cost incurred is mostly transferred out of the EDP Group (except for partial revenue losses). Also, EDP has a captive insurance policy (Energia RE, based in Luxembourg) for sharing Group's small losses (below external insurance deductibles) and to give direct access to reinsurance market.
Iberia	Increase water stress	(1) Water stress can reduce water availability for power plant cooling systems (2) water stress can reduce water availability for hydro power plants Both situations can reduce plant availability and production thus decreasing cash flow generation.	6-10	For new plants, during project phase EDP incorporates the corporate environmental best practices. In addition, best (voluntary) practices are added to the project guaranteeing that it will have a good environmental performance. As an example of good voluntary practices during project phase there is the Lares power plant, in which the industrial water supply is a mixture of water from the channel and the reused water from the final wash of the treatment sand filters and mixed bed exchangers; the recirculation of mixed bed exchangers (when the water does not achieve the minimum requirements to be sent to the demiwater tank, namely high conductivity); good quality condensate and boiler blow down water. The first two are sent to the water treatment plant and the last one is sent to the service water tank. In the exploitation phase there are actions aiming to reduce water use. Another action is at Sines power plant, the boiler slag extraction wet system was replaced by a dry system. One of the main objectives of this substitution was the reduction of water use. The substitution process began in 2004 and ended in 2008. Consequently, the water use associated with the original system, around 532,000 m3/year, was eliminated. Some other environmental, operational and maintenance advantages of this substitution are: cessation of mud production in the

				liquid effluent treatment installation; cessation of product consumption associated with the hopper water treatment (44 ton/year); reduction of costs associated with the cleaning of the area. Water stress in hydropower plants is managed through the reservoir dams that allow water stock.
Portugal	Physical declining water quality	Water contamination due to oil spill over from transformers.	Current	This risk is mitigated through the implementation of best practices, through the existing emergency procedures and through the construction of retention basins.

3.2 What methodology and what geographical scale (e.g. country, region, watershed, business unit, facility) do you use to analyze water-related risk across your operations?

Risk Methodology	Geographical scale
Global Water Tool	Facility

Currently EDP uses the Global Water Tool to access which facilities are under water stress. This tool produces upper-level data. In order to obtain more detailed data EDP within the Portuguese BCSD water working group is developing an "extension" of the Global water tool with more data and resolution.

Additionally EDP analyses water related risk in a qualitative approach per facility. EDP is also following the available methodologies in order to access which will be the most adequate.

Supply Chain

3.3 Do you require your key suppliers to report on their water use, risks and management?

No.

3.4 Is your supply chain exposed to water-related risks (current or future) that have the potential to generate a substantive change in your business operation, revenue or expenditure?

Yes.

3.4a Please describe (i) the current and/or future risks to your supply chain, (ii) the ways in which these risks affect or could affect your operations before taking action, (iii) the estimated timescale of these risks, and (iv) your current or proposed strategies for managing them.

Country or geographical reach	Risk type (to supplier)	Potential business impact (to responding company)	Estimated timescale (years)	Risk management strategies (to responding company)
Colombia	Water scarcity	Coal mining uses water. If there would be restrictions on water use this could cause an impact. If coal becomes scarce its price will increase, which will negatively impact EDP's cash flow	Unknown	(1) EDP has diversified fuel sources; (2) EDP has invested strongly on renewable (wind) thus reducing its exposure to fossil fuels.

Additional information

EDP is developing an internal tool to identify the risks to sustainable development existing in the supply chain. Although the direct link of raw materials regions to water related risks is not yet possible, during 2011 EDP examined the impact of different risks in the different supply chain categories, along with its significance, and the adequacy of the current monitoring/mitigation practices in place. In the Environment Section, water related risks were considered, namely water stress and the production of polluted effluents.

EDP also participates in a working group promoted by the Achilles Company, in which an inquiry is being developed for companies to allow for a better identification and understanding of supply chain related risks, in which water is also considered.

4 Impacts to business

4.1 Has your business experienced any detrimental impacts related to water in the past five years?

Yes

4.1a Please describe (i) these detrimental impacts, (ii) their financial impacts, and (iii) whether they have resulted in any changes to company practices.

Country	Impact indicator	Description of impact	Response strategy
Spain	Flooding	After the 2010 floods the Priañes hydropower plant was out of service for repair. The repair costs were approximately 1,2million euro and an outage period of several months.	The power plant was modified in order to mitigate the flood impact.

5 Opportunities

5.1 Do water-related issues present opportunities (current or future) that have the potential to generate a substantive change in your business operation, revenue or expenditure?

Yes.

5.1a Please describe (i) the current and/or future opportunities, (ii) the ways in which these opportunities affect or could affect your operations, (iii) the estimated timescale, and (iv) your current or proposed strategies for exploiting them.

Country	Opportunity Type	Potential business impact	Estimated timescale (years)	Strategy to exploit opportunity
Portugal	Sale of new products and services	Hidropower electricity production - The electric generation from hydropower plants increases EDP's cash flow. It is more interesting than producing electricity from fossil-fuel power plants.	Current	EDP is heavily investing in hydropower. In 2012 EDP concluded the works in Alqueva II (256MW of hydro reversible plant with reservoir), on-going construction of Baixo Sabor (172MW of hydro reversible plant with reservoir), Ribeiradio-Ermida (81MW hydro reversible plant with reservoir), Foz Tua (252MW hydro reversible plant with reservoir), repowering of Venda Nova III (756 MW hydro reversible plant with reservoir) and Salamonde II (207MW hydro reversible plant with reservoir); and development of other hydro plants in pipeline, up to 1GW capacity. Investments in new hydro named above represented about 450 million Euro in 2012.
Iberia	Cost savings	Cooling towers - Less water use will reduce operating costs if water use costs would increase.	Current	Closed water refrigeration circuits, with cooling towers, were adopted in the recently built Ribatejo and Lares combined cycle power plants. When compared to the conventional coal plant of Sines they are less water intensive because they use less water thus reducing the dependence on water availability. In Spain the Soto and Castejon power plants have closed water refrigeration circuits, with cooling towers
Portugal	Sale of new products and services	Reversible hydropower - Increases cash flow from operations.	Current	Reversible hydro power plants play a strategic role because they permit energy storage thus allowing for a better electrical system management.
Worldwide	Sales of new products and	EDP through its reservoirs provides many ecosystem	1-5 years	EDP has participated in projects to access ecosystem services and by now EDP has already the tools to

	services	services that have not yet been given value by the society. In a medium time frame EDP considers that this will happened, most likely as a result of the actual TEEB project. EDP has voluntarily participated in the CEV (Corporate Ecosystem Valuation) promoted by WBCSD.		proceed with an extended and thorough evaluation of the ecosystem services the company provides.

6 Managing trade-offs between water and carbon emissions

6.1 Has your company identified any linkages or trade-offs between water and carbon emissions in its operations or supply chain?

Yes.

6.1a Please describe the linkages or trade-offs and the related management policy or action.

Linkage or trade-off	Policy or action
Linkage	There is a direct link between water and CO2 emissions. This link mostly occurs through energy. Energy is consumed to transport and treat water, water is used to produce energy in hydropower plants, and it is also used in the thermal power plants as a cooling source. Energy has a direct link to CO2 since most of the energy used comes from fossil-fuel sources that emit CO2. GHG reduction systems in power plants, such as desulphurization systems cause an increase in water consumption. **Policy or action** - Reduce water and energy consumption; - Diversification of suppliers and of technologies. EDP has developed strategies to reduce its exposure to water and CO2 risks through water use/consumption saving measures such as: – - In Lares power plant, the industrial water supply is a mixture of water from the channel and reused water from: final wash of the treatment sand filters and mixed bed exchangers; the recirculation of mixed bed exchangers (when the water does not achieve the minimum requirements to be send to the demiwater tank, namely high conductivity); good quality condensate and boiler blow down water. The first two are sent to the water treatment plant and the last one is sent to the service water tank. - – In Sines power plant, the boiler slag extraction wet system was replaced by a dry system. One of the main objectives of this substitution was the reduction of water use. The substitution process began in 2004 and ended in 2008. Consequently, the water use associated with the original system, around 532,000 m3/year, was eliminated. Some other environmental, operational and maintenance advantages of this substitution are: cessation of mud production in the liquid effluent treatment installation; cessation of product consumption associated with the hopper water treatment (44 ton/year); reduction of costs associated with the cleaning of the area.
Trade off	In EDP's operations there are many trade-offs between water and CO2 emissions: - Water shortage on the hydropower plants will cause more energy production from thermal sources, thus generating more CO2 emissions; - Degradation of water quality causes more energy consumption in pre-treatments and pumping, thus causing more CO2 emissions. The above mentioned trade-offs also exist in EDP's supply chain, since some of the suppliers have a water intensive business. For example, the coal suppliers that use large amounts of water in the coal preparation plant. **Policy or action** - Reduce water and energy consumption; - Diversification of suppliers and of technologies. EDP has developed strategies to reduce its exposure to water and CO2 risks through water use/consumption saving

	measures such as: – - In Lares power plant, the industrial water supply is a mixture of water from the channel and reused water from: final wash of the treatment sand filters and mixed bed exchangers; the recirculation of mixed bed exchangers (when the water does not achieve the minimum requirements to be send to the demiwater tank, namely high conductivity); good quality condensate and boiler blow down water. The first two are sent to the water treatment plant and the last one is sent to the service water tank. - – In Sines power plant, the boiler slag extraction wet system was replaced by a dry system. One of the main objectives of this substitution was the reduction of water use. The substitution process began in 2004 and ended in 2008. Consequently, the water use associated with the original system, around 532,000 m3/year, was eliminated. Some other environmental, operational and maintenance advantages of this substitution are: cessation of mud production in the liquid effluent treatment installation; cessation of product consumption associated with the hopper water treatment (44 ton/year); reduction of costs associated with the cleaning of the area.

WATER ACCOUNTING

7 Withdrawals and recycling

7.1 Are you able to provide data, whether measured or estimated, on water withdrawals within your operations?

Yes.

7.1a Please report the water withdrawals within your operations for the reporting year

Country or region	River basin	Withdrawal type	Quantity (ML/yr)	Proportion of data that has been verified	Comments
Portugal		Surface water	1 166 726	100%	Thermal power plants Portugal
Portugal		Groundwater	125	100%	Thermal power plants Portugal
Portugal		Municipal water	3 015	100%	Thermal power plants Portugal
Portugal		Other	3 210	100%	Thermal power plants Portugal
Spain		Surface water	447 411	100%	Thermal power plants Spain
Spain		Municipal water	781	100%	Thermal power plants Spain
Spain		Other	1 143	100%	Thermal power plants Spain
Rest of the world		Groundwater	2	100%	Wind: Portugal, Spain, Brazil, EUA and others
Rest of the world		Municipal water	2	100%	Wind: Portugal, Spain, Brazil, EUA and others
Rest of the world		Other	1	100%	Wind: Portugal, Spain, Brazil, EUA and others
Spain		Municipal water	1	100%	Hydropower Spain
Brazil		Groundwater	2	100%	Hydropower Brazil
Brazil		Surface water	8	100%	Hydropower Brazil
Brazil		Municipal water	14	100%	Hydropower Brazil
Rest of the world		Groundwater	33	100%	Others
Rest of the world		Municipal water	199	100%	Others

7.2 Are you able to provide data, whether measured or estimated, on water recycling/reuse within your operations?

Yes.

Country or region	River basin	Quantity (megaliters/year)	Proportion of data that has been verified (%)	Comments
Spain	Norte	227	100	

7.3 Please use this space to describe the methodologies used for questions 7.1 and 7.2 or to report withdrawals or recycling/reuse in a different format to that set out above

The data was obtained directly through direct flow meter measures and indirectly through calculations using pump operation time.

7.4 Are any water sources significantly affected by your company's withdrawal of water?

No.

7.4.b You may explain why your company's withdrawal of water does not significantly affect any water sources.

The operation of electricity generation plants (gas and coal, cogenerations and hydro) includes the use or consumption of water. Water use occurs in the hydro power plants, in which water is turbinated, and in the thermal power plants, in which water is used in the condenser cooling circuits. Water is consumed in thermal power plants in the cooling towers, in all plants in the refilling of the water-steam circuit, and in some auxiliary systems such as pre-treatment systems.

All EDP power plants have been subjected to a licensing process in which the authorisation of the competent authorities has only been given when the plant's operation was compatible with the resource use and when it was granted that it would not cause any significant damage.

8 Discharges

8.1 Are you able to identify discharges of water from your operations by destination, by treatment method and by quality using standard effluent parameters?

Yes.

8.2 Did your company pay any penalties or fines for significant breaches of discharge agreements or regulations in the reporting period?

Yes

Country or geographical reach	River basin	Impact	Fines and penalties	Company action and outcomes
Spain	Norte	Accidental leak of fuel oil at Aboño power plant: Approximately 10 metric tons of oil reached the sea via the Aboño River. For more information about this event, please see page 66 of Annual	EUR 2,218 thousand	The emergency plan was activated and EDP proceeded with the cleaning works and recovery operational actions. Once the oil cleaning actions in the beaches were finished, further works were developed: - Clean-up of coastal rocks - Clean-up of man-made infrastructures such as sea ports walls All cleaning works were finished by November 2012. At the same time environmental studies were developed to

		Report 2012		ascertain the impact of the spilled oil in the ecosystem. These studies included chemical water and sediment analyses, biological monitoring, and impact on commercial fish captures. Oil spill dispersion and degradation studies were also performed. All these studies demonstrated that no significant environmental damage was caused by the oil spill. Additionally, a monitoring study is being implemented, encompassing similar parameters as the previous studies and it will continue till the end of 2013.

8.3 Are any water bodies and related habitats significantly affected by discharge of water or runoff from your operations?

Yes.

8.3a Please list any water bodies and associated habitats which are significantly affected by discharge of water or runoff from your operations

Country	Water body	Impact	Company action and outcomes
Portugal	Riparian zones	Impact on biodiversity, impact on river flow, impact on sediment transportation, etc.	EDP is developing measures to compensate the impacts resulting from the new hydropower plants.
Brazil	Riparian zones	Impact on biodiversity, impact on river flow, impact on sediment transportation, etc.	

Further information

9 Water intensity

9.1 Please provide any available financial intensity values for your company's water use across its operations

Country or geographical region	Financial metric	Water used type (megaliters)	Currency	Financial intensity (currency/Megaliters)	Please provide any contextual details that you consider relevant to understand the units or the figures you have provided
Portugal	Turnover	Water use in operations	Euro	138 751	Intensity unit - thousand litre per Euro The figure of water used for the calculation refers to our definition of water use. In Portugal this data includes: cooling water abstraction, raw water, and potable water. For more information please see Annual Report page 62.
Spain	Turnover	Water use in operations	Euro	93 832	Intensity unit - thousand litre per Euro The figure of water used for the calculation refers to our definition of water use. In Spain this data includes: cooling water abstraction, raw water, and potable water. For more information please see Annual Report page 62.
Brazil	Turnover	Water use in operations	Euro	29	Intensity unit - thousand liters per Euro The figure of water used for the calculation refers to our definition of water use. In Brazil this data includes: raw water and

					potable water.
USA	Turnover	Water use in operations	Euro	29	Intensity unit - thousand liters per Euro The figure of water used for the calculation refers to our definition of water use. In the USA EDP only has win power, and uses very low water quantities, only raw water and potable water.
RoW	Turnover	Water use in operations	Euro	3	Intensity unit - thousand liters per Euro The figure of water used for the calculation refers to our definition of water use. In the RoW EDP only has win power, and uses very low water quantities, only raw water and potable water.

9.2 Please provide any available water intensity values for your company's products across its operations

Country or geographical region	Product	Product unit	Water use type	Water unit	Water intensity (Water unit/Product unit)	Please provide any contextual details that you consider relevant to understand the units or the figures you have provided
Portugal	Electricity	GWh	withdrawals	Cubic meter	159 941	The figure of water used for the calculation refers to our definition of water use. In Portugal this data includes: cooling water abstraction, raw water and potable water. For more information please see Annual Report page 62.
Spain	Electricity	GWh	withdrawals	Cubic meter	77 270	The figure of water used for the calculation refers to our definition of water use. In Spain this data includes: cooling water withdrawal, raw water, and potable water. For more information please see Annual Report page 62.
Brazil	Electricity	GWh	withdrawals	Cubic meter	9	The figure of water used for the calculation refers to our definition of water use. In Brazil this data includes: raw water and potable water.
USA	Electricity	GWh	withdrawals	Cubic meter	1	The figure of water used for the calculation refers to our definition of water use. In the USA this data includes: raw water and potable water. EDP does not have thermal power plant in the USA, therefore cooling water is not included.
RoW	Electricity	GWh	withdrawals	Cubic meterr	0	The figure of water used for the calculation refers to our definition of water use. In RoW this data includes: raw water and potable water. EDP does not have thermal power plants in these areas, therefore cooling water is not included. For more information please see Annual Report page 62.