

# Investor CDP 2013 Information Request

## 0. Introduction to the document

EDP responds to the Carbon Disclosure Project since 2009. This activity has helped evolve upon our Climate Change knowledge, mitigation, adaptation, emissions strategy, targets and projects.

We hope that you enjoy reading our CDP answer as much as we have enjoyed doing it.

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

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

## 0. Introduction to CDP

Please give a general description and introduction to your organization

Following our full disclosure policy, all information about Energias de Portugal (EDP) can be accessed in [www.edp.pt](http://www.edp.pt). In addition EDP strongly recommends the consultation of the 2013 Annual Report.

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, 2013, EDP had an installed capacity of 23GW, generating 60.9TWh, of which 67% comes from wind and hydro plants.

### 2013 in short figures:

Turnover	16,103 EUR Million
Gross Operating Profit	3,617 EUR Million
Net profit	1,005 EUR Million
Employees	12,179
Net assets	42,650 EUR Million
Equity	11,529 EUR Million
Net debt	17,451 EUR Million
ISIN	PTEDPOAM0009
SEDOL	4103596

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 what regards Climate Change EDP is committed to reduce in a sustainable manner the specific greenhouse gas emissions of the energy it produces. EDP is also committed to promote energy efficiency and the access to energy.

**0. Reporting year**

01.01.2013 – 31.12.2013

**0. Country list configuration**

Please select the countries for which you will be supplying data. This selection will be carried forward to assist you in completing your response

Portugal

Spain

USA

Brazil

Rest of the world

**0. Currency selection**

Euro

# Management

## CC1. Governance

### Group and Individual Responsibility

1.1 Where is the highest level of direct responsibility for climate change within your company?

Individual/Sub set of the board or other committee appointed by the board.

*If an individual or committee is identified:*

1.1a. Please identify the position of the individual or name of the committee with this responsibility

#### **i. identify the job title of the individual**

Antônio Pita de Abreu the member of EDP's corporate executive board that has the responsibility upon Sustainability issues. He is an engineer with a long time experience in the company having worked many years in generation, distribution and overseas.

#### **ii. description of his position within the corporate structure**

Mr. Pita de Abreu is a member of EDP's Corporate Executive Board. He has responsibilities upon the following areas: sustainability, labor relations, IT, ethics and electric generation.

## Individual Performance

1.2 Do you provide incentives for the management of climate change issues, including the attainment of targets?

Yes

*If yes: 1.2a Please complete the table*

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator
Board/Executive Board	Monetary reward	EDP's performance in the Dow Jones Sustainability index that includes three performance vectors: economic, environmental and social. CO2 emissions reduction is included in the environmental vector. The methodology is based on the Dow Jones Sustainability Index. Depending on the Dow Jones Sustainability index performance the Board is entitled to a monetary reward.
Environment/sustainability managers	Monetary reward	EDP's performance in the Dow Jones Sustainability index that includes three performance vectors: economic, environmental and social. CO2 emissions reduction is included in the environmental vector. The methodology is based on the Dow Jones Sustainability Index. The employees entitled to this benefit are: <ul style="list-style-type: none"> <li>- The Corporate Sustainability Department</li> <li>- Members of Financial Control Department of EDP</li> <li>- Some colleagues from the BUs that collaborate with the corporate Sustainability Department.</li> </ul> Depending on the Dow Jones Sustainability index performance these employees are entitled to a monetary reward.
Employees EDP Brazil	Monetary reward	EDP Brazil's performance in ISE BOVESPA index that includes CO2 emission reduction in its environmental vector evaluation. All employees of EDP Brazil have this incentivized performance indicator factored into their individual KPI's. Depending on EDP Brazil's performance in ISE Bovespa all employees are entitled to a monetary reward.

## CC2. Strategy

### Risk Management Approach

2.1 Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities.

Integrated into multidisciplinary companywide risk management processes

*If “integrated into company-wide risk management process”, “a specific climate change risk management process”, or “a process that forms part of the company’s overall approach to governance/compliance” are selected:*

#### 2.1a Please provide further details on your risk management procedures with regard to climate change risks and opportunities

Frequency of monitoring	to whom are the results reported	Geographical areas considered	How far into the future are risks considered	Coment
Annually	Individual/Sub-set of the Board or committee appointed by the Board	Portugal Spain Brazil USA Rest of the World [RoW]	>6 years	<p>Climate Change risk being addressed in several approaches, namely its impact on investments, operation and future business.</p> <p>Investments – Investment in renewable energy always goes through a detailed resource evaluation encompassing scenario analyses. In hydro water availability is included in these scenarios.</p> <p>Operation – BU have access their exposure to Climate Change in the ClimEDP project that is going to be revisited during 2014</p> <p>Business – the Business plan published in 2014 has been subjected to scenario analyses that already include some of the CC effects, namely less water availability for hydro projects.</p> <p>Opportunities are identified at BU level by managers and its characterization is sent upwards.</p> <p>At corporate level several Departments also contribute to opportunity identification,: sustainability Dep, Energy Strategic Planning Dep., Marketing Dep., among others.</p>

#### 2.1b Please describe how your risk and opportunity identification processes are applied at both company and asset level

Company level:

EDP has a Corporate Policy on Enterprise-Wide Risk Management, that states: Principles, Structure and Governance and identifies all company departments that have responsibilities in risk management. This policy was issued by the Executive Board of Directors which decides about the company’s risk appetite and the acceptable level of risk exposure, it also delegates tasks and responsibilities, defines the overall risk limits and ensures that risk management policies and procedures are observed. The company has a Chief Risk Officer (CRO), the director of the corporate risk management department.

There is a Risk Management Corporate Department that is responsible for keeping updated the most significant risks assessment, to promote and monitor risk management actions, to systematically evaluate specific risks, to define the main concepts, methods, risk measures and key risk indicators, to support the Board in what regards Crises Management and Business Continuity. Controlled risk addresses many types of risk: Strategic, Business, Market, Operational, Credit and Regulatory Risks.

Climate change risks are dealt within the Strategic and Operational risks, through an on-going project, ClimEDP, in which climate impacts, risks and related management actions, including adaptation are addressed, in strong connection with water related risks.

Water and climate risks and opportunities are core issues for the company strategic planning and so its management is ultimately delegated in the CEO and the Board. In order to succeed in this mission, the CEO is assisted by the Chief Risk Officer in correlating those with the overall risk management policies either at strategic and operational level.

Strategic Climate Change risk is followed regularly, annually, by the Risk Management Corporate Committee, chaired by CEO and assessed by the Corporate Risk Management Department.

At corporate level, businesses opportunities are assessed by the strategic Departments such as: Energy planning, Sustainability, marketing, new investments, among others. These are responsible for periodic market analyses. Examples: Efficiency Services, energy monitoring and controlling devices, among others.

Asset level:

Business Units (BU) manage their own risks (down side) and opportunities (upside) within the established mandates.

Operational Climate Change Risk is managed by BUs according with corporate guidelines and monitored by the Corporate Risk Management Department and by the Sustainability Department.

BU Risk Officers articulate both with their hierarchies, and with the CRO, thus ensuring the alignment of objectives, processes, report and control. Depending location and using available knowledge from scientific and governmental institutions, eg: IPCC, SIAM, Portuguese weather meteo, SNIRH - hydro resources Portuguese database, among others on current extreme and average values and possible future changes for variables such as temperature, precipitation, flow and wind speed, risks and opportunities for large hydro, thermal power plants and wind farms are identified and are managed throughout the facility's lifecycle.

Design stage - Available resource usage is technically maximized (opportunity) and any necessary mitigation or preventive measures planned, eg: rising power plant ground-level a few meters to increase flood resilience or reinforcing power line towers' foundations to withstand extreme wind speeds, well above current regulation. Both are examples of current practices implemented at EDP.

Works - Construction or maintenance - extreme events, possible damages and/or delayed start-ups are managed through risk transfer through insurance, when coverage is available. Risk mitigation is implemented such as planning sensible activities, like overhauls, when there is the least probability of occurrence of extreme weather events. Examples: hydropower plants and wind farms in Europe will be under maintenance mostly in summer, thermal power plants will be under maintenance during lower demand season, hydro power plants during dry season and so on.

Reporting and control is supported by a software platform, web based, named "Portal de Risco" (Risk Portal). This was internally developed to consistently collect information on each relevant risk.

Opportunities are assessed at BU level by managers and are reported upwards to the board. Examples of opportunities identified are A2E the energy supply in less favored communities that allows energy supply with less carbon footprint since renewable energy replace wood and kerosene.

### **2.1c How do you prioritize the risks and opportunities identified?**

The Board decides about the company's risk appetite and the acceptable level of risk exposure and this information gives a first level of assessment for risk prioritization. The board is supported by a group of committees, among them the Risk Committee, chaired by the CEO, composed by: CFO, CRO, Corporate Financial Department Director, Iberian Trading Unit manager, Energy Strategic Planning Department Director and other senior management members who are invited upon agenda request. The main objective of the Risk Committee is to support the EBD decisions in what regards risk identification, evaluation, management and control.

The risk / opportunity prioritization is a result of its materiality which is evaluated upon its impact on the BU as well as its impact on EDP Group. In a small BU a risk may be important, but when evaluated at group level it may be almost irrelevant, either because of its value, either because it is naturally hedged. All risks / opportunities are evaluated taking into account these two vectors. A risk that has an important impact at Group Level is considered a priority and is addressed in an urgent manner with actions to diminish or transfer it.

Risk assessment is facilitated by a proprietary software platform named "Portal de Risco" (Risk Portal). This was internally developed to consistently collect information on each relevant risk and works for operational risks. The

Risk Portal automatically generates the following two-dimensional risk maps: (1) risk manageability vs. expected risk; (2) risk control vs. expected risk; (3)(manageability-control gap) vs expected risk where "expected risk"= frequency x severity.

Multi-dimensional stress tests and scenario analysis are also applied to the business plan and budget activities, including statistical models of flows (correlate partially with variability of precipitation) and wind resource, as well as tail risks (extreme events) that take into account inter-annual variability of climate/weather related phenomena and their impacts on liberalized market price and volume

Further information:

EDP has a Corporate Policy on Enterprise-Wide Risk Management (CPEWRM), that states: Principles, Structure and Governance and identifies all company departments that have responsibilities in risk management. Governance and Control are established in CPEWRM and were stated by the Executive Board of Directors (EBD). The EBD decides about the company's risk appetite and the acceptable level of risk exposure, it also delegates tasks and responsibilities, defines the overall risk limits and ensures that risk management policies and procedures are observed.

The EBD is supported by a group of committees, among them the Risk Committee, chaired by the CEO, composed by: CFO, CRO, Corporate Corporate Directors of: Financial Department, Strategic Planning Deptm, Management –Control Deptm., Institutional and Stakeholder Relations Deptm., plus Iberian Trading Unit Director, EDP Brazil representative, EDP Renewables representative and other senior management members who are invited upon agenda request. The main objective of the Risk Committee is to support the EBD decisions in what regards risk identification, evaluation, management and control. The responsibilities of the Risk Committee are: to monitor key risks and risk appetite of EDP Group, to approve reporting and monitoring mechanisms, to approve or define recommendations concerning key risks or extraordinary risk events and approve or define recommendations concerning the Group Risk Policy, procedures and limits.

At corporate level, there is a Risk Management Department that is responsible for keeping updated the most significant risks database, to promote and monitor risk management actions, to systematically evaluate specific risks, to define the main concepts, methods, risk measures and key risk indicators, to support the EBD in what regards Crises Management and Business Continuity.

The type of risks considered is vast and is listed in the Risk Types at EDP Risk Portal, the corporate Risk database, among others one can find:

- Credit– Clients, counterparties, among others
- Market – Forex, liquidity, price (fuel, electricity, financial instruments and others), volume and tax rates
- Business– Regulatory, Environmental(Strategic) – Climate change, biodiversity, among others
- Operational – Extreme weather events, among others
- Regulatory

## Business Strategy

2.2 Is climate change integrated into your business strategy?

Yes

If yes: 2.2a Please describe the process and outcomes (see guidance)

### **i. How the business strategy has been influenced, i.e., internal communication/reporting processes that achieve this**

EDP's strategy is based on three pillars: controlled risk, superior efficiency and focused growth.

The Board defines the corporate strategy based on the inputs from corporate departments such as Energy Strategic Department, Risk Department, Sustainability Department and relevant BU: electrical generation company, electrical distribution, gas distribution, among others. These inputs include market analysis, scenario analysis, technology analysis and regulation analysis and incorporate important climate change data such as emissions regulation, CO2

price, and extreme weather events, among others. Fuel use and availability are also considered

Climate Change integration into EDP's business strategy has allowed for:

1 - The identification of several new business areas of strategic relevance or the improvement of existing ones, namely in what concerns decarbonization of the generation portfolio and/or commercial differentiation:

- Continued investment in renewable electricity generation capacity In 2013, 67% of EDP's electricity generation came from renewable energy sources.
- Low carbon thermal generation (CCGT)
- Investment in smart grids
- Expansion of the energy services (includes efficiency) portfolio - in Portugal in 2013 represented about 13.3 million Euro
- Micro and mini generation - in Portugal in 2013 represented about 4.9 million Euro
- Green electricity commercialization in Portugal in 2013 represented about 4.65 million Euro

2 – The increase in resilience to extreme weather of EDP's facilities, thus also increasing operation efficiency and resilience.

3 – The adequate management of the CO2 financial instruments portfolio (EU-ETS emissions allowances and Clean Development Mechanism/Joint Implementation credits)

## **ii. What aspects of climate change have influenced the strategy, e.g., need for adaptation, regulatory changes, opportunities to develop green business**

The main aspects of climate change that have influenced the strategy are:

- Opportunities to develop new businesses –renewable energy, green energy commercialization, micro and mini generation, efficiency services.
- Regulation- EU-ETS has allowed the CO2 credits financial management
- Market – management of CO2 licenses portfolio

## **iii. The most important components of the short term strategy that have been influenced by climate change**

In the short term Climate Change has influenced the three strategic pillars of EDP's current business plan:

- Controlled risk – extreme weather adaptation, management of CO2 licenses portfolio
- Superior efficiency - extreme weather adaptation, smart grid implementation projects.
- Focused growth – renewable energy, green energy commercialization, micro and mini generation, efficiency services

## **iv. The most important components of the long term strategy that have been influenced by climate change**

EDP's strategy is based on three pillars: controlled risk, superior efficiency and focused growth. Climate Change awareness has allowed the identification of several new business areas of strategic relevance or the improvement of existing ones, such as:

- Renewables –Generation portfolio decarbonization
- Smart grids – Internal efficiency
- Energy efficiency services – customers efficiency
- Micro and mini generation – customers decarbonization
- Green electricity commercialization – Commercialization portfolio decarbonization
- Access to Energy - customers decarbonization in less favored areas.

Climate Change awareness has also allowed the increase in resilience to extreme weather in EDP's facilities, thus also increasing operation efficiency and resilience.

## **v. How this is gaining you strategic advantage over your competitors**

This strategy has allowed EDP to reach strategic advantages over the competitors through:

- Profitability and reduced risk exposure – Increasingly decarbonized generation portfolio (with high share of renewables) and more resilient generation assets
- Commercial differentiation – Provision of products (low carbon electricity and fuels) and services (energy efficiency services) that meet growing customers demand for solutions that reduced their own energy consumption and carbon footprint.
- Increased internal efficiency – Investment in smart grid projects.

**vi. what have been the most substantial business decisions made during the reporting year that have been influenced by the climate change driven aspects of the strategy**

As announced in the Financial Report, several relevant substantial business decisions occurred in 2013 that were related with Climate Change:

- EDP Brazil continued the: construction of Santo Antônio do Jari hydropower plant, installed capacity will be 373 MW, and its due by January 2015, the construction of Cachoeira Caldeirão 219 MW and acquired the license to build São Manuel Hydro power plant.

- Program Save to Compete ([www.savetocompete.com/pt](http://www.savetocompete.com/pt)). Since its launch in Portugal, 164 applications were registered, 85 of which were completed and validated, and executed contracts in the amount of EUR 7.2 million. CO2 Emissions avoided of 7,300 tons of carbon dioxide by the end of 2013, energy saving of 12 GWh and savings of EUR 2 million. These results are accounted online and can be found on the Save to Compete website. The success achieved in Portugal with this program led to its launch in Spain, in Astúrias, in November 2013. It received 10 applications and 7 of those have been completed and validated.

- PT - ease – system that performs a real time monitoring of energy and water consumption, allowing analyses and benchmark

- PT – Micro and mini generation projects – in 2013 EDP installed 3,8 MW photovoltaic systems with an estimated annual production of 5 GWh/year, clients reduce their scope 2 emissions and 300 mini systems with an installed capacity of 1 MW.

- PT - Since 2010 EDP leads the Portuguese electric mobility project ([www.mobie.pt](http://www.mobie.pt)) – 1100 charging points and 500 users

- PT – Wind off shore - EDP has a pioneer demonstration project, Windfloat a 2 MW sea wind turbine. Windfloat has proven its resilience in deep sea water, it has resisted the Hercules storm, it has maintained its operation and during 2013 has produced about 8 GWh. This project is currently included in an EU I&D project DemoWfloat that aims to develop a pre-commercial phase. The next step will be to build up a sea wind farm with 3 to 5 windfloat units.

iii. The cost of the windfloat demonstration project is 20 MEuro.

-PT – Sunlab – a laboratory that tests the performance of photovoltaic modules

- Foundation of the A2E (Access to Energy) Company – A business unit to promote the access to energy in less favored regions of developing countries

- EDP's 2050 energy simulator ([www.2050.edp.pt](http://www.2050.edp.pt)) this tool allows several energy simulations and scenarios for Portugal, European Union, China and United States thus providing a physical and economical model to assess the strategic options that can be taken in the energy sector.

- SF6 – All electrical transformers are being replaced by sealed for life ones.

- EDP participates in I&D CCS projects: CCS I&D projects under the FP7th – The EU 7th Framework Program: Project Decarbit, Flexiburn CFB and CMET.

**Companies should explain what they mean by long and short term**

Less than 3 years - short term, more than 3 years medium/long term.

**Engagement with Policy Makers**

2.3 Do you engage in activities that could either directly or indirectly influence policy on climate change through any of the following?

X	Direct Engagement
X	Trade Associations
X	Funding Research Organizations
X	Other
	No



### 2.3a On what issues have you been engaging directly?

Focus of legislation	Corporate position	Details of engagement	Proposed solution
Cap and trade	Support	EDP has supported a cap and trade approach to GHG emissions. This position was expressed in Eurelectric in the “Environmental and Sustainable Development Policy Committee” and in the “Energy Policy and Generation” Committee. Follow-up with the Portuguese Government of the PNALE (Climate Change National Plan).	EDP supports the European Union Emission Trading Scheme and during 2013 has been keen on defending back-loading, that is a more effective market stability reserve
Energy efficiency	Support	EDP is a member of Eurelectric and is strongly engaged in promoting Energy efficiency through its action in the “Energy Efficiency” Working Group. EDP is a member of the Portuguese Tariff Council and Advisory Council of the Portuguese Energy Services Regulator, participating in public discussions regarding : (1) the consumer efficiency promotion plans, (2) technical advices on the electrical grid operation and commercialization regulation	EDP has strongly supported the “Energy Efficiency directive” transposition into Portuguese legislation.
Clean energy generation	Support	EDP participated in the public discussion of the PNAER (National Renewable Energies Action Plan) EDP is a member of the Portuguese Tariff Council and Advisory Council of the Portuguese Energy Services Regulator, participating in public discussions regarding (1) technical advices on the electrical grid operation and commercialization regulation, (2) harmonization of integration of renewable and special regime production in MIBEL, (3) Electricity and Gas regulations	EDP has strongly supported the renewable energy promotion provisions of PNAER (National Renewable Energies Action Plan).
Adaptation resilience	Support	EDP has worked with the Portuguese government in the Portuguese Adaptation Strategy (for the energy sector)	EDP has indorsed: - the increase of asset resilience - The dissemination of information about adaptation And has promoted co-joint efforts to stimulate climate change adaptation, among private companies and public entities.
Climate finance	Support	EDP has subscribed and strongly supported Climate Finance in Eurelectric, in the “Environmental and Sustainable Development Policy Committee” and in the “Energy Policy and Generation” Committee.	EDP has subscribed and strongly supported Climate Finance, namely the adequate CO2 price to allow the EU-ETS market to work.
Other – Climate change in the energy sector	Support	EDP in Brazil participates in the Brazilian fora related to climate change that were created to discuss the proposed Sectorial Plans from the governmental National Policy on Climate Change. EDP is engaged in meetings and working groups to discuss the responsibility of the Brazilian energy sector in tackling climate change and reducing GHG emissions. Example of an Fora to which the Company is engaged - “Energy for sustainability development – The National Policy on Climate Change within Energy Sector”	EDP has participated in discussions and proposed solutions for CDM and other emissions reduction programs. Furthermore, the Company supported the interaction between the Energy Sector Companies and Federal government to achieve mitigation an adaptation to climate change events.
Other – Climate change in the energy sector	Support	EDP in Brazil participates in working groups supporting renewable energy	EDP defends a strong support to renewable generation

### 2.3b Are you on the Board of any trade associations or provide funding beyond membership?

Yes

2.3c Please enter the details of those trade associations that are likely to take a position on climate change legislation:

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to influence the position?
APE – Portuguese Energy Association	Consistent	APE is the Portuguese Association that represents the World Energy Council. APE strongly supports: cap and trade, energy efficiency, clean energy generation and adaptation and resilience.	EDP has a strong influence in APE. Usually EDP is a member of the board, either president or Vice-president.
Eurelectric	Consistent	<p>EU institutions: should promote GHG reduction, give strong support to EU-ETS, support intelligent grids and transport electrification, R&amp;D and incentives for early deployment of not-yet-mature renewable technologies.</p> <p>Eurelectric defends:</p> <ul style="list-style-type: none"> <li>- An efficient EU-ETS market</li> <li>- The non-retroactivity in renewable state aid review</li> </ul>	<p>EDP is a member of the Board of Directors and participates in several groups such as the “Environmental and Sustainable Development Policy Committee”, in the “Energy Policy and Generation” Committee, among others.</p> <p>EDP defends:</p> <ul style="list-style-type: none"> <li>- An efficient EU-ETS market</li> <li>- The non-retroactivity in renewable state aid review</li> </ul>
European Wind Energy Association - EWEA	Consistent	<p>Voice of the wind industry, actively promoting the utilization of wind power in Europe and worldwide, and representing the wind sector development before the European Commission.</p> <p>EWEA defends wind generation support.</p>	<p>Jorge Corrales (EDP Renovables) (Spain), member of the Board.</p> <p>EDP defends wind generation support.</p>
ADENE – Agência para a Energia	Consistent	<p>The association promotes the rational use of energy and renewable energy generation.</p> <p>ADENE promotes efficiency services.</p>	<p>EDP is a member of the social bodies.</p> <p>EDP defends the support to efficiency services.</p>
Asociación Empresarial Eólica - AEE	Consistent	<p>Association with the objectives of overcoming the technical and statutory barriers that affects the growth of wind power, maintaining and consolidating the retributive regimen of the electrical production of wind origin that allows the sustainable development of the sector.</p> <p>AEE - defends wind generation support</p>	<p>Rocio Sicre del Rosal (EDP Renovaveis). EDP Renováveis Europe. Vice-President of the Board</p> <p>EDP defends wind generation support.</p>
APREAN Renewable Spain	Consistent	<p>APREAN Renewable works as a negotiator/speaker with the Autonomic, Central and Local Administration and with any public or private organization. Its main objective is to represent, coordinate and defend the common professional, economic and business interests of its members and as an instrument to participate in the development of policies, especially energetic and environmental.</p> <p>APREAN - defends renewable generation support</p>	<p>Ricardo Sancho Benito (EDP Renovaveis) – Member of the board.</p> <p>EDP defends renewable generation support.</p>
APREN - Associação Portuguesa de Produtores de Energia Eléctrica de Fontes Renováveis	Consistent	<p>Non-profit association that aims the coordination and representation of its Associates, in developing energetic and environmental policies in renewable energies (hydro, wind, biomass, biogas, solar, offshore).</p> <p>AEE - defends renewable generation support</p>	<p>António Lobo Gonçalves (EDP) – member of the board.</p> <p>Carlos Almeida Carvalho (EDP) – vice president of the fiscal board.</p> <p>EDP - defends renewable generation support.</p>
Syndicat des Énergies Renouvelables (SER-FEE)	Consistent	<p>Association in permanent contact with political officials, ministerial offices and the administration to defend the interests of the sector.</p> <p>SER-FEE - defends renewable generation support</p>	<p>EDP - defends renewable generation support.</p>

AWEA	Consistent	<p>US trade association representing wind power project developers, equipment suppliers, services providers, parts manufacturers, utilities, researchers, and others involved in the wind industry. AWEA represents wind energy advocates from around the world.</p> <p>AWEA defends wind generation support</p>	<p>Gabriel Alonso (EDP Renovaveis) past chair.</p> <p>EDP defends wind generation support.</p>
Wind Energy Foundation - WEF	Consistent	<p>The Wind Energy Foundation is a Washington, D.C.-based organization founded in 2010 to educate the public about the benefits of wind power.</p> <p>WEF defends wind generation support</p>	<p>Roby Roberts (EDP Renovaveis) member of the board.</p> <p>EDP defends wind generation support.</p>
EPC – Empresas pelo Clima	Consistent	<p>EPC acts on four strategic lines: Capacity Building, Research and Knowledge Production, Articulation and Interconnections, and Communication.</p> <p>The objective is to find solutions for climate change without affecting business success. This is achieved through:</p> <ul style="list-style-type: none"> <li>- Knowledge and experience sharing</li> <li>- Best practices dissemination</li> <li>- Representativeness within the Federal and States Governments</li> </ul> <p>The association defends that Climate Change should be internalize in business and business should be supported in their mitigation and adaptation efforts.</p>	<p>The Company participates mostly in experience sharing and case studies. For instance, in 2012, EDP’s project ClimaGrid, which is highly connected within climate change adaptation, was presented to the Group as Best Practice and Technology Innovation example. The barriers and challenges faced by the Company are also exposed during the meetings, so that common solutions can come up quicker and coherently within different sectors context.</p> <p>EDP defends that Climate Change should be internalize in business and business should be supported in their mitigation and adaptation efforts.</p>
World Business Council on Sustainable Development- CEBDS- Conselho Empresarial para o Desenvolvimento Sustentável.	Consistent	<p>CEBDS is a civil association that leads Business Sector efforts for reaching excellence in sustainability practices, effectively acting together with companies, governments and civil society. The greatest Brazilian Companies are associated to CEBDS, which develops its activities based on the concept of triple bottom line. CEBDS recognizes importance of climate change management for Brazilian business sector and its mission is to maintain an adequate forum so that Companies raise awareness about their role in tackling climate change, supporting the development of strategies and addressing of risks and opportunities related to the GHG emissions reduction. They act mainly through:</p> <ul style="list-style-type: none"> <li>- Offering consistent platform for sharing experience and best practices among different companies and sectors;</li> <li>- Reaching and offering tools that enables and support emissions management and reduction; and</li> <li>- Represent CEBDS ideals and position towards tackling climate change.</li> </ul>	<p>EDP participates actively sharing experiences that contributes for raising and construction of knowledge regarding energy sector and climate change related issues. In 2013 CEBDS launched a guideline that assessed climate change challenges for the energy sector. The study was concluded by a consultant and took into consideration positions and context of energy companies in Brazil.</p> <p>EDP defends that Climate Change should be internalize in business and business should be supported in their mitigation and adaptation efforts.</p>

2.3d Do you publically disclose a list of all the research organizations that you fund?

Yes

2.3e Do you fund any research organizations to produce public work on climate change?

Yes

2.3f please describe the work and how it aligns with your own strategy on climate change

EDP has financed a study on “Biodiversity and Climate Change in the Iberian Peninsula” by the Museu Nacional de Ciências Naturais de Madrid and the Évora Rui Nabeiro CBIO Catedra. This study has performed a thorough evaluation of the effects of Climate Change on the Iberian biodiversity and has proposed adaptation measures, thus contributing to scientific knowledge on climate change impacts and adaptation strategies in the region.

EDP has also commissioned:

- A study on GHG scope 3 emissions applied to EDP. This study was presented in the SETAC conference in Rome in 2013;
- The development of a water footprint methodology and its application to EDP Group.

In both cases, the results are intended for public disclosure, contributing to knowledge dissemination on value chain GHG and water footprint accounting.

The three projects have supported EDP’s position towards climate change: that it is a very important business factor, both on the short and on the long term. Also, that companies must prepare themselves for internalization of externalities – both positive and the negative - and that the first step is to assess them.

2.3g Please provide details of the other engagement activities that you undertake

### **1. engagement process**

EDP has dedicated structures in each geography that manage the relation with the supervisory bodies of the energy sector:

- Portugal: Corporate Regulation and Competition Department, Stakeholders Department
- Spain: Regulación y Relaciones Institucionales Department (Regulation and Institutional Relationship Department)
- EDPR (Europe and USA): Market Analysis & Regulation Department
- Brazil: “Área de Assuntos Regulatórios” (Regulatory Issues Department) and environmental department.

#### **i. Method of engagement**

Through trade/Industry organization (among others):

- EURELECTRIC, the European electricity sector association, EDP participates as a member of ELECPOR, the Portuguese Association of Electricity Companies. EDP is represented, amongst others, in the Environmental and Sustainable Development Policy Committee, the Markets Committee, the Energy Policy and Generation Committee and in some of its various working groups, subgroups and task forces, namely the Working Groups “Climate Change”, “Environmental Protection” and “Energy Efficiency”
- APE, Portuguese Energy Association
- NGVA – The Natural and bio gas Vehicle Association
- WEC, the World Energy Council
- AGN, Natural Gas Association
- APREN – Portuguese renewable energy association
- COGEN – The Portuguese cogeneration association
- AEE, Wind Industrial Association (EDPR Spain)
- SER-FEE - French Wind Energy Federation, EDPR participates in the technical groups: acoustics, dangers studies, environmental, security, economic, law and regulation, offshore and marine energy and site
- WEWAG - Wind Energy Whopping Crane Action Group – EDPR collaborates with WEWAG that is developing a habitat conservation plan to address the potential impacts of wind energy the whooping crane and lesser prairie chicken within the central United States. WEWAG works in coordination with the U.S. Fish and Wildlife Service and nine state wildlife agencies
- ABRADEE - Brazilian electric distribution association
- ABEEólica – Brazilian wind generation association

Through ONG:

- Joint projects with WWF
- Participation in the COP side events
- WBCSD - World Business Council for Sustainable Development ([www.wbcsd.org](http://www.wbcsd.org)), a CEO-led, global association of some 200 companies dealing exclusively with business and sustainable development issues
- BCSD Portugal - the Portuguese Business Council for Sustainable Development, member of the WBCSD regional network

- CBDES Brazilian council for sustainable development

Through Institutional Authorities:

- Portuguese government - Contribution to the Portuguese Climate Change Adaptation Strategy with technical expertise on the energy sector. Contribution with information, opinions and recommendations regarding co-generation and the transposition into national law of the EU energy legislation. Participation in the public discussion of the PNAER (National Renewable Energies Action Plan) and PNAEE (National Energy Efficiency Action Plan). Follow up of the PNALE - (Climate Change National Plan). Participation in ENAAC, the Portuguese National Adaptation Strategy Plan. Participation in green tax reform public discussions.
- ERSE Portuguese Energy Services regulator – Member of the Tariff Council and the Advisory Council, Participation in the public discussions of: (1) the consumer efficiency promotion plans, (2) technical advices on the electrical grid operation and commercialization regulation, (3) harmonization of integration of renewable and special regime production in MIBEL, (4) Electricity and Gas regulations
- EER European Energy Regulators – EDP participated in the Public Consultation on Harmonization of Renewable Support Schemes and CEER's advice on the take-off of a demand response electricity market with smart meters
- DG Competition – Public discussion on guidelines for State Aid related to environmental projects

Through knowledge dissemination:

- EDP has developed the energy simulator - [www.2050.edp.pt](http://www.2050.edp.pt)

**ii. topic of engagement – EDP's position**

- CO2 emissions regulation
- EU-ETS
- MIBEL Iberian electricity market
- EU regulation
- EU Regulatory trends
- Climate change Risk and Opportunities
- Climate change mitigation
- Climate change adaptation
- Energy efficiency
- Renewable energy
- Offshore energy
- Wave energy
- Photovoltaic
- Electrical / Natural gas mobility

**iii. nature of engagement**

EDP participates in all forms: (1) Answer to consultations: EURELECTRIC, Government, among others. (2) Participation in working group: SER-FEE, WEWAG, ENAAC, WBCSD, among others. (3) participation in research: Winfloat (off-shore wind energy), Sunlab (photovoltaic), (4) Meetings with ERSE, EU, USA, Government Officials

**(2) actions advocated – the nature of the advice given/endorsement or opposition of policy proposals or were you encouraging action on mitigation /adaptation**

EDP supports both mitigation and adaptation. Examples:

- At the COP 15 in Copenhagen EDP produced a statement sustaining the summit objectives: global participation of countries, strong support to renewable energy and to implementation mechanisms.
- Encouraging adaptation strategy and actions, through participation in ENAAC, among others.
- Development of clean electrical production, through the support to renewable generation, namely the Sunlab photovoltaic and windfloat off-shore wind turbine projects, among others.

2.3h What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

EDP's approach to climate has been stated since 2006 when EDP has announced a strategic shift towards sustainable energies. This approach has allowed EDP to address Climate Change from both the mitigation and the adaptation perspectives.

EDP's position has been stressed in all the fora in which EDP participates, as well as with all regulatory bodies with whom EDP interacts with. EDP has dedicated structures in each geography that manage the relation with the supervisory bodies of the energy sector:

- Portugal: Corporate Regulation and Competition Department, Stakeholders Department

- Spain: Regulación y Relaciones Institucionales Department (Regulation and Institutional Relationship Department)
- EDPR (Europe and USA): Market Analysis & Regulation Department
- Brazil: “Área de Assuntos Regulatórios” (Regulatory Issues Department) and environmental department.

These structures ensure the overall alignment of EDP’s position with the corporate climate strategy, namely the strong support to:

- Effective CO2 markets, aiming to curb emissions and to enforce the Kyoto protocol objectives;
- Clean generation as the key to a more sustainable future;
- Businesses responsibility in shaping a more sustainable global future.

### 3. Targets and Initiatives

#### Targets

3.1 Did you have an emissions reduction target that was **active** (ongoing or reached completion) in the reporting year?

*If you have an absolute target:*

3.1a Please provide details of your absolute target

Yes.

*If it is an absolute target:*

3.1a Please provide details of your **absolute** target

ID	Scope	% of emissions in Scope	% reduction from base year	Base year	Base year emissions	Target year	Comment
A-1	Scope 1	99.8%	20%	2005	28 255 000 ton	2015	Reduction of GHG emissions from stationary combustion in electricity generation. The projected company's absolute target for 2015 is 22.7 Mton of CO <sub>2</sub> , while keeping approximately the same emission intensity (0.285 ton CO <sub>2</sub> /MWh) as of 2011. This target is based on projections made in EDP Business Plan 2012-2015, assuming the following generation mix: 21.4% of Coal, 14.3% of CCGT, 2.1% of Co-generation, 30.2% of Hydro, 31.7% of Wind and 0.3% of Biomass. This target applies to all geographies and generation activities. This objective is fully aligned from the 2020 corporate objective.

*If it is an intensity target:*

3.1b Please provide details of your **intensity** target

ID	Scope	% of emissions in Scope	% reduction from base year	Metric	Base year	Base year emissions	Target year	Comment
I-1	Scope 1	99.8%	70%	ton/MWh	2008	0,400 ton/MWh	2020	Reduction of GHG emissions from stationary combustion in electricity generation. In 2009, EDP committed to reduce its electricity generation emission factor in 2020 by 70%, in comparison to 2008, in order to achieve an EF of 0.120 tonCO <sub>2</sub> /MWh. This target applies to all geographies and generation activities.

3.1c Please also indicate what change in **absolute emissions** this intensity target reflects

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comment
I-1	Decrease	50	No change	n.a.	Reduction of GHG emissions from stationary combustion in electricity generation.

For both types of target, also:

3.1d Please provide details on your progress against this target made in the reporting year

	% complete (time)	% complete (emissions)	Comment
A-1	80%	100	Target was exceeded in 2013.
I-1	33%	27.5%	Reaching 2020 target is on track

### Emissions Reduction Initiatives

3.2 Does the use of your goods and/or services directly enable GHG emissions to be avoided by a third party?

Yes

If yes: 3.2a Please provide details (see guidance)

#### **i. Whether avoided emissions represent the third party's Scope 1 emissions, Scope 2 emissions, or both.**

The use of EDP's products and services enables the avoidance of scope 1 and scope 2 emissions from its clients.

#### **ii. & iii. How the Scope 1 and/or Scope 2 emissions are avoided by the third party. An estimate of the amount of emissions that are/were avoided over time, e.g. x metric tonnes CO2e per year with a 2007 baseline; x metric tonnes per year over a period of 10 years (2003-2013)**

The use of EDP's products and services avoids clients emissions through:

1 – The delivery of low carbon electricity, as a result of the progressive decarbonisation of EDP's generation portfolio (reduction of client's scope 2 emissions)

Resulting from the strategic decision to investment in renewable power generation (hydro, wind, solar and biomass) EDP's electricity generation portfolio relies less and less on fossil fuels. This allows for the delivery of electricity with a lower CO2 content than the average grid electricity of the countries in which the company operates, thus enabling its clients to avoid scope 2 emissions. In 2013, EDP generated 67% of its electricity from renewable sources and delivered electricity with an average carbon content of 276 gCO2/kWh.

2 – The sale of natural gas, which is a low carbon fossil fuel (reduction of the client's scope 1 emissions)

Natural gas (56 gCO2/GJ) is used by clients in replacement of other fossil fuels, with higher carbon content, namely fuel oil (77 g CO2/GJ), LPG (63 gCO2/GJ), diesel (74 g CO2/GJ), coal (92 g CO2/GJ) and kerosene (72 g CO2/GJ). 4100 t CO2 avoided in 2013.

3 – The provision of energy efficiency services, that help clients reduce their energy consumption (reduction of the client's scope 1 and scope 2 emissions).

EDP has a vast portfolio of targets energy services, that address the needs of specific client groups and help them reduce their energy (fossil fuel or electricity) consumption. EDP's energy services portfolio includes:

2.1 - Save to compete program ([www.savetocompete.com/pt](http://www.savetocompete.com/pt)) – partnership among EDP and the Portuguese Industrial Confederation to promote energy efficiency; Investment EUR 7.2 million, scope 1 and 2 emissions avoided 7,300 tons of CO2, energy saved 12 GWh in energy consumption and approximately EUR 2 million. The success achieved in Portugal with this program led to its launch in Spain, in Asturias, in November 2013.

2.2 - PPEC – Plan for Promoting the Efficient Electricity Consumption (PPEC) promoted by the Energy Services Regulatory Authority (ERSE). EDP had 16 measures approved: energy savings of about 1073 GWh, scope 1 and 2 emission reduction of 397 tons of CO2 and a global benefit of about EUR 105 million. For more information about these measures, visit

[www.erse.pt/pt/planodepromocaodaeficiencianoconsumoppec/ppec1314/Paginas/default.aspx](http://www.erse.pt/pt/planodepromocaodaeficiencianoconsumoppec/ppec1314/Paginas/default.aspx)

2.3 - EDP has a special program in Portugal to promote energy efficiency with, in particular, an exclusive web page for this theme - [www.eco.edp.pt](http://www.eco.edp.pt) - where consumers can find, for example:

- Information and advice on energy efficiency;
- Energy efficiency and CO2 emissions simulators;
- Practical guide for an efficient home.

2.4 - In Brazil electricity efficiency programs in 2013: investment EUR 8.5 million, estimated energy savings of about 36GWh and 16MW less demand at peak periods ([www.edp.com.br/inovacaosustentabilidade/](http://www.edp.com.br/inovacaosustentabilidade/) programa-



de-eficiencia-energetica)

2.5 - Since 2010 EDP leads the Portuguese electric mobility project ([www. mobie.pt](http://www.mobie.pt)) – 1100 charging points and 500 users- in 2013 the avoided scope 1 emissions were 1,205 tCO<sub>2</sub>. In Brazil, EDP carries on the evaluation of possible scenarios, experimentation and measuring the impacts of electric vehicles on the EDP distribution systems.

2.6 In Portugal EDP has created a service Ea:se service that allows monitoring of electricity, water, gas and compressed air consumption (REF powerpoint).

2.7 - A2E access to energy program - based on renewable energy solutions, mainly solar, in order to contribute towards the social, economic and environmental development of the communities less favoured. The projects allow scope 1 emission reductions since in most cases they allow for the replacement of wood combustion. The ongoing projects are:

- Brazil access to electricity distribution grid, Portable Light Project, electrical equipment donation, street light donation in less-favored neighborhoods and households.

- Cabiri Solar Village, in Angola - implementation of sustainable energy solutions to meet basic needs of local population – app. 3,000 people - 505 solar photovoltaic systems installed in 500 family houses and social and 83 solar street lighting posts (<http://www.fundacaoedp.pt/en/access-to-energy/mission/sustainable-development/166>)

2.8 - Micro and mini generation projects – in 2013 EDP installed 3,8 MW photovoltaic systems with an estimated annual production of 5 GWh/year, clients reduce their scope 2 emissions and 300 systems with an installed capacity of 1 MW.

2.9 – EDP Gás has a natural gas refuelling station at Braga, Portugal that provides fuel to public buses. In 2013 provided 22814 GJ of CNG to Braga public bus, avoiding 409 tCO<sub>2e</sub> per year. Emission factors from GHG protocol: 74.01 KgCO<sub>2</sub>/GJ gasoil, 56.06 KgCO<sub>2</sub>/GJ natural gas, 0.0336 GJ/m<sup>3</sup> natural gas.

**iv. The methodology, assumptions, emission factors and global warming potentials (if you have expressed your carbon saving figure in CO<sub>2e</sub>) used for your estimations.**

The annual thermal emission factors for each country or state (USA) include just fossil fuel that emit CO<sub>2</sub> (coal, fuel oil, gas) and exclude nuclear and Special Regime Production (e.g, CHP, Biomass).

The calculation is based on the following sources: Portugal - EDP, Turbogás, Pego, Rede Eléctrica Nacional (REN), and Entidade Reguladora dos Serviços Energéticos (ERSE); Spain - Rede Eléctrica de Espanha (REE); Brazil - Ministry of Science and Technology - SIN (National Interconnected System); USA - state emission factors; Other European Companies - CERA, Global Insight.

Emissions avoided from the use of natural gas by EDP clients assumed an average EF for the list of fuels replaced. Emissions factors from Portuguese Environmental Authority (APA).

**v. Whether you are considering generating CERs or ERUs within the framework of CDM or JI (UNFCCC)**

These activities will not generate CERs or ERUs.

3.3 Did you have emissions reduction initiatives that were active within the reporting year (this can include those in the planning and/or implementation phases)

Yes.

*If yes, complete questions 3.3a, 3.3b and 3.3c:*

3.3a Please identify the total number of projects at each stage of development, and for those in the implementation stages, estimated CO2e savings

Stage of development	Number of projects	Total estimated annual CO2e savings (only for rows marked *)	Comments
Under investigation	3		1 to 3 - Three carbon capture and sequestration (CCS) R&D projects developed under the FP7 <sup>th</sup> – The EU 7 <sup>th</sup> Framework Program (Decarbit, Flexiburn CFB and COMET). These projects investigated solutions that may combine the continued use of fossil fuels in electricity generation, such as coal and natural gas, with a drastic reduction of the carbon dioxide emissions that result from burning those fuels. EDP will, in the future, further investigate the large scale implementation of such technologies.
To be implemented*	3	400 000 t CO2/year	1&2 - Over the next years, EDP will continue to expand its renewable generation capacity, through several projects: - (1) Hydro: EDP will start the construction of São Manoel in Brasil - (2) Wind: EDP plans to add annually about 500 MW (several projects worldwide) to its wind generation portfolio in the forthcoming years.  3 - Internal eco-efficiency campaign similar to the one already commenced in EDP Renewables, with a focus on fostering environmental best practices in our offices. The expected results are to reduce consumption of electricity (3%), water (2%), paper (5%), and tonner and other consumables (10%), plastic (5%) and mobility costs.
Implementation commenced*	8	1 325 000 t CO2/year	1 to 7 – EDP has several hydro projects under construction: - (1 to 5) New power plants: Baixo Sabor, Ribeiradio-Ermida e Foz Tua (Portugal); Cachoeira Caldeirão and Jari (Brasil). - (6-7) Power reinforcement: Venda Nova III and Salomonde II (Portugal).  8 – EDP smart grid project (Inovgrid) is currently under implementation and will deliver emission reductions resulting from a better balance of electricity supply and demand, as well as reduction of distribution losses. Until 2020, 80% of the Portuguese clients will have access to intelligent grids. In Brazil there is also a smart grid project.
Implemented*	2	320 000 t CO2/year	1 & 2 - In 2013, several renewable energy projects entered into full operation, further reducing emissions from EDP generation portfolio: - (1) Wind: A total of 387 MW - (2) Solar: A total of 50 MW
Not to be implemented	0		

3.3b For those initiatives implemented in the reporting year, please provide details in the table below

Activity type	Description of activity	Estimated annual CO2e savings	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period	Estimated lifetime	Comment
Low carbon energy installation	New renewable energy generation capacity (387 MW wind and 50 MW solar PV). Scope 1 emissions reduction. Voluntary activity.	320 000 t CO2/year	40 000 000 €/year	627 000 000 €	11 - 15Years	25 Years	

3.3c What methods do you use to drive investment in emissions reduction activities? (CDP 2011 Q3.3b, no change)

Method	Comment
Compliance with regulatory requirements/standards	<ul style="list-style-type: none"> <li>- Switching electrical generation from gas and coal to wind and hydro is also a consequence of the restrictions to CO2 emissions due to the European Trading System EU-ETS.</li> <li>- In Brazil, by regulatory obligation, EDP distribution companies dedicate 0.5% of their revenues for energy efficiency projects.</li> </ul>
Dedicated budget for energy efficiency	<ul style="list-style-type: none"> <li>- In Portugal, EDP dedicates about 2 M€/year for voluntary energy efficiency measures under the ECO EDP Program (<a href="http://www.eco.edp.pt">www.eco.edp.pt</a>). The ECO EDP integrates, among other initiatives such as tools, simulators, tips, energy efficiency campaigns, etc., the measures carried out under the PPEC (Promotion of end-use electricity efficiency Plan) approved by ERSE, the Portuguese Energy Regulator (<a href="http://www.erse.pt">www.erse.pt</a>). EDP supports about 15% of the investment needed to carry out these measures and the remainder is supported either by PPEC and/or the target consumers.</li> <li>- In Portugal and in Spain, EDP provides energy efficiency services to all economic sectors as a new core business activity. The active promotion of DSM, either for b2c and b2b segment, will be strengthened and subject to massive phased roll-outs on the three strategic DSM axes (Energy Efficiency, Load Optimisation and Fuel Switching) due to: a greater customer orientation, the internal know-how developed so far on energy efficiency management and the pilot projects and on-going innovation activities in the pipeline (eg. SmartGrids, Innovcity, electric mobility).</li> <li>- In Brazil, by regulatory obligation, EDP distribution companies dedicate 0.5% of their revenues for energy efficiency projects</li> </ul>
Dedicated budget for low carbon product R&D	<p>EDP has a dedicated budget for low carbon product R&amp;D, namely through its R&amp;D company, EDP Inovação, this is developing projects such as off-shore wind power, wave power, CO2 capture and storage, energy efficiency, smart grids, electric mobility, among others. The R&amp;D and Innovation activities of the EDP Group total about EUR 32 M annually. This includes a Venture Capital – Risk Capital Fund, which is managed by EDP VENTURES and had invested, till the end of 2013 about EUR 16 million in innovative companies and funds in the clean tech area. It has also made an additional investment commitment of EUR 4 million for 2014.</p>
Employee engagement	<p>Electricity, water and paper consumption reductions in EDP's buildings, as well as waste management, are internal energy efficiency projects developed mainly by employees.</p>
Financial optimization calculations	<p>Emission reduction activities represent in some cases new business areas, and in a short time they can deliver an interesting contribution to EDP's revenue.</p>
Internal price of CO2	<p>Factor taken into account when analysing investments in new projects such as new power plants.</p>

*If no:* 3.3d If you do not have any emissions reduction initiatives, please explain why not (CDP 2011 Q3.3c, no change)

n.a.

## 4. Communications

4.1 Have you published information about your company's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s)

Publication	Page/Section reference	Identify the attachment
EDP Annual report	Pages 47 - 49	2013 EDP Annual Report
EDP website		<a href="http://www.edp.pt/PT/SUSTENTABILIDADE/AMBIENTE/ALTERACOESCLIMATICAS/Pages/alt_climaticas.aspx">http://www.edp.pt/PT/SUSTENTABILIDADE/AMBIENTE/ALTERACOESCLIMATICAS/Pages/alt_climaticas.aspx</a>
EDP 2050		<a href="http://www.2050.edp.pt/homepage.aspx">http://www.2050.edp.pt/homepage.aspx</a>
EDP Renováveis website		<a href="http://www.edpr.com/es/sostenibilidad/medio-ambiente-y-cambio-climatico/cambio-climatico/">http://www.edpr.com/es/sostenibilidad/medio-ambiente-y-cambio-climatico/cambio-climatico/</a>
EDP Renováveis Annual Report	Pages 29; 37; 44 and 66-68	2013 EDP Renovaveis Annual Report
Save as portal		<a href="http://www.save-as.org/">http://www.save-as.org/</a>
A2E presentation		A2E presentation
SETAC Rome presentation		SETAC Rome presentation
EDP R presentations		EDP R presentations
EDP Spain		<a href="http://www.sostenibilidadedp.es/publicaciones/index_for_categoria/35">http://www.sostenibilidadedp.es/publicaciones/index_for_categoria/35</a>

# Risks & Opportunities

## 5. Climate Change Risk

5.1 Have you identified any climate change risks (current or future) that have the potential to generate a substantive change in your business operations, revenue or expenditure?

Please identify the relevant categories:

### 5.1.a. Risks driven by changes in regulation:

ID	Risk Driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood of impact	Magnitude of impact
RR01	Fuel energy taxes and regulations	Regulatory risk in Iberia Due to the economic crisis in Portugal and Spain there is a pressure on electricity tariff deficit reduction.	Other – Decrease in revenues	Current	Direct	Likely	Low-medium
RR02	Fuel energy taxes and regulations	Changes in the legislator incentives to wind and solar energy. These incentives can be a feed in tariff, a tax credit or a capital incentive. Its decrease can cause a reduction in wind power revenues in Europe, USA and Brazil.	Other – Decrease in revenues	Current	Direct	More likely than not	Low-medium
RR03	Fuel energy taxes and regulations	Changes in wind farms permit regulation. Decrease in wind farms authorizations	Increased operational costs	Current	Direct	Very unlikely	Medium
RR04	CO2 Taxes	CO2 regulation in Europe. Volatility in thermal revenues.	Other – Decrease in revenues	Current	Direct	Likely	Low
RR05	Fuel energy taxes and regulations	Environmental laws and regulations that constrain the location of power plants and/or distribution grids	Other – Decrease in revenues	Current	Direct	About as likely than not	Medium
RR06	Fuel energy taxes and regulations, CO2 Taxes	Uncertainty surrounding new Federal regulation in Brazil	Reduction in capital availability	Unknown	Direct	More likely than not	Medium
RR07	CO2 Taxes	Creation of new Regional Markets (State Policies) in Brazil	Increased operational costs	1-5 years	Direct	More likely than not	Medium

### 5.1.b. Please describe:

i. the potential financial implications of the risk/opportunity before taking action

ii. the methods you are using to manage this risk/opportunity

iii. the costs associated with these actions

**Risk RR01** - Due to the economic crisis in Portugal and Spain there is a pressure on electricity costs thus decreasing renewable incentives. The most relevant decisions already taken for Portugal included cuts in capacity payments and the CMECs. Nevertheless One cannot be sure that there will not be any additional cuts.

In Spain there were cuts in capacity payments, in the distribution revenues, in the national coal incentives, in the transport system operator, in the social tariff fund and in the gas access tariffs.

EDP is much protected due to its diversified generation mix, diversified geographies, diversified asset maturities and diversified activities.

i. The potential financial implications of this risk are very low. The major changes were already made and represented less than 2% of EBITDA.

ii. This risk is mitigated through a close follow up of regulatory bodies and through generation mix, geography, asset maturity and market diversification. EDP works with governments, in Portugal EDP is a Member of the Tariff Council

and the Advisory Council of ERSE Portuguese Energy Services regulator. Under this membership EDP has participated in public discussions of: (1) the consumer efficiency promotion plans, (2) technical issues about the electrical grid operation and commercialization, (3) harmonization of integration of renewable and special regime production in MIBEL, (4) Electricity and Gas regulations

iii. The main cost associated with the regulatory follow-up is the annual budget for the Departments that do the regulatory follow-up. These Departments exist for Portugal Spain, Brazil and USA. Their budget is about 5 MEuro per year. On the other hand, generation mix, geography, asset maturity and market diversification of EDP's generation assets have no marginal cost, since they are the company's strategy.

**Risk RR02** - Changes in the legislator incentives to wind and solar energy. These incentives can be a feed in tariff, a tax credit or a capital incentive. Decrease in wind power revenues can impact business both in Europe and USA.

i. The potential financial implications of the risk before taking action depend on the country and on the intervention from the regulators/policy makers. It may affect the remuneration of the current wind farms, but mostly it can also affect company's growth (the intervention may make new investments less attractive). In 2013 the regulation changes in Spain had a negative impact of 71 MEuro on EDPPR. In the future it is expected that this figure will be smaller.

ii. Same response of RR01

iii. Same response of RR01.

**Risk RR03** - Changes in wind farms permit regulation. Decrease in the number of wind farms permits.

i. This risk may affect company's targets in terms of growth, and consequently EBITDA.

ii. This risk is mitigated through a close follow up of regulatory bodies and through generation mix, geography, asset maturity and market diversification.

iii. Same response of RR01.

**Risk RR04** - CO2 regulation in Europe. EU unclear signals regarding the EU-ETS. CO2 price heavily influences the return on investment, the current generation mix, and the future generation portfolio. These decisions represent large investments and need a long time frame to be in place, so the CO2 restrained emissions strategy should be maintained in order to allow the players to be confident about the future.

i. CO2 regulation heavily impact on electrical market. The financial impact is loss of EBITDA.

ii. This risk is largely mitigated through a technological and geographical diversified generation mix of EDP, namely the investment in CCGT and in wind, hydro and solar, and the investment in different geographies.

iii. The costs associated with these actions are the investment, in 2013, on renewable energy (wind) of 627 MEuro. These investments are part of EDP's Strategic Plan.

**Risk RR05** - Environmental laws and regulations that constrain the location of power plants and/or distribution grids.

i. This risk affects capex expenditure and can also decrease the revenues from the project.

ii. During the project phase the project team takes into account the possible restrictions that might appear.

iii. The marginal cost of this action is zero since they are included in the current activities.

**Risk RR06** - In December 2009, Brazil adopted Law No. 12187 which established the first National Policy on Climate Change. The policy aims to align the economic and social development with the climate change protection. In addition, sectorial plans will be established for mitigation and adaptation of climate change in order to achieve the national commitment to voluntary reductions of 36.1% to 38.9% GHG emissions by 2020, according to the national policy. In December 2010 some articles of the National Policy on Climatic Changes were regulated. The regulation mention the 'Ten Year Plan for Energy Expansion', where will be set reduction targets and procedures for energy sector, which currently presents 868 million tCO<sub>2</sub>e, 26% of the all Brazilians emissions. To achieve this commitment, actions aiming to expand supply hydroelectric power, supply from renewable sources (wind, small hydro, biofuels and bioelectricity) and increase energy efficiency will be implemented. EDP follows the updates of national and international regulations and is aware of sectorial plans, which will be defined over the coming years. EDP currently prepares its emissions inventory and evaluates potential opportunities to reduce emissions in their operational and administrative processes.

i. The estimated Risk exposure of EDP to this risk is less than 10 MEuro per year.

ii. The same of RR01. Also EDP participates in major discussion fora about regulation and taxation in Brazil, contributing to a better understanding of challenges and opportunities of climate change to the electricity sector, and to the national private sector. The company actively participates in national initiatives, such as the Brazil GHG Protocol Program and EPC – Empresas pelo Clima (Companies working for Climate Change), led by Fundação Getúlio

Vargas (Getúlio Vargas Foundation) and other international institutions. The company has also integrated the Brazilian Delegation in the last COPs.

EDP in Brazil currently prepares its emissions inventory and evaluates potential opportunities to reduce emissions in operational and administrative processes for the last 6 years, setting reduction targets and considering climate change its activities. In addition EDP is constantly participating in internal and external fora about regulation and Climate Change issues in order to build up knowledge.

iii. Monitoring of changes in legislation and regulation and participation in fora to discuss how to influence regulation and to implement best practices and technologies related to climate change management. Costs are associated with investments in new technologies, associations funding and the EDP Brazil Regulation Department budget. The latest is about 1.6 million Euro annually.

**Risk RR07** – Currently some States in Brazil are organizing themselves to establish policies and regulations regarding GHG emission reduction. The most advanced State is Rio de Janeiro which has already established a State Policy on Climate Change with caps applied to some sectors. Currently the Energy sector is not obliged by law to reduce emissions. The law only states that the total clean or low carbon energy that has to be generated in Rio, have to increase in a rate of 40% between 2010 and 2030. In the forthcoming years it is expected this law to evolve and include the energy Sector in the caps.

i. This risk is considered to be less than 20 MEuro.

ii. The same of RR01 and EDP currently prepares its emissions inventory and evaluates potential opportunities to reduce emissions in their operational and administrative processes.

EDP Brazil considers that current operations, distribution and generation, are very much prepared to reduce GHG emissions. EDP Brazil participates in major discussion fora about regulation and taxation, EDP actively participates in national initiatives, such as the Brazil GHG Protocol Program and EPC – Empresas pelo Clima, led by Fundação Getúlio Vargas (Foundation) and other international institutions. The company has also integrated the Brazilian Delegation in the last four COPs.

EDP has made its GHG Inventory in the last 5 years, setting reduction targets and considering climate change aspects on its activities.

iii. To be part of EPC, EDP Brazil contributed with 45 K USD for FGV. It is expected that in the forthcoming years laws shall mature and the energy Sector might be included in the caps.

### 5.1.c. Risks driven by changes in physical climate parameters:

Risk ID	Risk Driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood of impact	Magnitude of impact
RPC01	Precipitation and wind volatility	Hydro generation is an important component of our generation assets, especially in Portugal and Brazil. Any climate change implying a decrease in rainfall results in less hydropower generation. This decrease may not be balanced by higher energy prices. The wind volatility affects wind farms production.	Other – Decrease in operational income	Current	Direct	More likely than not	Low-medium
RPC02	Change in temperature extremes	Impact on generation Higher temperatures can disturb power plant normal operation, due to the cooling source's temperature being already outside of its legally admissible values even before its use at the power plant. Higher temperatures decrease the volume compressed air inserted in the combustion chambers thus decreasing energy generation Impact on water demand Higher temperatures can also result in increased population's water consumption, thus reducing available water in multiple use reservoirs.	Other – Decrease in operational income	Current	Direct	More likely than not	Low
RPC03	Change in extreme precipitation and droughts	Events, such as abnormal precipitation, droughts, extremely strong winds, pronounced sea waiving at seashore and sudden increases in algae coming in from the sea, can be accentuated by climate changes and have caused rare business interruptions at both thermal and hydropower plants. Extreme precipitation can also cause floods, dam overflow and landslides. Droughts may imply extra reservoir water expenditure in activities such as irrigation and maintenance of ecological flows, with inherent loss of energy generation/revenue, when these water flows are not turbinated or when they are released during off-peak hours (lower energy prices).	Increased operational costs	Current	Direct	More likely than not	Low
RPC04	Tropical cyclones	Under extreme winds, wind farms shut down for safety purposes. The increased frequency of wind automatic cut-off shut could have an effect on the turbine's wear, thereby increasing maintenance costs and/or reducing life span. Extreme winds can also affect distribution and the transmission grids likely limiting EDP's capacity to generate and supply energy in power stations.	Increased operational costs	Current	Direct	Likely	Medium
RPC05	Other physical climate drivers	Episodic events of particularly frequent and intense storms with lightning can be very damaging to electrical grids, wind turbines and any weather exposed electrical devices in general. This impact must be considered since the frequency and intensity of such storms may increase due to climate changes. The frequency and intensity of these events has already increased.	Increased operational costs	Current	Direct	Likely	Medium



RPC06	Other Physical climate drivers	Under a varying atmospheric pressure, the operation of natural gas pipelines, such as the ones EDP has in Portugal and Spain, can become more challenging, since safety controls are particularly sensitive to pressure, increasing the risk of preventive shut-down and, over time, increased wear of pipelines and valves, thus increasing operation and maintenance costs and/or reducing life span.	Increased operational costs	Current	Direct	Likely	Low-medium
RP07	Change in extreme temperature	Impact on demand The change in extreme temperatures might affect the peak load, increasing electricity demand and at the same time affect distribution and generation, causing less energy availability	Other – Decrease in operational income	Current	Direct	More likely than not	Low-medium

**5.1.d. Please describe:**

- i. the potential financial implications of the risk/opportunity before taking action**
- ii. The methods you are using to manage this risk/opportunity**
- iii. The costs associated with these actions**

EDP has the EMAS registration for 42% of global installed capacity and ISO 14001 certification worldwide (76% installed capacity). The ISO 14001 section that addresses these subjects is 4.4.7 – emergency preparedness and response.

There is also a range of insurances for the Group's assets in operation. So, the maximum physical risk cost incurred is mostly transferred out of the EDP Group (except for partial revenue losses and tail-end events). EDP has also a strategic captive insurance policy based in Luxembourg (Energia RE) that secures the small losses not covered by the insurers' pool.

**Risk RPC01**

i. Depending on the regulatory context the financial implications of this risk could go from a negligible value until about a 10 M€.

ii. EDP is building reversible hydropower plants that allow the storage of electricity generated in base loads hours. The energy stored is mainly from wind farms and during peak hours it replaces mainly energy that would be produced from fossil fuel power plants. The Sabor dam, under construction, is a reservoir dam located in an upstream position of Douro, the most affluent river in Portugal. This dam will allow water storage for consumption and energy generation in all power stations in Douro located downstream the Sabor dam. This allows for Portugal to have electrical consumption independency (for peak hours) for about 30 days.

The wind farms are geographically diversified.

iii. This risk is addressed by the new hydropower plants that EDP is building have investment costs. They provide the additional benefit of contributing to manage this risk. Currently EDP is investing in

- New hydro plants in Portugal: 5 hydro plants under construction to be commissioned in 2014-16: ~1,450MW:

- New hydro plants in Brazil: 2 hydro plants under construction to be commissioned in 2015/17: ~600MW

These are an important part of the 1.3 Billion capex used in 2013, and the 1 billion planned to 2014 and 0.8 billion planned to 2015

**Risk RPC02**

i. The potential financial implications is less than 500 thousand Euro, this value was obtained for an outage of a typical CCGT for a full week.

ii. In new thermal power plants, the cooling system is based on cooling towers instead of condenser, using a much lower water volume and introducing a much smaller change in temperature. As an example EDP has built in Portugal, two CCGTs with this technology TER and Lares. Regarding the reservoirs multi use, EDP has been establishing long term partnerships with all stakeholders, namely the water supply companies.

iii. EDP's generation mix, geographical, asset maturity and market diversification also mitigates this risk. EDP's Capex is not a direct cost but this risk will be partially mitigated by the new plants and infrastructures, it is a collateral benefit. Capex for 2014 till 2015 will be approximately 1 billion Euro per year in wind and hydro.

#### Risk RPC03

i. The potential financial implications is less than 500 thousand Euro, this value was obtained for an outage of a typical CCGT for a full week.

ii. This risk is managed through risk prevention measures, such as: placing equipments at a superior height (Ribatejo), algae cleaning systems (in Sines the algae explosive growth in the cooling source was due to a local increase in sea temperature), in hydropower plants duplication of floodgates circuits and the placement of diesel emergency groups in flood protected sites. During the dry and the flood seasons EDP closely works with the Meteorological and Civil Protection authorities thus achieving better performance. EDP's hydropower plants are also projected to support the so called "flood of the millennium".

iii. The costs of these actions are evaluated, per example the algae cleaning systems did cost around 1.5 EUR Million.

#### Risk RPC04

i. The potential financial implications are about than 15 MEuro (before insurance). Insurance considerably reduces this cost.

ii. In electricity distribution, extreme winds can cause major incidents. In order to assess its influence, EDP (in Portugal) created an incident database and some conclusions are already available about predictable future risks. The extreme wind phenomena can cause supply interruptions causing economic and reputational costs: the fall of electric lines and the impossibility of power plants to connect to the grid and sell their generation, among others. The Distribution Company is developing a geo-referenced platform that will allow the assessment of any event's severity and help define operation, maintenance or engineering actions. In Portugal, during storm and fire seasons, EDP closely manages the emergency teams and material storage ensuring a faster and more effective corrective action. In most important urban areas, substations are also redundant. These actions reduce interruption in the event of a catastrophe.

In Brazil, EDP developed ClimaGrid to manage the grid physical risks. This system automatically detects thunder storms (that usually precede grid shutdowns), allowing real time intervention in the prevention of future grid shutdowns.

iii. In 2013 the ClimaGrid project had an investment of approximately 600 000 USD.

Risk RPC05 – In the last years the frequency and the intensity of these extreme weather events are increasing. These can be particularly hard when there is a combination of extreme rain and extreme winds like the ones that occurred during the Gong Storm (2013) in Portugal.

i. The costs can be more than 15 million Euro before insurance only from equipment damage.

ii. EDP has created Business Continuity Departments in strategic areas to ensure that even under extreme weather events the key processes will not be affected.

In Brazil, EDP developed ClimaGrid to manage the physical risks of the grid. This system automatically detects thunder storms that usually precede grid shutdowns, allowing real time intervention in the prevention of future grid shutdowns.

iii. In Portugal the distribution company manages the storm and the wildfire seasons differently from the rest of the year increasing the material storage and enlarging the number of the emergency teams. All preventing activities are evaluated and its costs allocated. As an example a Business Continuity Department annual budget is around 500 thousand Euro.

In 2013 the ClimaGrid project had an investment of approximately 600 000 USD.

Risk RPC06 - The gas grid project incorporates best practices in what regards the avoidance of risk areas. These include the gas grid in ring layout that prevents supply interruptions.

EDP's gas company has also special procedures focused on physical risks, which are: the safety and health manual, the accident's analysis and the two-monthly safety and health follow-up meeting.

These actions are incorporated into the Gas Technical Division activity. Roughly this can be quantified 80 thousand Euro per year in Portugal.

RP07 - The change in temperatures might affect the peak load, increasing electricity demand and at the same time affect distribution and generation, causing less energy availability. High temperatures and increased demand can overload the electrical grid thus causing circuit breaks and distribution service interruption. Generation might be

affected by the high temperature of the cooling source. In an event in which these factors do coexist the electrical service might be affected.

- i. This risk can cause a decrease in revenue in about 1-2% in the days in which it occurs, at the most 5 days per year
- ii. The best strategy for this risk is diversification, of assets, of technologies life cycle, geographical, among others.
- iii. The same as RPC01 and RPC02.

**5.1.e. Risks driven by changes in other climate-related developments:**

Risk ID	Risk Driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood of impact	Magnitude of impact
RCC01	Reputation	Social liabilities - Operations in dam's reservoirs during floods - Water discharges in dam's reservoirs, in successive flood situations, are not always well understood by some stakeholders, such as environmental NGO. This may affect EDP's reputation.	Wider social disadvantages	Current	Direct	likely	Medium-low
RCC02	Induced changes in human and cultural environment	Personnel risk related to climate change, both directly, through death or illness in the event of extreme weather conditions (ex: heat waves, cold waves, hurricanes, bush fires, among others), and indirectly, through epidemics and facilitated disease spreading (ex: after floods), or chaos and disorder (ex: inability to reach working place or leave their home).	Reduction/Disruption in generation capacity	Current	Direct	likely	Medium-low
RCC03	Uncertainty in market signals	Climate change may cause consumer demand volatility or industrial consumption reduction or changes in sector tariffs causing reduction of energy market value in the energy sector	Reduced demand for goods/services	Current	Direct	unlikely	Medium-low
RCC04	Change in consumer behavior	EDP's Consumers (B2B and B2C) might be subjected to Climate Change Regulations like the use of low emission products. In order to cope with it, EDP clients may be forced into extra costs.	Reduced demand for goods/services	Unknown	Indirect	unlikely	Medium-low

**5.1.f. Please describe:**

**i. The potential financial implications of the risk/opportunity before taking action**

**ii. The methods you are using to manage this risk/opportunity**

**iii. The costs associated with these actions**

**Risk RCC01 – Reputation**

i. The potential financial implications of this risk can be brand value degradation. EDP's brand is evaluated (2012) in 2.4 Thousand Million Euro, if this risk occurs a reasonable value is about 5%, 240 Million Euro.

ii. EDP has been developing a pilot project, ComPro (Comunicação de Grandes Projectos - Communication Plans and Procedures for major Projects), whose main objective is the strengthening of the bi-directionality of the communication with stakeholders and the improvement of communication in sustainability and environmental issues. This project is being applied to some new investments such as new hydropower plants. In the near future, EDP aims to extend the ComPro methodology to the major investments.

EDP also has a dedicated website for the communication of new hydropower plants ([www.a-nossa-energia.edp.pt](http://www.a-nossa-energia.edp.pt)). EDP has developed social innovation projects in some of the regions in which new hydropower plants are being constructed. These projects include entrepreneurship enhancement through capacity building development (human capital), through product promotion in new markets, namely emerging ones, and through the empowerment in social institutions, among others.

iii. The dedicated website cost around 65 thousand Euro to implement and 5 thousand Euro annually to maintain. Social innovation projects – About 800 thousand Euro in 2010.

**Risk RCC02 – Induced changes in human and cultural environment**

i. The cost associated with this risk is the loss of revenue. This can be a loss in generation, distribution and commercialization; this would be less than 15 million.

ii. EDP has a Corporate procedure that establishes the principles, structure and procedures regarding the Crises and Business Continuity Plans (CCBCP), that must be produced by the main BU, these must address the mitigation actions that must be taken when some exceptionally harmful event occur. These plans are being developed, or already exist for key areas/events such as power plants, electrical distribution, main data processors, pandemics, among others. The plans (will) include emergency plans and frequent emergency drills. All key workers are (will be) identified, have (will have) a VPN access and know (will know) which should be their actions to cope with the situation. EDP has also personnel insurance that covers most of these events and support employees.

iii. The costs associated with the management of these risks are included in the Corporate Risk Department and in the Health and Safety Department Budgets, about 2 million.

**Risk RCC03 – Uncertainty market signals**

i. The impact is measured as a percentage of revenue, 4%.

ii. EDP manages the future risk through scenario analysis performed by the Energy Strategic Department. EDP performs long term energy outlook studies for new investment decisions, for adapting to new government or EU energy strategy. These were performed to renewable energy and electrical vehicle investments and demand trends, such as decentralized generation, decentralized storage, amongst others.

EDP has developed side demand models that incorporate changes in consumer volatility. This is perceived as a business opportunity and EDP has created EDP Serviços an ESCO company that provide efficiency and CO2 services

iii. The costs of these risks are included in the Department budgets, about 2 million Euro.

**Risk RCC04 – Changing consumer behavior**

This risk is rather unlikely and its impact is very much uncertain.

i. The financial impact is a reduction on electricity sales. The impact is measured as a percentage of revenue, about 4%.

ii. EDP manages the future risk through scenario analysis performed by the Risk and the Energy strategy department.

iii. The costs of these risks are included in the Department budgets and are about 2 million per year.

## 6. Climate Change Opportunities

6.1 Have you identified any climate change opportunities (current or future) that have the potential to generate a substantive change in your business operations, revenue or expenditure?

Please identify the relevant categories:

### 6.1.a. Opportunities driven by changes in regulation:

Risk ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood of impact	Magnitude of impact
OR01	Cap and trade schemes	Cap and trade impact the electrical generation mix. EDP's strategy strongly supports renewable energy generation even if the regulatory signals are not so supportive.	Increase demand for products/services	Current	Direct	Virtually certain	High
OR02	Fuel energy taxes and regulations	Taxes and regulations on fossil fuel will most probably force the shift towards clean mobility (electric and natural gas).	New products/business	1-5 years	Direct	Virtually certain	High
OR03	Voluntary agreements	CO2 emission compensation services and green energy commercialization	New business/products	Current	Direct	Virtually certain	Medium
OR04	Cap and trade schemes	CDM projects developed by EDP in Brazil.	New products/business	Current	Direct	Virtually certain	Medium
OR05	Other regulatory drivers	Renewable generation in countries where wind power is currently underdeveloped	Increase demand for products/services	Current	Direct	Virtually certain	Medium
OR06	Fuel energy taxes and regulations	In regulated activities (distribution and last resource supply) costs may be recognized, if proven the need to invest more in assets in order to guarantee service quality levels, while selling electricity at a fixed price.	New products/business	Current	Direct	Likely	Low
OR07	Other regulatory drivers	Wind offshore generation regulation in Europe will most probably give EDP new opportunities. EDP has since January 2010 the permission to develop (with sea energy) 1.3 GW of offshore wind turbines in Scotland.	Increased generation capacity	Current	Direct	Likely	Medium-High
OR08	Other regulatory drivers	European and national legislation concerning ESCOs create a business opportunity in utilities	New products/business	Current	Direct	Very Likely	Medium
OR09	Other regulatory drivers	Financial incentives to reduce electricity use.	New products/business	Current	Direct	Very Likely	Medium

## 6.1.b Please describe:

### i. The potential financial implications of the risk/opportunity before taking action

### ii. The methods you are using to manage this risk/opportunity

### iii. The costs associated with these actions

Regulatory opportunities are constantly monitored by the Regulation and Competition Department in different companies and geographies, as well as by the Energy Strategic Departments, in Iberia and Brazil. In Brazil the Sustainability Department also follows this risk.

#### OR01

i. There is a considerable market for renewable energy reinforced by CO2 markets. In the forthcoming years it is estimated that the operating cash flow from renewable will constantly grow. Since 2012 renewable revenues surpass the billion Euro.

ii. This opportunity is managed by EDP Board using the inputs from the Regulation and Competition Department and the Energy Planning Departments. The strategy is implemented via the EDP Renewable company, EDPR.

iii. The cost associated with this opportunity is the Capex on wind and Hydro. Capex in renewable in 2013 was 627 million Euro.

#### OR02

Clean mobility is an opportunity because: it consumes electricity and gas. In electrical mobility vehicles have zero local emissions and can consume electricity mostly during off-peak hours this might help to regulate the grid. In natural gas mobility CO2 savings are materially relevant thus compensating other business emissions.

i. The potential market for electrical mobility for EDP is the sale of electricity for mobility that will account for about 8.5 MEuro, based on 19 000 vehicles for 2020.

The potential market for natural gas mobility is about 10 MEuro.

ii. In Portugal EDP has currently 17 electrical vehicles and EDP has also installed 400 charging locations. In next years it is planned to develop the business in two lines: pilot project of public charging infrastructure with 1030 charging points, and achieving the 500 users. EDP is currently creating commercial products tailored for clients with electric cars.

In Spain EDP has a partnership with Mitsubishi in which when a car is sold EDP installs the charging system at the client's house.

EDP in Brazil there are actually 26 points in the Brazilian states of São Paulo and Espírito Santo, in 2013 3 points were inaugurated in Mogi das Cruzes city, São Paulo University and at the Portuguese Consulate.

In Portugal EDP is already selling natural gas for the public transport of Braga and Oporto.

iii. Investment associated – Electrical mobility 2 MEuro.

Natural gas mobility – 300 thousand euro per new client (infrastructure).

#### OR03

i. The potential market for the next years 5 could be about 10 MEuro just for the RECs business.

ii. Presently EDP sells green energy, energy certified by RECs, Renewable energy certificates issued by AIB, the Association of Issuing Bodies, to a small group of clients. EDP is currently developing a green services business area that will provide the clients with efficiency services, green energy and CO2 footprint evaluation and compensation. This is a promising area because many businesses are actually under great pressure to cope with voluntary sustainability evaluations in which these products are key factors.

iii. The costs associated with this opportunity are the commercial selling structures that not only sell these products but also sell electricity. A pro rata of the structure costs would be 50 KEuro per year.

OR04 CDM projects developed by EDP in Brazil generating voluntary certificates

i. In 2010 the South America VER market accounted about 17 MUS\$D. Brazil did play a significant part in this figure.

ii. In Brazil, where there is no carbon market in operation, EDP has been a pioneer in the electricity sector in developing carbon credit projects. It has five Clean Development Mechanism (CDM) projects registered with the Executive Board of the UNFCCC (United Nations Framework Convention on Climate Change): repowering the fourth group at Mascarenhas hydroelectric power station; the São João and Paraíso hydroelectric power stations; and Agua Doce and Horizonte wind farms. To date, the UN has issued 40 426 CER.

The revenue from the VERs is invested in socio-environmental projects supported or developed by Instituto EDP.

iii. The cost currently associated with this opportunity is about 50 k USD per year.

OR05 Renewable generation in countries where renewable is underdeveloped

i. There is a considerable market for renewable energy reinforced by CO2 markets. In the next years it is estimated that the operating cash flow from renewable will constantly grow. In 2012 renewable revenues have already surpassed the billion Euro.

These opportunities may arise at two scales. One is related with economies that although they have not fully developed their renewable potential, they are structured economies, as an example one has Romania, Poland, etc.

Another category of opportunities is related with less favored regions in which the energy access is very restricted. EDP created a company A2E that aims to providing access to energy, by disseminating renewable energy generation and use, namely in cooking, in lightning (to allow night study and work) and in water purification. These second type of opportunities have as main objective the improvement of human conditions (<http://www.fundacaoedp.pt/en/access-to-energy/mission/sustainable-development/166>).

ii. EDP renewable company, EDPR is the world third wind player. In 2012 EDP had 8 GW of installed power, a net capacity factor of 30% worldwide and has generated 19.9 TWh with an outstanding availability factor of 98%. EDP is focused in doing business in countries with under exploited wind potential and adequate incentive framework. Those incentives can be power purchase agreements, tax credits, among others.

iii. Investment associated - the Capex on wind in 2013 was 627 MEuro. The Capex of the for A2E, namely for Kakuma demonstration project was 1.3 MEuro

OR06 In regulated activities (distribution and last resource supply) costs may be recognized, if proven the necessity to invest more in assets in order to guarantee service quality levels, while selling electricity at a fixed price. This regulatory issue can decrease operational costs, increasing the margin and also contributing to a better reputation because EDP is able to invest more in these areas.

OR07 - Wind offshore generation regulation.

i. The potential market for offshore wind power is about 3 GW/year worldwide. EDP R being the third wind power company will most surely capture some of these opportunities.

ii. Wind offshore generation is an opportunity and may be supported by regulation. EDP has a pioneer demonstration project, Windfloat a 2 MW sea wind turbine. Windfloat has proven its resilience in deep sea water, it has resisted the Hercules storm, it has maintained its operation and during 2013 has produced about 8 GWh. This project is currently included in an EU I&D project DemoWfloat that aims to develop a pre-commercial phase. The next step will be to build up a sea wind farm with 3 to 5 windfloat units.

iii. The cost of the windfloat demonstration project is 20 MEuro.

OR08

i. In Portugal EDP's estimates the potential ESCO market to be about 1300 MEuro.

ii. EDP has created an ESCO company, EDP Serviços and ESCO company to supply energy efficiency and CO2 services.

iii. The costs associated with this opportunity are the commercial selling structures that not only sell these products but also sell electricity. A pro rata of the structure costs would be about 5 MEuro per year.

OR09 – PPEC Consumption Efficiency Promotion Plan - Project dedicated to promote energy efficiency in Portugal. This project promotes the active participation of consumers in sustainability, in terms of the efficient use of energy. This project is sponsored by the Portuguese Energy Regulator (ERSE).

i. The potential market is about 600 MEuro

ii. Efficiency is a major business area. PPEC initiatives do include these.

iii. The annual cost is 900 Thousand Euro per year.

### 6.1.c. Opportunities driven by changes in changes in physical climate parameters:

Risk ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood of impact	Magnitude of impact
OPC01	Change in precipitation pattern	Water scarcity is a strong scenario. EDP uses water in the thermal power plants cooling system and in the hydropower plant. Through the installation of cooling towers, instead of condensers, EDP has substantially reduced water use. Also the hydro reversible power plants have contributed to a decrease water use guaranteeing additional power generation.	Increase generation capacity Increase power plant resilience	Current	Direct	Virtually certain	Medium - High
OPC02	Change in average temperature	Higher temperatures during summer and mild temperatures in winter may lead to increased electricity and/or gas sales in these periods as a result of intensive use of HVAC equipments.	Increase demand for products/services	Current	Direct	likely	Medium
OPC03	Change in extreme temperature	Resilient technologies may be needed to cope with extreme temperature and weather. Utilities should be able to develop this technologies in the market (ex: conductors for HV lines and cables that can bear higher temperatures with lower losses) and eventually lower the cost of both new and existing technologies by scale effect, e.g.: underground HV cables.	New business/products	1-5 years	Direct	Likely	Medium
OPC04	Increase grid resilience	Decentralized electrical generation and smart grids to improve the electrical system resilience to extreme weather events.	New business/products	Current	Direct	Likely	High

### 6.1.d. Please describe:

i. the potential financial implications of the risk/opportunity before taking action

ii. the methods you are using to manage this risk/opportunity

iii. the costs associated with these actions

EDP has the EMAS registration for 42% of installed capacity and ISO 14001 certification worldwide (76% installed capacity). The ISO 14001 section that addresses these subjects is 4.4.7 – emergency preparedness and response. These certifications guarantee that EDP is already prepared to a range of climactic events thus gaining an advantage regarding its competitors that do not have such a preparation.

OPC01 - Change in precipitation pattern

i. The potential financial revenue of this opportunity is: (1) the marginal revenue that EDP obtains from its pump and storage, (2) the water use savings associated with cooling towers vs. condenser cooling units.

ii. Water scarcity is a strong scenario. EDP uses water in thermal power plants cooling systems and in hydropower plants. Through the installation of cooling towers instead of condensers, EDP has substantially reduced water use. To benefit from this opportunity EDP has invested in technologies that use less water and allow the storage of the resource to better manage it. As an example the Sabor dam, under construction, is a reservoir dam located in an upstream position of Douro, the most affluent river in Portugal. This dam will allow water storage for consumption



and energy generation in such a quantity that Portugal will have electrical consumption independency for peak hours for 30 days.

iii. The new hydropower plants that EDP is building have investment costs. They provide the additional benefit of contributing to manage this risk. Currently EDP is investing in

- New hydro plants in Portugal: 5 hydro plants under construction to be commissioned in 2014-16: ~1,450MW:

- New hydro plants in Brazil: 2 hydro plants under construction to be commissioned in 2015/17: ~600MW

These are an important part of the 1.3 Billion capex used in 2013, and the 1 billion planned to 2014 and 0.8 billion planned to 2015.

#### OPC02 - Change in average temperature

i. Higher temperatures during summer may lead to increased electricity and/or gas sales in these periods as a result of intensive use of HVAC equipments. Increased electricity and/or gas sales will positively impact the company cash flow in about 2 a 3 %.

ii. EDP manages this opportunity by always providing energy supply, even in summer peaks, this is achieved by the diversified investments that EDP has done in generation.

iii. The investments in new power plants, see answer to OPC01. Additionally the Capex on renewable in 2013 was 627 million Euro. EDP is going to invest in new wind & solar capacity: +0.5GW in 2014 and +0.3GW in 2015 mainly through PPAs in US.

OPC03 - Change in extreme temperature - Resilient technologies may be needed to cope with extreme temperature and weather. Utilities should be able to support the development of this technologies in the market (ex: conductors for HV lines and cables that can bear higher temperatures with lower losses) and eventually lower the cost of both new and existing technologies by scale effect, e.g.: underground HV cables. These technologies will decrease operational costs.

#### OPC04 - Increase grid resilience

i. Decentralized generation and smart grids to improve the electrical system resilience to extreme weather events. The potential market for smart grids is about 600 to 1000 MEuro, just considering the distribution component. The micro generation, the electric vehicles and all other services will add up to this amount.

The European Union has ruled that in 2020 80% of electricity clients should be connected via smart grids.

ii. Smart grids allow a much more efficient electrical grid management, and the integration of grid remote management, micro generation, distributed generation, electric vehicles, among others. Currently in Portugal smart grid connects 100 000 clients and in Brazil 11 500.

iii. EDP's investment in smart grids totals about 30 MEuro.

### 6.1.e Opportunities driven by changes in other climate-related developments:

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood of impact	Magnitude of impact
OCC01	Other drivers	Economy decarbonization increase EDP's competitive advantage due to its low CO2 generation	Increased demand for existing products/Services	Current	Direct	Virtually certain	Medium - High
OCC02	Other drivers	Economy decarbonization increase EDP's competitive advantage due to its services in efficiency, green energy and CO2 compensation.	Increased demand for existing products/Services	Current	Direct	Virtually certain	Medium - High
OCC03	Consumer behavior	Clean mobility	New products /business services	10 years	Direct	likely	Medium - High
OCC04	Consumer behavior	Smart grids	New products /business services	5 years	Direct	Likely	Medium - High
OCC05	Induced changes human and cultural environment	Green electricity generation - RECs	New products /business services	Current	Direct	likely	Medium - High
OCC06	Consumer behavior	Energy services – efficiency and CO2 compensation	New products /business services	Current	Direct	Very likely	Medium - High
OCC07	Consumer behavior	Clean electricity production	New products, business, services	Current	Direct	Virtually certain	Medium

### 6.1.f Please describe:

#### i. The potential financial implications of the risk/opportunity before taking action

#### ii. The methods you are using to manage this risk/opportunity

#### iii. The costs associated with these actions

#### OCC01 - Economy decarbonization

i. The potential market for wind generation by 2020 will be between 500 and 1100 GW (IEA, Global wind Energy Outlook) depending on the policies.

ii. EDP is strongly investing in renewables, in 2013 its capex was 627 million Euro, and its revenues surpassed once again the billion Euro.

iii. The costs associated with this opportunity is the capex, in 2013 was 627 million Euro.

#### OCC02 - Economy decarbonization

i. The potential market for energy efficiency services is well above the 1300 MEuro

ii. Economy decarbonization increase EDP's competitive advantage due to its low emissions generation and also to its services in energy efficiency, green energy and CO2 compensation. Also, under the decarbonization trend, EDP sells green energy - energy certified by RECs, Renewable Energy Certificates issued by AIB, the Association of Issuing Bodies. In 2013 EDP sold 4 934 GWh of green electricity to 586 115 clients. This is a promising market because many businesses are actually under great pressure to cope with voluntary sustainability evaluations in which these products are key factors.

iii. The costs associated with these opportunities are related to existing structures, and are about 150 kEuro per year.

#### OCC03 - Clean mobility – Increasing emission regulations will cause the swift from fossil fuel mobility to clean one (electricity and natural gas)

i. The potential market for electrical mobility for EDP is the sale of electricity for mobility that will account for about 8.5 MEuro, based on 19 000 vehicles for 2020.

The potential market for natural gas mobility is about 10 million Euro.

ii. In Portugal EDP has currently 17 electrical vehicles and EDP has also installed 400 charging locations. In next years it is planned to develop the business in two lines: pilot project of public charging infrastructure with 1030 charging

points, and achieving the 500 users. EDP is currently creating commercial products tailored for clients with electric cars.

In Spain EDP has partnerships with Toyota, Mitsubishi and BYD to promote the use of the electric a car

EDP in Brazil there are actually 26 points in the Brazilian states of São Paulo and Espírito Santo, in 2013 3 points were inaugurated in Mogi das Cruzes city, São Paulo University and at the Portuguese Consulate.

In Portugal EDP is already selling natural gas for the public transport of Braga and Oporto.

iii. Investment associated – Electrical mobility 2 MEuro. Natural gas mobility – 300 thousand euro per new client (infrastructure).

#### OCC04 - Smart grids.

i. The potential market for smart grids is about 600 to 1000 MEuro, just considering the distribution component. The micro generation, the electric vehicles and all other services will add up to this amount.

The European Union has ruled that in 2020 80% of electricity clients should be connected via smart grids.

ii. Smart grids allow a much more efficient electrical grid management, and the integration of grid remote management, micro generation, distributed generation, electric vehicles, among others. Currently in Portugal smart grid connects 100 000 clients and in Brazil 11 500.

iii. EDP's investment in smart grids totals about 30 MEuros.

#### OCC05 – Green electricity Renewable Energy Certificates (RECs).

i. The potential market for RECs is about 10 MEuro.

ii. RECs are certificates that proof that one megawatt-hour (MWh) of electricity was generated from a renewable energy resource. Currently EDP has the sourcing and a small client portfolio. The sourcing is produced in the new hydropower plants that are not under any special feed-in tariff. The clients exist and will increase due to the growing number of voluntary sustainability evaluations in which EDP's clients will need to score to keep up with their peers.

iii. The costs associated with this opportunity are the commercial selling structures that not only sell these products but also sell electricity. A pro rata of the structure costs would be 50 KEuro per year.

#### OCC06 - Energy services– energy efficiency and CO2 compensation.

i. The potential market for CO2 services can be up to 7 MEuro and for energy efficiency about 1300 MEuro.

ii. Efficiency services provide positive return; the major drawback is for some projects is its payback period. On the other hand CO2 compensation is a promising area because many businesses are actually under great pressure to cope with voluntary sustainability evaluations in which these products are key factors. A good business opportunity is to provide clients with finance and technology solutions.

iii. The costs associated with this opportunity are the commercial selling structures that not only sell these products but also sell electricity. A pro rata of the structure costs would be about 50 KEuro per year.

#### OC07 - Clean electricity production

EDP has created a Business Unit dedicated to the development of renewable cost effective energy supply in less favored regions: the A2E. Its objective is to promote the access to energy

i. The world potential market is 2.5 billion Euro in investment to provide access to energy worldwide (and access to the 1.3 billion people currently without it).

ii. Supply of solar portable light, solar ovens, water purifiers, and solar home systems, among others. A2E has performed a pilot in the Kakuma refugee camp and in the next 3 years is going to develop 6 projects in 3 continents that will impact the life of more than 70 thousand extremely poor people.

iii. The investment in the first project – in Kakuma – represented an investment of 1.3 million Euro

## CC7. Emissions Methodology

### Base year

CC7.1 Please provide your base year and base year emissions (Scopes 1 and 2).

Use the table in the ORS to provide the following details for Scopes 1 and 2:

Base year	Base year emissions Scope 1	Base year emissions Scope 2
2008	19 813 643	1 571 028

### Methodology

CC7.2 Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

#### Scope 1:

European Directive no. 2003/87/CE - EDP Scope 1 stationary combustion emissions for power generation units under the EU-ETS were calculated using the methodology defined by the European Directive no. 2003/87/CE.

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) (<http://www.ghgprotocol.org/>) – remaining scope 1, scope 2 and scope 3 emissions

If you have selected “other”:

CC7.2a Please provide further details of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

CC7.3 Please give the source for the global warming potentials you have used

Gas	Reference
CO2	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	IPCC Fourth Assessment Report (AR4 - 100 year)
SF6	IPCC Fourth Assessment Report (AR4 - 100 year)

CC7.4 Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data at the bottom of this page

Fuel/Material/Energy	Emission Factor	Unit	Reference
Electricity Emission factor Portugal (Scope 2) 2013	299.2	kg CO2e/MWh	Electricity national emission factor - Portuguese Regulator (ERSE), TSO (REN)
Electricity Emission factor Spain (Scope 2) 2013	249.3	kg CO2e/MWh	Electricity national average emission factor - Spanish TSO (REE)
Electricity Emission factor Brazil (Scope 2) 2013	96.0	kg CO2e/MWh	Electricity national emission factor – Brazil Minister of Science and technology
Electricity Emission factor USA (Scope 2) 2013	562.1	kg CO2e/MWh	Electricity emission factor of the states in which EDP is operating.
Electricity Emission factor RoE (Scope 2) 2013	348.6	kg CO2e/MWh	Electricity emission factor of the countries in which EDP is operating – CERA, Global Insight
Gasoline (Europe and USA)	2.27	kg CO2e/litre	Mobile combustion - GHG emissions calculation tool – version 2.3
Gasoline (Brazil)	2.27	kg CO2e/litre	National emission factor – GHG Protocol Brazilian Program
Diesel (Europe)	2.69	kg CO2e/litre	Mobile combustion - GHG emissions calculation tool – version 2.3
Diesel (USA)	2.67	kg CO2e/litre	Mobile combustion - GHG emissions calculation tool – version 2.3
Diesel (Brazil)	2.67	kg CO2e/litre	National emission factor – GHG Protocol Brazilian Program
CNG (Brazil)	1.99	kg CO2e/m3	National emission factor – GHG Protocol Brazilian Program
Alcohol (Brazil)	1.18	kg CO2e/litre	National emission factor – GHG Protocol Brazilian Program

## CC8. Emissions Data

### Boundary

CC8.1 Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory  
Select from

X	Financial control
	Operational control
	Equity share
	Climate Change Reporting Framework (CCRF)
	Other

### Scope 1 and 2 Emissions Data

CC8.2 Please provide your gross global Scope 1 emissions figures in metric tonnes CO<sub>2e</sub>

16 668 937

CC8.3 Please provide your gross global Scope 2 emissions figures in metric tonnes CO<sub>2e</sub>

2 328 203

CC8.4 Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

No

### Data Accuracy

CC8.5 Please estimate the level of uncertainty of the total gross global Scope 1 and 2 emissions figures that you have supplied and specify the sources of uncertainty in your data gathering, handling and calculations

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
1	Less than or equal to 2%	Control and measurement equipment (Fuel measurement)	The values are fully audited. EDP considers as an acceptable figure an uncertainty of less than 2%.
2	Less than or equal to 2%	Control and measurement equipment (electricity measurement)	The values are fully audited. EDP considers as an acceptable figure an uncertainty of less than 2%.

### External Verification or Assurance

CC8.6 Please indicate the verification/assurance status that applies to your reported Scope 1 emissions

*If Scope 1 emissions have been subject to third party verification or assurance (complete or underway):*

CC8.6a Please provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements

Type of verification or assurance	Attach the document	Page/Section reference	Relevant standard	Proportion of reported Scope 1 emission verified (%)
Reasonable Assurance	EDP Annual Report 2013	Pag. 319 - 333	ISAE 3410	100%

CC8.7 Please indicate the verification/assurance status that applies to your reported Scope 2 emissions

*If Scope 2 emissions have been subject to third party verification or assurance (complete or underway):*

CC8.7a Please provide further details of the verification/assurance undertaken for your Scope 2 emissions, and attach the relevant statements

Type of verification or assurance	Attach the document	Page/Section reference	Relevant standard	Proportion of reported Scope 1 emission verified (%)
Reasonable Assurance	EDP Annual Report 2013	Pag. 319 - 333	ISAE 3410	100%

CC8.8 Please identify if any data points other than emission figures have been verified as part of the third party verification work undertaken (new for CDP 2014)

Additional data point verified	Comment
Year on year change in emissions (Scope 1 and 2)	
Year on year emissions intensity figure	
Emissions reduction activities	

### Carbon Dioxide Emissions from Biologically Sequestered Carbon

CC8.9 Are carbon dioxide emissions from the combustion of biologically sequestered carbon (i.e. carbon dioxide emissions from burning biomass/biofuels) relevant to your company?

Yes

CC8.9a Please provide the emissions from biologically sequestered carbon relevant to your organization in metric ton CO<sub>2</sub>

809 tCO<sub>2</sub>e (mobile combustion) + 842 tCO<sub>2</sub> (Biomass power plants), total 1651 tCO<sub>2</sub>.

### CC9. Scope 1 Emissions Breakdown

*Electric utilities should report emissions by country/region using the tables in EU2.*

*Oil and gas sector companies are requested to provide breakdowns of emissions by value chain segment and activity as shown in OG2 and OG3.*

*ICT companies can use the sector module to respond to Q9.2d*

CC9.1 Do you have Scope 1 emissions sources in more than one country?

Yes

If yes: CC9.1a Please break down your total gross global Scope 1 emissions by country/region

Country/Region	Scope 1 metric tonnes CO <sub>2</sub> e
Portugal	7 861 588
Spain	8 800 792
Brazil	6 066
USA	295
RoE (Rest of Europe - France, Belgium, UK, Italy, Poland and Romania)	196

CC9.2 Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

By business division (CC9.2a)	
By facility (CC9.2b)	
By GHG type (CC9.2c)	X
By activity (CC9.2d)	X

Where a breakdown option has been ticked, a table appears to allow you to enter the relevant emissions data

CC9.2.c

GHG Type	Scope 1 metric tonnes CO <sub>2</sub> e
CO <sub>2</sub>	16 654 646
SF <sub>6</sub> (GWP=22,800)	9 189
Methane (Gas losses) (GWP=25)	5 103

CC9.2.d

Activity	Scope 1 metric tonnes CO2e
Electricity generation and distribution	16 662 284
Gas transport and distribution	6 653

### CC10. Scope 2 Emissions Breakdown

*Oil and gas sector companies are requested to provide the breakdown of emissions by value chain segment as shown in OG2*

*ICT companies can use the sector module to respond to Q10.2c*

CC10.1 Do you have Scope 2 emissions sources in more than one country?

Yes

If yes: CC10.1a Please break down your total gross global Scope 2 emissions by country/region

Country/Region	Scope 2 metric tonnes CO2e	Purchased (MWh)	Purchased low carbon (MWh)
Portugal	1 899 092	1 424 582	0
Spain	121 875	119 101	0
Brazil	290 201	26 030	0
USA	14 027	25 901	0
RoW (Rest of the world - France, Belgium, UK, Italy, Poland and Romania)	3 007	8 626	0

CC10.2 Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

By business division (CC10.2a)	
By facility (CC10.2b)	
By activity (CC10.2c)	X
By legal structure (CC10.2d)	

Where a breakdown option has been ticked, a table appears to allow you to enter the relevant emissions data

CC10.2.c

Activity	Scope 2 metric tonnes CO2e
Electricity generation and distribution	2 327 847
Gas transport and distribution	356



## CC11. Energy

CC11.1 What percentage of your total operational spend in the reporting year was on energy?

82%

CC11.2 Please state how much fuel, electricity, heat, steam, and cooling in MWh your organization has consumed during the reporting year

Energy Type	MWh
Fuel	47 493 792
Electricity	11 496 191
Heat	0
Steam	0
Cooling	0

CC11.3 Please complete the table by breaking down the total "Fuel" figure entered above by fuel type

Fuel Type	MWh
Coal	36 457 721
Natural Gas	6 402 619
Gasoil	26 630
Fuel oil	110 864
Solid Biomass	884 213
Blast Furnace Gas	2 977 483
Coke Oven Gas	233 864
Oxygen Steel Furnace Gas	325 894
Fuel for mobile (Gasoline, diesel oil, alcohol, LNG)	74 504

CC11.4 Please provide details of the electricity, heat, steam or cooling amounts that were accounted at a low carbon emission factor in the Scope 2 figure reported in CC8.3

Basis for applying a low carbon emission factor	MWh associated with low carbon electricity, heat, steam or cooling	Comments
Not applicable	n.a.	n.a.

## CC12. Emissions Performance

### Emissions History

CC12.1 How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to the previous year?

Decreased

*If emissions have increased, decreased or remained the same overall:*

CC12.1a Please identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined) and for each of them specify how your emissions compare to the previous year

Reason	Emissions Value	Direction of change	Comment
Emissions reduction activities	2,1%	Decreased	The entry into operation of new renewable capacity (approx. 500 MW of wind and solar PV) led to further decarbonisation of EDP's generation portfolio, which resulted in reduced scope 1 emissions.
Change in physical operating conditions	5,5%	Decreased	Favourable weather conditions for the operation of hydroelectric and wind energy power stations, particularly on the Iberian Peninsula, led to the overall improvement of the energy and environmental performance of supply of the EDP Group compared to 2012: strong increase in generation from renewable sources and reduction of scope 1 emissions.
Other: increase in distribution network losses	4,5%	Increased	There was an increase in losses (mostly commercial) in the distribution business, which led to increase of scope 2 emissions. These losses represent about 70% of scope 2 emissions.

### Emissions Intensity

CC12.2 Please describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per unit currency total revenue

Intensity figure	Metric numerator [mtCO2e]	Metric denominator [Turnover M€]	% change from previous year	Direction of change from previous year	Reason for Change
1 179.7	18 997 140	16 103	1.1%	Decreased	Both scope 1+2 emissions (-2.6%) and turnover (-1.1%) decreased compared to previous year. However, emissions decreased more than turnover, so the overall result is a decrease in the intensity figure from previous year.

CC12.3 Please describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric ton CO2e per full time equivalent (FTE) employee

Intensity figure	Metric numerator [mtCO2e]	Metric denominator [FTE employee]	% change from previous year	Direction of change from previous year	Reason for Change
1 559.9	18 997 140	12 179	1.8%	Decreased	Both scope 1+2 emissions (-2.6%) and FTE (-0.8%) decreased compared to previous year. However, emissions decreased more than FTE, so the overall result is a decrease in the intensity figure from previous year.

CC12.4 Please provide an additional intensity (**normalized**) metric that is appropriate to your business operations

Intensity figure	Metric numerator [mtCO2e]	Metric Denominator (MWh)	% change from previous year	Direction of change from previous year	Reason for Change
0.276	18 997 140	60 175 091	9.9%	Decreased	Scope 1+2 emissions decreased (-2.6%) and power generation increased (+8.1%) from previous year, resulting in a decrease in the intensity figure of about 10%.

### CC13. Emissions Trading

13.1 Do you participate in any emissions trading schemes?

Yes.

If yes: CC13.1a Please complete the following table for each of the emission trading schemes in which you participate

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO2e	Details of ownership
EU - ETS	Year 2013	3 530 010	9 128 762	16 633 878	Facilities EDP owns and operates

CC13.1b What is your strategy for complying with the schemes in which you participate or anticipate participating?

EDP's compliance strategy for the EU-ETS is based on emission reduction as well as in allowances purchase.

The allocation of emissions allowances for the 2013-2020 period began to be partially made in auction, in accordance with Directive 2009/29/EC, which regulates the 3rd phase of the EU ETS - European Emission Trading System. In the case of the EDP Group, the power stations covered by the EU ETS produced 16.6 Mton of CO2 in 2013, which is an 8% decrease compared to 2012. Overall specific emissions fell from 0.323 tCO2/MWh in 2012 to 0.276 tCO2/MWh in 2013, due to the strong increase in generation from renewable origin. EDP continued with the same strategy of CO2 portfolio management as that adopted in previous years for coverage of exposure through the use of allowances and also carbon credits acquired in both the primary market and secondary market, minimizing its

exposure to market risk. Moreover, EDP has been promoting voluntary CDM projects (Clean Development Mechanism), particularly in Brazil.

CC13.2 Has your organization originated any project-based carbon credits or purchased any within the reporting period?

Yes

If yes: CC13.2a Please complete the following table

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric ton CO2e)	Number of credits (metric ton CO2e): Risk adjusted volume	Credits retired	Purpose, e.g. compliance
Purchase	Coke Oven Gogen	CN2818	CDM	6 004	6 004	0	Compliance
Purchase	HFC23	CN11	CDM	38 017	38 017	0	Compliance
Purchase	HFC23	CN306	CDM	39 089	39 089	0	Compliance
Purchase	Hydro	CN3271	CDM	48 228	48 228	0	Compliance
Purchase	Hydro	CN3273	CDM	15 517	15 517	0	Compliance
Purchase	Hydro	CN3824	CDM	58 639	58 639	0	Compliance
Purchase	Hydro	CN4237	CDM	12 093	12 093	0	Compliance
Purchase	Landfill gas	AR928	CDM	177 148	177 148	0	Compliance
Purchase	N2O	DE1000017	JI	446 390	446 390	0	Compliance
Purchase	Waste gas	CN1416	CDM	57 038	57 038	0	Compliance
Purchase	Wind	CN1815	CDM	17 530	17 530	0	Compliance
Purchase	Wind	CN2530	CDM	76 867	76 867	0	Compliance
Purchase	Wind	CN3092	CDM	42 885	42 885	0	Compliance
Purchase	Wind	CN3251	CDM	37 627	37 627	0	Compliance
Purchase	Wind	CN5286	CDM	55 776	55 776	0	Compliance
Purchase	Wind	CN5688	CDM	40 227	40 227	0	Compliance
Purchase	Wind	CN5856	CDM	46 275	46 275	0	Compliance
Purchase	Wind	CN5912	CDM	24 607	24 607	0	Compliance
Purchase	Wind	CN5920	CDM	14 849	14 849	0	Compliance

## CC14. Scope 3 Emissions

CC14.1 Please account for your organization's Scope 3 emissions, disclosing and explaining any exclusions

Sources of Scope 3 emissions	Evaluation Status	metric ton CO2e	Methodology	% emissions primary data	Explanation
C.01 Purchased goods and services	Relevant, calculated	7 164 232	Life Cycle Assessment (LCA) study performed with Simapro software. Scope and emissions categorization defined to comply with the requirements of The GHG Protocol Value Chain (Scope 3) Accounting and Reporting Standard. Activity data sources: EDP; Ecoinvent database when primary data was not available. Emission factors source: calculated from publish data (national energy authorities and LCA studies). GWP source: IPCC Assessment Report 4 (2007).	50	Generation/processing of electricity and natural gas purchased for retail.
C.02 Capital goods	Not relevant, calculated	18 201	Life Cycle Assessment (LCA) study performed with Simapro software. Scope and emissions categorization defined to comply with the requirements of The GHG Protocol Value Chain (Scope 3) Accounting and Reporting Standard. Activity data sources: EDP; Ecoinvent database when primary data was not available. Emission factors source: calculated from publish data (national energy authorities and LCA studies). GWP source: IPCC Assessment Report 4 (2007).	20	Facilities (power plant and buildings) construction and equipment acquisition.
C.03 Fuel-and-energy-related activities (not included in Scope 1 or 2)	Relevant, calculated	2 145 739	Life Cycle Assessment (LCA) study performed with Simapro software. Scope and emissions categorization defined to comply with the requirements of The GHG Protocol Value Chain (Scope 3) Accounting and Reporting Standard. Activity data sources: EDP; Ecoinvent database when primary data was not available. Emission factors source: calculated from publish data (national energy authorities and LCA studies). GWP source: IPCC Assessment Report 4 (2007).	50	Production (extraction and processing) of fuels (coal, natural gas, forest biomass, fuel oil and diesel) used by EDP for electricity generation (excluding transport/transmission).

C.04 Upstream transportation and distribution	Relevant, calculated	1 428 170	Life Cycle Assessment (LCA) study performed with Simapro software. Scope and emissions categorization defined to comply with the requirements of The GHG Protocol Value Chain (Scope 3) Accounting and Reporting Standard. Activity data sources: EDP; Ecoinvent database when primary data was not available. Emission factors source: calculated from publish data (national energy authorities and LCA studies). GWP source: IPCC Assessment Report 4 (2007).	50	Transportation of coal and transmission/distribution of electricity purchased by EDP from other suppliers for retail.
C.05 Waste generated in operations	Not relevant, calculated	22 300	Life Cycle Assessment (LCA) study performed with Simapro software. Scope and emissions categorization defined to comply with the requirements of The GHG Protocol Value Chain (Scope 3) Accounting and Reporting Standard. Activity data sources: EDP; Ecoinvent database when primary data was not available. Emission factors source: calculated from publish data (national energy authorities and LCA studies). GWP source: IPCC Assessment Report 4 (2007).	50	Transport and disposal of waste generated in EDP's activities (mainly gypsum and ashes from coal power plants).
C.06 Business travel	Not relevant, calculated	11 340	Life Cycle Assessment (LCA) study performed with Simapro software. Scope and emissions categorization defined to comply with the requirements of The GHG Protocol Value Chain (Scope 3) Accounting and Reporting Standard. Activity data sources: EDP; Ecoinvent database when primary data was not available. Emission factors source: calculated from publish data (national energy authorities and LCA studies). GWP source: IPCC Assessment Report 4 (2007).	50	EDP employee business travel (air, train and road travel).
C.07 Employee commuting	Not relevant, calculated	4 477	Life Cycle Assessment (LCA) study performed with Simapro software. Scope and emissions categorization defined to comply with the requirements of The GHG Protocol Value Chain (Scope 3) Accounting and Reporting Standard. Activity data sources: EDP; Ecoinvent database when primary data was not available. Emission factors source: calculated from publish data (national energy authorities and LCA studies). GWP source: IPCC Assessment Report 4 (2007).	50	EDP employee commuting.
C.08 Upstream leased assets	Not relevant, calculated	33 997	Life Cycle Assessment (LCA) study performed with Simapro software. Scope and emissions categorization defined to comply with the requirements of The GHG Protocol Value Chain (Scope 3) Accounting and Reporting Standard. Activity data sources: EDP; Ecoinvent database when primary data was not available. Emission factors source: calculated from publish data (national energy authorities and LCA studies). GWP source: IPCC Assessment Report 4.	100	Use of rented assets (especially machinery) in construction activities.

C.09 Downstream transportation and distribution	Not relevant, calculated	712	Life Cycle Assessment (LCA) study performed with Simapro software. Scope and emissions categorization defined to comply with the requirements of The GHG Protocol Value Chain (Scope 3) Accounting and Reporting Standard. Activity data sources: EDP; Ecoinvent database when primary data was not available. Emission factors source: calculated from publish data (national energy authorities and LCA studies). GWP source: IPCC Assessment Report 4 (2007).	90	Support activities (offices and stores) associated with electricity and gas retail.
C.10 Processing of sold products	Not applicable	n.a.	n.a.	n.a.	EDP's products (electricity and gas) are supplied in their final consuming form, therefore they do not require processing.
C.11 Use of sold products	Relevant, calculated	7 036 803	Life Cycle Assessment (LCA) study performed with Simapro software. Scope and emissions categorization defined to comply with the requirements of The GHG Protocol Value Chain (Scope 3) Accounting and Reporting Standard. Activity data sources: EDP; Ecoinvent database when primary data was not available. Emission factors source: calculated from publish data (national energy authorities and LCA studies). GWP source: IPCC Assessment Report 4 (2007).	100	Use of natural gas sold by EDP to clients.
C.12 End of life treatment of sold products	Not applicable	n.a.	n.a.	n.a.	EDP's products (electricity and gas) do not generate residues, therefore no end of life treatment is required.
C.13 Downstream leased assets	Not applicable	n.a.	n.a.	n.a.	EDP did not use downstream leased assets in the reporting year.
C.14 Franchises	Not applicable	n.a.	n.a.	n.a.	EDP did not have franchised activities in the reporting year.
C.15 Investments	Not relevant, calculated	4 127	Life Cycle Assessment (LCA) study performed with Simapro software. Scope and emissions categorization defined to comply with the requirements of The GHG Protocol Value Chain (Scope 3) Accounting and Reporting Standard. Activity data sources: EDP; Ecoinvent database when primary data was not available. Emission factors source: calculated from publish data (national energy authorities and LCA studies). GWP source: IPCC Assessment Report 4 (2007).	10	Emissions from EDP's participated companies (minority interests).

Annexed: Scope 3 project results

CC14.2 Please indicate the verification/assurance status that applies to your Scope 3 emissions

Limited Assurance

*If Scope 3 emissions have been subject to third party verification or assurance (complete or underway):*

CC14.2a Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Type of verification or assurance	Attach the document	Page/Section reference	Relevant standard	Proportion of reported Scope 1 emission verified (%)
Limited Assurance	Letter of assurance		ISAE 3410	100%

CC14.3 Are you able to compare your Scope 3 emissions for the reporting year with those for the previous year for any sources?

Yes

If yes: CC14.3a Please identify the reason for any change in your Scope 3 emissions and for each of them specify how your emissions compare to the previous year

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
C.01 Purchased goods and services	Due to a wet year EDP has produced more energy, thus distributing considerably less energy generated from other companies.	-45%	decrease	In depth analysis of year-to-year change was conducted only for material scope 3 emission categories.
C.03 Fuel-and-energy-related activities (not included in Scope 1 or 2)	Less activity of coal and CCGT power plants.	-32%	decrease	In depth analysis of year-to-year change was conducted only for material scope 3 emission categories.
C.04 Upstream transportation and distribution	Due to reduced fossil fuel electricity generation, EDP transported less coal in Portugal and in Spain.	-10%	decrease	In depth analysis of year-to-year change was conducted only for material scope 3 emission categories.
C.11 Use of sold products	Total quantity of natural gas sold to clients in 2013 did not change significantly from 2012.	-0.5%	maintain	In depth analysis of year-to-year change was conducted only for material scope 3 emission categories.

CC14.4 Do you engage with any of the elements of your value chain on GHG emissions and climate change strategies?

Yes.

<input checked="" type="checkbox"/>	Yes our suppliers
<input checked="" type="checkbox"/>	Yes our customers
<input type="checkbox"/>	Yes other partners in the value chain
<input type="checkbox"/>	No, we do not engage

If “yes, our suppliers”, “Yes, our customers” or “Yes, other partners in the value chain” is ticked:

CC14.4.a Please give details of methods of engagement, your strategy for prioritizing engagements and measures of success:

Suppliers:

EDP is currently working with suppliers on sustainability performance enhancement. Within this line of work, EDP is developing a specific project, launched in 2013, in which it will assess its supply chain exposure to climate change and water related risks. Results will be available in the forthcoming years.

Furthermore, EDP scrutinizes suppliers performance using the Achilles database that contains important sustainability data such as if the supplier has implemented and certified environmental management systems, which is used as a proxy for sustainability performance, including GHG emissions management.

Customers:

EDP has for long worked with clients in educational projects addressing energy efficiency and climate change such as “Twist”, for college schools ([www.twist.edp.pt](http://www.twist.edp.pt)), “A tua energia” for elementary schools, among others.

1 - Save to compete program ([www.savetocompete.com/pt](http://www.savetocompete.com/pt)) – partnership among EDP and the Portuguese Industrial Confederation to promote energy efficiency; Investment EUR 7.2 million, scope 1 and 2 emissions avoided 7,300 tons of CO<sub>2</sub>, energy saved 12 GWh in energy consumption and approximately EUR 2 million. The success achieved in Portugal with this program led to its launch in Spain, in Astúrias, in November 2013.

2 - PPEC – Plan for Promoting the Efficient Electricity Consumption (PPEC) promoted by the Energy Services

Regulatory Authority (ERSE). EDP had 16 measures approved: energy savings of about 1073 GWh, scope 1 and 2 emission reduction of 397 tons of CO2 and a global benefit of about EUR 105 million. For more information about these measures, visit

[www.erse.pt/pt/planodepromocaodaeficiencianoconsumoppec/ppec1314/Paginas/default.aspx](http://www.erse.pt/pt/planodepromocaodaeficiencianoconsumoppec/ppec1314/Paginas/default.aspx)

3 - EDP has a special program in Portugal to promote energy efficiency with, in particular, an exclusive web page for this theme - [www.eco.edp.pt](http://www.eco.edp.pt) - where consumers can find, for example:

- Information and advice on energy efficiency;
- Energy efficiency and CO2 emissions simulators;
- Practical guide for an efficient home.

4 - In Brazil electricity efficiency programs in 2013: investment EUR 8.5 million, estimated energy savings of about 36GWh and 16MW less demand at peak periods ([www.edp.com.br/inovacaosustentabilidade/ programa-de-eficiencia-energetica](http://www.edp.com.br/inovacaosustentabilidade/programa-de-eficiencia-energetica))

5 - Since 2010 EDP leads the Portuguese electric mobility project ([www. mobie.pt](http://www.mobie.pt)) – 1100 charging points and 500 users- in 2013 the avoided scope 1 emissions were 1,205 tCO2. In Brazil, EDP carries on the evaluation of possible scenarios, experimentation and measuring the impacts of electric vehicles on the EDP distribution systems.

2.6 In Portugal EDP has created a service Ea:se service that allows monitoring of electricity, water, gas and compressed air consumption (REF powerpoint).

7 - A2E access to energy program - based on renewable energy solutions, mainly solar, in order to contribute towards the social, economic and environmental development of the communities less favoured. The projects allow scope 1 emission reductions since in most cases they allow for the replacement of wood combustion. The ongoing projects are:

- Brazil access to electricity distribution grid, Portable Light Project, electrical equipment donation, street light donation in less-favored neighborhoods and households.

- Cabiri Solar Village, in Angola - implementation of sustainable energy solutions to meet basic needs of local population – app. 3,000 people - 505 solar photovoltaic systems installed in 500 family houses and social and 83 solar street lighting posts (<http://www.fundacaoedp.pt/en/access-to-energy/mission/sustainable-development/166>)

8 - Ease program – system that performs a real time monitoring of energy and water consumption, allowing its analyses and benchmark, clients can reduce their scope 2 emissions,

9 - Micro and mini generation projects – in 2013 EDP installed 3.8 MW photovoltaic systems with an estimated annual production of 5 GWh/year, clients reduce their scope 2 emissions and 300 mini systems with an installed capacity of 1 MW.

10 – EDP Gás has a natural gas refuelling station at Braga, Portugal that provides fuel to public buses. In 2013 provided 22814 GJ of CNG to Braga public bus, avoiding 409 tCO2e per year. Emission factors from GHG protocol: 74.01 KgCO2/GJ gasoil, 56.06 KgCO2/GJ natural gas, 0.0336 GJ/m3 natural gas. This project will generate neither CERS nor ERUs.

*And if “yes, our suppliers” is ticked, complete questions CC14.4b and CC14.4c:*

CC14.4.b To give a sense of scale of this engagement, please give the number of suppliers with whom you are engaging and the proportion of your total spend that they represent

Number of suppliers	% total spend	Comment
1 196	65%	Suppliers assessed using Achilles database.

CC14.4.c If you have data on your suppliers’ GHG emissions and climate change strategies, please explain how you make use of that data

How you make use of the data	Please give details
No data available	