Welcome to your CDP Climate Change Questionnaire 2019

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

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

EDP is a vertically integrated utility company, with presence in 16 countries, in 4 continents. With more than 11,600 employees, EDP has operational activities in power generation, distribution and supply of electricity (Portugal, Spain and Brazil) and gas supply (Portugal and Spain). More recently, EDP entered the transmission business in Brazil. Through its subsidiary EDP Renewables, EDP is also one of the largest wind power operators worldwide, with on-shore wind farms in Europe (Iberian Peninsula, France, Belgium, Italy, Poland and Romania), North America (United States of America, Canada and Mexico) and South America (Brazil), and developing off-shore wind projects in the UK, France and the USA. Additionally, EDP generates power from photovoltaic plants in Portugal, Romania and the USA. Almost 70% of our energy is produced from renewable resources.

Throughout its 40 years of history, EDP has been building a relevant presence in the world energy scene. EDP supplies electricity to 9.8 million customers and gas to 1.6 million customers. In 2018, the company generated about 72 TWh of electricity worldwide, of which 66% from renewable energy sources and, by year end, had an installed capacity of 27.2 GW (74.4% renewable).

EDP's vision is to be a global energy providing company, leader in the energy transition to create superior value. Our values are Innovation, Sustainability and Humanization and our commitments are towards results, sustainability, customers and people. The company assumes the power sector's key role in the transition to a low-carbon economy and set a strategic agenda based on organic growth focused on renewables and low exposure to CO2 and sustainability risks. EDP publishes detailed information on its financial and sustainability performance and governance practices in its Annual Report and Sustainability Report, available on www.edp.com.

Key financial figures in 2018:
Turnover: EUR 15,278 million
EBITDA: EUR 3,317 million
Net profit: EUR 519 million
Net investment: EUR 1,707 million
Net debt: EUR 13,480 million
Total assets: EUR 41,644 million
ISIN: PTEDP0AM0009
SEDOL: 4103596

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years
Row 1	January 1, 2018	December 31, 2018	No

C0.3

(C0.3) Select the countries/regions for which you will be supplying data.

Belgium
Brazil
Canada
France
Italy
Mexico
Poland
Portugal
Romania
Spain
United Kingdom of Great Britain and Northern Ireland
United States of America

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

EUR

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your consolidation approach to your Scope 1 and Scope 2 greenhouse gas inventory.

Financial control

C-EU0.7

(C-EU0.7) Which part of the electric utilities value chain does your organization operate in? Select all that apply.

Row 1

Electric utilities value chain

Electricity generation
Distribution

Other divisions

Smart grids / demand response

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Director on board	A Director on EDP's Corporate Executive Board has formal responsibility over sustainability issues (CSO), including climate change. The Director currently in charge is assigned with all the company's cross-cutting critical themes, namely risk management and sustainability. This Director is responsible for: submitting to Board's approval the company's climate targets, policies and actions; ensuring inclusion of climate risks (e.g. impact of acute and chronical physical risks in electricity generation and distribution assets) in the company's risk profile; integrating climate-related issues into Business Plan development and investment/divestment analysis (e.g. forecast of carbon price impact on new generation assets profitability); reporting on climate-related issues to EDP's General and Supervisory Board (GSB), the highest-level corporate body below the General Shareholders Meeting, which includes a Corporate Governance and Sustainability Committee, headed by the GSB chairman.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – some meetings	Reviewing and guiding strategy	The Executive Board of Directors, in the person of the Director responsible for sustainability, is briefed monthly

	Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues	by the company's Corporate Sustainability Office – coordinating, whenever needed, with the Corporate Risk Management Office and the company's Business Units – on sustainability issues, including climate change. Reports include: i) regular updates on the implementation of the company's climate-related policies, actions and targets (e.g. performance against CO2/kWh targets in electricity generation business unit; performance against client energy savings from energy services in electricity supply business unit); ii) results of in-depth climate risk analysis (e.g. extensive exercise, conducted in 2017, of emerging risks mapping, highlighting climate change transition and physical risks); iii) inputs for analysis of investments/divestments on electricity generation, impacting business plans and annual budgets (e.g. impact of changing CO2 prices); iv) proposal for new climate policies, actions and targets, aligned with EDP's corporate sustainability strategy. The Executive Director in charge of sustainability regularly takes the most relevant climate-related issues to the Executive Board meetings. The Executive Director also reports on climate to EDP's General and Supervisory Board, oversees the Corporate Sustainability and Risk Management Offices and chairs the Sustainability Committee, where the top management of the most relevant business units discuss the Group's environmental performance and its annual Operational Environment and Sustainability Plan.

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Other C-Suite Officer, please specify Head of Corporate Sustainability Office	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

Highest-level management position (i.e below Executive Board level) for climate-related issues lies with the Head of EDP's Corporate Sustainability Office. Corporate offices are structures of EDP Corporate Centre, headed by the company's most senior managers, who report directly to the company's Executive Board of Directors. The Head of the Corporate Sustainability Office is responsible for assisting the Executive Board in defining corporate sustainability policies, actions and targets, including those related to climate, and for monitoring their implementation at Business Unit level. He is also the Head of the company's Corporate Risk Management Office, thus facilitating the integration of climate-related transition and physical risks into the company's risk profile and risk management procedures (assessment, integrated analyses of return-risk, mitigation strategies and monitoring). The Head of the Corporate Sustainability Office reports directly, at least monthly, to the company's Executive Board Director in charge of sustainability. Reports include updates on the implementation of climate-related policies, actions and targets (e.g. corporate target of reduction in CO2/kWh in 2030 from 2005 levels); results of in-depth climate risk analysis (e.g. value at risk from climate change-induced structural change in water and/or wind volumes, affecting the operation of renewable electricity generation assets); climate-related inputs for analysis of investments/divestments; and proposal for new climate policies, actions and targets, namely the new 2030 ambition targets, approved and presented to the market through the EDP Strategic Update 19-22.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

Yes

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Who is entitled to benefit from these incentives?

Board/Executive board

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

Members of EDP Corporate Executive Board of Directors, in accordance with the Board's remuneration policy, have the company's sustainability performance factored into their multiannual variable remuneration.
The indicator is monitored through EDP performance in the Dow Jones Sustainability Index (DJSI), which includes the attainment of the explicit CO2 emissions reduction targets set by the company.

Who is entitled to benefit from these incentives?

Business unit manager

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction project

Comment

Top managers of EDP Group's Business Units have emissions reduction KPIs, based on the company's 2020 Business Plan and Sustainability Targets, factored into their variable remuneration.
KPIs include: at EDP Renewables, board members have a KPI for investments in new solar projects; at supply companies, board members have KPIs for customer energy efficiency and adjudication of solar PV projects.

Who is entitled to benefit from these incentives?

All employees

Types of incentives

Monetary reward

Activity incentivized

Other, please specify

DJSI and Business Plan performance

Comment

At group level, all employees have their variable compensation dependent upon DJSI performance, of which the emissions reduction target is one of the components.
At Business Unit level, team level and individual level, all employees have KPIs based on the company's 2020 Business Plan and Sustainability Targets factored into their variable remuneration. Among other KPIs, we highlight:
1) Renewable installed capacity investment, implying emissions intensity reduction;
2) Energy services market objectives, which include
2a) Smart meters deployment targets;

2b) Distribution technical losses reduction;
2c) Investment in new solar projects;
3) Electric mobility objectives, which include:
3a) Light vehicles fleet electrification;
3b) Electric vehicles charging points installation;
3c) New e-mobility products and services;
4) Customer energy efficiency.
Additionally, employees in Brazil have specific KPI associated to the company performance at ISE Sustainability Index.

C2. Risks and opportunities

C2.1

(C2.1) Describe what your organization considers to be short-, medium- and long-term horizons.

	From (years)	To (years)	Comment
Short-term	0	1	Focus is on the budget of the year. Timeframe allows foresight of the most immediate consequences of possible regulatory/ technological/ other transitional triggers.
Medium-term	1	5	Focus is on the Business Plan exercise. Timeframe allows foresight of possible transition risks and a prospective analysis of structural changes cause by physical risks, with an impact on the company's strategy.
Long-term	5	50	Focus is on the long-term company strategy. It foresees the consequences of structural changes in climate patterns, as such chronic physical impacts are not immediate and can only be assessed in the long-term.

C2.2

(C2.2) Select the option that best describes how your organization's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management.

Integrated into multi-disciplinary company-wide risk identification, assessment, and management processes

C2.2a

(C2.2a) Select the options that best describe your organization's frequency and time horizon for identifying and assessing climate-related risks.

	Frequency of monitoring	How far into the future are risks considered?	Comment
Row 1	Six-monthly or more frequently	>6 years	There are several means to monitor climate risks. The more frequent reports usually follow transition risks related with markets evolution and potential regulatory risks that may constraint and change market dynamics as well as the performance of renewable volumes, which are impacted by physical risks, namely hydro and wind productivity indexes. The frequency of monitoring of more integrated reports and exercises is annual for most climate risks as they are integrated into the annual budgeting exercises performed by EDP Group. Furthest time horizon considered is over 6 years, typically for climate-related physical risk, which are considered in the long-term (5-50 year timeframe). Transition risks are evaluated in the short/medium-term (0-5 year timeframe).

C2.2b

(C2.2b) Provide further details on your organization's process(es) for identifying and assessing climate-related risks.

Climate-related risks/opportunities are fully integrated into EDP's periodic risk identification, assessment and management process. They are identified across different categories of EDP's risk taxonomy and monitored and reported periodically to the Board. The analysis is performed in several different processes within the company. Some of those are more frequent (assessed bi-weekly, quarterly or every 6-months, depending on the report/ process) giving an updated vision on more volatile risks, others are more prospective, being assessed in a 1-50 year timeframe, either short, medium or long term, analysing the implications they will have for the future of the company. Overall, climate risks/opportunities are a relevant input to assess the impact on strategic development, business planning, investment decisions and operations management.

Among the most frequent reports, are the following:

1. Risk Fortnightly Report and Risk Dashboard – reports developed fortnightly and every 6-months (respectively) by the Risk Management Department. The aim is to follow up on more volatile risks and update EDP's exposure to the key sources of risk (strategic, markets, regulatory, financial and operational). There is a follow up on climatic conditions (namely hydro and wind volumes), relevant climate-related regulatory developments, and the evolution of incidents covered by insurance climate related (among others).
2. Prices and Volumes report – follow up on climate conditions (current and prospected) to assess the impact on prices and volumes of energy, regulatory pressure, among others. The report is produced monthly, with a specific committee to discuss the key matters quarterly with top-management.

As for the process within the timeframe of 1-50 years, it includes:

1. Risk map (Group and Business Unit-level) – identification and categorization of risks (incl. strategy, business, financial, and operational) and their mapping according to expect loss (average scenario) and maximum loss (worst case scenario). This allows for the prioritization of risks according to their materiality (substantial financial impact defined as over 5M€) and for the setting of a risk agenda focused on relevant topics. Climate-related strategic risks (e.g. structural reduction of hydro productivity) and transition risks (e.g. change in renewables support regulation; changes in CO2 trading schemes; technological breakthroughs) are assessed at Group level. At operational level, risks related to generation and distribution asset losses and damages from increased frequency of extreme weather events are also assessed.
2. Budget – annual exercise that identifies possible transition risks for the next year with impact on EDP's results through sensitivity and stochastic analysis to several indicators (e.g., impact of hydro coefficient variation under several scenarios).
3. Business Plan – bi-annual prospective exercise of the company's activity for the next 4 years, taking into account risks that may affect EDP's results, including climate-related risks. Strategic decisions, business plans and targets are defined after a structured reflection about market conditions that considers historical and prospected evolution of, among others: regulation and policies; costs of technologies; physical parameters (incl. renewable volumes). Sensitivity and stochastic analysis to EBITDA@Risk and CF@Risk according to different scenarios assumed is also performed.
4. Energy outlook scenario analysis – annual exercise performed by EDP's corporate energy planning department, based on World Energy Outlook scenarios, that prospects transition risks/opportunities impact for the medium term. It sets scenarios according to different decarbonisation paths and defines different evolution trends for demand, fuels and CO2 prices, capacities, among others, forecasting different generation mixes, RES generation shares and capacity changes.
5. Emerging risks survey – exercise developed every 3 years to assess main concerns of EDP Group top management for the next 10 years of the company. Focus on 6 dimensions: geopolitics, economic, social, technological, environmental and sectoral. Climate risks (physical and transition) are present in several dimensions and were highlighted as key concern in the exercise developed in 2019.
6. Deep dive analysis – Specific deep dive analysis, performed whenever necessary. Examples include: a) EDP Water Risk Map, developed in 2015, where EDP characterized strategic risks associated with structural changes in precipitation patterns (reduction of hydro generated production) and operational risks associated with the increase in global temperature (reduction of thermal power plant cooling systems efficiency) and extreme weather events (damage to physical generation and distribution assets); b) Extensive exercise, conducted in 2017, to identify of key emerging trends (global and utility-related), highlighting climate change transition and physical risks.

C2.2c

(C2.2c) Which of the following risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain

Current regulation	Relevant, always included	Climate and energy related regulation – at international, European Union and national levels – can have a significant financial impact on EDP's electricity generation, distribution and retail businesses (reduced revenues and margins, increased operating costs). Examples include regulation on renewables support schemes, emissions trading mechanisms or carbon pricing. The regulatory context of the different markets where EDP operates and the corresponding developments are closely analysed by a dedicated corporate department, the Regulation Department. Together with the Energy Planning Department and the Risk Management Department, the Regulation Department quantifies potential impacts on the company of changes to the different regulatory contexts, according to different scenarios. Regulatory framework related with climate is a priority concern and is part of several analysis namely, investment analysis, budget and business plan.
Emerging regulation	Relevant, always included	The creation of additional regulatory measures by policy makers, in order to achieve a carbon-free economy, may create pressure on the business-as-usual and (possibly) demands operational and strategic adjustments. Similarly to the current regulation risk type previously mentioned, new climate and energy related regulations may materialise at international, European Union and national levels and can also have a significant financial impact on EDP's electricity generation, distribution and retail businesses (reduced revenues and margins, increased operating costs). Examples include additional requirements to carbon-intensive technologies (coal), or in the worst-case scenario the early decommissioning of thermal plants. Follow-up on possible changes to the regulatory context of the different markets where EDP operates is conducted by a dedicated corporate department, the Regulation Department (including the participation in several forums of discussion with experts, scientists & academics and policy-makers). Together with the Energy Planning Department and the Risk Management Department, the Regulation Department quantifies potential impacts on the company of additional requirements to the different regulatory contexts, according to different scenarios.
Technology	Relevant, sometimes included	Technological breakthroughs (e.g. advances in smart grids, decentralized generation, energy storage or electric vehicles, trends in renewables levelized cost of electricity) are key to the implementation of EDP's low carbon transition plan and climate targets. Failure to anticipate and integrate innovation can compromised the company's ability to implement said plan, leading to competitive disadvantages. EDP Innovation Business Unit and EDP corporate Energy Planning Department closely follow up technological developments that can impact EDP low carbon strategy. One example is the recurrent Energy Outlook scenarios analysis exercise, performed by the Energy

		Planning Department, as well as emerging technology studies carried out by the Innovation Business Unit, where technological risks and opportunities are accounted for, such as the development of storage technologies, different sources of mobility and the evolution of electric mobility in particular, as well as the evolution of LCOEs of renewables that are analysed and incorporated in the different scenarios.
Legal	Relevant, sometimes included	Climate-related legal risks (penalties, compensations, agreements) can arise from non-compliance with associated laws and regulation, or future compliance costs (e.g. decommissioning of thermal power plants). Legal risks are analysed and followed up by EDP Legal Department with a view to ensure compliance and monitor on-going contingencies of different natures, including environmental and climate change related contingencies. Together with the Risk Management department, sensitivity analysis is performed to assess different scenario for legal losses. EDP constitutes provisions for decommissioning of power plants.
Market	Relevant, always included	Volatility in commodity prices (e.g. fuel; CO2), in generation volumes of renewables (especially hydro and wind), and in energy consumption (including energy efficiency) are market risks that can be influenced by climate change. Examples include the spill-over effect of new emissions trading schemes on CO2 prices or the reduction in electricity demand brought upon by new energy efficiency regulations and public policy targets. These risks can have a negative impact on EDP's results. These variables are always included in the company's climate risks analysis, as they are a key driver of EDP's results. Assessment is performed through sensitivities analysis of several market indicators, assuming different global energy scenarios with different underlying decarbonisation paths.
Reputation	Relevant, always included	The energy sector, including electric utilities, is at the forefront of societal awareness on climate change and the role of the private sector. Failure to commit to ambitious targets on climate change mitigation and adaptation and to deliver on these commitments can cause reputational damages leading to the reduction of EDP brand value and investor interest and loss of market competitiveness. EDP Group sees reputation as an impact instead of a risk, which means that all climate risks have a potential impact on EDP's reputation. For that reason, reputation is always included in risk analysis, along with economic, environmental and personnel impacts' assessment. To assess the reputation impact, EDP follows a qualitative scale from reduced to very high, depending on the level of media diffusion.
Acute physical	Relevant, always included	Increase in the frequency and severity of extreme weather events, foreseen by IPCC scenarios, represents an operational risk to EDP's activities, in particular to electricity distribution. Damage to assets in operation (overhead lines, poles and substations) and service

		disruption can have a negative financial impact, namely in investment and insurance costs. Acute climate-related physical risks (e. g. precipitation extremes, floods, storms) are the object of corporate-level deep-dive analysis of emerging risks, using IPCC scenarios, and Business Unit level analysis by prevention teams in order to create preventive measures for asset management and service assurance.
Chronic physical	Relevant, always included	Chronic physical risks are also analysed, in particular the structural decrease in precipitation that is foreseen for the Iberian Peninsula, both by IPCC and the European Environment Agency scenarios. This is a major long-term risk for EDP's hydro electricity generation activities (32% of total installed capacity by the end of 2018), most of which (82%) is concentrated in this geography. Chronic physical risks are accounted in medium/ long term analysis, namely regarding water availability in Iberia and the potential impact in hydro generation, taking into account historical data of the worst Hydroelectric Capability Index consecutive years, water estimates for coming years using different IPCC scenarios, and quantifying potential impact on the Group's EBITDA.
Upstream	Relevant, sometimes included	Major source of potential risk is fossil fuel sourcing (natural gas and coal), which could be subject to disruption caused by extreme weather events (acute risks) and by reduced water availability (chronic risk). For EDP the exposure to such risks is smaller than for the previous risk types, given that: i) EDP's current generation portfolio (74.4% installed capacity is renewable - wind, hydro and solar PV); ii) EDP business strategy focused on continued organic growth from renewables, which will further reduce portfolio exposure (installed capacity in coal will be reduced from current 11% to become coal free in 2030); iv) fuel procurement based on a vast range of alternative suppliers in different geographies; v) for coal, 90% of current sourcing comes from mines in low water stress areas (WRI Baseline Water Stress <10%) and only 1% from high stress areas. However, there is still a relevant risk of sourcing of gas for both retail and CCGTs uses, which is accompanied and followed up periodically by the EDP trading company UNGE, managing sourcing contracts and prospecting the uses of gas for the future, taking into consideration market dynamics, possible evolution of the use of CCGTs in the variability of hydro production, penetration of renewables, and the early retirement of coal.
Downstream	Relevant, sometimes included	A potential change in consumption patterns (e.g. reduced demand resulting from higher energy efficiency standards; increase in decentralized self-generation) can have a negative impact on EDP revenues and create additional challenges for operations, namely regarding energy distribution networks management. This risk is continuously monitored, in parallel with market risks, by EDP electricity distribution, retail and innovation units. The current uptake

		by EDP of emerging technologies such as smart grids, decentralized generation and storage, mitigates the risk and the company regards this particular factor as an opportunity rather than a risk driver.

C2.2d

(C2.2d) Describe your process(es) for managing climate-related risks and opportunities.

Climate change risks/ opportunities are fully integrated into EDP's risk management procedures, including the company's risk taxonomy, process and governance responsibilities. They are also integrated into project investment analysis (e.g. investment in renewable generation undergoes detailed resource evaluation encompassing scenario analysis). Risk prioritization is firstly defined by EDP Executive Board of Directors' decision on the company's risk appetite and acceptable level of risk exposure. This is a key risk prioritization. Priorities are further detailed based on the results of the risk quantification exercises and on the systematic risk return analysis.
The analysis is based on the quantification of average loss and maximum loss (considering estimated probabilities of materialization and impacts), different scenarios and time horizons (short/medium/long term) and aggregated by risk category considering possible correlations between risk natures. In addition, risk return analyses are systematically conducted (based on EBITDA@Risk, CF@Risk or other methods) with the main strategic guidelines and decisions (e.g. regarding the Group's Strategic Plan, key investment decisions or other relevant topics).
The management strategies include mitigation (e.g. specific plans for catastrophic weather events crisis management and business continuity in EDP's electricity distribution activities, as well as the investment in infrastructure resilience) and transfer (e.g. insurance policies that cover property damage and civil responsibility associated with the impact of extreme weather events in distribution networks).
Climate-related opportunities are assessed by corporate departments (Energy Planning, Sustainability, and business development areas). Opportunity maximization strategies are firstly defined at corporate level and then deployed at Business Unit (BU) level. It includes the current focus on renewable electricity generation growth (renewables represented 66% of total generated electricity by the end of 2018 and 7.3 GW of additional renewable capacity is foreseen in EDP's 2019-2022 Business Plan) and the marketing of energy efficiency services (in 2018, the P&S made available to customers in Portugal, Spain and Brazil generated energy savings of 447 GWh, avoiding 175kt of CO2. Total accumulated savings since 2015 have now reached 951 GWh, avoiding 406kt of CO2).
E.g. of transition risk management: EDP's renewables segment is exposed to risks of changing regulations on renewable energy support schemes in different markets where it operates (total portfolio of 21 GW worldwide). These schemes are subject to revisions and changes, driven both by budget constraints and from structural factors related to the maturity cycle of many technologies (e. g. wind or solar). Risk is mitigated through an active strategy of diversification across multiple technologies, geographies, asset maturity and markets regulatory design, as well as through a close follow up of regulatory bodies and governments. EDP Business Plan 2019-2022 includes investment in 7.3 GW renewable capacity addition (25% solar, 73% wind on-shore and off-shore and 2% in hydro), 60% of which in North America, 25% in EU and 15%

in Brazil. EDP is also increasing direct renewable electricity sales to large companies through long-term Power Purchase Agreement (PPA), firstly in USA and more recently in Mexico and Spain. This contractual model is interesting in terms of the predictability of cash flows it guarantees and contributes to the mitigation of risks arising from uncertainty regarding regulatory support schemes.
E.g. of physical risk management: Acute climate-related physical risks (e.g. increase in frequency and severity of extreme weather events like precipitation and wind extremes, floods, wildfires, landslides) can have a negative impact in several EDP business activities, in particular electricity distribution, resulting in damage to assets in operation (overhead lines, poles and substations). To a lesser extent, damage can also occur during the company's hydro power plant construction phase, as cofferdams may be insufficient to hold large water inflows, causing flooding in some elements of the work. These risks are identified and managed by EDP's BUs and monitored at corporate level. BUs use country specific meteorological data to assess risks and opportunities over the life cycle of the assets. On the design phase, examples include rising power plant ground-level to increase flood resilience or reinforcing power line foundations to withstand extreme wind speeds. On construction/ maintenance phase, damage from extreme events is managed through risk transfer (insurance contracts). Risk mitigation also includes planning of critical activities (e.g. overhauls) for periods with least probability of extreme weather. In terms of adaptation to extreme weather events, EDP has been investing to increase resilience of energy distribution assets.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Mandates on and regulation of existing products and services

Type of financial impact

Other, please specify

Decreased revenue; reduced capital access

Company- specific description

Changes in renewable energy generation support schemes. EDP's renewables business segment is currently present in 13 countries, namely EU countries, North America and Brazil, with a portfolio of ~21 GW worldwide (EBITDA + Equity) exposed to different regulatory frameworks. These support schemes - feed-in tariffs, tax credits, green certificates or capital incentives –are subject to revisions and changes in those markets, both due to budget constraints resulting from economic stress, and/ or to structural factors related with the maturity cycle of many technologies (e.g., wind or solar). Estimated potential yearly reduction in EDPR's revenues for the 2019-2022 period, across all markets, is EUR 50 million. Risk is mitigated through an active strategy of diversification across multiple technologies, geographies, asset maturity and markets regulatory design, as well as through a close follow up of regulators and governments. EDP's Business Plan 2019-2022 projects and addition of 7.2GW in renewables (25% solar, 73% wind on-shore and offshore, and 2% hydro), 60% of which in North America, 25% in EU and 15% in Brazil. EDPR is also increasing direct renewable electricity sales to large corporate clients through long-term Power Purchase Agreement (PPA) and Contracts for Difference (CfD), in geographies such as the North America, Brazil, Greece and Poland. This contractual model is interesting in terms of the predictability of cash flows as it guarantees and contributes to the mitigation of risks arising from uncertainty regarding regulatory support schemes. EDP investment for the period of 2019-2022 in renewables is ~9Bn€, distributed across diversified markets and technologies.

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

165,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Estimated potential accumulated reduction in EDPR's revenues for the 2019-2022 period, across all markets.

Management method

Risk is mitigated through an active strategy of diversification across multiple technologies, geographies, asset maturity and markets regulatory design, as well as through a close follow up of regulatory bodies and governments. EDP accumulated investment for the period of 2019-2022 in renewables is ~ EUR 9 bn distributed across diversified markets and technologies. EDP's Business Plan 2019-2022 projects and addition of 7.2GW in renewables (25% solar, 73% wind on-shore and offshore, and 2% hydro), 60% of which in North America, 25% in EU and 15% in Brazil. EDP is also increasing direct renewable electricity sales to large corporate clients through long-term Power Purchase Agreement (PPA), firstly in USA and more recently in Mexico and Spain. This contractual model is interesting in terms of the predictability of cash flows it guarantees and contributes to the mitigation of risks arising from uncertainty regarding regulatory support schemes. Examples include the 20 years PPA for solar energy signed in June 2018 in the US with East Bay Community Energy, and the first PPA signed in the Spanish market for green energy supply to the Calidad Pascual dairy company.

Cost of management

9,000,000,000

Comment

Major risk mitigation process is EDP diversification strategy (technologies, geographies, asset maturity and markets regulatory design). EDP accumulated net expansion investment for the period of 2019-2022 in renewables is ~ EUR 9 bn distributed across diversified markets and technologies.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Chronic: Changes in precipitation patterns and extreme variability in weather patterns

Type of financial impact

Reduced revenues from lower sales/output

Company- specific description

Structural decrease in hydro generation productivity. Both IPCC (Intergovernmental Panel on Climate Change) and EEA (European Environment Agency) long-term scenarios forecast a relevant decrease in average annual precipitation in the Iberian Peninsula (10% to 30%, depending upon scenarios, although current portfolio is located mainly in the region with 10% decrease). An increase in temperature will as well impact

the water competitive uses. Hydro generation is an important source of value for EDP, mainly in Portugal and Brazil. In 2017, severe drought occurred in the Iberian Peninsula, with a hydropower index (IPH) more than 53% below the average hydrological year. In Portugal, the company's hydropower production dropped by around 9 TWh compared to 2016. A structural decrease in precipitation and increase in competitive uses, affecting hydro generation, can negatively impact EDP's revenues.

Time horizon

Long-term

Likelihood

More likely than not

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

60,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Estimated yearly decrease in EDP hydro generation revenues in Iberia, in a long-term perspective, is about EUR 60 million. Value assumes a structural decrease of 10% in hydro productivity in the long-term, yearly production of 12 TWh and a pool price of 50€/MWh.

Management method

EDP manages this risk through a diversified generation portfolio in terms of technologies and geographies. EDP accumulated investment for the period of 2019-2022 in renewables is ~ EUR 9 bn, i.e. EUR 2.25 bn per year, distributed across diversified markets and technologies. EDP's Business Plan 2019-2022 investments in new generation capacity are also diversified: addition of 7.2 GW (25% solar, 73% wind on-shore and offshore, and 2% hydro) 60% of which in North America, 25% in EU and 15% in Brazil. Geographic diversification significantly reduces the risk, as structural reduction in precipitation is not likely to occur in all geographies and with same magnitude.
EDP developed a specific Water Risk Map (initial scope Iberia, currently being expanded to all geographies) and conducts a periodic assessment of generation assets exposure to water stress areas, using high level mapping tools (WBCSD Global Water Tool, WRI Aqueduct and WWF Water Risk Filter) and local level analysis (site specific data from local authorities and information on assets specific operating conditions from

local company staff). All new power plant project valuation considers sensitivities to lower inflows scenarios, thus enabling informed decision making.

Cost of management

2,250,000,000

Comment

Major risk mitigation process is EDP's diversification strategy for generation portfolio growth. The planned accumulated net expansion investment for the period of 2019-2022 in renewables is ~ EUR 9 bn, i.e., EUR 2.25 bn/year on average. This investment will be distributed across diversified geographies and generation technologies.

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Acute: Increased severity of extreme weather events such as cyclones and floods

Type of financial impact

Increased capital costs (e.g., damage to facilities)

Company- specific description

Operational disruption of electricity distribution activities. Precipitation extremes, floods, wildfires and landslides – frequently associated also with extreme winds – can have a negative impact in several EDP business activities, in particular electricity distribution, resulting in damage to assets in operation (overhead lines, poles and substations). To a lesser extent, damage can also occur during the company's hydro power plant construction phase, as cofferdams may be insufficient to hold large water inflows, causing flooding in some elements of the work. According to IPCC scenarios, the frequency and intensity of these extreme weather events is likely to increase due to climate change, thus increasing the risk of disruption in EDP's energy distribution and/or supply activities, as well as increasing the operational and capital cost from damage recovery.

Time horizon

Long-term

Likelihood

More likely than not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

15,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Maximum financial impact of damage to distribution networks under operation in Portugal is, in the worst- case scenario (before insurance) c. 15 M€. Estimate is based on the impact of the worst storm already experienced (Gong). No detailed evaluation of financial implications is currently available for EDP's distribution activities in Spain and Brazil.

Management method

Risk is firstly mitigated by the operational areas of BUs, who propose and implement best practice (e.g. regular inspections and preventive maintenance) and have specific plans for catastrophic events' crisis management and business continuity. Yearly cost of risk transfer through insurance and costs associated with the company's Business Continuity Plan and structures is equivalent to 0.2% of EBITDA (c. 8 million euros), including specialized outsourced services. EDP has Business Continuity Departments in strategic company areas and, in 2015, revised its crisis management and business continuity policies, in line with international best practice. A significant part of the remaining risk is mitigated through a comprehensive range of insurance policies (property damage and civil and environmental responsibility) that mitigate the financial impact of large-scale events (e.g., associated with extreme and comprehensive weather phenomena, non-availability of revenue generating assets or significant compensation to third parties) as well as much less frequent incidents with catastrophic impact (e.g., earthquakes). In Spain, EDP takes part of the Compensation Insurance Consortium, a State-run initiative targeted at extreme events risk mitigation for the electricity sector. In Brazil, EDP developed ClimaGrid to manage the physical risks of the grid, a system that automatically detects thunder storms, allowing real time intervention in the prevention of future grid shutdowns.

Cost of management

8,000,000

Comment

Approximate yearly cost of risk transfer through insurance and costs associated with the company's Business Continuity Plan and structures is equivalent to 0.2% of EBITDA, including specialized outsourced services.

Identifier
Risk 4

Where in the value chain does the risk driver occur?
Customer

Risk type
Transition risk

Primary climate-related risk driver
Market: Changing customer behavior

Type of financial impact
Reduced demand for goods and/or services due to shift in consumer preferences

Company- specific description
Reduced demand driven by energy efficiency. In developed markets, gains in energy intensity and energy efficiency – further strengthened by climate-related policy targets - are expected to dictate a slow recovery in electricity consumption. In Europe, in particular, in response to the competitiveness challenges faced by industry and climate regulation, the economy is specializing in low-energy-intensive sectors. The new package of measures under the Clean Energy for All Europeans' programme, is an example on how EU intends to facilitate the transition to a more efficient and low carbon economy. Among the several legislative frameworks under revision, new Energy Efficiency Directive reinforces the implementation of energy saving measures, either voluntary or mandatory. This policy framework induces a shift in consumption patterns - either regulation driven or behavioral driven – which can negatively impact revenues from EDP's energy supply activities in the Iberian Peninsula and Brazil.

Time horizon
Medium-term

Likelihood
More likely than not

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
5,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Potential financial impact of inherent risk (reduced revenues across EDP's electricity supply markets), in a worst-case scenario. Assumes a 1% reduction of electricity demand in Iberia, with conjugated effects in retail, distribution and generation.

Management method

Risk is managed through the development and marketing of specific energy services and customer efficiency solutions (e.g. fuel switching, load optimization, decentralized renewable generation). For the period of 2019-2022 EDP will invest ~EUR 12 bn, 5% of which, i.e. 600 million euros will be dedicated to client solutions & energy management. EDP has set a target to provide customers with ongoing access to energy efficiency products and services to reduce overall consumption by more than 5 TWh in accumulated energy savings in the period 2015-20220. In Brazil, EDP Soluções em Energia also provides energy efficiency services mainly for businesses in the liberalised market. By the end of 2018, through energy efficiency services and solutions in decentralised renewable generation, EDP had already induced accumulated client savings of over 951 GWh since 2015, thus avoiding c. 406 ktCO2.

Cost of management

600,000,000

Comment

For the period of 2019-2022 EDP will invest ~EUR 12 bn, 5% of which will be dedicated to client solutions & energy management, i.e., about 600 million euros.

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of supportive policy incentives

Type of financial impact

Returns on investment in low-emission technology

Company-specific description

Investment opportunities in new renewable generation capacity, in line with the electricity sector's crucial role in the transition to a decarbonized economy. Higher regulatory visibility in the US, as well as European Union's Climate-Energy 2030 policy commitments represent a major investment opportunity. EDP has a key competitive advantage in seizing renewables growth opportunities, given its large pipeline of projects in North America and the EU. Planned investment in new generation capacity in EDP's 2019-2022 Business Plan is entirely based on renewables, with a strategic focus on wind in North America.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

100,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The EBITDA is expected to grow 17% in this timeframe, mainly caused by new investment in new renewable installed capacity. We expect a financial positive implication (additional EBITDA) of about EUR 400 million in the 2019-2022 period, i.e., EUR 100 million per year on average.

Strategy to realize opportunity

EDP's renewables business segment will invest EUR ~9 bn in visible growth opportunities, i.e., c. EUR 2.250 bn/year, installing a total of 7.2 GW new capacity (25% solar, 73% wind on-shore and offshore, and 2% hydro).

Cost to realize opportunity

2,250,000,000

Comment

EDP's renewables business segment will invest EUR ~9 bn in visible growth opportunities keeping the USA and wind onshore at the core of the growing strategy.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Customer

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Type of financial impact

Increased revenue through demand for lower emissions products and services

Company-specific description

Increased electricity demand for operation of HVAC equipment. Higher temperatures during summer and lower temperatures in winter may lead to an increase in electricity demand as the result of intensive use of HVAC equipment in these periods, thus increasing EDP revenues from its electricity supply business (Portugal, Spain and Brazil). EDP electricity supply business units in the above-mentioned geographies will benefit from a competitive advantage in supplying this increase in electricity demand given the progressive lower carbon content of the electricity generated by the Group, which accounted in 2018 for about 67% of total supply (-90% CO2/kWh in 2030 from 2005 levels).

Time horizon

Long-term

Likelihood

More likely than not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

3,500,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

EDP carried out an internal study for estimating the potential increase in electricity demand driven by temperature extremes. The main outcome of this study, recently updated, shows the excess demand to be in the order of 2 GWh/day for each ºC decrease in Winter and 1.5 GWh/day for each ºC increase in Summer. Assumes average temperature extreme increases of +/- 2ºC in the Iberian Peninsula and the current market share, with conjugated effects in retail, distribution and generation.

Strategy to realize opportunity

In addition to the strong focus on generation capacity expansion, 25% of total investment included in EDP's Business Plan 2019-2022 (c. EUR 12 bn) will be channeled to distribution networks and client solutions & energy management, thus strengthening the company's capacity to respond to peak electricity demand and capture this market opportunity. This investment corresponds to c. EUR 3 bn or EUR 750 million/year on average, and strengthens the company's capacity to respond to peak electricity demand and capture this market opportunity.

Cost to realize opportunity

750,000,000

Comment

According to the company's Business Plan 2019-2022, EDP will invest a total of EUR 12 bn, 25% of which in distribution networks and client solutions & energy management, i.e., c. EUR 3 bn or EUR 750 million/year on average.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Customer

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Type of financial impact

Increased revenue through demand for lower emissions products and services

Company-specific description

Business opportunity in new energy efficiency solutions. Implementation of the Paris Climate Agreement objectives is expected to lead to profound changes in the electricity sector: 50% of the Intended National Determined Contributions (INDCs) include energy related targets, 40% include quantified objectives for renewable production and more than 30% include energy efficiency targets. Electricity will be crucial to decarbonise the world economy and the sector is set to undergo a major transformation towards

renewables, decentralized generation and smart consumption. This structural change in energy production and consumption patterns brings about new growth opportunities for EDP, especially in energy services (smart buildings and industry), renewable distributed generation and electric mobility. EDP will benefit from a competitive advantage in seizing the opportunity for this new demand pattern, given its investment in new energy solutions and the progressive decarbonisation of the electricity it generates (-90% CO2/kWh in 2030 from 2005 levels).

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

151,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Financial impact corresponds to increased revenues from energy efficiency products and services. Value is based on consolidated revenues from such services at EDP Group level in 2018.

Strategy to realize opportunity

According to the company's Business Plan 2019-2022, EDP will invest a total of EUR 12 bn, 25% of which in distribution networks and client solutions & energy management, i.e., c. EUR 3 bn or EUR 750 million/year on average. Anticipating the new electricity sector paradigm (development of infrastructure and applications of smart grids focused on customers and operations, distributed generation, prosumers), EDP provides a range of energy solutions intended to respond to the specific needs of different customer segments, through a diversified offering of sustainable products and services that avoid emissions in final energy consumption. In order to foster the Brazilian market potential for energy services, EDP Brasil, through EDP Soluções em Energia - EDP Energy Solutions, is extending its presence in energy efficiency services as well as in the photovoltaic distributed generation market through a new company EDP Solar. EDP has set a target to provide customers with ongoing access to energy efficiency products and services to reduce overall consumption by more than 5 TWh in accumulated energy savings in the period 2015-2022. It has also committed to expand the installation of

smart grids Iberia, covering 100%, by 2030, and to invest EUR 200 million in innovation projects by 2020 (R&D on clean energy technologies, energy efficiency and smart grids), which was already achieved

Cost to realize opportunity

750,000,000

Comment

According to the company's Business Plan 2019-2022, EDP will invest a total of EUR 12 bn, 25% of which in distribution networks and client solutions & energy management, i.e., c. EUR 3 bn or EUR 750 million/year on average

C2.5

(C2.5) Describe where and how the identified risks and opportunities have impacted your business.

	Impact	Description
Products and services	Impacted	Opportunities for the development and marketing of new products and services are being leveraged by a favourable regulatory framework that promotes renewable-based electrification as a means to achieve carbon emissions reduction (e.g. low-carbon electricity, electric mobility, decentralized renewable generation) and energy efficiency and management (e.g. energy services, smart grids). The realization of these opportunities will have a medium-high financial impact associated with increased revenues from renewable generation and energy services and a competitive advantage arising from a decarbonised generation portfolio.
Supply chain and/or value chain	Impacted	Supply chain-related risks and opportunities are considered of low impact for EDP's business. Major source of potential risk is fossil fuel sourcing (natural gas and coal), which could be subject to disruption caused by extreme weather events (acute risks) and, by reduced water availability (chronic risk). Exposure to such risks is limited, given that: i) EDP's current generation portfolio (74% installed capacity is renewable - wind, hydro and solar PV); ii) EDP business strategy focused on continued organic growth from renewables, which will further reduce portfolio exposure (e.g. installed capacity in coal will be reduced from current 11% to become coal free in 2030); iv) fuel procurement based on a vast range of alternative suppliers in different geographies; v) for coal, 90% of current sourcing from mines in low water stress areas (WRI Baseline Water Stress <10%) and only 1% from high stress areas. However, the risk persists in natural gas with the sourcing of CCGTs and retail. Downstream value chain (client-related) opportunities are addressed in the above category (products and services).

Adaptation and mitigation activities	Impacted	Climate change adaptation (e.g. rising power plant ground-level to increase flood resilience; reinforcing power line foundations to withstand extreme wind speeds; contracting specific insurance policies) and mitigation measures (e.g. increasing renewable electricity generation installed capacity; developing and marketing energy services) have a medium-high impact in EDP's strategy and business plans and reflect on the company's revenues, OPEX and CAPEX.
Investment in R&D	Impacted	Development of new technologies that deliver energy efficiency and carbon emissions reductions is a key-driver of EDP's R&D strategy and has a high impact on our business. R&D and innovation focus on 5 main areas: clean energy, smart grids, client focused solutions, energy storage and digital innovation. The company has committed to invest EUR 5 Bn in renewable energy generation technologies, energy efficiency and smart grids in the 2019-2022 period. Moreover, the company committed to invest EUR 200 million in R&D in the period 2015-2020. In 2018, EDP invested 75 M€ in such projects, including renewable generation (e.g. floating solar PV pilot-project in Portuguese dams, Windfloat Atlantic), smart grid projects (e.g. INTEGRID project for demonstration of smart grids, storage and integration of renewable energies) and energy storage (e.g. SENSIBLE project for managing and storing distributes energy).
Operations	Impacted	Climate-related physical risks, both chronic (structural reduction in precipitation) and acute (increased frequency and severity of extreme weather events) are expected to impact EDP's operations, causing a reduction in electricity output of our hydro generation assets and damage to electricity distribution networks, respectively. Impact is expected to be intensified in the long-term and have a medium-high impact on EDP's revenues from electricity generation as well as operational and capital cost from damage recovery. Currently, there are already some impacts of acute events, with a trend of increasing severity and frequency of extreme weather events, namely storms and wildfires.
Other, please specify	Not impacted	No other business areas impacted.

C2.6

(C2.6) Describe where and how the identified risks and opportunities have been factored into your financial planning process.

	Relevance	Description
Revenues	Impacted	Identified climate-related risks and opportunities have the potential to impact EDP's revenues: i) negative impact - reduction in hydro volume influenced by a structural reduction of precipitation, leading to a reduction in hydro electricity production. The magnitude of the impact on

		company revenues, associated with risk 2 identified in C2.3, is medium, given that the reduction of hydro production is partially compensated by the increased value of such production; ii) positive impact - CO2 price increase favours hydro and wind, due to a favourable regulatory framework benefitting renewable sources. The magnitude of the impact, associated with opportunity 1 identified in C2.4, is high. This positive impact is further strengthened by the forecasted increase in the electrification of final energy consumption which is also driven by the enabling effect of electricity in the decarbonisation of energy consumption in other sectors.
Operating costs	Impacted	Identified climate-related risks have the potential to generate both a negative and a positive impact on EDP's operating costs: i) negative impact - reduced margins due to regulatory/policy penalization of carbon intensive fuels, leading to reduced thermal power plant margins; ii) positive impact – renewable portfolio optimization resulting from higher CO2 prices, associated with opportunity 1 described in C2.4. Renewables currently represent 74.4% of EDP's total electricity generation portfolio. The net balance between the above-mentioned positive and negative impacts is positive and the overall magnitude is medium to high.
Capital expenditures / capital allocation	Impacted	Identified climate-related risks and opportunities have the potential to impact EDP's capital expenditures and capital allocation plans: i) negative impact - investment on additional features of the electricity distribution grid to increase resilience to extreme weather events, has described in risk 3 identified in C2.3. The magnitude of this negative impact is low; ii) positive impact - focus on renewable generation portfolio, leveraging current portfolio mix of the Group and internal know-how, motivated by renewable friendly regulatory frameworks. The magnitude of this positive impact, associated with opportunity 1 identified in C2.4, is high.
Acquisitions and divestments	Impacted	Identified climate-related opportunities have the potential to impact EDP's acquisitions decisions, namely wind/solar generation pipeline projects as well as the acquisition of downstream businesses (energy efficiency, decentralized renewable generation). The magnitude of this impact, associated with opportunity 1 and opportunity 3 identified in C2.4, is high.
Access to capital	Impacted	Identified climate-related risks and opportunities (e.g. related to changing consumer behavior and/or investor interest) can, depending on positive or negative impacts on EBITDA and operational results (e.g., renewable volumes, regulation, extreme

		events), have an impact on capital structure and liquidity (improve/deteriorate) impacting cost of capital. These impacts cover a range of identified risks and opportunities, and therefore their magnitude can range from medium to high.
Assets	Impacted for some suppliers, facilities, or product lines	Identified climate-related transition and physical risks can impact EDP's assets by causing damage to facilities, loss of value or impairment resulting from changing consumer behaviour or climate-related regulation. These impacts cover a range of identified risks (e.g., risk 1, 3 and 4 described in C2.3). The most exposed assets to damage are distribution assets. Additional regulatory requirements to thermal generation impact is considered low, given the high average life cycle stage of EDP's thermal generation assets.
Liabilities	Impacted for some suppliers, facilities, or product lines	Identified climate-related risks can, depending on positive or negative impacts on EBITDA and operational results (e.g., renewable volumes, regulation, extreme events), have an impact (increase/decrease) on EDP's debt levels. These impacts cover a range of identified risks and opportunities, but the impact is mostly indirect, and the magnitude is considered low.
Other	Not impacted	No other financial planning processes impacted.

C3. Business Strategy

C3.1

(C3.1) Are climate-related issues integrated into your business strategy?

Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform your business strategy?

Yes, qualitative and quantitative

C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b

(C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b) Indicate whether your organization has developed a low-carbon transition plan to support the long-term business strategy.

Yes

C3.1c

(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.

1. Climate-related issues are embedded in the priorities of EDP's current business strategy (Strategic Update 2019-2022):
i) organic growth with strong focus on CO2-free technologies, mainly wind, solar and hydro (international expansion, 40% of which in North America, 35% in Europe and 25% in South America). Target is to reach at least 78% of installed capacity on renewables by 2022 and 85% by 2030; and
ii) low exposure to CO2 and other environmental risks, through low-carbon electricity generation, management of CO2 portfolio and sustainability leadership. Target is to reduce CO2/kWh levels by 65%in 2022 and by 90% in 2030 versus 2005 levels.

2. Our business priorities are explicitly linked to an emissions reduction target and to a renewable energy target. Both are corporate-wide strategic commitments and performance is regularly reported to the market (e.g. annual investor presentations, corporate annual reports, sustainability report). The emissions reduction target is fully aligned with EDP's science-based target, formally approved by the Science Based Target Initiative in early 2017: to reduce direct (scope 1) and indirect (scope 2) emissions from electricity production 55% per TWh by 2030, from 2015 levels. The company also commits to reduce absolute indirect emissions (scope 3) by 25% over the same time period.

3. In March 2019, EDP announced a gross investment of € 2.9 bn/year for the 2019-2022 period, 75% of which in new renewable generation installed capacity, 20% in networks and 5% in client solutions and energy management. In 2022, EDP foresees its specific CO2 emissions will be 36% below 2015 levels, on track with the science-based target, thus contributing both to climate change mitigation (reduction of scope 1 emissions) and reduction of climate regulatory risks exposure. The company will also make a strong investment in low carbon client solutions (energy efficiency services, sustainable mobility and renewable micro-generation) and in distribution grids. This will contribute both to climate mitigation (reduction of scope 2 and scope 3 emissions) and adaptation (increased asset resilience). In 2018, EDP marketed energy efficiency services that delivered client savings of 447 GWh, avoided 145 kt of CO2 and generated EUR 151 million in revenues.

4. EDP’s business strategy has been influenced by the need to: a) Mitigate climate change – Reduce CO2 emissions from electricity generation; b) Adapt to climate change – Increase resilience of generation and distribution assets; c) Reduce exposure to climate-related regulatory and market risks – Reduce specific CO2 emissions, manage CO2 allowances and credits portfolio; d) Seize opportunities to develop new products and services – Deliver low carbon energy, decentralized renewable energy solutions and tailored energy efficiency services.

5. EDP’s short/medium term strategy (up to five years) is expressed by the company’s Business Plan (Strategic Update 2019-22) which is focused on renewable generation growth

and decrease in the portfolio's carbon intensity. EDP publicly committed to the following operational objectives:
i) Reaching 78% of renewables in its overall installed capacity by 2022;
ii) Reduce CO2/kWh emissions by 65% in 2022 (compared to 2005 levels);
iii) Accelerate the roll-out of smart meters in the Iberian Peninsula, installing at least 75% at EDP's low-voltage delivery points by 2020;
iv) Provide customers with ongoing energy efficiency products and services, delivering more than 5 TWh in accumulated savings from 2015 to 2022;
v) Achieve carbon neutrality in EDP's office buildings by 2022
vi) Promote the acquisition of electric vehicles for EDP's light-duty fleet, reaching 30% of the total fleet by 2022.
vii) Investing EUR 200 million in innovative clean energy, energy efficiency and smart grids projects by by 2020 - target already achieved.

6. EDP's long term strategy (5 years onward) is to continue decarbonisation of electricity generation and to provide client solutions to further decarbonise the economy. Under our Ambition 2030, EDP committed to:
i) 85% of renewable installed capacity;
ii) 90% of EDP's power generation from renewable sources;
iii) 90% reduction of CO2 emissions intensity vs. 2005 levels;
iv) 3 GW of centralised solar PV installed capacity and 1 GW of distributed PV on customers;
v) 100% smart meters installed in the Iberian Peninsula;
vi) 100% of EDP's light-duty fleet electrified
vii) Become coal-free before 2030.

7. This strategy has gained EDP strategic advantages over the competitors through:
a) Profitability and reduced risk exposure – decarbonised generation portfolio (74.4% renewable installed capacity by the end of 2018) and low exposure to CO2 regulatory risks (long term target to reduce CO2/kWh in line with climate science);
b) Commercial differentiation – products (low carbon electricity) and services (energy efficiency services) that meet growing customers demand for low carbon solutions (total accumulated client savings of 951 GWh since 2015, avoiding 406 kt CO2);
c) Increased internal efficiency – Consistently increasing wind turbine load capacity (30%) and availability (>97%) and differentiation in wind farm development; reduction of technical and commercial electricity losses in distribution networks.

8. EDP' vision and business strategy are fully aligned with the Paris Agreement. The company committed to a 2030 science based GHG reduction target, approved by the Science Based Targets Initiative and developed using a 2ºC scenario (IEA 2DS, consistent with the IPCC's 5th Assessment Report RCP 2.6 Scenario). EDP is also actively involved in the promotion of the vital role of renewable energy in the attainment of the 2ºC objective; it is a member of the Low Carbon Technology Partnership Initiative (LCTPi), a collaborative initiative led by the World Business Council for Sustainable Development that produced in-depth analysis demonstrating that the potential of existent business solutions can deliver 65% of the needs to achieve the 2ºC objective. EDP, along with 15 electricity utilities, signed an action plan whose implementation

enables the installation of 1,5 TW renewable energy capacity worldwide, over the next 10 years.

C3.1d

(C3.1d) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios	Details
RCP 2.6 RCP 4.5 RCP 6 RCP 8.5	EDP uses IPCC scenarios to assess climate-related physical risks, taking into account forecasts for the long-term evolution of precipitation patterns and temperature. We use IPCC's RCP 8.5 Scenario (business as usual), as well as RCP 6.0, 4.5 and 2.6 Scenarios (aggressive CO2 emission reductions), to identify the most relevant chronic and acute risks and evaluate potential impacts on our electricity generation and distribution activities up to 2050. Results highlighted two key risks: structural reduction of precipitation in Iberia, affecting the productivity of our hydroelectric generation assets in Portugal and Spain (chronic physical risk); and increased occurrence and severity of extreme weather events (precipitation extremes, floods, wildfires, landslides and extreme winds), causing damage to our electricity distribution assets (acute physical risk). Our business strategy is shaped in order to mitigate chronic risk through a diversified generation portfolio in terms of technologies and geographies. Geographic diversification significantly reduces the risk, as structural reduction in precipitation is not likely to occur in all geographies and with the same magnitude. Example of this is the investment in other renewable sources besides hydro (i.e., solar and wind) in different markets (European markets, North America and Brazil). We have also developed a specific Water Risk Map (initial scope Iberia, currently being expanded to all geographies) and conduct a periodic assessment of generation assets exposure to water stress areas, using high level mapping tools (WBCSD Global Water Tool, WRI Aqueduct and WWF Water Risk Filter) and local level analysis (site specific data from local authorities and information on assets specific operating conditions from local company staff). To manage the acute risk, EDP has strengthened its business continuity and crisis management capabilities, implemented a set of preventive measures and defined a comprehensive range of insurance policies (property damage and civil and environmental responsibility).
IEA 450 IEA NPS IEA CPS	EDP uses IEA scenarios to assess climate-related transition risks, taking into consideration forecasts for demand, energy capacity additions (renewable), commodity prices and technology realized prices evolution. We integrate IEA's 450 Scenario, CPS (Current Policy Scenario) and NPS (New Policy Scenario) into our energy planning exercises and evaluate impacts on our entire business portfolio up to 2030, taking into account EDP Group Business Plan. Internal assumptions are used regarding demand forecast and taxation and scenario

	analysis and stress tests are performed against current OTC (Over the Counter) scenario. Results show that a CO2 price increase does not have a significant negative effect on EDP operational results, given the decreasing importance of thermal generation in our overall electricity generation portfolio. Our business strategy in aligned with a low carbon energy system and has proven resilient under the different scenarios analysis. By the end of 2018, 74.4% of our electricity generation installed capacity was renewable and our strategic agenda is based on organic growth focused on renewables. Additionally, new downstream retail focus on energy services (e.g. energy management solutions, Re:dy) and decentralized production (e.g., micro-generation solar PV), contribute to capturing the opportunity in transition.
2DS	EDP used IEA 2DS Scenario for setting its GHG reduction science-based target (SBT). EDP's SBT was formally approved by the Science Based Target Initiative in early 2017. An intensity reduction pathway for our entire business portfolio up to 2030 was derived from the application of the Sectoral Decarbonization Approach (SDA) to the power sector. The trajectory was based on the power sector 2DS scenario which, in turn, is consistent with the IPCC's 5th Assessment Report RCP 2.6 Scenario. We used the assumptions of EDP Group Business Plan (electricity demand, installed capacity and electricity output per generation technology) to test the alignment of our global portfolio carbon intensity (scope 1 and 2 CO2e/kWh) against the SDA intensity reduction pathway. Our business strategy has proven aligned with the 2DS Scenario.
Other, please specify IPCC SRES	EDP uses IPCC SRES (Special Report on Emissions Scenarios, 2012, 2014) scenarios to quantify financial impacts from extreme events, namely extreme temperatures, wildfires in southern Europe and increase storms frequency.

C-AC3.1e/C-CE3.1e/C-CH3.1e/C-CO3.1e/C-EU3.1e/C-FB3.1e/C-MM3.1e/C-OG3.1e/C-PF3.1e/C-ST3.1e/C-TO3.1e/C-TS3.1e

(C-AC3.1e/C-CE3.1e/C-CH3.1e/C-CO3.1e/C-EU3.1e/C-FB3.1e/C-MM3.1e/C-OG3.1e/C-PF3.1e/C-ST3.1e/C-TO3.1e/C-TS3.1e) Disclose details of your organization's low-carbon transition plan.

For more than a decade now, EDP corporate strategy has been based on renewables, efficiency and innovation, combining the need for competitiveness of its business with one of the world's leading concerns – climate change.

Transition to a low-carbon economy is a priority of EDP's current business strategy (Strategic Update 2019-2022) and is materialized in the company's set of public, quantified and time-bound climate-related commitments, as presented to the markets in March 2019 (Strategic Update 2019-2022):
i) Reaching 78% of renewables in its overall installed capacity by 2022;
ii) Reduce CO2/kWh emissions by 65% in 2022 (compared to 2005 levels);
iii) Accelerate the roll-out of smart meters in the Iberian Peninsula, installing at least 75% at EDP's low-voltage delivery points by 2022;
iv) Provide customers with ongoing energy efficiency products and services, delivering more than 5 TWh in accumulated savings from 2015 to 2022;
v) Achieve carbon neutrality in EDP's office buildings by 2022
vi) Promote the acquisition of electric vehicles for EDP's light-duty fleet, reaching 30% of the total fleet by 2022.
vii) Investing EUR 200 million in innovative clean energy, energy efficiency and smart grids projects by 2020 - target already achieved.

Besides these medium-term targets, EDP also publicly announced the following strategic goal for 2030:
i) 85% of renewable installed capacity;
ii) 90% of EDP's power generation from renewable sources;
iii) 90% reduction of CO2 emissions intensity vs. 2005 levels;
iv) 3 GW of centralised solar PV installed capacity and 1 GW of distributed PV on customers;
v) 100% smart meters installed in the Iberian Peninsula;
vi) 100% of EDP's light-duty fleet electrified
vii) Become coal-free before 2030.

Major challenge to the low-carbon transition plan implementation is the regulatory uncertainty regarding renewable generation support schemes in several markets where EDP Renováveis, EDP Group's subsidiary for renewables, is present. We manage this risk through an active strategy of diversification across multiple technologies, geographies, asset maturity and markets regulatory design, a close follow up of regulatory bodies and governments and increase in direct renewable electricity sales to large corporate clients through long-term Power Purchase Agreement (PPA) and Contracts for Difference (CfD), contractual models that allows higher predictability of cash flows and reduces exposure to regulatory uncertainty in support schemes.

EDP's current business plan (2019-2022) foresees a gross investment of € 2.9 bn/year, 75% of which in new renewable generation installed capacity, growing mostly in North and South America and Europe. In 2022, EDP foresees its specific CO2 emissions will be 36% below 2015 levels, on track with the 2030 55% reduction commitment and science-based target, thus contributing both to climate change mitigation (reduction of scope 1 emissions) and reduction of climate regulatory risks exposure. The company will also make a strong investment in low carbon client solutions (energy efficiency services, sustainable mobility and renewable micro-generation) and in distribution grids. This will contribute both to climate mitigation (reduction of scope 2 and scope 3 emissions) and adaptation (increased asset resilience). In 2018, EDP added over 625 MW of renewable generation to its portfolio. EDP also marketed energy

efficiency services that delivered client savings of 447 GWh, avoided 145 kt of CO2 and generated EUR 151 million in revenues in the reporting year.

In 2018, EDP was included in the Dow Jones Sustainability Index World for the 11th consecutive year and ranked second position among the integrated utilities. We recently strengthened our ambition and aligned our corporate strategy to the global challenges and committed to direct action on nine of the seventeen UN Sustainable Development Goals: 5, 7, 8, 9, 11, 12, 13, 15 and 17.
We are particularly engaged in advancing SDG 7 and our CEO is now Chairman of the Administrative Board to the Sustainable Energy for All (SE4ALL), an accelerator for that SDG that was born within the UN and is now a formal International NGO with several partners.

We are also continuing to develop our businesses in a changing world where electricity plays a central role in supporting decarbonisation of the economy and is now giving great priority to electric mobility. In 2018, EDP became a founding company member of the Transport Decarbonisation Alliance and committed to actively contribute to accelerating decarbonisation of transport by:
1) Switch 100% of light-duty fleet to electric by 2030;
2) And develop new offers and commercial solutions that promote the energy transition, including charging infrastructures.
More recently, EDP became a member of the EV100 initiative and committed to transitioning 100% of vehicles up to 3.5 t to be EV and 50% of vehicles between 3.5 t and 7.5 t to be EV by 2030.

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Both absolute and intensity targets

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1

Scope

Scope 1+2 (location-based)

% emissions in Scope

100

Targeted % reduction from base year

42

Base year

2015

Start year

2016

Base year emissions covered by target (metric tons CO2e)

22,532,150

Target year

2030

Is this a science-based target?

Yes, this target has been approved as science-based by the Science-Based Targets initiative

% of target achieved

37

Target status

Underway

Please explain

Target officially approved by SBTi, expressed in absolute terms, assuming average hydro and wind conditions.

Group-wide reduction target for combined scope 1 and scope 2 emissions, for all GHGs, set using the Sectoral Decarbonization Approach - Power Sector and IEA 2DS Scenario. Applies to all geographies and is fully aligned with our public commitment, announced before COP21, to reduced specific CO2 emissions from electricity generation by 75% in 2030, compared with 2005 levels. This is part of EDP's Strategic Agenda and Business Plan 2016-2020.

Target achievement is supported by the strategic focus on renewable generation growth (scope 1 emissions reduction) and continued investment in distribution grids, thus reducing electricity losses (scope 2 emissions reduction).

EDP has also committed to Eurelectric's pledge to achieve a carbon-neutral power supply in Europe well before 2050.

Target reference number

Abs 2

Scope

Scope 3 (upstream & downstream)

% emissions in Scope

99.6

Targeted % reduction from base year

25

Base year

2015

Start year

2016

Base year emissions covered by target (metric tons CO2e)

14,622,760

Target year

2030

Is this a science-based target?

Yes, this target has been approved as science-based by the Science-Based Targets initiative

% of target achieved

90

Target status

Underway

Please explain

Absolute target officially approved by SBTi.

Group-wide reduction target for the company's relevant upstream and downstream scope 3 emissions categories: C1 (purchased goods and services); C2 (capital goods), C3 (fuel and energy related activities); C4 (upstream transportation and distribution); C6 (business travel) and C11 (use of sold products). Together, these categories represented 99,6% of total scope 3 emissions in base year.
Target achievement is supported by the reduction of the Group's activities in the gas sector and by supplier engagement activities focused on supply chain indirect emissions reduction.

In 2018, EDP scope 3 GHG emissions decreased by 13% compared to 2017 and already achieved 22.5% below 2015 base year level. Upstream activities related to EDP production business - energy and fuels - which account for 70% of the total scope 3 emissions, have dropped due to less use of fossil fuels for electricity generation, while downstream activities (in particular, use of sold natural gas) remained slightly unchanged. This result puts EDP well on track to meet its 2030 scope 3 Science-based target.

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number
Int 1

Scope
Scope 1+2 (location-based)

% emissions in Scope
100

Targeted % reduction from base year
55

Metric
Metric tons CO2e per megawatt hour (MWh)*

Base year
2015

Start year
2016

Normalized base year emissions covered by target (metric tons CO2e)
0.356

Target year
2030

Is this a science-based target?
Yes, this target has been approved as science-based by the Science Based Targets initiative

% of target achieved
46

Target status
Underway

Please explain
Intensity target officially approved by SBTi.

Group-wide reduction target for combined scope 1 and scope 2 emissions, for all GHGs, set using the Sectoral Decarbonization Approach - Power Sector and IEA 2DS Scenario. Applies to all geographies and is fully aligned with our public commitment,

announced before COP21, to reduced specific CO2 emissions from electricity generation by 75% in 2030, compared with 2005 levels. This is part of EDP's Strategic Agenda and Business Plan 2016-2020.

Target achievement is supported by the strategic focus on renewable generation growth (scope 1 emissions reduction) and continued investment in distribution grids, thus reducing electricity losses (scope 2 emissions reduction).

EDP has also committed to Eurelectric's pledge to achieve a carbon-neutral power supply in Europe well before 2050.

In 2018, EDP Group renewable electricity generation increased 22% from 2017 as a result of favorable hydrological year in the Iberian Peninsula. Consequently, GHG emissions (Scope 1+2) also decreased (-20% from 2017) and so did the carbon intensity of electricity generation by EDP (-22% from 2017).

Absolute emissions reduction in target year were calculated assuming average hydro and wind conditions. We anticipate a reduction of 25% in absolute scope 3 emissions, which is the reduction target formally approved by the SBTi (Abs2).

% change anticipated in absolute Scope 1+2 emissions

42

% change anticipated in absolute Scope 3 emissions

25

Target reference number

Int 2

Scope

Scope 1

% emissions in Scope

99.9

Targeted % reduction from base year

75

Metric

Metric tons CO2e per megawatt hour (MWh)*

Base year

2005

Start year

2015

Normalized base year emissions covered by target (metric tons CO2e)

0.628

Target year

2030

Is this a science-based target?

No, but we are reporting another target that is science-based

% of target achieved

46

Target status

Underway

Please explain

Group-wide reduction target for GHG emissions from stationary combustion in the company's electricity generation assets.

Applies to all geographies and generation activities and is embedded in the strategic options set out in our 2016-2020 Business Plan. Target was publicly announced by EDP in anticipation of the Paris Climate Conference and is fully aligned with our Int1 target, which is a science-based target.

Absolute emissions reduction in target year were calculated assuming average hydro and wind conditions. We anticipate a reduction of 25% in absolute scope 3 emissions, which is the reduction target formally approved by the SBTi (Abs2).

% change anticipated in absolute Scope 1+2 emissions

54

% change anticipated in absolute Scope 3 emissions

25

Target reference number

Int 3

Scope

Scope 1+2 (location-based)

% emissions in Scope

100

Targeted % reduction from base year

75

Metric

Metric tons CO2e per megawatt hour (MWh)*

Base year
2015

Start year
2019

Normalized base year emissions covered by target (metric tons CO2e)
0.356

Target year
2030

Is this a science-based target?
Yes, we consider this a science-based target, but this target has not been approved as science-based by the Science Based Targets initiative

% of target achieved
34

Target status
Underway

Please explain
This target is an update of the Int1 target, which is a science-based target, and was submitted to the Science Based Target initiative but not yet approved. We anticipate a reduction in absolute scope 1+2 emissions of 70% and in absolute scope 3 emissions of 45%.

% change anticipated in absolute Scope 1+2 emissions
70

% change anticipated in absolute Scope 3 emissions
45

C4.2

(C4.2) Provide details of other key climate-related targets not already reported in question C4.1/a/b.

Target
Renewable electricity production

KPI – Metric numerator
Renewable electricity generation installed capacity (MW)

KPI – Metric denominator (intensity targets only)
Total electricity generation installed capacity (MW)

Base year

2005

Start year

2015

Target year

2020

KPI in baseline year

0.48

KPI in target year

0.75

% achieved in reporting year

73

Target Status

Underway

Please explain

This is one EDP's 2016-2020 Business Plan strategic targets: to ensure at least 75% of renewable installed capacity by 2020. It is a corporate-wide target and applies to all geographies where the Group operates.
Target was publicly announced by EDP in 2015, in anticipation of the Paris Climate Conference.
2005 is reported as base year although the target does not have one, as it is set not as a reduction from a baseline but as an absolute level to be achieved in the target year.

Part of emissions target

Target is not formally part of an emissions reduction target but EDP's strategic focus on renewable growth is essential for the achievement of our emissions reduction targets.

EDP joined the REscale LCTPi initiative, contributing to accelerate the deployment of renewables and the transition to a low-carbon electricity system, in line with the IEA 2°C Scenario, aiming at achieving an additional 1.5 TW of deployment by 2025.

Is this target part of an overarching initiative?

Low-Carbon Technology Partnerships initiative

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	50	
To be implemented*	8	870,000
Implementation commenced*	12	1,690,000
Implemented*	15	1,480,000
Not to be implemented	0	0

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative type
Low-carbon energy installation

Description of initiative
Wind

Estimated annual CO2e savings (metric tonnes CO2e)
1,230,000

Scope
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
156,000,000

Investment required (unit currency – as specified in C0.4)
1,240,000,000

Payback period
4 - 10 years

Estimated lifetime of the initiative
21-30 years

Comment

Several wind farms in USA, Portugal, Spain, France, Italy and Brazil, totaling 826 MW installed capacity. Assumptions made:
- CO2 savings based on avoided thermal generation and respective 2018 emission intensity by geography.
- Monetary savings based on avoided thermal generation costs (coal and gas), assuming average renewables load factors over the past 5 years and on avoided CO2 emissions, assuming EU-ETS spot price as of Dec. 31st 2018, i.e., 24.68 €/tCO2.
- Investment based on real or typical values of CAPEX for wind farms

Initiative type

Low-carbon energy installation

Description of initiative

Hydro

Estimated annual CO2e savings (metric tonnes CO2e)

40,000

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

9,850,000

Investment required (unit currency – as specified in C0.4)

105,000,000

Payback period

11-15 years

Estimated lifetime of the initiative

>30 years

Comment

33% stake in one large hydro project in Brazil, of which 175 MW was built in 2018. Assumptions made:
- CO2 savings based on avoided thermal generation and respective 2017 emission intensity by geography.
- Monetary savings based on avoided thermal generation costs (coal and gas), assuming average hydro load factors over the past 5 years and on avoided CO2 emissions, assuming EU-ETS spot price as of Dec. 31st 2017, i.e., 24.68 €/tCO2.
- Investment based on real values of CAPEX for this hydro power plant

Initiative type

Other, please specify

Distribution loss, power plant self-consumption reduction

Description of initiative

Estimated annual CO2e savings (metric tonnes CO2e)

210,000

Scope

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

132,330,000

Investment required (unit currency – as specified in C0.4)

53,000,000

Payback period

<1 year

Estimated lifetime of the initiative

>30 years

Comment

Initiative type

Low-carbon energy installation

Description of initiative

Solar PV

Estimated annual CO2e savings (metric tonnes CO2e)

108

Scope

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

55,000

Investment required (unit currency – as specified in C0.4)

243,000

Payback period

4 - 10 years

Estimated lifetime of the initiative

21-30 years

Comment

243 kWp photovoltaic power systems installed in office buildings in Portugal (self-consumption regime), likely to generate around 360 MWh/year and avoid 100+ tCO2/year.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Compliance with regulatory requirements/standards	Focus on renewable generation allows for the reduction of exposure to risk of further regulatory restrictions on CO2 emissions.
Dedicated budget for low-carbon product R&D	EDP has a dedicated budget for R&D that is allocated to 5 main areas: (1) Clean Energy; (2) Smart Grids; (3) Customer-Focused Solutions; (4) Energy Storage and (5) Digital Innovation.
Internal price on carbon	EDP uses internal price of carbon to assess the impact of current and future carbon regulation on energy prices and volumes, existing assets' value and to evaluate capital investments in new electricity generation assets (fossil fuel based and renewable energy based).

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Group of products

Description of product/Group of products

Renewable electricity. EDP's strategic focus on renewable generation growth led to a progressive decarbonization of the company' electricity generation portfolio. In 2018,

EDP's installed capacity worldwide was 74.4% renewable and the company generated 66.5% of its electricity from renewable sources, thus delivering electricity with an average low carbon content. In addition, 100% certified renewable electricity is also part of EDP's product portfolio. In 2022, EDP foresees its generation portfolio to be, at least, 78% renewable based and its emissions intensity to be 65% below 2005 levels and 36% below 2015 level, putting the company well on track to meet its 2030 reduction commitment (-90% CO2 per TWh, compared to 2005, according to the new strategic goals) and science-based target (-55% scope 1 and 2 CO2 per TWh, compared to 2015).

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product and avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Low-Carbon Investment (LCI) Registry Taxonomy

% revenue from low carbon product(s) in the reporting year

18

Comment

Under its Strategic Update 2019-2022, EDP will invest c. € 9 bn in renewables, increasing 17% its installed capacity in 2022 from 2018 level. EDP had committed to exceeding 75% of renewables in its overall installed capacity by 2020, further committed to 78% of renewables by 2022 and to reduce CO2 specific emissions by 65% in 2022 and by 90% before 2030 (compared to 2005 levels).

Level of aggregation

Group of products

Description of product/Group of products

Energy efficiency services and low carbon client solutions.
EDP has a diversified portfolio of energy efficiency services targeted at the specific needs of different customer segments in Portugal, Spain and Brazil, which increases efficiency and avoids emissions in final energy consumption. This portfolio includes: distributed generation (solar PV micro and mini-generation solutions), home storage systems, smart appliances, heat pumps, LED lighting, energy management devices, fuel switching projects, energy audits, electric mobility solutions, education projects and awareness campaigns. For SMEs and large corporate customers in Iberia, the Save To Compete (S2C) programme identifies energy savings measures and funds its implementation through the induced savings. By the end of 2018, S2C had induced accumulated savings of 270 GWh, avoiding c. 100 ktCO2.
In Brazil, through Soluções em Energia, the energy efficiency and distributed generation projects carried out in 2018 represented 254 GWh savings and a reduction of 51 ktCO2.
EDP also offers solar photovoltaic (PV) generation solutions for different clients' segments, allowing for 100% renewable electricity self-consumption: by the end of 2018,

c. 40 MW of PV capacity had been installed in our customer's premises. EDP is also promoting sustainable mobility by offering commercially attractive packages combining special prices for electricity, home EV charging stations and partnerships with electric car manufacturers. For light duty vehicles and average yearly mileage, electric mobility delivers annual savings of 1,2 t CO2 compared to conventional mobility.
Total accumulated savings provided to our customers since 2015, have now reached 951 GWh, avoiding 406 kt of CO2 emissions. It is expected that the target set for 2020 (accumulated savings of 1 TWh from 2015) will be largely exceeded. These indicators do not include the measures implemented by EDP under the PPEC programme in Portugal – Plan for Promoting Efficiency in Electricity Consumption (PPEC), promoted by the Portuguese Regulator - which have already generated accumulated savings, since the start of the programme in 2007, of around 4 TWh, with 1.6 Mt of CO2 emissions avoided. According to the new EDP's sustainability strategic goals, we foresee to improve our customer's energy efficiency by inducing up to 5 TWh accumulated savings from 2015 to 2022.

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Low-Carbon Investment (LCI) Registry Taxonomy

% revenue from low carbon product(s) in the reporting year

1

Comment

EDP committed to provide customers with ongoing and target energy efficiency products and services delivering up to 5 TWh in accumulated savings in the period 2015-2022.

C-EU4.6

(C-EU4.6) Describe your organization's efforts to reduce methane emissions from your activities.

Methane emissions are not relevant to EDP's operation. In 2017, EDP sold its gas distribution assets in Portugal and Spain and is currently active only in the supply segment of the gas business. Therefore, leaks in gas distribution networks, the only previous material source of methane emissions, are no longer associated with EDP Group. However, there are areas in which we estimate and manage our methane emissions.

Stationary combustion in thermal power plants accounts for 99,87% of EDP's total scope 1 GHG emissions. The company monitors GHG emissions from its thermal generation assets according to the European Union Emission Trading System (EU ETS): The Monitoring and Reporting Regulation (MMR) – General guidance for installations. These guidelines do not contemplate CH4 emissions, as they are immaterial in thermal electricity generation. According to official data from the Portuguese Environmental Agency, CH4 emissions from fuel combustion in electricity generation account for 0,08% of total GHG emissions (expressed in

CO2e) from that activity. (Source: Portugal National Inventory Report 2017. CRF Table 1.s1 - 1.a - Public Electricity and Heating. Five-year average for the most recent available years).

Mobile combustion in the company fleet represents less than 0,1% of EDP's total scope 1 GHG emissions and the company accounts for the immaterial methane emissions associated with this source. EDP is implementing a plan to renew its company fleet to more efficient vehicles, including electric and hybrid vehicles, having committed to achieve electrification of 100% of its light-duty fleet segment by 2030. Since 2010, the number of electric vehicles has grown almost 20-fold representing, by the end of 2018, 5% of the total fleet of about 3500 vehicles; primary energy consumption decreased by 23%; and GHG emissions (including small quantities of methane) by 26%. Methane emissions are incorporated into our absolute (Abs 1) and intensity (Int 1) GHG emissions reduction Science Based Targets, as they pertain only to our scope 1 and scope 2 emissions, including all GHGs.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1, 2008

Base year end

December 31, 2008

Base year emissions (metric tons CO2e)

19,813,643

Comment

Base year data refers to our first Group-wide complete GHG inventory (scope 1, 2 and 3 emissions). Nevertheless, base year for our active reduction targets are 2005 (scope 1 target) and 2015 (science-based target for scope 1, scope 2 and scope 3).

Scope 2 (location-based)

Base year start

January 1, 2008

Base year end

December 31, 2008

Base year emissions (metric tons CO2e)

1,571,028

Comment

Base year data refers to our first Group-wide complete GHG inventory (scope 1, 2 and 3 emissions). Base year for our active reduction targets are 2005 (scope 1 target) and 2015 (Science Based Target for scope 1, scope 2 and scope 3).

Scope 2 emission results are the same for location-based and market-based methods because almost all electricity consumed by EDP and included in this scope (electricity consumption in office buildings, renewable power stations self-consumption and electricity losses in distribution networks) was generated and supplied by the EDP Group and therefore emissions are accounted for under scope 1. Exceptions are markets where EDP distributes more electricity than it generates (Portugal and Brazil) and markets where EDP does not have supply activities and, therefore, consumes electricity supplied by third parties (North America and European countries other than Portugal and Spain).

In Portugal and Brazil no country-wide Guarantees of Origin system is currently in place, therefore residual mix figures, used to calculate our scope 2 emissions in these markets according to the market-based method, are very similar to average grid emission factors, used in the location-based method. Markets where we don't distribute or supply electricity (North America and Rest of Europe) contribute only marginally to our electricity consumption and, therefore, even if we use RECs to certify 100% of our North America consumption, scope 2 global figures are the same calculated with the two methods.

Scope 2 (market-based)

Base year start

January 1, 2008

Base year end

December 31, 2008

Base year emissions (metric tons CO2e)

1,571,028

Comment

Base year data refers to our first Group-wide complete GHG inventory (scope 1, 2 and 3 emissions). Base year for our active reduction targets are 2005 (scope 1 target) and 2015 (Science Based Target for scope 1, scope 2 and scope 3).

Scope 2 emission results are the same for location-based and market-based methods because almost all electricity consumed by EDP and included in this scope (electricity consumption in office buildings, renewable power stations self-consumption and electricity losses in distribution networks) was generated and supplied by the EDP Group and therefore emissions are accounted for under scope 1. Exceptions are markets where EDP distributes more electricity than it generates (Portugal and Brazil) and markets where EDP does not have supply activities and, therefore, consumes electricity supplied by third parties (North America and European countries other than Portugal and Spain).

In Portugal and Brazil no country-wide Guarantees of Origin system is currently in place, therefore residual mix figures, used to calculate our scope 2 emissions in these markets according to the market-based method, are very similar to average grid emission factors, used in the location-based method. Markets where we don't distribute or supply electricity (North America and Rest of Europe) contribute only marginally to our electricity consumption and, therefore, even if we use RECs to certify 100% of our North America consumption, scope 2 global figures are the same calculated with the two methods.

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.

European Union Emission Trading System (EU ETS): The Monitoring and Reporting Regulation (MMR) – General guidance for installations

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)

18,429,224

Start date

January 1, 2018

End date

December 31, 2018

Comment

After a year of extreme drought in the Iberian Peninsula in 2017, which had a negative impact on the environmental and climate performance of the EDP Group, the average hydraulic conditions in 2018 contributed to the significant improvement in all indicators, with special emphasis on the reduction of CO2 absolute and specific emissions (-20% vs. 2017).

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

We have revised the methodology to calculate Scope 2 emission to be consistent with the GHG Protocol location- and market-based approach. Almost all electricity consumed by EDP and included in this scope (electricity consumption in office buildings, renewable power plants self-consumption and electricity losses in distribution networks) was generated and supplied by the EDP Group and therefore emissions are accounted for under scope 1. Exceptions are markets where EDP distributes more electricity than it generates (Portugal and Brazil) and markets where EDP does not have supply activities and, therefore, consumes electricity supplied by third parties (North America and European countries other than Portugal and Spain).

In Portugal and Brazil no country-wide Guarantees of Origin (GoO) system is currently in place, therefore residual mix figures, used to calculate our scope 2 emissions in these markets according to the market-based method, are very similar to average grid emission factors, used in the location-based method. Markets where we don't distribute or supply electricity (North America and Rest of Europe) contribute only marginally to our electricity consumption. Nevertheless, the use of Renewable Energy Certificates (RECs) in the USA and GoO in Spain result in a slight improvement of scope 2 emissions (-3%) calculated with the market-based method.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based

601,853

Scope 2, market-based (if applicable)

585,244

Start date

January 1, 2018

End date

December 31, 2018

Comment

We have revised the methodology to calculate Scope 2 emission to be consistent with the GHG Protocol location- and market-based approach. Almost all electricity consumed by EDP and included in this scope (electricity consumption in office buildings, renewable power plants self-consumption and electricity losses in distribution networks) was generated and supplied by the EDP Group and therefore emissions are accounted for under scope 1. Exceptions are markets where EDP distributes more electricity than it generates (Portugal and Brazil) and markets where EDP does not have supply activities and, therefore, consumes electricity supplied by third parties (North America and European countries other than Portugal and Spain).

In Portugal and Brazil no country-wide Guarantees of Origin (GoO) system is currently in place, therefore residual mix figures, used to calculate our scope 2 emissions in these markets according to the market-based method, are very similar to average grid emission factors, used in the location-based method. Markets where we don't distribute or supply electricity (North America and Rest of Europe) contribute only marginally to our electricity consumption. Nevertheless, the use of Renewable Energy Certificates (RECs) in the USA and GoO in Spain result in a slight improvement of scope 2 emissions (-3%) calculated with the market-based method.

C6.4

(C6.4) 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

C6.5

(C6.5) Account for your organization's Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

48,645

Emissions calculation methodology

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 published data (national energy authorities and LCA studies). GWP source: IPCC Assessment Report 5 (2014).

Percentage of emissions calculated using data obtained from suppliers or value chain partners

50

Explanation

Purchase of chemicals products and use of municipality water. Categories that account for less than 1% of total scope 3 emissions or are not applicable to EDP, are considered not relevant.

Capital goods

Evaluation status

Relevant, calculated

Metric tonnes CO2e

329,858

Emissions calculation methodology

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 published data (national energy authorities and LCA studies). GWP source: IPCC Assessment Report 5 (2014).

Percentage of emissions calculated using data obtained from suppliers or value chain partners

20

Explanation

Facilities construction (power plant and buildings) and equipment acquisition.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Relevant, calculated

Metric tonnes CO2e

6,399,407

Emissions calculation methodology

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. Scope 2 emissions calculated according to location-based method. Activity data sources: EDP; Ecoinvent database when primary data was not available. Emission factors source: calculated from published data (national energy authorities and LCA studies). GWP source: IPCC Assessment Report 5 (2014).

Percentage of emissions calculated using data obtained from suppliers or value chain partners

50

Explanation

Production (extraction and processing) of fuels (coal, natural gas, fuel oil and diesel) used by EDP for electricity generation. Generation/processing of electricity and natural gas purchased for retail.

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

675,182

Emissions calculation methodology

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 published data (national energy authorities, GHG Protocol Transport tool and LCA studies). GWP source: IPCC Assessment Report 5 (2014).

Percentage of emissions calculated using data obtained from suppliers or value chain partners

50

Explanation

Transportation of fuels (coal, natural gas, fuel oil and diesel oil) used by EDP for electricity generation.

Waste generated in operations

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

22,300

Emissions calculation methodology

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 published data (national energy authorities and LCA studies). GWP source: IPCC Assessment Report 5 (2014).

Percentage of emissions calculated using data obtained from suppliers or value chain partners

50

Explanation

Transport and disposal of waste generated in EDP's activities (mainly gypsum and ashes from coal power plants). Categories that account for less than 1% of total scope 3 emissions or are not applicable to EDP are considered not relevant.

Business travel

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

9,607

Emissions calculation methodology

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. Emission factors source: calculated from published data (national energy authorities or default data from GHG Protocol Transport tool). GWP source: IPCC Assessment Report 5 (2014).

Percentage of emissions calculated using data obtained from suppliers or value chain partners

50

Explanation

EDP employee business travel (air, train and road travel). Categories that account for less than 1% of total scope 3 emissions or are not applicable to EDP are considered not relevant.

Employee commuting

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

4,477

Emissions calculation methodology

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. Emission factors source: calculated from published data (national energy authorities or default data from GHG Protocol Transport tool). GWP source: IPCC Assessment Report 5 (2014).

Percentage of emissions calculated using data obtained from suppliers or value chain partners

50

Explanation

EDP employee commuting. Categories that account for less than 1% of total scope 3 emissions or are not applicable to EDP are considered not relevant.

Upstream leased assets

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

33,997

Emissions calculation methodology

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 published data (national energy authorities and LCA studies). GWP source: IPCC Assessment Report 5 (2014).

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Explanation

Use of rented assets (especially machinery) in construction activities. Categories that account for less than 1% of total scope 3 emissions or are not applicable to EDP are considered not relevant.

Downstream transportation and distribution

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

712

Emissions calculation methodology

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 published data (national energy authorities and LCA studies). GWP source: IPCC Assessment Report 5 (2014).

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

Support activities (offices and stores) associated with electricity and gas retail. Categories that account for less than 1% of total scope 3 emissions or are not applicable to EDP are considered not relevant.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Explanation

This category is not applicable to EDP. EDP's products (electricity and gas) are supplied in their final consuming form, therefore they do not require further processing.

Use of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

3,870,859

Emissions calculation methodology

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. Emission factors source: calculated from published data (national energy authorities and LCA studies). GWP source: IPCC Assessment Report 5 (2014).

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Explanation

Use of natural gas sold by EDP to clients.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Explanation

This category is not applicable to EDP. EDP's sold products (electricity and gas) do not generate waste, therefore no end of life treatment is required.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Explanation

EDP did not use downstream leased assets in the reporting year.

Franchises

Evaluation status

Not relevant, explanation provided

Explanation

EDP did not have franchised activities in the reporting year.

Investments

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

4,127

Emissions calculation methodology

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 published data (national energy authorities and LCA studies). GWP source: IPCC Assessment Report 5 (2014).

Percentage of emissions calculated using data obtained from suppliers or value chain partners

10

Explanation

Emissions from EDP's participated companies (minority interests). Categories that account for less than 1% of total scope 3 emissions or are not applicable to EDP are considered not relevant.

Other (upstream)

Evaluation status

Not relevant, explanation provided

Explanation

EDP had no emissions from upstream or downstream activities other than the ones reported in categories C1 to C15.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Explanation

EDP has no emissions from upstream or downstream activities other than the ones reported in categories C1 to C15.

C6.7

(C6.7) Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

No

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

0.00125

Metric numerator (Gross global combined Scope 1 and 2 emissions)

19,031,077

Metric denominator

unit total revenue

Metric denominator: Unit total

15,278,085,902

Scope 2 figure used

Location-based

% change from previous year

18

Direction of change

Decreased

Reason for change

Despite a slight decrease in the total revenue (-2%), the global combined scope 1 and 2 emissions decreased 20% from previous year, due to favourable hydrologic conditions in the Iberian Peninsula leading to higher hydropower generation and less fossil fuels use, which explains the % and direction of change.

Intensity figure

0.266

Metric numerator (Gross global combined Scope 1 and 2 emissions)

19,031,077

Metric denominator

megawatt hour generated (MWh)

Metric denominator: Unit total

71,614,335

Scope 2 figure used

Location-based

% change from previous year

23

Direction of change

Decreased

Reason for change

Power generation increase about 3% and the global combined scope 1 and 2 emissions decreased 20% from previous year, due to favourable hydrologic conditions in the Iberian Peninsula leading to higher hydropower generation and less fossil fuels use, which explains the % and direction of change.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	18,418,614	IPCC Fifth Assessment Report (AR5 – 100 year)
SF6	10,349	IPCC Fifth Assessment Report (AR5 – 100 year)

CH4	33	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	228	IPCC Fifth Assessment Report (AR5 – 100 year)

C-EU7.1b

(C-EU7.1b) Break down your total gross global Scope 1 emissions from electric utilities value chain activities by greenhouse gas type.

	Gross Scope 1 CO2 emissions (metric tons CO2)	Gross Scope 1 methane emissions (metric tons CH4)	Gross Scope 1 SF6 emissions (metric tons SF6)	Gross Scope 1 emissions (metric tons CO2e)	Comment
Fugitives	0	0	0.44	10,349	Corresponds to SF6 fugitive emissions in gas insulated switchgears and transformers from generation and distribution activities
Combustion (Electric utilities)	18,403,522	0	0	18,403,522	CO2 emissions from thermal power plants, calculated according with the European Union Emission Trading System (EU ETS): The Monitoring and Reporting Regulation (MMR) – General guidance for installations. These guidelines do not contemplate the calculation of CH4 emissions, as they are immaterial in thermal electricity generation. According to official data from the Portuguese Environmental Agency, CH4 emissions from fuel combustion in electricity generation account for 0,08% of total GHG emissions (expressed in CO2e) from that activity. (Source: Portugal National Inventory Report 2017. CRF Table 1.s1

					- 1.a - Public Electricity and Heating. Five-year average for the most recent available years).
Combustion (Gas utilities)	0	0	0	0	There are no combustion emissions associated with EDP's gas business. In 2017, EDP sold its gas distribution assets in Portugal and Spain, alienating its gas distribution networks and solely maintaining the gas supply activity.
Combustion (Other)	15,091	1.18	0	15,352	Emissions from stationary (natural gas consumption in office buildings) and mobile (company fleet) combustion in support activities. Gross scope 1 emissions include 228 tCO2e corresponding to N2O emissions from fleet.
Emissions not elsewhere classified	0	0	0	0	All gross scope 1 emissions are accounted for in the previous categories.

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
Portugal	9,106,078
Spain	5,345,039
Brazil	3,977,284
North America [1]	492
Other, please specify Rest of Europe (FR, BE, IT, PL, RO)	331

[1] North America includes activities in the USA, Canada and Mexico

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By activity

C7.3c

(C7.3c) Break down your total gross global Scope 1 emissions by business activity.

Activity	Scope 1 emissions (metric tons CO2e)
Stationary combustion in thermal power plants	18,403,522
Fugitive emissions	10,349
Mobile combustion in company fleet	15,166
Natural gas consumption (office buildings)	187

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Comment
Electric utility generation activities	18,413,871	Total refers to EDP's scope 1 emissions from stationary combustion of fossil fuels in our thermal power plants and to SF6 fugitive emissions from electricity generation and distribution equipment. Together, these sources represent 99.92% of our total scope 1 GHG emissions. The remaining 0.08% (excluded from this figure but reported in C6.1) refer to mobile combustion in the company fleet and to natural gas consumption in office buildings. Outside the electricity sector, EDP has only gas supply activities, with no material scope 1 emissions.

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
Portugal	440,838	440,838	1,863,692	0
Spain	0	0	0	0

Brazil	136,415	136,415	1,758,134	0
North America [1]	16,609	0	38,322	38,322
Other, please specify Rest of Europe (FR, BE, IT, PL, RO) [2]	7,991	7,991	16,926	0

[1] North America includes activities in the USA, Canada and Mexico

[2] Rest of Europe includes operations (wind and solar farms) in France, Belgium, Italy, Poland and Romania

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By activity

C7.6c

(C7.6c) Break down your total gross global Scope 2 emissions by business activity.

Activity	Scope 2, location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Electricity consumption in office buildings	1,827	96
Electricity self-consumption in power plants	22,773	7,895
Distribution grid losses	577,253	577,253

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) 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.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	0	No change	0	No material change in combined scope 1 and scope 2 emissions from previous year resulting from change in renewable energy consumption.
Other emissions reduction activities	250,000	Decreased	1	Among the various emissions reduction initiatives disclosed in 4.3b, only the ones related with hydro in Portugal and Brazil, and grid losses reduction in all geographies have a direct impact on absolute scope 1 and 2 emissions. The other initiatives, namely wind and solar, contributed to EDP's overall emissions intensity reduction. The contribution of hydro in Portugal and Brazil and the grid losses reduction in all geographies amounted to emissions reduction of about 250,000 tCO2, which represents around 1% decrease in EDP's combined S1 + S2 emissions from 2017: (250,000/23,957,269)*100 = 1%.
Divestment	484,000	Increased	2	In 2018, EDP sold several mini-hydro plants in Portugal and Brazil, totalling 230 MW, which would have produced about 1 TWh under the 2018 hydrological conditions. This loss of production from hydro corresponds to an increase of about 484 kt CO2, given the thermal emission factors of those countries, i.e., a 2% increase in EDP's combined S1 + S2 emissions from 2017: (484,000/23,957,269)*100= 2%.
Acquisitions	0	No change	0	No change in combined scope 1 and scope 2 emissions from previous year resulting from acquisitions.
Mergers	0	No change	0	No change in combined scope 1 and scope 2 emissions from previous year resulting from mergers.
Change in output	0	No change	0	In 2018, EDP produced only 2.8% more electricity than in 2017, although with a different mix. So, there was no significant

				change in output with material impact in scope 1 and scope 2 emissions.
Change in methodology	0	No change	0	No change in combined scope 1 and scope 2 emissions from previous year resulting from change in methodology
Change in boundary	0	No change	0	No change in combined scope 1 and scope 2 emissions from previous year resulting from change in boundary
Change in physical operating conditions	5,650,000	Decreased	24	In 2018, as a result of favourable hydrological year in the Iberian Peninsula, hydropower generation increased 6.3 TWh, avoiding about 5,650,000 tCO2 emissions from thermal power plants, namely coal-fired. This figure represents a 24% decrease in EDP's combined S1 + S2 emissions from 2017: (5.650,000/23,957,269)*100 = 24%.
Unidentified	0	No change	0	No change in combined scope 1 and scope 2 emissions from previous year resulting from unidentified reasons
Other	0	No change	0	No change in combined scope 1 and scope 2 emissions from previous year resulting from other reasons

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 80% but less than or equal to 85%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertakes this energy-related activity
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	3,754.2	61,561,212.6	61,564,966.8
Consumption of purchased or acquired electricity		1,817,540.1	1,850,656.1	3,668,196.2
Consumption of self-generated non-fuel renewable energy		47,656,028.6		47,656,028.6
Total energy consumption		49,477,322.9	63,411,868.7	112,889,191.6

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	No

Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	Yes

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)

Bituminous Coal

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

46,106,241

MWh fuel consumed for self-generation of electricity

46,106,241

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Comment

Used in EDP's coal-fired power plants in Portugal, Spain and Brazil

Fuels (excluding feedstocks)

Natural Gas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

11,229,208

MWh fuel consumed for self-generation of electricity

10,443,537.6

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-cogeneration or self-trigeneration

785,670.4

Comment

Used in EDP's CCGT plants and co-generation plants in Portugal and Spain, as well as in office buildings

---

Fuels (excluding feedstocks)

Blast Furnace Gas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

3,432,103.6

MWh fuel consumed for self-generation of electricity

3,432,103.6

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Comment

Residual gas from iron industry used in Aboño coal power plant in Spain

---

Fuels (excluding feedstocks)

Coke Oven Gas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

259,385.4

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-cogeneration or self-trigeneration

259,385.4

Comment

Residual gas from iron industry used in Aboño coal power plant and Sidergas co-generation plant in Spain

Fuels (excluding feedstocks)

Basic Oxygen Furnace Gas (LD Gas)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

338,828.8

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-cogeneration or self-trigeneration

338,828.8

Comment

Residual gas from iron industry used in Sidergas co-generation plant in Spain

Fuels (excluding feedstocks)

Other, please specify

Fuel oil

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

82,415.4

MWh fuel consumed for self-generation of electricity

82,415.4

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Comment

Fuels (excluding feedstocks)

Diesel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

56,197.3

MWh fuel consumed for self-generation of electricity

56,197.3

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Comment

Used in EDP's thermal power plants

Fuels (excluding feedstocks)

Other, please specify

Fuel for mobile combustion

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

60,587.3

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-cogeneration or self-trigeneration

60,587.3

Comment

Sum of fuels used for mobile combustion (gasoline, gas/diesel oil, natural gas liquids and biofuels)

C8.2d

(C8.2d) List the average emission factors of the fuels reported in C8.2c.

Basic Oxygen Furnace Gas (LD Gas)

Emission factor

182

Unit

kg CO2e per GJ

Emission factor source

2006 IPCC Guidelines for National Greenhouse Gas Inventories

Comment

Residual gas from iron industry used in Sidergas co-generation plant in Spain

Bituminous Coal

Emission factor

94.6

Unit

kg CO2e per GJ

Emission factor source

2006 IPCC Guidelines for National Greenhouse Gas Inventories

Comment

Used in EDP’s coal-fired power plants in Portugal, Spain and Brazil

Blast Furnace Gas

Emission factor

260

Unit

kg CO2e per GJ

Emission factor source

2006 IPCC Guidelines for National Greenhouse Gas Inventories

Comment

Residual gas from iron industry used in Aboño coal power plant in Spain

Coke Oven Gas

Emission factor

44.4

Unit

kg CO2e per GJ

Emission factor source

2006 IPCC Guidelines for National Greenhouse Gas Inventories

Comment

Residual gas from iron industry used in Aboño coal power plant and Sidergas co-generation plant in Spain

Diesel

Emission factor

74.1

Unit

kg CO2e per GJ

Emission factor source

2006 IPCC Guidelines for National Greenhouse Gas Inventories

Comment

Used in EDP's thermal power plants

Natural Gas

Emission factor

56.1

Unit

kg CO2e per GJ

Emission factor source

2006 IPCC Guidelines for National Greenhouse Gas Inventories

Comment

Used in EDP’s CCGT plants and co-generation plants in Portugal and Spain, as well as in office buildings

Other

Emission factor

69

Unit

kg CO2e per GJ

Emission factor source

2006 IPCC Guidelines for National Greenhouse Gas Inventories

Comment

The emission factor disclosed was obtained from the weighted average of the emission factors of the fuels used for mobile combustion (gasoline, gas/diesel oil, natural gas liquids and biofuels)

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	71,842,306	1,919,190	47,907,824	1,071,703
Heat	0	0	0	0
Steam	846,624	0	0	0
Cooling	0	0	0	0

C-EU8.2e

(C-EU8.2e) For your electric utility activities, provide a breakdown of your total power plant capacity, generation, and related emissions during the reporting year by source.

Coal – hard

Nameplate capacity (MW)

3,124.2

Gross electricity generation (GWh)

18,939.9

Net electricity generation (GWh)

17,471.04

Absolute scope 1 emissions (metric tons CO2e)

16,315,625

Scope 1 emissions intensity (metric tons CO2e per GWh)

928.14

Comment

Figures refer to coal power plants in Portugal, Spain and Brazil.

Lignite

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

EDP does not own lignite-fired power plants.

Oil

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

EDP does not own oil-fired power plants.

Gas

Nameplate capacity (MW)

3,729

Gross electricity generation (GWh)

5,525.32

Net electricity generation (GWh)

5,332.71

Absolute scope 1 emissions (metric tons CO2e)

2,053,871

Scope 1 emissions intensity (metric tons CO2e per GWh)

385.15

Comment

Figures refer to CCGT power plants in Portugal and Spain.

Biomass

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

EDP owns a 50% stake in 4 biomass power plants in Portugal but no financial or operational control. These plants are outside our reporting boundary.

Waste (non-biomass)

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

EDP does not own waste power plants

Nuclear

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

EDP, through Iberenergia, S.A.U., a subsidiary company of EDP España S.A.U., holds a 15.5% stake in the Trillo nuclear power plant. EDP is a minor shareholder and has no operational or financial control over this power plant, which is outside our reporting boundary.

Geothermal

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

EDP does not own geothermal power plants.

Hydroelectric

Nameplate capacity (MW)

8,792.4

Gross electricity generation (GWh)

19,482.31

Net electricity generation (GWh)

19,296.49

Absolute scope 1 emissions (metric tons CO2e)

337

Scope 1 emissions intensity (metric tons CO2e per GWh)

0.02

Comment

Figures refer to large and mini-hydro power plants in Portugal, Spain and Brazil. Scope 1 emissions in hydroelectric power plants are related to SF6 fugitive emissions.

Wind

Nameplate capacity (MW)

11,155.9

Gross electricity generation (GWh)

28,197.88

Net electricity generation (GWh)

28,132.91

Absolute scope 1 emissions (metric tons CO2e)

408

Scope 1 emissions intensity (metric tons CO2e per GWh)

0.01

Comment

Figures refer to wind farms in Portugal, Spain, Brazil, North America and several European countries. Scope 1 emissions in wind farms are related to SF6 fugitive emissions.

Solar

Nameplate capacity (MW)

145.2

Gross electricity generation (GWh)

227.64

Net electricity generation (GWh)

226.05

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Figures refer to solar PV farms in Portugal, Romania and the USA.

Other renewable

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

EDP does not own other renewable power plants besides hydro, wind and solar.

Other non-renewable

Nameplate capacity (MW)

49.2

Gross electricity generation (GWh)

315.89

Net electricity generation (GWh)

308.5

Absolute scope 1 emissions (metric tons CO2e)

158,282

Scope 1 emissions intensity (metric tons CO2e per GWh)

137.03

Comment

Figures refer to gas-fired CHP (including LDG and coke oven gas). Denominator for emission intensity calculation includes steam generation (862.5 GWh).

Total

Nameplate capacity (MW)

26,995.8

Gross electricity generation (GWh)

72,688.93

Net electricity generation (GWh)

70,767.71

Absolute scope 1 emissions (metric tons CO2e)

18,428,523

Scope 1 emissions intensity (metric tons CO2e per GWh)

257.33

Comment

Denominator for Scope 1 emissions intensity calculation includes 862.5 GWh from steam generation in CHP plants. The total absolute scope 1 emissions disclosed corresponds to 99.996% of the total scope 1 emissions reported in question C6 .

C8.2f

(C8.2f) Provide details on the electricity, heat, steam and/or cooling amounts that were accounted for at a low-carbon emission factor in the market-based Scope 2 figure reported in C6.3.

Basis for applying a low-carbon emission factor

Energy attribute certificates, Renewable Energy Certificates (RECs)

Low-carbon technology type

Solar PV
Wind

Region of consumption of low-carbon electricity, heat, steam or cooling

North America

MWh consumed associated with low-carbon electricity, heat, steam or cooling

38,322.3

Emission factor (in units of metric tons CO2e per MWh)

0

Comment

Power supplied to EDP Renewables office buildings, as well as solar and wind farms backfeed power in North America

C-EU8.4

(C-EU8.4) Does your electric utility organization have a transmission and distribution business?

Yes

C-EU8.4a

(C-EU8.4a) Disclose the following information about your transmission and distribution business.

Country/Region

Brazil

Voltage level

Distribution (low voltage)

Annual load (GWh)

25,006.85

Scope 2 emissions (basis)
Location-based

Scope 2 emissions (metric tons CO2e)
136,415.2

Annual energy losses (% of annual load)
9.9

Length of network (km)
92,160

Number of connections
3,451,040

Area covered (km2)
50,800

Comment
EDP, through their distribution companies EDP S. Paulo and EDP Espírito Santo, holds concession contracts for electricity distribution in the Brazilian States of S. Paulo and Espírito Santo

---

Country/Region
Portugal

Voltage level
Distribution (low voltage)

Annual load (GWh)
46,058.56

Scope 2 emissions (basis)
Location-based

Scope 2 emissions (metric tons CO2e)
440,837.9

Annual energy losses (% of annual load)
9.6

Length of network (km)
226,308

Number of connections
6,225,643

Area covered (km2)
89,102

Comment

EDP, through its distribution company EDP Distribuição, holds concession contracts for electricity distribution in Portugal mainland. EDP Distribuição is also the Portuguese DSO (Distribution System Operator), holding the High and Medium Voltage networks. Data disclosed includes all the networks.

Country/Region

Spain

Voltage level

Distribution (low voltage)

Annual load (GWh)

9,360.38

Scope 2 emissions (basis)

Location-based

Scope 2 emissions (metric tons CO2e)

0

Annual energy losses (% of annual load)

3.4

Length of network (km)

20,709

Number of connections

666,403

Area covered (km2)

10,056

Comment

EDP España, through its distribution company, holds concession contracts for electricity distribution in Asturias, Madrid, Comunidad Valenciana, Aragón and Cataluña

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description

Other, please specify

Renewable generation installed capacity

Metric value

0.74

Metric numerator

Renewable installed capacity in 2018: 20,093 MW

Metric denominator (intensity metric only)

Total installed capacity in 2018: 26,996 MW

% change from previous year

0.5

Direction of change

Increased

Please explain

EDP's organic growth is focused on CO2-free technologies, mainly wind, solar and hydro. Target set in 2015 was to reach at least 75% of installed capacity on renewables by 2020. EDP is on track to meet this target, likely before 2020. Under the current Strategic Update 2019-2022 presented in March 2019 in London, EDP updated this target and committed to have 78% renewable installed capacity by 2022, 85% in 2030 and 90% of the total power generation from renewable sources in 2030, coal-free.

Description

Other, please specify

% of Smart meter installed in Iberia

Metric value

0.38

Metric numerator

Smart meters installed by the end 2018: 2,581,623

Metric denominator (intensity metric only)

Number of delivery points: 6,768,309

% change from previous year

36.2

Direction of change

Increased

Please explain

EDP publicly committed, in 2015, to install smart meters in more than 90% of EDP’s low-voltage delivery points in Iberia by 2030. More recently, this commitment was updated and the new target is to have 90% smart meters installed in 2022 and 100% in 2030 (Strategic Update 2019-2022 presented in March 2019 in London).

Description

Other, please specify

Induced clients' savings (accumulated in the period 2015-2018)

Metric value

951

Metric numerator

Accumulated clients' savings: 951 GWh

Metric denominator (intensity metric only)

No metric denominator, this is an absolute target

% change from previous year

89

Direction of change

Increased

Please explain

EDP publicly committed, in 2015, to provide customers with ongoing energy efficiency products and services delivering more than 1 TWh in accumulated savings in the period 2015-2020. This target was recently updated to 5 TWh in 2022 and will include savings induced by the PPEC plan in Portugal, an Energy Efficiency programme managed by the Portuguese energy regulated ERSE and the Directorate-General for Energy and Geology (DGEG).

Description

Other, please specify

R&D and innovation expenses in cleantech

Metric value

211,873,489

Metric numerator

R&Di expenses since 2015: EUR 211,783,489

Metric denominator (intensity metric only)

No metric denominator, this is an absolute target

% change from previous year

55

Direction of change

Increased

Please explain

EDP publicly committed to Invest EUR 200 million in innovative clean energy, energy efficiency and smart grids projects from 2015 to 2020. This target has already been reached in 2018.

C-EU9.5a

(C-EU9.5a) Break down, by source, your total planned CAPEX in your current CAPEX plan for power generation.

Primary power generation source	CAPEX planned for power generation from this source	Percentage of total CAPEX planned for power generation	End year of CAPEX plan	Comment
Coal – hard	115,178,000	1.8	2022	Figures refer to gross CAPEX planned for the period of the current EDP Strategic Update 2019-22
Gas	52,218,000	0.8	2022	Figures refer to gross CAPEX planned for the period of the current EDP Strategic Update 2019-22
Hydroelectric	478,312,000	7.5	2022	Figures refer to gross CAPEX planned for the period of the current EDP Strategic Update 2019-22
Wind	4,641,098,000	72.9	2022	Figures refer to gross CAPEX planned for the period of the current EDP Strategic Update 2019-22
Solar	1,079,017,000	17	2022	Figures refer to gross CAPEX planned for the period of the current EDP Strategic Update 2019-22

C-EU9.5b

(C-EU9.5b) Break down your total planned CAPEX in your current CAPEX plan for products and services (e.g. smart grids, digitalization, etc.).

Products and services	Description of product/service	CAPEX planned for product/service	Percentage of total CAPEX planned products and services	End of year CAPEX plan
Smart grid	15% of the net CAPEX for the business plan 2019-2022 will be in smart grids in Portugal, Spain and Brazil, including roll-out of smart meters in the low voltage delivery points in Iberia. By the end of 2022, EDP plans to achieve 90% of smart meters installed in the Iberian Peninsula.	750,000,000	15	2022
Other, please specify Energy end-use efficiency products and services	2% of the net CAPEX for the business plan 2019-2022 will be directed to client solutions and energy management. EDP has a diversified portfolio of energy efficiency services targeted at the specific needs of different customer segments in Portugal, Spain and Brazil, which includes: distributed generation (solar PV micro-generation solutions), prosumer services, home storage systems, smart appliances, heat pumps, compact smart energy management devices, integrated energy management solutions, fuel switching projects, energy audits, electric mobility solutions, education projects and awareness campaigns. For SMEs and large corporate customers in Iberia, we highlight the “Save To Compete” programme that identifies energy savings measures and funds its implementation through the induced savings. By the end of 2018, Save To Compete had already induced accumulated client savings of 270 GWh, avoiding about 100 ktCO2. In Brazil, through Soluções em Energia, EDP is also expanding its presence in energy efficiency and	100,000,000	2	2022

	distributed generation services. EDP is also promoting sustainable mobility by offering commercially attractive packages combining special prices for electricity, home charging stations and partnerships with electric car manufacturers. Total accumulated savings provided to our customers since 2015, have now reached 951 GWh, avoiding 406 kt of CO2 emissions. These indicators do not include the measures implemented by EDP under the PPEC programme in Portugal – Plan for Promoting Efficiency in Electricity Consumption (PPEC), managed by the Portuguese Regulator and the Directorate-General for Energy and Geology - which have already generated accumulated savings, since the start of the programme in 2007, of more than 4 TWh and 1.6 Mt of CO2 emissions avoided. The target set for 2020 (accumulated savings of 1 TWh from 2015) will be largely exceeded and EDP further committed to an updated target of 5 TWh savings by 2022, including the PPEC measures.			
Other, please specify Renewable power plants including distributed generatioj	75% of the CAPEX for the business plan 2019-2022 will be on renewable capacity additions, namely wind and solar power plants in the different geographies where EDP operates (Europe, North America and South America)	9,000,000,000	75	2022

C-CO9.6/C-EU9.6/C-OG9.6

(C-CO9.6/C-EU9.6/C-OG9.6) Disclose your investments in low-carbon research and development (R&D), equipment, products, and services.

Investment start date

January 1, 2018

Investment end date
December 31, 2018

Investment area
R&D

Technology area
Renewable energy

Investment maturity
Pilot demonstration

Investment figure
3,530,993

Low-carbon investment percentage
0-20%

Please explain
Several clean tech projects, including Distributed generation, PV floating System, CPVLab project, WindFloat Atlantic

Investment start date
January 1, 2018

Investment end date
December 31, 2108

Investment area
R&D

Technology area
Energy storage

Investment maturity
Applied research and development

Investment figure
373,359

Low-carbon investment percentage
0-20%

Please explain
European R&D projects: Sensible and Redox

Investment start date

January 1, 2018

Investment end date

December 31, 2018

Investment area

R&D

Technology area

Smart grids

Investment maturity

Applied research and development

Investment figure

8,357,252

Low-carbon investment percentage

21-40%

Please explain

European R&D projects (Integrid, Gridcure) and smart grid projects in Brazil.

Investment start date

January 1, 2018

Investment end date

December 31, 2018

Investment area

R&D

Technology area

Digital technology

Investment maturity

Full/commercial-scale demonstration

Investment figure

18,148,721

Low-carbon investment percentage

41-60%

Please explain

Distribution IT innovative projects on Big Data, Machine Learning and Artificial Intelligence technologies, for service and process improvement, namely for installation inspection, monitoring, cyber-security.

Investment start date
January 1, 2018

Investment end date
December 31, 2018

Investment area
R&D

Technology area
Other, please specify
Operational and customer's efficiency

Investment maturity
Small scale commercial deployment

Investment figure
1,802,493

Low-carbon investment percentage
0-20%

Please explain
Several energy efficiency related projects, such as IoT - Artificial Intelligence and Smart Building, Smart Lab, new functionalities for the Re:dy device, EV Smart Charging, efficient lighting

Investment start date
January 1, 2018

Investment end date
December 31, 2018

Investment area
Equipment

Technology area
Renewable energy

Investment maturity
Small scale commercial deployment

Investment figure
3,633,812

Low-carbon investment percentage
0-20%

Please explain

PV Distributed generation for self-consumption in office buildings, PV floating systems

Investment start date
January 1, 2018

Investment end date
December 31, 2018

Investment area
Equipment

Technology area
Smart grids

Investment maturity
Large scale commercial deployment

Investment figure
53,012,967

Low-carbon investment percentage
61-80%

Please explain
Smart grids and roll-out of smart meters in Portugal, Spain and Brazil

Investment start date
January 1, 2018

Investment end date
December 31, 2018

Investment area
Equipment

Technology area
Other, please specify
Energy efficiency equipment

Investment maturity
Large scale commercial deployment

Investment figure
18,650,370

Low-carbon investment percentage
21-40%

Please explain

Deployment of high efficient lighting (LED) for street lighting and reactive power compensation

Investment start date

January 1, 2018

Investment end date

December 31, 2018

Investment area

Services

Technology area

Other, please specify

Energy efficiency products and services

Investment maturity

Large scale commercial deployment

Investment figure

17,957,882

Low-carbon investment percentage

81-100%

Please explain

Commercial offer of energy efficiency, demand side management, sustainable mobility and distributed generation products and services to our customers in the three markets where EDP conducts electricity supply activities (Portugal, Spain and Brazil).

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 and/or Scope 2 emissions and attach the relevant statements.

Scope

Scope 1

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

EDP Sustainability Report_2018_en.pdf

Page/ section reference

PwC Independent Assurance Report: pp. 191-193 (printed pages) + GRI Indicators Table-GRI 305-1 Direct (Scope 1) GHG Emissions: p.185 (printed page) + Emissions data table: pp.102-103; 145; 172 (printed page)

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

Scope

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

EDP Sustainability Report_2018_en.pdf

Page/ section reference

PwC Independent Assurance Report: pp. 191-193 (printed pages) + GRI Indicators Table-GRI 305-2 Indirect (Scope 2) GHG Emissions: p.185 (printed page) + Emissions data table: pp.102-103; 145; 172 (printed page)

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

Scope

Scope 2 market-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

EDP Sustainability Report_2018_en.pdf

Page/ section reference

PwC Independent Assurance Report: pp. 191-193 (printed pages) + GRI Indicators Table-GRI 305-2 Indirect (Scope 2) GHG Emissions: p.185 (printed page) + Emissions data table: pp.102-103; 145; 172 (printed page)

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope

Scope 3- all relevant categories

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Attach the statement

EDP Sustainability Report_2018_en.pdf

Page/section reference

PwC Independent Assurance Report: pp. 191-193 (printed pages) + GRI Indicators Table-GRI 305-3 Other Indirect (Scope 3) GHG Emissions: p.185 (printed page) + Emissions data table: pp.102-103; 145; 172 (printed page)

Relevant standard

ISAE3000

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C6. Emissions data	Year on year change in emissions (Scope 1)	ISAE3000	Verification under third party independent assurance (PwC) of EDP Sustainability Report 2018. Annual verification of corporate-wide data. C6.1 – Scope 1 emissions.
C6. Emissions data	Year on year change in emissions (Scope 2)	ISAE3000	Verification under third party independent assurance of EDP Sustainability Report 2018. Annual verification of corporate-wide data. C6.3 – Scope 2 emissions.
C6. Emissions data	Year on year change in emissions (Scope 3)	ISAE3000	Verification under third party independent assurance of EDP Sustainability Report

			2018. Annual verification of corporate-wide data. C6.5 – Scope 3 emissions.
C6. Emissions data	Year on year emissions intensity figure	ISAE3000	Verification under third party independent assurance of EDP Sustainability Report 2018. Annual verification of corporate-wide data. C6.10 – Scope 1 + Scope 2 emissions per MWh.
C9. Additional metrics	Renewable energy products	ISAE3000	Verification under third party independent assurance of EDP Sustainability Report 2018. Annual verification of corporate-wide data. C9.1a – % of renewable electricity generation installed capacity.
C4. Targets and performance	Financial or other base year data points used to set a science-based target	ISAE3000	Verification under third party independent assurance of EDP Sustainability Report 2018. Annual verification of corporate-wide data. C4.1b – Emissions and electricity generation data used in setting EDP Science-based Target and reporting year % of achievement.
C4. Targets and performance	Emissions reduction activities	ISAE3000	Verification under third party independent assurance of EDP Sustainability Report 2018. Annual verification of corporate-wide data. C4.3b - GHG reduction from emissions reductions initiatives in the reporting year.
C8. Energy	Other, please specify Energy Consumption	ISAE3000	Verification under third party independent assurance of EDP Sustainability Report 2018. Annual verification of corporate-wide data. C8.2a – Energy consumption totals. C8.2c – Energy consumption by fuel type.

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

EU ETS

C11.1b

(C11.1b) Complete the following table for each of the emissions trading systems in which you participate.

EU ETS

% of Scope 1 emissions covered by the ETS

78.3

Period start date

January 1, 2018

Period end date

December 31, 2018

Allowances allocated

72,435

Allowances purchased

17,030,000

Verified emissions in metric tons CO2e

14,432,749

Details of ownership

Facilities we own and operate

Comment

Includes only the facilities we own and operate in Europe (Portugal and Spain). In Brazil, there are no emissions trading systems in place so far.

C11.1d

(C11.1d) What is your strategy for complying with the systems 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 is made partially in auction, in accordance with Directive 2009/29/EC, which regulates the 3rd phase of the EU ETS - European Emission Trading Scheme. EDP's carbon credit management follows a hedging strategy, as in previous years, aiming at minimizing its exposure to market risk. The purchase of allowances is made on the secondary market and through over-the-counter transactions. In 2018, only one CHP plant in Portugal got allowances allocated for free (~72 kt). The power plants covered by the EU ETS emitted about 14,4 Mton of CO2 in 2018. To comply with EU-ETS, EDP has used allocated allowances, allowances purchased and banked allowances (allowances that EDP did not use in the past years).

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

Navigate GHG regulations
Stakeholder expectations
Change internal behavior
Drive energy efficiency
Drive low-carbon investment
Stress test investments
Identify and seize low-carbon opportunities

GHG Scope

Scope 1

Application

A carbon price is used company-wide to assess the impact of current and future carbon regulation—namely ETS and carbon taxes—on energy prices, energy volumes, and existing assets' value, as well as to evaluate capital investments in building or acquiring new electricity generation assets across the globe. Meaningful carbon prices strongly benefit EDP's business strategy, fully align with the Paris Agreement, and contribute decisively to its commitment to be carbon neutral well before 2050.

Actual price(s) used (Currency /metric ton)

27

Variance of price(s) used

Price ranges are set by the Energy Planning Department and are updated yearly. Price forecasts currently range from €10 to €50 per ton of CO2, depending on the scenario, year, and geography. For the timeframe 2018 to 2030, the average price for the base scenario is in the range €25 to €30 per ton of CO2.

Type of internal carbon price

Shadow price
Implicit price

Impact & implication

EDP uses internal shadow and implicit carbon prices to assess the impact of regulation on energy prices, energy volumes and existing asset's value, as well as to evaluate capital investments.
GHG regulation considered include the EU-ETS, which applies to our thermal power generation assets in Europe (Portugal and Spain), as well as possible future ETS in the only other geography where we currently own thermal power plants (Brazil).
Use of internal carbon price in investment evaluation is applied building or acquiring new electricity generation assets (either fossil fuel or renewable energy based), in all geographies where we currently operate, taking into account the specifics of the markets, namely in what concerns regulation.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers
Yes, our customers

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Compliance & onboarding

Details of engagement

Included climate change in supplier selection / management mechanism
Code of conduct featuring climate change KPIs
Climate change is integrated into supplier evaluation processes

% of suppliers by number

100

% total procurement spend (direct and indirect)

100

% Scope 3 emissions as reported in C6.5

62

Rationale for the coverage of your engagement

For the sustainable management of EDP's supply chain, the number of suppliers under scope is the total number of ongoing suppliers that where procured. As for the Procurement Function, the number of suppliers is 1,835 representing 93.85% of total purchase spend.
Every supplier under procurement is invited to answer climate questionnaire but the questionnaire is mandatory for tenders with potential or real environmental impacts. Tenders for supplies of services or products that are (internationally or by law or by performance) identified as having environmental impacts or that are exposed to risks of environmental impacts are classified as Environmental Critical. Therefore the tender includes Environmental threshold criteria that any bidding supplier* must accomplish for being included in the negotiation stage. Those tenders are Environmentally segmented: emissions, waste, dangerous waste, dangerous chemicals, biodiversity... or any combination of those criteria.
As a consequence, applicants must demonstrate:
- That they have a valid Environmental Certification (policies, systems, managers, goals, targets) and the extent of their scope
- What was its performance in the previous 3 years (accidents, fines, emissions, consumption, improvements ...)
- Special criteria/technological devices

*The concept of supplier includes any company contracted under a tender process.

Impact of engagement, including measures of success

The general goal of EDP's climate procurement policy is based on the idea that if every supplier commits with environmental certification, than sooner or later they will commit with reduction targets. The specific instrument of EDP's climate procurement policy is the development of tender criteria that are climate favourable.
The impact of this engagement is supported by a KPI system, where some indicators are directly linked to procurement teams annual prizes. For the reporting year (2018), KPIs include:
- % of Suppliers under Procurement obliged by EDP's Code of Conduct for Suppliers: 100%
- % of Suppliers under Procurement engaged on disclosing Environmental Information: 100%
- % of Suppliers under Procurement exposed to Environmental risks with ISO certification: 68%
- % Environmental Critical Suppliers performance annually appraised: 100%
- % Direct coal contracts made in 2018 with Bettercoal clause: 100%

Comment

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

1

% total procurement spend (direct and indirect)

33

% Scope 3 emissions as reported in C6.5

45

Rationale for the coverage of your engagement

As mentioned above, EDP collects information from any supplier exposed to Environmental Risks, but it is beyond doubt that international companies, that are also EDP's suppliers, are central to leveraging Climate Change combat as they are supply chain integrators. Partnering with those companies, EDP is promoting a higher level of commitment and Climate disclosure through promoting CDP methodology and engagement with international organizations such as WBCSD, SEE4ALL, Bettercoal etc.

EDP monitors the success of this approach by evaluating the share of the total procurement spend that is directed to companies that are engaged with CDP.

Impact of engagement, including measures of success

The impact of this engagement is evaluating by the share of the total procurement spend that is directed to companies that respond to CDP Climate Change questionnaire. In 2018, the % of the total value spend with suppliers engaged with CDP's Carbon Change annual assessment was 33%.

Comment

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement

Collaboration & innovation

Details of engagement

Run a campaign to encourage innovation to reduce climate change impacts

% of customers by number

100

% Scope 3 emissions as reported in C6.5

1

Please explain the rationale for selecting this group of customers and scope of engagement

Engagement activity applies to all customers in the three markets where EDP conducts electricity supply activities (Portugal, Spain and Brazil). For electricity customers, the promotion of energy efficiency measures only contributes to reducing customer's scope 2 emissions and have no material impact on our scope 3 emissions. EDP actively promotes energy efficiency improvement, demand-side management and distributed generation by developing and offering its customers innovative products and services (P&S), including:

i) Energy efficiency improvement projects: supply of more efficient equipment and lighting (LED bulbs, street lighting, high performance engines, electronic speed drives, heat pumps, other high efficiency appliances);

ii) Integrated energy services: e.g. the Save to Compete (S2C) programme in Portugal and Spain, the Cuota Ahorro programme in Spain and the E:ficient programme in Brazil. The S2C programme applies to the business sector in the Iberian Peninsula and consists on identifying measures to reduce energy consumption, promoting its implementation and costing through the savings generated. The accumulated results in terms of MWh , bill saved and CO2 avoided are posted online (https://www.edp.pt/empresas/servicos/save-to-compete/). In line with the S2C concept, through Cuota Ahorro in Spain and E:ficient in Brazil EDP makes a complete facilities' assessment, implements the energy efficiency projects and invests on customers' facilities. A part of the generated savings is used to pay EDP's investment.

iii) Energy audits, certification systems and energy management systems (e.g., Re:dy);

iv) Distributed generation projects: EDP provides solar energy solutions to all types of consumers residential, commercial or industrial through distributed generation and self consumption PV schemes.

v) Electric mobility: EDP promotes electrification of transports to its customers, both in the B2C and the B2B segment, through commercial offerings and solutions, including public and private electric vehicle charging infrastructures, awareness campaigns, simulators, app based system for monitoring and managing electricity consumption of households and electric vehicle, and so on.

iv) Regulatory programs, either voluntary (Plan for the Promotion of Electricity Consumption Efficiency - PPEC – in Portugal), or mandatory (schemes in Spain and Brazil).

Impact of engagement, including measures of success

In 2018, the product and services made available to our customers in Portugal, Spain and Brazil generated energy savings of 447 GWh, thus avoiding 175 kt of CO2 emissions. Total accumulated savings since 2015 have now reached 951 GWh, avoiding 406 kt of CO2 emissions. It is certain that the target set for 2020 (savings of 1 TWh, excluding the PPEC programme) will be largely exceeded. When including also the impact of the measures carried out under the PPEC programme in Portugal, the total accumulated savings since 2015 increase to about 2.3 TWh, with a new target set at 5 TWh by 2022. EDP also conducts regular customer awareness campaigns targeted at energy and GHG reduction on the use of its products and services. Examples of awareness campaigns are available on EDP's supply companies' websites: www.edp.pt

(in Portugal, for the liberalised market); www.edpsu.pt (in Portugal, for the regulated market); www.edpenergia.es (in Spain); and www.edp.com.br (in Brazil).

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

Direct engagement with policy makers
Trade associations
Funding research organizations
Other

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Other, please specify Clean Energy for All Europeans Package	Support with minor exceptions	During 2018, EDP continued engaging with the European institutions and European associations to follow the evolution of the legislative approval of key proposals of the Clean Energy Package, namely the Renewables Directive, Energy Efficiency Directive and the Electricity Market Regulation and Directive ("Market Design Initiative").	EDP supported a more ambitious renewable target (35%) and a stable framework that creates a favorable investment environment. In the energy efficiency chapter we proposed, in order to speed up electrification and decarbonization, the update of the Primary Energy Factor (PEF) to a lower figure that reflects the energy mix and that is forward looking. On the Market Design, EDP advocated for the setup of market rules that provide the right incentives for all players and limit cross-effects between them, the support of long-term contracts to promote the necessary low-carbon investments and a stable framework that do not allow retroactive regulatory changes.
Other, please specify Clean mobility	Support with minor exceptions	The European Commission proposed, in 2017, the Clean Vehicles Directive recast, setting new targets (-40% until 2030) for the EU fleet wide average CO2 emissions of new passenger cars and vans to help accelerate the	EDP strongly supports this initiative but call for more ambitious targets, as we believe electric mobility is key to actively contribute to accelerating decarbonisation of transport. EDP, through its membership in Eurelectric, supports

		transition to low- and zero emission vehicles.	the Electro-Mobility Platform (that unites organisations from across civil society, industries, and transport modes to promote electro-mobility across Europe) and is currently a member of the Transport Decarbonisation Alliance, aiming at accelerating the worldwide transformation of the transport sector towards a net-zero emission mobility system before 2050.
Other, please specify A Clean Planet for All ("2050 long-term strategy")	Support with major exceptions	Following the invitations by the European Parliament and the European Council, the European Commission issued a communication presenting its strategic long-term vision for a competitive and climate-neutral economy by 2050. The communication includes a set of scenarios that are in line with the Paris Agreement.	EDP considers that the communication lacks the necessary instruments to deliver on the 2050 objectives. We support a reassessment of the intermediate decarbonisation targets, currently set at -40% for 2030, the development of a new market design and the set-up of a new fiscal system. The long-term strategy needs to enrich the value proposition of the electrification, ensure the visibility for new investments in carbon-neutral investments and be accomplished with a EU scheme to support the consumer throughout the transition for a climate-neutral economy. EDP participated in a Eurelectric study focused on 2050 decarbonisation scenarios that envisage illustrating the decarbonisation potential of electrifying transports, buildings and industry.

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association

EURELECTRIC - Union of the Electricity Industry

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Eurelectric's mission is to contribute to the development and competitiveness of the electricity industry, to provide effective representation for the industry in public affairs and to promote the role of a low-carbon electricity mix in the advancement of society. In this regard, Eurelectric's main objectives are:

• Achieving a carbon-neutral electricity mix in Europe well before mid-century

• Ensuring a cost-efficient, reliable supply through an integrated market

• Developing energy efficiency and the electrification of the demand-side to mitigate climate change.

Eurelectric's positions are available at its website www.eurelectric.org/publications/.

How have you influenced, or are you attempting to influence their position?

EDP has one representative in Eurelectric Board of Directors as participates as well in the association's committees: i) Electrification & Sustainability, ii) Generation and Environment, iii) Markets and Investments, iv) Distribution & Market Facilitation and v) Customers and Retail Services. EDP regularly contributes with specific inputs to the association's common position papers and answers to consultation processes. In 2018, two landmark publications of Eurelectric was the declaration with an updated sector vision for the European electricity industry and a study in relation with the 2050 decarbonization pathway and the role of electricity in decarbonizing transports, buildings and industry. This report feed-up the debate in relation with Europe 2050 Climate Ambitions and the delivery of commitments of the Paris Agreement. EDP was a key actor of both publications.

Trade association

UNESA – Spanish Electricity Industry Association

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

UNESA is an electric sector organization aiming to represent, promote, manage and defend the general and common interests of its members. The entity was created in

1999 and focuses on various activities of this industry, developing studies and analyses of the various aspects of electrical activity, such as transportation or regulation, pricing and tariffs, economic and financial aspects, international and institutional relations, quality of service, research and social communication. The UNESA represents and coordinates the activities of the sector, developed by representatives of power companies in various international organizations, such as EURELECTRIC.

How have you influenced, or are you attempting to influence their position?

EDP Spain is one of the energy companies that is part of this association and member of the Board of Directors.

Trade association

ELECPOR – Portuguese Electricity Industry Association

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

ELECPOR represents and defends the common interests of its associates, currently the five main national companies in the sector, including EDP. As a business sectoral association, it acts as an intermediary and instrument of such companies in the development and discussion of policies, guidelines and regulation of the electricity sector to the Portuguese and international entities. ELECPOR is a member of EURELECTRIC, whose positions are described above.

How have you influenced, or are you attempting to influence their position?

EDP chairs the Board of Directors.

Trade association

AWEA: American Wind Energy Association

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

AWEA is a national association in the United States representing the players in the wind power industry. With hundreds of members, ranging from utilities, researchers, parts manufacturers and energy companies, AWEA promotes wind energy as a clean source of electricity for American consumers. The wind force is creating a major impact on combating climate change and reducing greenhouse gases. Through sustainable initiatives, the association hopes to change attitudes and improve the environment.

How have you influenced, or are you attempting to influence their position?

EDP's subsidiary EDP Renewables is one of the partner companies and member of the Board of Directors.

Trade association

WE - Wind Europe

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

WE, formerly European Wind Energy Association, is the voice of the wind industry, actively promoting the use of wind power in Europe and worldwide, and representing the wind sector development before the European Commission.
The association defends wind generation support. EWEA participated in the European Commission stakeholder consultation on the new renewable energy directive (REDII) for the period 2020-2030. EDP supports EWEA's position on climate change legislation.

How have you influenced, or are you attempting to influence their position?

EDP Renewables (EDP Group's subsidiary for renewable energy generation) is a leading member of the Board of Directors.

Trade association

WEF - Wind Energy Foundation

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

WEF is a Washington, D.C based, nonprofit organization founded in 2010 by the AWEA association to raise public awareness of the advantages of using wind as a source of energy for domestic use. Through the efforts made with communication, research and education, the foundation was born in order to educate the public about the benefits of wind energy. The foundation is also committed to support research and studies for wind energy growth. Headquartered in Washington, the foundation was established in 2010 and EDP is a partner company supporting the WEF in the legislation on climate change and wind generation support.

How have you influenced, or are you attempting to influence their position?

EDP Renewables (EDP Group's subsidiary for renewable energy generation) is represented in the Foundation's governance bodies.

Trade association

CanWEA - Canadian Wind Energy Association

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

CanWEA is a Canadian wind power industry association that promotes the realization of the country's abundant wind energy potential to build a cleaner, stronger future. It engages in this mission through advocacy, education, communication, partnerships and the promotion of industry best practices. It is a nonprofit organization that is responsible for publicizing the social, economic, health and environmental benefits that this type of energy offers to the communities and companies. Founded in 1984, CanWEA represents the wind energy community - organizations and individuals who are directly involved in the development and application of wind energy technology, products and services. Its members are the wind energy leaders in Canada. Aware of the importance of its role, EDP supports the association and its positions on climate change legislation.

How have you influenced, or are you attempting to influence their position?

EDP Renewables (EDP Group's subsidiary for renewable energy generation) is a member of the Board of Directors.

Trade association

APE - Portuguese Energy Association

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

APE is the Portuguese Association that represents the World Energy Council. APE strongly supports cap and trade schemes, EU-ETS reform, energy efficiency, clean energy generation and adaptation and resilience. EDP supports APE's position on climate change legislation.

How have you influenced, or are you attempting to influence their position?

EDP is a member of the Board of Directors and chairs the Board.

Trade association

APREN – Portuguese Renewable Energy Association

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

APREN is a non-profit association, founded in October 1988, that promotes the development of renewable energy generation in Portugal. Its associates are companies holding permits to explore power plants for electricity production from renewable sources, representing more than 90% of all renewable installed capacity in Portugal. APREN develops its work together with official authorities and other similar entities, either national or international, being an important key player in the development of energy policies for Portugal. The Association privileges the coordination and permanent

contact with the Portuguese Government, the ministries responsible for energy and environmental issues and their official agencies, as well as a fruitful dialogue with the crucial national stakeholders related to the production of electricity from renewable sources and representatives from the civil society.
APREN has also a strong involvement at European level, through the participation in European projects and through its partnership with several European Associations. This enables the monitoring of European Energy Policy. EDP supports APREN's position on all subjects related to renewable energy.

How have you influenced, or are you attempting to influence their position?

EDP Renewables (EDP Group's subsidiary for renewable energy generation) is a member of the Board of Directors (deputy chairman).

Trade association

ABEEOLICA - Associação Brasileira de Energia Eólica

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Established in 2002, ABEEólica, the Brazilian Wind Energy Association, is a non-profit institution that brings together and represents the wind energy in this country. Members come from all links in the wind energy chain. Since it was created, ABEEólica has effectively contributed to the development and recognition of wind energy as a competitive, clean, renewable, low-impact source of energy, and a strategic element of this country's energy matrix.

How have you influenced, or are you attempting to influence their position?

EDP Renewables (EDP Group's subsidiary for renewable energy generation) is a member of the Board of Directors (executive president).

Trade association

SEIA - Solar Energy Industry Association

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

SEIA is the national trade association for the U.S. solar industry. It embodies the innovation and entrepreneurship that defines solar energy. SEIA represents all organizations that promote, manufacture, install and support the development of solar energy. SEIA works with its 1,000 member companies to build jobs and diversity, champion the use of cost-competitive solar in America, remove market barriers and educate the public on the benefits of solar energy.

How have you influenced, or are you attempting to influence their position?

EDP Renewables (EDP Group's subsidiary for renewable energy generation) is a member of the Board of Directors.

Trade association

PWEA

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The Polish Wind Energy Association (PWEA) is a non-governmental organisation established in 1999 (previously known as "VIS VENTI Association for Supporting Wind Energy"). It is one of the most effective organisations lobbying for the establishment of a relevant legal framework allowing for the development and operation of renewable energy sources, in particular wind energy, in Poland.

PWEA is an association of the leading companies active on the wind energy market in Poland: investors, developers, turbine and component manufacturers, both from Poland and abroad.

How have you influenced, or are you attempting to influence their position?

EDP Renewables (EDP Group's subsidiary for renewable energy generation) is a member of the Board of Directors.

Trade association

RWEA - Romanian Wind Energy Association

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The Romanian Association for Wind Energy or "RWEA" (Romanian Wind Energy Association) was founded in Bucharest in 2008 and is a professional association serving as a non-governmental organization. The association is a voluntary organisation for participants in the wind energy industry in Romania. It exists to promote the proper role of wind energy in the energy mix in Romania and, consequently, to promote clean, safe and effective energy for Romania.

How have you influenced, or are you attempting to influence their position?

EDP Renewables (EDP Group's subsidiary for renewable energy generation) is a member of the Board of Directors.

Trade association

AEE - Asociación Empresarial Eólica

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

AEE - Spanish Wind Energy Association - is the voice of the wind sector in Spain. It promotes the use of wind energy in Spain, Europe and worldwide. It represents and defends the interests of the sector. With about 200 member companies, it represents more than 90% of the sector in Spain which includes promoters, wind generator and component manufacturers, national and regional associations, organizations connected with the sector, consultants, lawyers and financial entities, among others. AEE coordinates research into the areas surrounding wind energy and provides services to its members, meeting their different needs. It contributes to the formulation of the normative framework with a view to the sector developing under the best possible conditions. It disseminates the reality of wind energy and endeavours to raise awareness in society.

How have you influenced, or are you attempting to influence their position?

EDP Renewables (EDP Group's subsidiary for renewable energy generation) is a member of the Board of Directors (chairman).

Trade association

Scottish Renewables

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Scottish Renewables (SR) is the voice of Scotland's renewable energy industry, whose vision is for a Scotland leading the world in renewable energy. It works to grow Scotland's renewable energy sector and sustain its position at the forefront of the global clean energy industry. The sectors SR represent deliver investment, jobs, social benefits and reduce the carbon emissions which cause climate change. SR members work across all renewable energy technologies, in Scotland, the UK, Europe and around the world. In representing them, SR aims to lead and inform the debate on how the growth of renewable energy can help sustainably heat and power Scotland's homes and businesses.

How have you influenced, or are you attempting to influence their position?

EDP Renewables (EDP Group's subsidiary for renewable energy generation) is a member of the Board of Directors (chairman).

Trade association

MAREC - Mid-Atlantic Renewable Energy Coalition

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The Mid-Atlantic Renewable Energy Coalition (MAREC) was formed in September 2009 as a nonprofit Pennsylvania corporation. Currently MAREC's membership consists of wind developers, solar developers, wind turbine manufacturers, service companies, and nonprofit organizations dedicated to the growth of renewable energy technologies to improve our environment, diversify our electric generation portfolio, and boost economic development in the region. Its mission is to improve and enhance the opportunities for renewable energy development in the nine jurisdictions in the Mid-Atlantic region. The primary areas of focus of MAREC are to provide education and expertise on the environmental sustainability of wind and solar energy; offer technical expertise and advice to assist in understanding the operating and environmental impacts of integrating wind and solar into the electrical power system; and promote fair policies, rules and regulations to expand the region's electric transmission system to accommodate the growth of renewable energy generation.

How have you influenced, or are you attempting to influence their position?

EDP Renewables (EDP Group's subsidiary for renewable energy generation) is a member of the Board of Directors (vice-chairman).

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

Yes

C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

EDP also engages in climate policy making through its membership of organizations other than trade associations, namely national and international business associations specifically focused on sustainability advocacy. Most relevant in 2018:
- UN Global Compact: EDP is a member and is engaged in its strategy and operations with the 10 principles, concerning human rights, labour, environment and anti-corruption, as well as in taking actions to advance on the UN Sustainable Development Goals. EDP also participates in the Global Compact Brazilian Network, namely in the working group Energy and Climate, promoting a country level discussion on issues such as climate change mitigation and adaptation, carbon pricing, energy efficiency and renewable energy. This group is aligned with the International platform Caring For Climate.
- World Business Council for Sustainable Development (WBCSD): EDP is a member of the WBCSD, actively participating in the association's activities and regularly taking part in some of its high-level projects. In 2018, EDP continued its participation in the Rescale LCTPI - Low Carbon Technology Partnership Initiative, a partnership bringing together over 140 companies that aims to demonstrate the potential of existing business solutions to achieving the 2ºC climate objective. EDP is working on solutions to accelerate the deployment of RES and the

transition to a low-carbon electricity system. In 2018, EDP also participated in the Climate and Energy areas and in the Transforming Urban Mobility (TuM) project, aiming to advance solutions with a collaborative approach for accelerating deployment of electric vehicles and solutions for sustainable mobility. Already in 2019, António Mexia, CEO of EDP, signed the WBCSD CEO Guide to Human Rights aiming to reinforce the importance, and promote the respect for the human rights in the organisations, as well as setting clear expectations of suppliers and business partners.
- Business Council for Sustainable Development Portugal: EDP is also a member of BCSD Portugal, part of the WBCSD network. António Mexia, CEO of EDP, has the Presidency of BCSD Portugal, while António Martins da Costa, member of EDP Executive Board, has recently became Vice-President. BCSD Portugal represents 89 companies, from different sectors, which account for 38% of the national GDP. In 2018, EDP participated in various initiatives related to the Carbon Neutrality Roadmap 2050 (RNC2050) from the Portuguese Environment Agency, reflecting the ambition to tackle climate change, one of the main current challenges.
- Transport Decarbonisation Alliance (TDA): EDP joined TDA in 2018 as founder members, reflecting its intention to move forward in transport decarbonisation and improve quality of life in cities. Still in 2018, EDP committed to 100% electrification of the Group's light vehicle fleet.
- EV100 Initiative: EDP has recently joined the EV100 global initiative from The Climate Group, by extending its commitment to electrify its fleet, by also including 50% of vehicles between 3.5t and 7.5t, strongly reinforcing its position in sustainable mobility.
- Sustainable Energy for All (SE4ALL): born within the UN, the SE4ALL initiative is now a formal International NGO with several partners, particularly engaged in advancing and accelerating the Sustainable Development Goal (SDG) #7 - Affordable and Clean Energy. António Mexia, CEO of EDP, is currently chairman of the Administrative Board. The annual meeting – SEforALL Forum – in 2018 successfully took place in Lisbon, providing leaders from different sectors the opportunity to share their ideas and positive outcomes regarding the SDG #7.
- Task Force on Climate-related Financial Disclosures (TCFD): as part of the TCFD Preparer Forums, in collaboration with WBCSD, EDP joined a group of 6 utilities to collaboratively contribute to push for a better understanding of how these recommendations could be implemented by the power sector.
- In Brazil, EDP was one of the pioneer companies to participate on carbon markets and has adopted stakeholder's engagement practices to raise awareness on the climate change management through the application of the Social Carbon Methodology (created by Brazilian NGO Ecologica Institute).
- "Empresas Pelo Clima" (Businesses for Climate), a Brazilian business platform whose goal is to mobilize, engage and involve corporate leaderships for managing and reducing GHG emissions, managing climate risks, and proposing public policies and positive incentives in the context of climate change. Case studies and sharing of experience are mostly important for the Group discussions, which aims to enable engagement among different sectors and companies and disseminate Best Practices through benchmarking. EDP participates mostly by sharing experience and case studies. The barriers and challenges faced by the Company are also explored , so that common solutions may come up quicker and coherently within different sectors context .

C12.3f

(C12.3f) 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?

For almost a decade, EDPs' corporate strategies targeted mainly renewables, efficiency and innovation, combining the need for competitiveness of its business with one of the world's leading concerns – climate change. The visibility of EDP's climate strategy was further reinforced with: i) the company's direct participation, at CEO level, in COP21 Climate Conference (December 2015); ii) the announcement of five ambitious climate-related targets addressing emissions reduction, renewable electricity generation, smart grids expansion, energy services for clients and clean technologies R&D (December 2015); iii) the announcement of a GHG reduction science based target (set in 2016 and approved by the Science Based Target Initiative in early 2017); iv) Update Strategy 2019-2022 presented to investors in March 2019, with new targets aligned with the business plan 2019-22 and also new ambitious targets for 2030. EDP's position has been stressed in all the fora and trade associations in which the company participates, as well as with all regulatory bodies EDP interacts with. Furthermore, 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, Stakeholder Relations Department - Spain: Regulation Management Department - EDP Renewables (Europe and North America): Regulations & Markets, Global Risk Strategy and Investor Relations and Sustainability Departments - Brazil: Regulatory Issues Department, Environmental Department and Sustainability Department- These structures ensure the overall alignment of EDP's climate policy engagement activities with the corporate climate strategy.

C12.4

(C12.4) Have you published information about your organization'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

In mainstream reports

Status

Complete

Attach the document

rc_2018_en_vcmvm_compress.pdf

Page/Section reference

Section 2.2 (Strategic Priorities) pp. 37-41; Section 2.3 (Risk Management) pp. 42-49; section 3.5 (Risk Management of the Year) p. 82;

Content elements

Governance
Strategy
Risks & opportunities
Emission targets
Other metrics

Comment

Publication

In voluntary sustainability report

Status

Complete

Attach the document

EDP Sustainability Report_2018_en.pdf

Page/Section reference

Section 2.1 (Corporate Governance) pp. 41-44; Section 2.5 (Risk Management), pp. 53-56; sector 2.6 (Strategy, Goals and Targets) pp. 57-59; section 3.3 (Improve Environmental Performance) pp. 109-111; Application of the TCFD recommendations in assessing the risks and opportunities from climate change - pp. 115-117; section 3.5 (Performance Indicators) pp. 149-157; GRI Indicators pp. 182-184; TCFD Reporting Recommendations page 181

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

Publication

In voluntary communications

Status

Complete

Attach the document

edp_strategic_update_2019-22_0.pdf

Page/Section reference

Pages 14-15, 17, 19, 32-41, 86, 90-93

Content elements

Strategy
Emission targets
Other metrics

Comment

C14. Signoff

C-FI

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

C14.1

(C14.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Member of EDP Executive Board of Directors with formal responsibility over sustainability, risk and other company's cross-cutting critical themes.	Director on board

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

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

Please confirm below

I have read and accept the applicable Terms