# **EDF - Climate Change 2020**

## **C0. Introduction**

## **C0.1**

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

A key player in energy transition, the EDF Group is an integrated electricity company, active in all areas of the business generation, transmission, distribution, energy supply and trading, energy services.A global leader in low-carbon energies, the Group has developed a diversified generation mix based on nuclear power, hydropower, new renewable energies and thermal energy. The Group is involved in supplying energy and services to approximately 38.9 million customers, 28.8 million of which are in France. It generated consolidated sales of 71.3 billion in 2019. With a global installed net generation capacity of 122.3 GWe as of 31 December 2019 producing 557.6TWh (1), the Group has one of the largest generation fleet in the world. In addition to being one of the world’s leading electricity firms in terms of net capacity and output, EDF group already has one of the lowest carbon intensities amongst electricity firms thanks to the share of nuclear, hydro and other renewable energies in its generation mix: 55 g CO2/kWh in 2019 at Group level, 13 g CO2/kWh for EDF SA in mainland France in 2019. 90% of the generation is carbon free at Group level, 98% in France. EDF’s business model is partly regulated through its transmission and distribution network activities on one hand, and its renewable assets which benefit from long term contracts or feed in tariffs. As a major integrated utility, the Group ensures the optimisation its portfolio of assets upstream (generation and procurement of energy and fuels) and downstream (wholesale and retail) to guarantee supply of energy to its customers through the best possible management of operational and market risks and with a view to maximising gross margin. (1) Source: 2019 EDF Group Universal Registration document page 5. Figures calculated on the basis of the consolidation accounting rules.

## **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** | **Select the number of past reporting years you will be providing emissions data for** |
| Reporting year | January 1 2019 | December 31 2019 | No | <Not Applicable> |

## **C0.3**

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

Belgium

France

Italy

United Kingdom of Great Britain and Northern Ireland

## **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 chosen approach for consolidating your GHG 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

Transmission

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** |
| Board-level committee | The Corporate Responsibility Committee, set up in October 2018, is a dedicated committee of the board of Directors which oversees issues relating to ethics, compliance and corporate responsibility. As climate change is a major CSR commitment of the Group, the committee examines the way in which the Company takes into account issues relating to climate change, supervises the implementation of the Group’s SD Policy and the 6 CSR Goals, both based on EDF’s CAP 2030 Strategy and the SDGs. Furthermore, Carbon neutrality isat the core of the Group’s “raison d’être” which is now part of the Bylaws. The Committee is appointed by the Board and chaired by an independent director. . The Audit Committee, also a board-level committee, is in charge of the monitoring of risks and internal control. In this context, it ensures, in conjunction with the Corporate Responsibility Committee, the existence of programs for the internal control and management of the main risks. In 2019, a Group-wide climate risk mapping of all physical and transition risks was presented both at the Risk committee of the Executive Committee and at the Audit Committee, in accordance with the TCFD recommendations. Climate risks have been identified and assessed using the Group’s general risk mapping method. This mapping of climate risks, has led to an action plan mobilising the Group at both corporate and entity levels. Among 15 actions validated by the Audit Committee, 3 are worth highlighting: (i) Integration of climat risk within all relevantEDF group policies (purchasing, financial engagement, HR, ,etc.). (ii) For each entity, systematically include the risks of non-adaptation to climate change in its risk mapping, by integrating an assessment of the associated financial issues as well as health and safety issues (from end of 2019, generalization at the end of 2020). (iii) Set up monitoring of all climate risks in the CSR committee, with reporting to EXCOM. See 2019 Universal Registration document p. 118 & 230. The highest level of responsibility for sustainable development (including climate change) at the operational level lies within the EDF Group Executive Committee, decision-making body that reflects and consults on Group operational and strategic matters. |

## **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** | **Scope of board-level oversight** | **Please explain** |
| Scheduled – some meetings | Reviewing and guiding strategy  Reviewing and guiding major plans of action  Reviewing and guiding risk management policies  Reviewing and guiding business plans  Setting performance objectives  Monitoring implementation and performance of objectives  Monitoring and overseeing progress against goals and targets for addressing climate-related issues | <Not Applicable> | The Corporate Responsibility Committee examines, in connection with the Group’s strategy, the Group’s commitments and policies, as well as their implementation, in terms of ethics, compliance, and corporate responsibility. It examines the way in which the Company takes into account issues relating to climate change. It makes sure, in conjunction with the Audit Committee, of the existence of programmes to identify and manage the main risks in these fields and comply with legal and regulatory provisions. There were 8 meetings in 2019. In 2018, the Committee examined issues relating to climate change and the management of the Group's carbon goals . See 2018 Reference document pages 266-267. Monitoring and implementation of the commitment to reduce direct CO2 emissions, announced in the Shareholders' Meeting of 12 May 2018, was presented to the Governance and Corporate Social Responsibility Committee meeting on 29 November 2018. See 2018 reference document page 153. The Board of Directors establishes the Group’s strategic, economic, financial, and technology orientations, taking climate issues into consideration. To do so, it regularly examines climate change-related risks and opportunities and gives its opinion on the Group’s climate strategy. In November 2018, EDF group’s carbon commitment governance was presented to the Board of Directors’ Governance and Corporate Responsibility Committee (CGRE). In October 2019, a specific brief on climate risks was presented to the Board of Directors’ Audit Committee. See 2019 Universal Registration document page 137. |

## **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)** | **Reporting line** | **Responsibility** | **Coverage of responsibility** | **Frequency of reporting to the board on climate-related issues** |
| Chief Executive Officer (CEO) | <Not Applicable> | Both assessing and managing climate-related risks and opportunities | <Not Applicable> | 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).**

The CEO is the highest position responsible for Climate Change in the Group. Climate change is indeed a strategic issue for an Electric Utility like EDF Group. The CEO chairs the Strategy Committee, which deals with strategic issues.

The CEO is assisted by an Executive Committee which includes representatives of all the Group’s lines of business. This Committee is a body that makes decisions on, considers and discusses the Group’s operational and strategic issues. It examines all the Group’s significant underlying and current issues, tracks the operating objectives and results and contributes to the management and forecasting of the EDF group’s major challenges. The Executive Committee meets in principle each week. See our 2019 Universal Registration document page 235.

The Executive Committee annually reviews the prospective emissions trajectory and its compatibility with the Group's decarbonisation target. See our 2019 Registration document page 137. In addition, GHG emissions in France are published monthly on our website and reviewed by the Executive Committee.

The Sustainable Development Department reports to the Senior Vice President in charge of Innovation, Corporate Responsibility and Strategy, a member of the Executive Committee. See our 2019 Universal Registration document page 133.

The Sustainable Development Department ensures operational follow-up, in relation with the Corporate departments and subsidiaries concerned, relying on the Sustainable Development Committee (SDC) and the Environmental Management System (EMS). See our 2019 Universal Registration document page 133.

All of the requirements relative to sustainable development at Group level are listed in the Group Sustainable Development policy, including, in particular, the requirements related to the challenges of climate change. The process of mapping climate-related risks and opportunities is included in the definition of EDF's strategies. An action plan provides for the updating of the Climate Change Strategy (mitigation and adaptation) taking into consideration physical, financial and societal effects. The Sustainable Development Department has the task of organising the management, coordination and control of this policy, for which the implementation and control are the responsibility of the divisions and entities of the Group. See our 2019 universal Registration document page 132.

In addition, the CSR Committee (set up in December 2018) which is a dedicated committee of the EXCOM, ensures the strategic management of CSR issues including climate change and reports on its activities to the Group's Executive Committee at least once a year. Minutes of the meetings are sent to Corporate Responsibility Committee of the Board, which reports back to the Board of Directors. See our 2019 Universal Registration Document page 132.

In particular, the Corporate Social Responsibility Strategy Committee monitors the EDF Group's carbon commitment, the CSR agreement and the EV100 commitment. See. 2019 Universal Registration Document page 132.

The CAP 2030 strategic project aiming to make EDF “an efficient and responsible electricity producer, champion of low-carbon growth” has set new prospects for the Sustainable Development and Environmental approach of the Group,with20 out of 25 working streams defining CAP 2030 strategy are linked to EDF’s climate neutrality ambition. On top, the Group has defined its raison d’être which is “To build a net zero energy future with electricity and innovative solutions and services, to help save the planet and drive wellbeing and economic development” and is now part of the bylaws of the Group, receiving a 99.96% favourable vote at the Group’s AGM on May 7th.

## **C1.3**

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

|  |  |  |
| --- | --- | --- |
|  | **Provide incentives for the management of climate-related issues** | **Comment** |
| Row 1 | Yes | Reduce CO2 emissions by reducing business travel and printed jobs : for employee pay, the profit-sharing agreement entered into by EDF in 2016 for the 2017-2019 period includes a carbon footprint-reducing criterion, accounting for 20% of each employee’s profit-sharing, with two targets: cutting hardcopy print-outs by 15% per year and increasing remote meetings by 30% per year. |

## **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).**

|  |  |  |  |
| --- | --- | --- | --- |
| **Entitled to incentive** | **Type of incentive** | **Activity inventivized** | **Comment** |
| Board/Executive board | Monetary reward | Emissions reduction target | In 2016, EDF SA signed a new profit-sharing agreement with its social partners, covering all employees and including the following five national performance criteria: (i) development of group cash flow - progress of Group EBITDA, (ii) electric generation (iii) customer satisfaction, (iv) online employees health & safety training (v) a sustainable development/digital criterion (v) In particular : - A social criterion relating to participation in e-learning training health and safety (20%) - Two sustainable development criterion below (20%): a) The reduction of printed jobs (reduction target of 15% in 2019) accounts for 10% of the total profit-sharing. With this criteria, we aim to reduce CO2 emissions and also electricity consumption in our tertiary buildings. It was 100% achieved in 2019 (-18,2%) b) The increase use of remote connection has a demanding target of 30% in 2019 (+20% in 2018). It accounts for 10% of the total profit-sharing. With this criteria, we aim to reduce CO2 emissions due to business travel. It was almost achieved in2019 (+28%). This agreement is applicable for 2017-2019. It applies to all employees of EDF, including executives and members of the Executive Committee. See our 2019 Universal Registration document page 142. Moreover, as regards managers (these are the generation managers in France (EDF SA) and the United Kingdom (EDF Energy), 10% of the variable part of their remuneration (which represents up to 40% of their salary) is indexed to the availability of the nuclear fleet, and therefore to the carbon content of the electricity produced, which does not generate direct CO2 emissions. See our 2019 Universal Registration document page 142. |
| All employees | Non-monetary reward | Emissions reduction project | In 2014, EDF launched the first ever "EDF Pulse Awards", to honour projects from across the group that drive progress and innovation. EDF Pulse is a programme dedicated to innovation and designed to honour technical, industrial and social initiatives that aid progress. This programme continued in 2019. Each participating entity is represented by a team of a maximum of five employees. The price categories Pulse EDF are classified into three top categories "Smart Living and Electricity” (projects related to habitation, mobility, urban planning, sustainable city, etc.), “Health and Electricity” (innovations improving our health and boosting overall well-being both individually and collectively (smart medicine, smart health care, etc.) and “Science and Electricity” (research and projects related to energy storage). See our 2019 universal Registration document page 142. |
| All employees | Monetary reward | Emissions reduction target | In 2016, EDF SA signed a new profit-sharing agreement with its social partners, covering all employees and including the following five national performance criteria: (i) development of group cash flow - progress of Group EBITDA, (ii) electric generation (iii) customer satisfaction, and (iv) online employees health & safety training (v) a sustainable development/digital criterion (v) In particular : - A social criterion relating to participation in e-learning training health and safety (20%) - Two sustainable development criterion below (20%). a) The reduction of printed jobs (15%) accounts for 10% of the total profit-sharing. With this criteria, we aim to reduce CO2 emissions and also electricity consumption in our tertiary buildings. It was 100% achieved in 2019 (-18,2%). b) The increase use of remote connection has a demanding target of 30% in 2019 (+20% in 2018). It accounts for 10% of the total profit-sharing. With this criteria, we aim to reduce CO2 emissions due to business travel. It was almost achieved in 2019 (+28%). This agreement is applicable for 2017-2019. It applies to all EDF employees. See our 2019 Universal Registration document page 142. |
| Energy manager | Monetary reward | Efficiency target | Promoting eco-efficiency and efficient use of electricity for customers: Staff working on the realization of energy performance contracts have targets related to the energy savings (and thus CO2 avoided) they achieved for customers. EDF Group develops products and eco-efficiency services for all its customers to generate energy and CO2 savings. This includes renewable distributed energy. |
| Corporate executive team | Monetary reward | Emissions reduction target | The variable compensation of the members of the Executive Committee is composed by a performance-related salary accounting for up to 40% of the entire compensation. 10% of this performance-related salary is subject to reaching a high level of availability of the nuclear fleet, which is indeed a criteria leading to CO2 emissions reductions given the fact that nuclear plants being more available leads to a lesser utilisation of fossil thermal power plants (coal, fuel). See 2019 Universal Registration document page 142. This compensation does not apply to the CEO of the EDF Group for his compensation is limited by the French law. |
| Business unit manager | Monetary reward | Emissions reduction project | Environmental objectives are included in some managers' annual performance contracts, which include annual variable compensation. |
| Risk manager | Monetary reward | Emissions reduction target | In addition to financial indicators, staff working on risk analysis for new investments are subjected to non-financial criteria. Before being submitted to the Commitments of the Executive Committee (EXCOM), the Group’s major investment projects undergo an assessment of their exposure to the risk of “non-achievement of sustainable development commitments”. ”. The majority of our maintenance and development projects are already decarbonised – be it renewables, nuclear, or energy efficiency. In Europe, our new investments will be strongly driven by the existing and emerging regulation in place, notably on CO2 pricing. Outside Europe new investments will be scrutinized through different criteria such as contribution to the climate policy of the country, efficiency and access to clean and affordable energy for emerging markets . The new investments must be compliant with the EDF group commitments on carbon emissions targets. |
| Other, please specify (R&D team) | Non-monetary reward | Energy reduction project | With its forward–looking action for the medium and long-term, EDF’s R&D is preparing for the Group’s future in line with the environmental issues it faces. Within the indicators published each year by the EDF group (in its Universal Registration Document), EDF discloses R&D expenditure dedicated to environmental protection (In 2019, EDF group’s total R&D budget was €713 million and approximately 18% of this budget was devoted to protecting the environment. See 2019 Universal Registration document page 98. Its research areas focus on three major priorities: (i) Consolidation of a carbon-free energy mix; (ii) Development of a flexible demand for low-carbon energy; (iii) Adaptation of the electricity system. |

## **C2. Risks and opportunities**

## **C2.1**

### **(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?**

Yes

## **C2.1a**

### **(C2.1a) How does your organization define short-, medium- and long-term time horizons?**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **From (years)** | **To (years)** | **Comment** |
| Short-term | 1 | 5 |  |
| Medium-term | 5 | 10 |  |
| Long-term | 10 | 30 |  |

## **C2.1b**

### **(C2.1b) How does your organization define substantive financial or strategic impact on your business?**

Our definition of a high-stake environmental event: an event causing serious environmental damage (areas, resources and natural environments, sites and landscapes, air quality, animal and plant species, biological diversity and balance) combined with extensive media coverage or a financial impact of more than €3 million. An event causing environmental damage and likely to affect human health falls within the scope of a high-stake environmental event for the EDF group. We can apply this definition for characterizing a substantive financial or strategic impact on our business. See 2019 Universal Registration Document page 134.

## **C2.2**

### **(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.**

### **Value chain stage(s) covered**

Direct operations

Upstream

Downstream

### **Risk management process**

A specific climate-related risk management process

### **Frequency of assessment**

More than once a year

### **Time horizon(s) covered**

Short-term

Medium-term

Long-term

### **Description of process**

EDF’s process for responding to climate-related risks is as follows: Set up in 2018, the Corporate Social Responsibility Strategy Committee is in charge of managing EDF group’s climate strategy. This includes monitoring the Group’s carbon commitment on all 3 scopes, and the adjustment strategies engaged to cope with the course of climate change-related risks and opportunities. The CSR Strategy Committee met three times during the year, and particularly examined at each meeting the stages of the development of the Group’s main mission, how to take account of Corporate Social Responsibility Goals in the management cycle, particularly including climate commitments. These issues have also been presented to The Board of Directors’ Governance and Corporate Responsibility (CGRE) Committee. More generally, the CGRE Committee examines the way in which the Company takes account of issues relating to climate change and to this end they are regularly informed through CSR Strategy Committee minutes. At last, the CSR committee reports on its activities at least once a year to the Group’s Executive Committee. The Sustainable Development Department (DDD) is responsible for operational monitoring of EDF group’s climate change-related actions and indicators for implementation of the Group’s sustainable development policy. It works in liaison with the corporate departments and subsidiaries concerned, backed by the Group’s Environmental Management System (EMS) and the Sustainable Development Committee (SDC), which serves as the Group’s Environment Board. Actions to implement the Group’s sustainable development policy are the responsibility of the Group’s various business units and entities Environmental risks, including those associated with climate change, are fully integrated into the Group’s Environmental Management System (EMS) and internal control system in coordination with the Group risk management function. This system is ISO 14001: 2015 certified by the Afnor certification external expert, for a scope representing almost all the consolidated revenue of EDF and its subsidiaries (excluding Enedis) and shareholdings. They are subject to action plans resulting from strategic priorities in the Group’s sustainable development policy. See our 2019 Universal Registration Document page 133. Immediately after publication of the IPCC’s first report in 1990, EDF group resolved to develop internal skills focusing on climate issues. Unlike any other major electricity company, EDF group now has a team of some fifteen permanent researchers investigating the consequences of climate change on its existing and future production fleets for nuclear, hydro, wind, and solar power, etc., changes in production potential from renewable energy, and trends in energy demand. EDF R&D’s Climate Department was set up in 2014. It acts as an interface between constantly-changing scientific knowledge about the climate and EDF group’s business lines. It provides EDF group’s different business lines with climate data that can immediately be used to quantify climate-change-related risks and develop appropriate adaptation plans. EDF systematically takes the IPCC’s worst-case scenario (currently, RCP 8.5) into account in its impact and design studies. EDF group has also developed an operational unit to monitor meteorological phenomena and forecast their impact on water catchment sources: groundwater, rivers, and the sea. Located in Grenoble, this unit provides 24/7 monitoring of hydro-meteorological phenomena that represent a risk to EDF’s production fleet. See our 2019 Universal Registration Document page 140. The major heatwave which severaly impacted France in 2003 led the Group to develop a climate incident plan in 2004, followed by an initial climate change adaptation strategy in 2010. This document lays out the foundations of the Group’s commitments in terms of adaptation, and identifies actions to be implemented across all business lines: - Evaluating the impacts of climate change on future and existing activities - Adapting existing installations to make them less sensitive to climatic conditions and more resilient to extreme weather events - Incorporating climate change scenarios in the design of new installations - Adapting the Group’s offers, internal operations, and expertise to encompass climate change. - Adapting the organization to the legal, regulatory, technological, commercial and reputational risks due to climate change. In this initial adaptation strategy, physical risks relating to climate change were the priority, in particular production infrastructures with a lifespan of over 40 years, such as nuclear power plants and hydropower dams. To a lesser extent, wind and solar farms and offshores with a lifespan of around 20 years, are also exposed to climate risks. For instance EDF monitors hurricane risks that are variable and can result in critical damages. Following the publication of the TCFD recommendations in 2017 and the “climate risks” brief presented to the Board of Directors, EDF group has undertaken to update its climate change adaptation strategy in 2020, adopting a holistic method covering not only physical risks, but also risks relating to transition. This national strategy goes hand in hand with adaptation plans developed by each of the Group’s entities, to be updated at least once every five years. See 2019 Universal Registration Document page 140. Case study of how process is applied to physical risk: In order to provide hydropower facilities with stronger protection against extreme weather risks, some plants have been reinforced by installing spillways. This is the case of the Record Dam, the last EDF dam to benefit from the “Piano Key Weirs” spillway technology. This technology was developed by EDF’s hydropower engineering and R&D divisions, in collaboration with HYDROCOOP, the École polytechnique fédérale de Lausanne and the University of Liège. On 2 December 2015, EDF received the Large Group Award for the “Adapting to the effects of climate change” category of the Climate Solutions Trophy. See our 2019 Universal Registration Document page 141. Case study of how process is applied to transitional opportunity: EDF group takes part in the European EU-SysFlex project launched in November 2017, for which EDF R&D provides the technical coordination. This program aims to determine a flexibility roadmap to incorporate 50% of renewable energy into European electricity grids by 2030. To do so, the optimization and coordinated management of flexibility services (centralized and decentralized storage, demand, services of conventional and renewables-based units, etc.) will be developed and tested at six innovative demonstrator sites spread around Europe. See our 2019 Universal Registration Document page 145.

### **Value chain stage(s) covered**

Direct operations

Upstream

Downstream

### **Risk management process**

Integrated into multi-disciplinary company-wide risk management process

### **Frequency of assessment**

More than once a year

### **Time horizon(s) covered**

Short-term

Medium-term

Long-term

### **Description of process**

EDF’s process for identifying and assessing climate-related risks is as follows : since 2017, the EDF group has organised the control of activities and risks around the Group policies, validated and signed by the Executive Committee. The Executive Committee meets at least twice a year as a Risk Committee, during which it examines in particular the mapping of Group risks, the assessment of internal control activities and audit activities (annual programme, results). It identifies the priority risks for the Group, shares their strategy for mitigation’s strategy and designates the respective sponsors whithin members of the Executive Committee who are its sponsors. To strengthen the appraisal and monitoring of maintenance and developments projects of certain size and impact, the Group Executive Committee through its Commitments Committee (CECEG) thoroughly examines the most significant projects in terms of the extent of the commitments and/or the risks incurred before decisions are made by the Executive Committee. Each Group entity prepares an annual report on the control of its activities and risks based on a self-assessment, including climate change risks and a description of its improvement actions. Each report gives rise to a commitment signed by the Director of the entity on the level of control achieved and the actions undertaken. In addition, these entities produce an annual risk map based on a methodology common to the entire Group. On the basis of these reports, supplemented by a cross review with the Internal Audit Department, the EDF group Risk Department draws up the consolidated mapping of its major risks, including the overall assessment of internal control and provides Management and governance bodies with a consolidated and regularly updated view of the major risks and their level of control. Risks are divided into five categories. It is in the third one "Group transformation and strategic risks" that the risks related to climate change appear: “Adaptation to climate change: physical and transition risks”. The Group Risk Department (DRG) ensures that all entities examine climate risks (physical and transition risks) in their risk map, which is updated annually. The DRG coordinates the updating of EDF group’s policies and, in collaboration with the Sustainable Development Team, ensures that each update includes a specific analysis to verify its consistency with the Group’s climate strategy. The Board of Directors establishes the Group’s strategic, economic, financial, and technologicaly orientations, taking climate issues into consideration. To do so, it regularly examines climate change-related risks and opportunities and gives its opinion on the Group’s climate strategy. EDF group identified climate risk as a priority risk in 2018, addressing it in a report from the Group’s Scientific Council in March 2019, as well as in detailed analysis presented to EDF group’s Executive Committee and the Board of Directors Audit Committee in October 2019. In addition, a Group-wide climate risk mapping of all physical and transition risks following the recommendations of the TCFD (Task Force for Climate Financial Disclosures). Climate risks have been identified and assessed using the Group’s general risk mapping method. This mapping of climate risks, based in particular on the adaptation plans of the operating entities and on the report to the Scientific Council, has led to an action plan mobilising the Group at both corporate and entity levels. It was examined by the Audit Committee. Upstream risks such as dependency factors on suppliers constitutes an input to the risk identification and assessment process (mapping process). Under the Group Purchasing policy, as updated in 2019, its suppliers are required to comply with the Group’s values and all contracts must include environmental, social and human rights clauses. For example, all of EDF Renewables qualified suppliers have signed its sustainable development charter. See 2019 Universal Registration Document page 176. Downstream risks are assessed. For example, the impact of climate change on temperature (means, extremes) affecting the demand for heating and cooling, and electricity consumption; the impact on electricity demand resulting from the development of electric vehicles. The analysis of this item constitutes an input to the risk identification and assessment process (mapping process). See 2019 Universal Registration Document page 104, 117, 137, 140, 195.

## **C2.2a**

### **(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?**

|  |  |  |
| --- | --- | --- |
|  | **Relevance & inclusion** | **Please explain** |
| Current regulation | Relevant, always included | With an electricity production mix that is already 90% decarbonised worldwide, EDF group’s exposure to climate policy is very different from most energy producers : hence the main regulatory risk for EDF group would be to have current climate and energy regulations not sufficiently ambitious or unable to deliver the right decarbonisation signals at national as well as at international levels. As an example, an important regulatory risk for EDF group would be the collapse of the EU emission trading scheme (ETS) because of exceedance of allocations, resulting in low carbon prices for a long period on the EUA market. |
| Emerging regulation | Relevant, always included | The EU is currently elaborating the first classification system – or taxonomy – for environmentally-sustainable economic activities. This aims to provide guidance for policy makers, industry and investors on how best to support and invest in economic activities that contribute to achieving a climate neutral economy. To meet the Paris agreement targets, the EU needs to flag billions in additional yearly investment in towards projets dedicated to the decarbonisation of the economy, which imply a higher penetration of electricity in the overall energy mixdecarbonized electricity: hence the taxonomy is a very important emerging regulation for EDF group. One of the main risks for EDF would be the exclusion of nuclear energy from the EU taxonomy, despite the undeniable contribution of this technology to fight climate change, resulting in difficulties for EDF group to attract competitive financing |
| Technology | Relevant, always included | The electricity sector is a highly technical and capital intensive sector, with numerous breakthroughs always looming (like low cost and high capacity electricity storage, small modular nuclear reactors, smart grids, etc.). Hence the technology risk for EDF group would be to have its business model to be outdated by new, game-changing and unanticipated innovations. It is worth noting that this risk is an opportunity as well for EDF group, which is one the biggest investor in R&D amongst all the electricity utilities in the world. It also nurtures a corporate venture program, called EDF Pulse Croissance, which invests in start up which can deploy disruptive model for the Group, allowing the Group to better adapt its business model in the future. |
| Legal | Relevant, always included | The legal risks for EDF group are threefold : firstly the risk of cancellation of new or retroffited plant permits on the basis of climate protection ; secondly the risk of climate-related litigation claims following extreme climatic events (like flood or forest fire) ; thirdly the risk of litigation claims related to EDF group publications, particularly as regards the EU and national requirements on the French law called “duty of care”. |
| Market | Relevant, always included | Climate change and the transition to a carbon neutral economy will result in changes in the behaviors and expectations of EDF group’s customers., etc.). The main risks for EDF group would be to face a drastic decrease of electricity demand (for instance because of warmer winters and progress in energy efficiency) and loose market shares (for instance because of the rise of self-consumption) However this market transformation, driven by an increased share of low carbon electricity in the final energy consumption of citizens all over the world, is mostly an opportunity for the electricity sector in general and for EDF ‘group in particular which is the largest renewable operator in Europe (hydro,wind and solar). |
| Reputation | Relevant, always included | EDF group is acknowledged recognized by all stakeholders, including the IEA, as a key contributor to the world transition to a lower-carbon economy, thanks to its production mix based at 90% on nuclear and renewables. The main reputation risk for EDF group would arise if the nuclear energy was not to be considered anymore as a sustainablesolution to fight climate change, although climate friendly, source of energy. |
| Acute physical | Relevant, always included | The main acute physical climate risks for EDF group are firstly the increase of heatwaves and droughts, that can result in a drop of its electric production (limitation of cooling systems) and accelerated wearing of materials; and secondly the increase of strong wind events and floods, that can result in temporary halt of production facilities, partial destruction of electric transport/distribution system and power cut offs. |
| Chronic physical | Relevant, always included | The main chronic physical risks for EDF group are firstly the increase of average temperatures, that can result in microbial growth in cooling circuits, proliferation of organisms that plug water intake, decreased efficiency of nuclear and thermal power plants during summer, as well as drop in electric demand during winter, and secondly the increase of sea levels, that can result in the submersion of infrastructures on seacoasts, particularly for islands. |

## **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 & Primary climate-related risk driver**

|  |  |
| --- | --- |
| Acute physical | Increased severity and frequency of extreme weather events such as cyclones and floods |

### **Primary potential financial impact**

Decreased revenues due to reduced production capacity

### **Climate risk type mapped to traditional financial services industry risk classification**

<Not Applicable>

### **Company-specific description**

EDF Group is exposed to the impact of extreme heat waves, impacting the electricity production of conventional and nuclear power plants that use open-loop system for water cooling. Those risks are particularly relevant for EDF which operates nuclear power plants located on rivers, such as the Rhône or the Loire in France, with strong regulatory constraints on the temperature of discharged cooling water. In addition, extreme temperatures may cause installations to dysfunction, and require additional maintenance and adaptation.

### **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)**

300000000

### **Potential financial impact figure – minimum (currency)**

<Not Applicable>

### **Potential financial impact figure – maximum (currency)**

<Not Applicable>

### **Explanation of financial impact figure**

The potential financial impact of this risk for EDF group is estimated based on the experience of the 2003 heat wave. During this heat wave, several power plants of EDF group had to be operated below their optimal level or had to be shut down because of the regulatory constraints on the temperature of discharged cooling water. The resulting decrease of generation was estimated to be 5.5 TWh in total (equivalent to 256 days of production for one unit at full power). Considering an average cost of 1 M€ per day for the voluntary shutdown of a nuclear unit (including the loss of revenue for the electricity sale and the additional maintenance associated), the financial impact of the heat wave was estimated to be circa 300 M€.

### **Cost of response to risk**

400000000

### **Description of response and explanation of cost calculation**

EDF group first adaptation strategy to climate change was originally developed in 2010. Since then, the physical impact of climate change on EDF group installations with a lifespan of over 40 years, such as nuclear power plants and hydropower, has been assessed considering several climate scenarios, including IPCC RCP 8.5. In order to allow a better resistance of EDF group nuclear power plants to extreme temperatures and droughts, EDF has opted for several modifications that are progressively implemented in all plants concerned, according to the Group’s fleet overhaul programme (plan “Grands Chauds”, launched in 2008). These modifications include: the installation of new air coolers on emergency diesel generators, the improvement of the efficiency of the water cooling system, the modification of the ventilation system of MV / LV electrical rooms and of the raw water pumping stations, the upgrade of the air conditioning system for several part of the plants in order to withstand temperatures as extreme as 50°C. The additionnal financial cost for EDF's existing nuclear fleet is estimated to be 400 M€, spread over 10 years.

### **Comment**

### **Identifier**

Risk 2

### **Where in the value chain does the risk driver occur?**

Direct operations

### **Risk type & Primary climate-related risk driver**

|  |  |
| --- | --- |
| Acute physical | Increased severity and frequency of extreme weather events such as cyclones and floods |

### **Primary potential financial impact**

Increased direct costs

### **Climate risk type mapped to traditional financial services industry risk classification**

<Not Applicable>

### **Company-specific description**

EDF Group is exposed to the impact of extreme climate events like storms and floods, whose frequency and intensity are likely to increase in the future. These events can cause damage to power plants and electricity distribution network, leading to the halt or the reduction of the operation.

### **Time horizon**

Short-term

### **Likelihood**

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)**

55000000

### **Potential financial impact figure – minimum (currency)**

<Not Applicable>

### **Potential financial impact figure – maximum (currency)**

<Not Applicable>

### **Explanation of financial impact figure**

The potential financial impact of this risk for EDF group has been assessed based on the experience of 2019. 2019 saw a large number of extreme weather events in France, including a succession of storms (in particular storm Amélie) and torrential rainfall at the end of the year, resulting in severe floods. The cost for EDF group was estimated to be 55 M€, mainly due to the collapse of the electricity distribution networks, requiring the set-up of emergency power units and the replacement of damaged aerials equipment. The financial impact of the previous major storm in France (Xynthia, in 2010) was estimated to be 37 M€ for EDF Group.

### **Cost of response to risk**

43000000

### **Description of response and explanation of cost calculation**

ENEDIS is an independent company within EDF Group, in charge of managing the French distribution network. In order to increase its resiliency of extreme climate events, ENEDIS has set up an emergency organisation (called FIRE for Force d’Intervention Rapide Electricité), enabling resources and staff to be redeployed nationwide to restore power as quickly as possible. FIRE can mobilized 2500 technicians trained for crisis situations and 11 logistics storage facilities across the country, allowing the deployment of 2000 electricity generators. The FIRE has been deployed seven times in 2019. ENEDIS also works on reducing the vulnerability of its 1.4 million of km of electricity networks, mainly by reinforcing electricity pylons or by burying overhead lines underground when possible, in order to avoid risks of falling trees, wind, snow and frost. The cost of burying 1 km of line is estimated to be between 60 k€ and 120 k€. In 2019, 3500 km of high voltage overhead lines and 6000 km of low voltage overhead lines were removed. In island regions, 95% of the new networks are built underground. ENEDIS programme on pylons reinforcement and life extension of overhead high-voltage network is estimated around 43 M€ per year.

### **Comment**

### **Identifier**

Risk 3

### **Where in the value chain does the risk driver occur?**

Direct operations

### **Risk type & Primary climate-related risk driver**

|  |  |
| --- | --- |
| Emerging regulation | Other, please specify (Inability to attract co-financiers and/or investors for low carbon investments due to unsuitable taxonomy) |

### **Primary potential financial impact**

Decreased access to capital

### **Climate risk type mapped to traditional financial services industry risk classification**

<Not Applicable>

### **Company-specific description**

The EU is currently elaborating the first classification system – or taxonomy – for environmentally-sustainable economic activities. It aims to provide guidance for policy makers, industry and investors on how best to support and invest in economic activities that contribute to achieving a climate neutral economy. However in the report released by the Technical Expert Group in March 2020, the production of electricity from nuclear energy was not listed amongst the environmentally-sustainable economic activities, although its contribution to fight climate change was acknowledged. Taxonomy is a very important emerging regulation for EDF group and in particular regarding the renewal of its nuclear fleet, that currently represents circa 60% of EDF group installed generation capacity.

### **Time horizon**

Short-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)**

30000000

### **Potential financial impact figure – minimum (currency)**

<Not Applicable>

### **Potential financial impact figure – maximum (currency)**

<Not Applicable>

### **Explanation of financial impact figure**

The non-recognition of nuclear energy as a lever of the energy transition by the taxonomy could result in the downgrading of EDF group rating by rating agencies. With a conservative approach, for a one notch downgrade of EDF group's rating, the impact on the 10-years bonds would be between +15 to +25 bps. EDF group issues in average 3 billion euros of bond per year. In 2019 EDF group reported a net financial debt of 41 billion euros. The financial impact of an unfitted taxonomy could hence be estimated between 20 and 30 million euros per year for EDF group. It has to be noticed that the amount of impacted bonds would be cumulative year after year.

### **Cost of response to risk**

2000000

### **Description of response and explanation of cost calculation**

EDF group‘s response to the risk of an unfitted taxonomy is to provide the Technical Expert Group set up by the European Commission with accurate and science based information about nuclear energy. EDF group contributes actively to the consultations organised by the European Commission, with the support of EDF offices in Brussels as well as the sectorial association EURELECTRIC. The budget of EDF group European Affairs, as disclosed in the European Transparency Register, is approximately 2 million € per year.

### **Comment**

## **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**

Participation in carbon market

### **Primary potential financial impact**

Reduced indirect (operating) costs

### **Company-specific description**

With an electricity production mix that is already 90% decarbonised worldwide, EDF group has one the lowest carbon intensity factor amongst the major electricity producers in Europe. Regulations that incentive the decarbonisation of the energy mix, such as the European Emission Trading System (EU ETS), can hence be seen as a competitive advantage and an opportunity for EDF group.

### **Time horizon**

Medium-term

### **Likelihood**

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)**

1000000000

### **Potential financial impact figure – minimum (currency)**

<Not Applicable>

### **Potential financial impact figure – maximum (currency)**

<Not Applicable>

### **Explanation of financial impact figure**

The financial impact of this opportunity is estimated by comparing the carbon intensity of the electricity produced by EDF group (55 gCO2e/kWh in 2019 ) with the average carbon intensity of the electricity in Europe (294 gCO2e/kWh in 2017). Considering that approximatively 400 TWh of EDF group electricity production is directly exposed to market price (for a total production of 558 TWh in 2019), an increase of +10€/t of the EU ETS carbon price would result in a competitive advantage for EDF group estimated at 1 billion € per year.

### **Cost to realize opportunity**

13500000000

### **Strategy to realize opportunity and explanation of cost calculation**

EDF group is fully committed not only to maintain its competitive advantage as leader of the low carbon electricity production in Europe, but also to reach full carbon neutrality by 2050. In 2019, 97% of EDF Group’s net investments contributed to decarbonising the electricity system, with a total of 13,5 billion € invested in renewable and nuclear power generation, electricity grids and energy services.

### **Comment**

### **Identifier**

Opp2

### **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

### **Primary potential financial impact**

Returns on investment in low-emission technology

### **Company-specific description**

With a net capacity installed of more than 32 GWe in 2019, EDF group is the renewable energy leader in Europe. EDF group is investing massively in the development of renewable energies in France and worldwide with a target of reaching 50 GWe by 2030. The ambitious renewable energy targets that have been set at EU level (binding target of 32% of the final energy consumption in 2030) as well as national level in many countries are seen as great opportunities for the development of EDF group’s activities in the field of renewable energy generation, and most notably in the field of wind and solar energy (3% of EDF group’s electricity production in 2019 but already 7% of its EBITDA) .

### **Time horizon**

Medium-term

### **Likelihood**

Very likely

### **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)**

1200000000

### **Potential financial impact figure – minimum (currency)**

<Not Applicable>

### **Potential financial impact figure – maximum (currency)**

<Not Applicable>

### **Explanation of financial impact figure**

The financial impact of this opportunity is estimated from the earnings of EDF Group subsidiary in charge with solar and wind energy projects development, namely EDF Renewable. In 2019, the earnings before interest, taxes, depreciation, and amortization (EBITDA) of EDF Renewable was 1,2 billion €.

### **Cost to realize opportunity**

400000000

### **Strategy to realize opportunity and explanation of cost calculation**

In order to achieve its ambitious targets in renewable energy, EDF group invested 400 M€ (net) in renewable energy in 2019 only. EDF Renewable has in 2019 more than 33 GW of additional renewable wind and solar projects in the pipe. Over the 2017-2020 period, EDF group invested above €6 billion in total in renewables energy.

### **Comment**

### **Identifier**

Opp3

### **Where in the value chain does the opportunity occur?**

Downstream

### **Opportunity type**

Products and services

### **Primary climate-related opportunity driver**

Development of new products or services through R&D and innovation

### **Primary potential financial impact**

Increased revenues resulting from increased demand for products and services

### **Company-specific description**

Facing the emergency of climate change, many countries (including France) and regions of the world (including EU) are now committed to reach net zero emissions by 2050. According to all scenarios (IEA scenarios as well as EU long term decarbonisation scenarios), electrification is the most important solution to turn the vision of a fossil-free world into reality, with the development of many new solutions, from electric mobility to electricity storage.

### **Time horizon**

Short-term

### **Likelihood**

Virtually certain

### **Magnitude of impact**

High

### **Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

### **Potential financial impact figure (currency)**

2500000000

### **Potential financial impact figure – minimum (currency)**

<Not Applicable>

### **Potential financial impact figure – maximum (currency)**

<Not Applicable>

### **Explanation of financial impact figure**

The financial impact of this opportunity has been assessed based on the increase of EDF group’s turnover between 2018 and 2019 (+3,5% organic growth, circa 2,5 billion €). According to EU long term strategy scenarios, the use of electricity should increase from 22% (in 2015) to between 35% to almost 70% of the EU final energy consumption in 2050.

### **Cost to realize opportunity**

700000000

### **Strategy to realize opportunity and explanation of cost calculation**

In order to anticipate the electrification of the economy and to seize the associated business opportunities, EDF group is investing massively in its R&D. In 2019, EDF group’s total R&D budget was 713 M€. This is one of the largest R&D budgets of any electricity company in the world. The topics covered are notably energy efficiency, uses of electricity as a substitute for fossil fuels, renewable energies and their insertion into the grid, energy storage, carbon-free hydrogen and its applications for decarbonising the economy, sustainable cities, the local impacts of climate change and other environmental issues such as biodiversity, air and water quality.

### **Comment**

## **C3. Business Strategy**

## **C3.1**

### **(C3.1) Have climate-related risks and opportunities influenced your organization’s strategy and/or financial planning?**

Yes, and we have developed a low-carbon transition plan

## **C3.1a**

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

Yes, qualitative and quantitative

## **C3.1b**

### **(C3.1b) Provide details of your organization’s use of climate-related scenario analysis.**

|  |  |
| --- | --- |
| **Climate-related scenarios and models applied** | **Details** |
| 2DS  RCP 2.6  RCP 4.5  RCP 8.5  IEA B2DS | For the assessment of physical risks associated with climate change (chronical and acute), EDF group uses the Representative Concentration Pathway (RCP) developed by the IPCC (Fifth Assessment report, AR5, 2014). The pathways describe different climate futures, all of which are considered possible depending on the volume of greenhouse gases emitted in the years to come (and are labelled after a possible range of radiative forcing values in the year 2100). RCP8.5 is generally taken as the basis for worst-case climate change scenarios and is systematically considered in EDF group impact assessments carried out by EDF R&D in house team, according to EDF group adaptation strategy to climate change (initially released in 2010). These assessments have been made for all existing nuclear power plans of EDF group and is compulsory for any new nuclear or hydro power plants. The results of this assessments have resulted in several plants modifications, including the design of the water intakes of Hinkley Point C nuclear power plant (Somerset, England, construction started in 2016), in order to take into account the rise of the sea level by 2050 and 2100.For the assessment of transition risks (legal, technology, market, reputation), EDF groups uses shorter term scenarios (typically 2030-2050), with different scopes depending on the nature of the risk considered (e.g. some transition risks are better assessed at national or regional scales).In 2018, EDF group participated to the sectorial study at EU level called “Decarbonisation Pathways” by Eurelectric. This comprehensive study assessed the potential contribution of the power sector on economy-wide EU decarbonisation by 2050, considering 3 scenarios that achieve respectively 80%, 90% and 95% decarbonisation of the main energy-using sectors: transport, buildings, and industry. This study clearly showed that at least 60% of the EU’s economy should be electrified by 2050 to achieve 95% GHG emission reduction versus 1990 levels. Annual average investments of 89-111 billion € will be required to decarbonise the power sector and other segments of the EU economy. Investments will also be needed to strengthen electricity network interconnections across Europe and reinforce distribution grids. The study shows that, despite this massive ramping up of investments, the overall cost of electricity supply in a fully decarbonised system is lower than estimated due to the rapid cost-reduction trend of renewable technologies. By 2045, wholesale power prices are expected to reach 70-75 € / MWh, which is significantly lower than other existing projections, such as the 105 € / MWh estimated by the European Commission. This study was used by EDF group to demonstrate the feasibility of decarbonising the EU economy by electrification in 3 ways: Firstly, electrification enables a switch from emitting fuels to carbon neutral electricity from variable renewable sources such as solar and wind power, hydro and nuclear. Secondly, electrification reduces total energy demand thanks to the higher efficiency of electric solutions compared to conventional solutions for most applications. For example, electric vehicles consume only 25% of the energy consumed by conventional vehicles. In space heating, the coefficient of performance of heat pumps is 4 to 5 times higher than the coefficient of performance for typical gas boilers. Thirdly, via electric production of fuels such as hydrogen and power-to-X, electrification can reduce emission in end uses where direct use of electricity is not appropriate, e.g. marine transport and aviation, and selected industrial processes.Building up on these pathways, EDF group committed to reach carbon neutrality by 2050, to move away from coal-fired power generation by 2030 in all geographical areas, and adopted its “raison d’être” “To build a net zero energy future with electricity and innovative solutions and services, to help save the planet and drive wellbeing and economic development” |

## **C3.1d**

### **(C3.1d) Describe where and how climate-related risks and opportunities have influenced your strategy.**

|  |  |  |
| --- | --- | --- |
|  | **Have climate-related risks and opportunities influenced your strategy in this area?** | **Description of influence** |
| Products and services | Yes | EDF group raison d’être” is “To build a net zero energy future with electricity and innovative solutions and services, to help save the planet and drive wellbeing and economic development”. The fight against climate change is completely integrated into EDF group strategy and in the development of all its activities. As an example of opportunity related to products and services, EDF group has invested early in renewable energy until becoming in 2019 the renewable energy leader in Europe, with a net capacity installed of more than 32 GWe. In 2017 EDF group launched a Solar Plan with the aim of becoming the leader in solar photovoltaic energy, with an average gross investment in renewables above €2 billion per year over the 2017-2020 period. In 2019, EDF created its Hynamics subsidiary devoted to the production and marketing of low-carbon hydrogen produced by water electrolysis. It is directed at industrial markets such as refineries, glassworks, food and chemicals industries, as well at heavy-duty mobility. Hynamics is helping to build a network of hydrogen recharging stations for fleets of heavy-duty electric vehicles such as trains, buses, refuse collection trucks, commercial vehicles, and river vessels. |
| Supply chain and/or value chain | Yes | EDF group is committed to support the energy transition of its customers to a carbon neutral economy. The development of electric mobility has hence been identified by EDF as an opportunity associated with climate change. In 2018, EDF group launched the Electric Mobility Plan, with the aim of becoming the leading energy provider in electric mobility by 2022 on its four major European markets (France, UK, Italy, Belgium), thanks to its subsidiary company dedicated to electric mobility called Izivia. . |
| Investment in R&D | Yes | Unlike any other major electricity company, EDF group has set up in 2014 a team of some fifteen permanent researchers investigating the consequences of climate change on electricity production and demand. It provides EDF group’s business lines with climate data that can be used to quantify climate-change-related risks and develop appropriate adaptation plans. EDF systematically takes the IPCC’s worst-case scenario (currently, RCP 8.5) into account in its impact and design studies. In 2019, EDF group’s total R&D budget was 713 M€. This is one of the largest R&D budgets of any electricity company in the world. |
| Operations | Yes | EDF group developed its first climate emergency plan in 2004 (as a consequence of 2003 heatwave) and its first climate change comprehensive adaptation strategy in 2010. Since then, many modifications have been implemented within EDF installations as a response to climate risks: for instance the electronic system of nuclear power plants has been reinforced in order to withstand temperatures in excess of 50°C and 9 hydropower plant have been equipped with an innovative in-house technology known as the Piano Key Weir, which allows much more water to be released in case of sudden rise in river levels (EDF received an UNFCCC award in the field of adaptation to climate change at the COP 21 for this innovation). EDF group has also set up an operational unit, located in Grenoble, that is able since 2003 to monitor and forecast 24/7 hydro-meteorological phenomena in Europe, their impact on rivers, sea and groundwater, and ultimately on the operation of EDF group generation fleet. |

## **C3.1e**

### **(C3.1e) Describe where and how climate-related risks and opportunities have influenced your financial planning.**

|  |  |  |
| --- | --- | --- |
|  | **Financial planning elements that have been influenced** | **Description of influence** |
| Row 1 | Acquisitions and divestments  Access to capital | Since 2017, EDF group has been engaged in the Powering Past Coal Alliance, which promotes the phasing out of coal in EU countries by 2030 and in the rest of the world by 2050 in the wake of the Paris Agreement. In 2020, EDF has committed to stop coal power generation by 2030 in all geographical areas. This decision implies not only the shutdown of EDF group last coal power plants operated in France and UK, but also the divestment from all residual coal assets, most notably in China (In 2019, coal-fired heat and electricity generation accounted for less than 1% of EDF group’s total production). EDF group has been a pioneer in so-called “sustainable” finance, with a first Green Bond issue in 2013. Since then, the Group has raised a total of €4.5 billion, making EDF one of the largest corporate green bond issuers in Europe. EDF is committed to allocating the funds raised only to investments in photovoltaic and wind power projects, in renovating and modernising its hydropower fleet and in projects contributing to energy efficiency and biodiversity protection. EDF group is also advocating for a closer integration of environmental, social, and governance criteria (ESG) into finance. EDF group has contracted several credit facilities since 2017 that include a cost adjustment mechanism based on the reduction of EDF group’s direct CO2 emissions, as well as the electrification of EDF’s light vehicle fleet (EV100 commitment). In 2019 EDF group’s credit facilities indexed to ESG criteria amounted to over €5 billion, representing 48% of EDF group’s total credit. |

## **C3.1f**

### **(C3.1f) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).**

## **C4. Targets and performance**

## **C4.1**

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

Absolute target

## **C4.1a**

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

### **Target reference number**

Abs 1

### **Year target was set**

2018

### **Target coverage**

Company-wide

### **Scope(s) (or Scope 3 category)**

Scope 1+2 (location-based)

### **Base year**

2015

### **Covered emissions in base year (metric tons CO2e)**

59285268

### **Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)**

100

### **Target year**

2030

### **Targeted reduction from base year (%)**

50

### **Covered emissions in target year (metric tons CO2e) [auto-calculated]**

29642634

### **Covered emissions in reporting year (metric tons CO2e)**

33379487

### **% of target achieved [auto-calculated]**

87.3936540187353

### **Target status in reporting year**

Underway

### **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

### **Please explain (including target coverage)**

The EDF group has made in 2018 a commitment to reduce its direct CO2 emissions significantly, with a target of 30 million tonnes in 2030 compared to 2017. This target has been recently increased with a new commitment to reduce by 50% compared to 2017. The results are consistent with the Sectoral Decarbonisation Approach (SDA) developed by the CDP initiative, United Nations Global Compact, WRI and WWF “Science based targets (SBTi)”.

### **Target reference number**

Abs 2

### **Year target was set**

2019

### **Target coverage**

Company-wide

### **Scope(s) (or Scope 3 category)**

Scope 1+2 (market-based) +3 (upstream & downstream)

### **Base year**

2019

### **Covered emissions in base year (metric tons CO2e)**

152743114

### **Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)**

100

### **Target year**

2050

### **Targeted reduction from base year (%)**

100

### **Covered emissions in target year (metric tons CO2e) [auto-calculated]**

0

### **Covered emissions in reporting year (metric tons CO2e)**

152743114

### **% of target achieved [auto-calculated]**

0

### **Target status in reporting year**

New

### **Is this a science-based target?**

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

### **Please explain (including target coverage)**

This is a “Business Ambition for 1,5°C” target. In line with EDF group “raison d’être” adopted in 2020 (“To build a net zero energy future with electricity and innovative solutions and services, to help save the planet and drive wellbeing and economic development.”), EDF group is committed to achieve carbon neutrality (“net zero emission”) by 2050.

### **Target reference number**

Abs 3

### **Year target was set**

2019

### **Target coverage**

Company-wide

### **Scope(s) (or Scope 3 category)**

Scope 1+2 (location-based)

### **Base year**

2017

### **Covered emissions in base year (metric tons CO2e)**

51804887

### **Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)**

100

### **Target year**

2030

### **Targeted reduction from base year (%)**

50

### **Covered emissions in target year (metric tons CO2e) [auto-calculated]**

25902443.5

### **Covered emissions in reporting year (metric tons CO2e)**

33379487

### **% of target achieved [auto-calculated]**

71.1338295168948

### **Target status in reporting year**

New

### **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

### **Please explain (including target coverage)**

EDF group is officially committed with SBTI since the end of February 2020 and its targets are currently being reviewed by the SBTi, The current targets were developed in line with SBTi Sectoral Decarbonisation Approach (SDA). The targets apply to the emissions of the whole company.

### **Target reference number**

Abs 4

### **Year target was set**

2019

### **Target coverage**

Company-wide

### **Scope(s) (or Scope 3 category)**

Scope 1+2 (location-based)

### **Base year**

2017

### **Covered emissions in base year (metric tons CO2e)**

51804887

### **Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)**

100

### **Target year**

2023

### **Targeted reduction from base year (%)**

36

### **Covered emissions in target year (metric tons CO2e) [auto-calculated]**

33155127.68

### **Covered emissions in reporting year (metric tons CO2e)**

33379487

### **% of target achieved [auto-calculated]**

98.7969854401316

### **Target status in reporting year**

Revised

### **Is this a science-based target?**

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

### **Please explain (including target coverage)**

This is an intermediary targets set up for 2023 in order to reach 2030 SBTi target.

## **C4.2**

### **(C4.2) Did you have any other climate-related targets that were active in the reporting year?**

No other climate-related targets

## **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 | 0 | 0 |
| To be implemented\* | 0 | 0 |
| Implementation commenced\* | 0 | 0 |
| Implemented\* | 1 | 2046000 |
| 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 category & Initiative type**

|  |  |
| --- | --- |
| Low-carbon energy generation | Other, please specify (shut down of coal-fired fleet) |

### **Estimated annual CO2e savings (metric tonnes CO2e)**

2046000

### **Scope(s)**

Scope 1

### **Voluntary/Mandatory**

Voluntary

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

0

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

0

### **Payback period**

No payback

### **Estimated lifetime of the initiative**

Ongoing

### **Comment**

The CO2 savings associated with the shut down of the Cottam coal-fired power plant operated by EDF Energy in the UK, in September 2019, represents a CO2 saving of 2,046,000 t (for a full year generation from this power plant). There is no investment as such associated with this action, nor monetary savings to be calculated, and therefore no payback period. The lifetime of the closure of Cottam plant is infinite. See 2019 Universal Registration Document pages 136 & 138.

## **C4.3c**

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

|  |  |
| --- | --- |
| **Method** | **Comment** |
| Dedicated budget for low-carbon product R&D | With its forward–looking action for the medium and long-term, EDF’s R&D is preparing for the Group’s future in line with the environmental issues it faces. Its research areas focus on three major priorities: (i) Consolidation of a carbon-free energy mix (scope 1) - by reinforcing the Group’s nuclear potential through actions designed to generate further improvements in the existing fleet’s safety and performance, operating lifetime and development of new reactors, incorporating the lessons learned from the Fukushima accident, - by developing renewable energies, which involves identifying technological breakthroughs with significant competitive value, and working to bring the most promising technologies into industrial existence, (ii) Development of a flexible demand for low-carbon energy (scope 2&3): by improving knowledge of demand and promoting new uses for electricity (heat pumps, mobile electricity, etc); and developing technical and economic models for buildings and sustainable cities by promoting energy efficiency. (iii) Adaptation of the electricity system: by improving management of network assets, optimization models and economic scenarios for proposed new transmission infrastructures, incorporating intermittent energies and developing “smart grids”. The main areas for research are : - A) Renewable energies (all scope): reducing the costs of renewable energies, especially offshore wind and photovoltaic; insertion into the networks of intermittent, decentralised power generation from renewable sources, notably through application of Concept Grid, an experimental platform unique in the world, half-way between laboratory testing and field experiments; B) Use of electricity (scope 3): development of planning instruments for sustainable cities and areas; C) carbon capture and geological storage, with commissioning of the first carbon capture demonstrator at Le Havre fossil-fired power plant (the first tonne of CO2 was captured in July 2013). In 2019, 95% of R&D operating budgets in France dedicated to electricity system decarbonisation and transition. See 2019 Performance document page 26. |
| Financial optimization calculations | EDF investments in low carbon energy are not only driven by regulatory compliance, but also by the wider economics, including the use of a carbon price. For example, the Renewables Obligation helps to provide an economic rationale for doing so. |
| Compliance with regulatory requirements/standards | EDF is required to comply with the Renewables Obligation, the Carbon Emissions Reduction Target (CERT), the Community Energy Saving Programme (UK-CESP), the CRC Energy Efficiency Scheme and the EU Emissions Trading System. |
| Dedicated budget for energy efficiency | Sales advisers are helping customers to reduce their carbon footprint: Another way in which EDF is helping to decarbonize the economy is by advising customers on how to reduce their carbon footprint. With more than 3.38 million tonnes of CO2 emissions avoided between mid-2009 and end-2015 in France, its advice is proving effective. All EDF companies in Europe now market green packages guaranteeing electricity from very low CO2-emitting renewable sources. Examples include “Blue+Price Promise” in the United Kingdom and “Équilibre” in France, priced to encourage customers to reduce their consumption when electricity is dearest and emits the most CO2. They also advise business and local authority customers and supply them with low carbon solutions that integrate local renewable power generation, renovation of buildings, energy management services, and electric mobility (with charging terminals and car-sharing plans, etc.). In France, Dalkia Smart Building has made a specialty of low carbon solutions, with a client list including the Allianz Riviera stadium in Nice, the world’s first energy-positive stadium, built for the Euro 2016 soccer tournament; an eco-neighbourhood for Roquebrune; and renovation of the Roc Noir neighbourhood aimed at halving its CO2 emissions. In 2019, Dalkia inaugurated a new heating and cooling network in Perpignan for which 90% of the power supply comes from heat recovered from an energy-from-waste plant operated by Dalkia Wastenergy producing 100,000MWh per year. In addition, 54 secondary schools and 4 administrative buildings in Indre et Loire, as well as 45 high schools in the Nouvelle Aquitaine region, benefitted from an Energy Performance Contract (CPE: a CPE is “an agreement between a contracting authority and an energy efficiency service provider aimed at ensuring improved energy performance for a building or set of buildings with respect to a contractual baseline, verified and measured over time, by means of investment in works, supplies, or services”.) See 2019 Universal Document page 144. |
| Dedicated budget for other emissions reduction activities | The Group continued its programme of gross operational investments (around 10 billion € a year with more than a third dedicated to renewable energy). |
| Partnering with governments on technology development | Enedis (French network subsidiary, formerly ERDF) coordinates the European GRID4EU project, a major initiative which has been set up in response to the European Commission financed smart grid research program. GRID4EU is the largest program for smart grids co-financed by the European Union, and will involve a consortium of six European distributors representing 50% of customers in Europe. The aim is to work together to move forward on: (i) Integration of generation from renewable energy sources, (ii) Automation and security of the electricity network, (iii) Effective customer participation in consumption management, (iv) Support for development of electric vehicle and electricity storage solutions. |
| Other (Partnering with other industrials) | Partnering with other industrials, for example: EDF Renewables and wind offshore team up to jointly respond to the French government’s second call for tenders, in an exclusive partnership with Alstom for the supply of wind turbines. |

## **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**

Product

### **Description of product/Group of products**

In 2019, 90 %of EDF's kWh produced is free of CO2. EDF is one of the European electricity providers with the lowest level of carbon emissions. Worldwide, the Group has a carbon factor of 55 g of CO2 per kWh produced compared to a world average of around 485 gCO2/kWh (1). In continental France, EDF’s carbon factor was 13g per kWh in 2019 (see 2019 Annual results page 92) compared to the French average of around 40 gCO2/kWh (2). Applying to all the presented emissions values: direct CO2 emissions, excluding life cycle analysis of generating resources and fuels. (1) CO2 Emission Factors, International Energy Agency, 2019 (2017 figures).. (2) Base Carbone Ademe 2018

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

Low-carbon product

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

Other, please specify (Electricity produced by nuclear and renewables is considered as low carbon as they do not generate direct emissions and their Life Cycle Analysis demonstrates that their indirect emissions are significantly under 100g by kWh produced. See commentbox)

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

80

### **% of total portfolio value**

<Not Applicable>

### **Asset classes/ product types**

<Not Applicable>

### **Comment**

Electricity produced by nuclear and renewables is considered as low carbon as they do not generate direct emissions and their Life Cycle Analysis demonstrates that their indirect emissions are significantly under 100g by kWh produced. The latest study produced by the Intergovernmental Panel on Climate Change (IPCC) of the United Nations constitutes a commonly accepted reference [IPCC 2014 report “AR5 Climate Change 2014: Mitigation of Climate Change” ]. According to this report the mean worldwide emissions per kWh produced are: nuclear : 12g ; hydro : 24g ; solar PV : 48g ; Wind : 11g. In 2019, EDF produced 78.5% of electricity from nuclear and 11.2% from renewables (including hydro). So we can estimate that the % revenue from low carbon products is above 80%. See 2019 EDF Annual Results page 89.

## **C-EU4.6**

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

The main sources of methane emission for the energy sector are associated with the transport and distribution of natural gas. These activities are outside the scope of EDF.

The methane emissions of EDF originate from two sources:

1/ The incomplete combustion of fuels in thermal power plants (boilers, gas turbines and engines).

Methane emissions are measured for 100% of EDF's assets.

These emissions are not continuously measured but estimated using standard emission factors (IPCC 2006 emission factors when available, see EURELECTRIC guidelines “European Wide Sector Specific Calculation Method for Reporting to the European Pollutant Release and Transfer Register”).

The methane emissions from power plants are considered to be very low, because of the good quality of the combustion in large combustion installations which is required to achieve high energy efficiency.

The quality of combustion is continuously monitored by the operators based on the concentration of carbon monoxide (CO) after the combustion chamber and/or at the stack.

In practice the main emissions of methane are occurring during the start-up and shut-down periods of combustion installations.

EDF has already carried out significant work [MK1] these last years in the frame of the implementation of the European Industrial Emission Directive 2010/75/EU in order to limit the duration and the associated emissions of these “other than normal operating conditions”. This work consisted in particular in optimizing the management of plant start-ups.

Hence it can be considered that the room for further reduction of CH4 emissions is now very narrow for EDF combustion installations.

2/ Methane emitted by Hydropower reservoirs in tropical areas.

Methane emissions are measured continuously for 100% of EDF's assets located un tropical areas.

EDF has developed considerable experience in this area. The data sets developed for Petit Saut in French Guiana, and Nam Theun in Laos are the most comprehensive in the world. Nam Theun 2 is nowadays known as one of the most studied reservoir in the world for CH4 issues. At the Nakai dam of the Nam Theun 2 facility, surface water is withdrawn for the environmental flow release. Based on the experience of the EDF Petit Saut reservoir, this specific design was adopted to improve water quality, and to reduce methane emissions through degassing: methane concentration in surface water is low as compared to bottom water from where the environmental discharge is usually withdrawn.

As defined by IPCC, EDF uses specific hydraulic methods to assess methane leaks emitted by Hydropower reservoirs in tropical areas.

We calculated the CH4 emission difference between the “classical” design (bottom outlet) and the specific NT2 design with the following assumptions:

- The difference between the 2 configurations is only significant when the environmental flow only is released (2 m3/s). Indeed with higher discharges, during flood spill for instance, the released water downstream the dam is a mixture of the whole water column in the reservoir and the distinction between surface and bottom layers cannot be made anymore.

- The degassing efficiency for the 2 configurations is the same. The efficiency in the current configuration has been estimated at 97% (Descloux et al., 2016b): 97% of the methane leaving the reservoir is degassed in the atmosphere just below the dam.

- For the current and bottom configurations, surface and bottom methane concentrations are assumed (not a depth-averaged concentration).

- CH4 concentrations in the reservoir were obtained from the NTPC Aquatic Environmental Laboratory (see Descloux et al., 2016a for more details about the monitoring program)

Under these assumptions, between the reservoir impoundment (April 2008) and the beginning of 2016, the CH4 emission reduction between the 2 configurations is estimated at about **640 tons of methane** (Between 2008 and 2020, the methane emissions reductions can be estimated at about 940 tonnes of methane).

Given the very small amount of methane emissions, no specific target has been set. However, these emissions are fully covered by the scope 1 emission reduction objective

## **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 2017

### **Base year end**

December 31 2017

### **Base year emissions (metric tons CO2e)**

51300000

### **Comment**

See 2018 SD Indicators page 34

### **Scope 2 (location-based)**

### **Base year start**

January 1 2017

### **Base year end**

December 31 2017

### **Base year emissions (metric tons CO2e)**

500000

### **Comment**

See 2018 SD Indicators page 34

### **Scope 2 (market-based)**

### **Base year start**

January 1 2017

### **Base year end**

December 31 2017

### **Base year emissions (metric tons CO2e)**

389712

### **Comment**

## **C5.2**

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

ISO 14064-1

The Climate Registry: Electric Power Sector (EPS) Protocol

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

The Tokyo Cap-and Trade Program

Other, please specify (GRI and diverse European guidelines)

## **C5.2a**

### **(C5.2a) Provide details of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.**

International guidelines:

- GRI

European guidelines:

- Council Directive 96/61/EC of 24 September 1996 concerning Integrated Pollution Prevention and Control (so-called “IPPC” Directive)

- Council Directive 88/609/EEC of 24 November 1988 concerning Large Combustion Plants (LCP)

- Directive 2001/80/EC of the European Parliament and of the Council of 23 October 2001 on the Limitation of Emissions of Certain Air Pollutants from Large Combustion Plants

- Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse emission allowance trading within the Community (so-called “Allowance” Directive)

- Commission Decision 2007/589/EC of 18 July 2007 establishing guidelines for the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council and repealing Décision 2004/156/EC of 29 January 2004

- European wide sector specific calculation method for reporting to the European Pollutant Release and Transfer Register Ref 2008-030-0105 VGB/ EURELECTRIC Recommandations

- Directive 88/609/EEC on the limitation of certain acid pollutants (sulphur dioxide, nitrogen oxides, dust) into the air from large combustion plants (LCP)

- Council Directive 96/61/EC of 24 September 1996 concerning Integrated Pollution Prevention and Control

- Commission Decision 2000/479/EC of 17 July 2000 on the implementation of a European Pollutant Emission Register according to Article 15 of Council Directive 96/61/EC concerning Integrated Pollution Prevention and Control (IPPC)

- Council Directive 94/66/EC of 15 December 1994 amending directive 88/609/EEC on the limitation of certain pollutants into the air from large combustion plants

- Regulation (EC) no. 166/2006 of 18 January 2006 concerning the establishment of a European Pollutant Release and Transfer Register (E-PRTR)

## **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)**

33090243.979

### **Start date**

<Not Applicable>

### **End date**

<Not Applicable>

### **Comment**

These emissions and total Scope 1 emissions fell 7% between 2018 and 2019. This fall is the result of less use of fossil-fired plants in France, due to a mild winter. Also, the rise in the price of CO2 emission quotas along with low prices for coal and natural gas resulted in less market demand for coal generation and more use of gas generation. It is important to underline the high level of variability in annual emissions for EDF group, due to the very low proportion of fossilfired electricity generation in EDF’s total output. Annual variations in temperatures and rainfall, as well as the availability of the nuclear facilities, can have a significant impact on how much use is made of EDF’s fossil-fired plants and lead to considerable differences in annual emissions.

## **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 are also calculating Scope 2 market-based but only for CDP

## **C6.3**

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

### **Reporting year**

### **Scope 2, location-based**

289242.736

### **Scope 2, market-based (if applicable)**

387540.33

### **Start date**

<Not Applicable>

### **End date**

<Not Applicable>

### **Comment**

Between 2018 and 2019, the Group’s Scope 2 emissions fell 38 %. This decrease is explained by the transition to Scope 3 of emissions linked to Dalkia's purchases of heat, which is not subject to transformation.

## **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?**

Yes

## **C6.4a**

### **(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.**

### **Source**

Companies accounted for by the equity method (excluded in scope 1 and 2)

### **Relevance of Scope 1 emissions from this source**

Emissions are not relevant

### **Relevance of location-based Scope 2 emissions from this source**

Emissions are not relevant

### **Relevance of market-based Scope 2 emissions from this source (if applicable)**

Emissions are not relevant

### **Explain why this source is excluded**

The companies accounted for under the equity method are factored into the assessment Scope 3, under investments. Other companies that are accounted for under the equity method but excluded from this assessment represent less than 5% of emissions in this category.

## **C6.5**

### **(C6.5) Account for your organization’s gross global Scope 3 emissions, disclosing and explaining any exclusions.**

### **Purchased goods and services**

### **Evaluation status**

Relevant, calculated

### **Metric tonnes CO2e**

3784217.331

### **Emissions calculation methodology**

GHG protocol; Purchases of goods and services (maintenance, office supplies, communication, etc.)

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

0

### **Please explain**

### **Capital goods**

### **Evaluation status**

Relevant, calculated

### **Metric tonnes CO2e**

4323198.18

### **Emissions calculation methodology**

GHG protocol ; Fixed assets: (buildings, technical equipment, small furniture, etc.)

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

0

### **Please explain**

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

### **Evaluation status**

Relevant, calculated

### **Metric tonnes CO2e**

40545397

### **Emissions calculation methodology**

GHG protocol ; Upstream emissions of purchased fossil fuels (extraction, refining, transportation)

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

0

### **Please explain**

### **Upstream transportation and distribution**

### **Evaluation status**

Not relevant, explanation provided

### **Metric tonnes CO2e**

<Not Applicable>

### **Emissions calculation methodology**

<Not Applicable>

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

<Not Applicable>

### **Please explain**

The transportation and distribution of fuels and materials provided by third parties are included in the purchase emissions of these goods (fuel-and-energy-related act).

### **Waste generated in operations**

### **Evaluation status**

Relevant, calculated

### **Metric tonnes CO2e**

190248.233

### **Emissions calculation methodology**

GHG protocol ; Waste disposal (disposal of waste generated in operations, waste generated in the production of purchased materials and fuels, disposal of sold products at the end of their life)

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

0

### **Please explain**

### **Business travel**

### **Evaluation status**

Relevant, calculated

### **Metric tonnes CO2e**

122938.61

### **Emissions calculation methodology**

GHG protocol ; Travel: Employees commuting to and from work, employee business travel, (excluding transportation by vehicles owned by the company)

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

0

### **Please explain**

### **Employee commuting**

### **Evaluation status**

Relevant, calculated

### **Metric tonnes CO2e**

315032.133

### **Emissions calculation methodology**

GHG protocol ; this figure is calculated on basis of the number of employees, their partitioning over the territories, the number of worked days in a year.

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

0

### **Please explain**

### **Upstream leased assets**

### **Evaluation status**

Not relevant, explanation provided

### **Metric tonnes CO2e**

<Not Applicable>

### **Emissions calculation methodology**

<Not Applicable>

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

<Not Applicable>

### **Please explain**

As EDF has a financial control consolidation approach for emissions’ sources, there is no upstream leased assets which are not already taken into account in the scope 1 and 2 emissions.

### **Downstream transportation and distribution**

### **Evaluation status**

Not relevant, explanation provided

### **Metric tonnes CO2e**

<Not Applicable>

### **Emissions calculation methodology**

<Not Applicable>

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

<Not Applicable>

### **Please explain**

As EDF also has control of these emissions through production and distribution (ENEDIS) they are already taken into account in scope 1 and 2 emissions.

### **Processing of sold products**

### **Evaluation status**

Not relevant, explanation provided

### **Metric tonnes CO2e**

<Not Applicable>

### **Emissions calculation methodology**

<Not Applicable>

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

<Not Applicable>

### **Please explain**

Energy products sold by EDF are transported by networks, used by customers, but not processed.

### **Use of sold products**

### **Evaluation status**

Relevant, calculated

### **Metric tonnes CO2e**

60095133.206

### **Emissions calculation methodology**

GHG Protocol; Combustion emissions of purchases gas sold to end-users.

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

0

### **Please explain**

### **End of life treatment of sold products**

### **Evaluation status**

Not relevant, explanation provided

### **Metric tonnes CO2e**

<Not Applicable>

### **Emissions calculation methodology**

<Not Applicable>

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

<Not Applicable>

### **Please explain**

There is no end of life treatment of energy products.

### **Downstream leased assets**

### **Evaluation status**

Not relevant, explanation provided

### **Metric tonnes CO2e**

<Not Applicable>

### **Emissions calculation methodology**

<Not Applicable>

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

<Not Applicable>

### **Please explain**

There are no downstream leased assets

### **Franchises**

### **Evaluation status**

Not relevant, explanation provided

### **Metric tonnes CO2e**

<Not Applicable>

### **Emissions calculation methodology**

<Not Applicable>

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

<Not Applicable>

### **Please explain**

EDF has no franchises

### **Investments**

### **Evaluation status**

Relevant, calculated

### **Metric tonnes CO2e**

9987463.124

### **Emissions calculation methodology**

GHG Protocol; scope 1 and 2 from equity assets

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

0

### **Please explain**

### **Other (upstream)**

### **Evaluation status**

Not relevant, explanation provided

### **Metric tonnes CO2e**

<Not Applicable>

### **Emissions calculation methodology**

<Not Applicable>

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

<Not Applicable>

### **Please explain**

No other relevant category for EDF apart those ones already reported in the preceding lines

### **Other (downstream)**

### **Evaluation status**

Not relevant, explanation provided

### **Metric tonnes CO2e**

<Not Applicable>

### **Emissions calculation methodology**

<Not Applicable>

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

<Not Applicable>

### **Please explain**

No other relevant category for EDF apart those ones already reported in the preceding lines

## **C6.7**

### **(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?**

Yes

## **C6.7a**

### **(C6.7a) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.**

|  |  |  |
| --- | --- | --- |
|  | **CO2 emissions from biogenic carbon (metric tons CO2)** | **Comment** |
| Row 1 | 2901447.527 | Increase emissions due to the "green" investments done for the increase in biogenic carbon generation |

## **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**

0.00047

### **Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)**

33379486.72

### **Metric denominator**

unit total revenue

### **Metric denominator: Unit total**

71317000000

### **Scope 2 figure used**

Location-based

### **% change from previous year**

11

### **Direction of change**

Decreased

### **Reason for change**

Two simultaneous effects explain this decrease : the revenus have increased and the scope 1 and 2 emissions decreased. Scope 1 (-7%) and scope 2 (-38%). The emissions decreased corresponds to the commitement of EDF to decrease fossil fired power plant emissions, with important shutdown in 2019 (Cottam coal plant in UK and oil fuel power units in France)

### **Intensity figure**

57

### **Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)**

33379486.72

### **Metric denominator**

megawatt hour generated (MWh)

### **Metric denominator: Unit total**

588035.91

### **Scope 2 figure used**

Location-based

### **% change from previous year**

1

### **Direction of change**

Increased

### **Reason for change**

In spite of the decrease of emissions, a slightly increase is observed. It is due to the decrease of generation of -9%

## **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 | 32469926.51 | IPCC Fourth Assessment Report (AR4 - 100 year) |
| CH4 | 323033.704 | IPCC Fourth Assessment Report (AR4 - 100 year) |
| N2O | 159262.618 | IPCC Fourth Assessment Report (AR4 - 100 year) |
| SF6 | 68146.475 | IPCC Fourth Assessment Report (AR4 - 100 year) |
| HFCs | 69874.672 | IPCC Fourth Assessment Report (AR4 - 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)** | **Total gross Scope 1 emissions (metric tons CO2e)** | **Comment** |
| Fugitives | 69874.672 | 282101.087 | 68146.475 | 420122.234 | Slightly increase of fugitives emissions mainly due to SF6 leaks from the maintenance operation of connections in Nuclear PP |
| Combustion (Electric utilities) | 32448992.637 | 0 | 0 | 32448992.637 | The emissions decreased corresponds to the commitement of EDF to decrease fossil fired power plant emissions, with important shutdown in 2019 (Cottam coal plant in UK and oil fuel power units in France) |
| Combustion (Gas utilities) | 0 | 0 | 0 | 0 |  |
| Combustion (Other) | 221129.109 | 0 | 0 | 221129.109 |  |
| Emissions not elsewhere classified | 0 | 0 | 0 | 0 |  |

## **C7.2**

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

|  |  |
| --- | --- |
| **Country/Region** | **Scope 1 emissions (metric tons CO2e)** |
| France | 15736391 |
| United Kingdom of Great Britain and Northern Ireland | 4611145 |
| Italy | 7235304 |
| Other, please specify (Rest of World) | 5507404 |

## **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)** |
| Coal | 3499781 |
| Gas | 22494539 |
| Fuel Oil | 3440249 |
| Other | 3655675 |

## **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** | **Net Scope 1 emissions , metric tons CO2e** | **Comment** |
| Cement production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Chemicals production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Coal production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Electric utility activities | 33090243.979 | <Not Applicable> |  |
| Metals and mining production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (upstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (midstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (downstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Steel production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Transport OEM activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Transport services activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |

## **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 | EDF group is already the leader in Europe in electricity generation from renewables. The increase of renewable energy in EDF mix does not lead to a significant decrease of its scope 1 and 2 emissions, since EDF mix of production is already decarbonized at more than 90%. |
| Other emissions reduction activities | 2790030 | Decreased | 7.9 | One the main lever for EDF group to reduce its GHG direct emissions is by closing (and not simply selling) thermal power stations. The latest plants to be closed in 2019 have been Cottam coal power plant (2000 MWe, UK) and Cordemais 3 heavy fuel oil plant (700 MWe). The CO2 emission of these plants were around 900 kt CO2 in 2018. Their closure in 2019 resulted in an emission reduction of 900 kt CO2.. The decrease of EDF group direct GHG emissions in 2019 resulted mainly from the decline of coal power plants operation driven out of the electric market by renewables and partially balanced by the operation of gas power plant.. This decrease is estimated to represent 1 890 030 tCO2e (scope 1+2), or 5% of the 2018 emission (excluding the plants closed in 2019, ie. 35 269 517 tCO2e). Total decrease : (900 000 + 1 890 030 ) / 35 269 517 x 100 = 7,9% of scope 1&2 emissions compared to 2018. |
| Divestment | 0 | No change | 0 |  |
| Acquisitions | 0 | No change | 0 |  |
| Mergers | 0 | No change | 0 |  |
| Change in output | 0 | No change | 0 |  |
| Change in methodology | 0 | No change | 0 |  |
| Change in boundary | 0 | No change | 0 |  |
| Change in physical operating conditions | 0 | No change | 0 |  |
| Unidentified | 0 | No change | 0 |  |
| Other | 0 | No change | 0 |  |

## **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 45% but less than or equal to 50%

## **C8.2**

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

|  |  |
| --- | --- |
|  | **Indicate whether your organization undertook this energy-related activity in the reporting year** |
| Consumption of fuel (excluding feedstocks) | Yes |
| Consumption of purchased or acquired electricity | Yes |
| Consumption of purchased or acquired heat | Yes |
| Consumption of purchased or acquired steam | Yes |
| Consumption of purchased or acquired cooling | Yes |
| 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 (renewable and non-renewable) MWh** |
| Consumption of fuel (excluding feedstock) | LHV (lower heating value) | 7634074.64 | 147064092.95 | 154698167.58 |
| Consumption of purchased or acquired electricity | <Not Applicable> | 388320.52 | 1265153.29 | 1653473.81 |
| Consumption of purchased or acquired heat | <Not Applicable> | 0 | 27179.93 | 27179.93 |
| Consumption of purchased or acquired steam | <Not Applicable> | 0 | 0 | 0 |
| Consumption of purchased or acquired cooling | <Not Applicable> | 0 | 1411.52 | 1411.52 |
| Consumption of self-generated non-fuel renewable energy | <Not Applicable> | 0 | <Not Applicable> |  |
| Total energy consumption | <Not Applicable> | 8022395.15 | 148357837.69 | 156380232.84 |

## **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 | Yes |
| 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)**

Coal

### **Heating value**

LHV (lower heating value)

### **Total fuel MWh consumed by the organization**

10228054.54

### **MWh fuel consumed for self-generation of electricity**

9817942.07

### **MWh fuel consumed for self-generation of heat**

990.28

### **MWh fuel consumed for self-generation of steam**

<Not Applicable>

### **MWh fuel consumed for self-generation of cooling**

<Not Applicable>

### **MWh fuel consumed for self-cogeneration or self-trigeneration**

409122.18

### **Emission factor**

0.236

### **Unit**

metric tons CO2e per metric ton

### **Emissions factor source**

Base Carbone ADEME - Anthracite France continentale - amont

### **Comment**

### **Fuels (excluding feedstocks)**

Fuel Oil Number 1

### **Heating value**

LHV (lower heating value)

### **Total fuel MWh consumed by the organization**

13604256.57

### **MWh fuel consumed for self-generation of electricity**

13059941.47

### **MWh fuel consumed for self-generation of heat**

144.83

### **MWh fuel consumed for self-generation of steam**

<Not Applicable>

### **MWh fuel consumed for self-generation of cooling**

<Not Applicable>

### **MWh fuel consumed for self-cogeneration or self-trigeneration**

544170.26

### **Emission factor**

0.503

### **Unit**

metric tons CO2e per metric ton

### **Emissions factor source**

Base Carbone ADEME - Fioul lourd commercial France continentale - amont

### **Comment**

Fuel oil number 1 = Heavy fuel oil

### **Fuels (excluding feedstocks)**

Fuel Oil Number 2

### **Heating value**

LHV (lower heating value)

### **Total fuel MWh consumed by the organization**

11470741.45

### **MWh fuel consumed for self-generation of electricity**

11011789.68

### **MWh fuel consumed for self-generation of heat**

122.12

### **MWh fuel consumed for self-generation of steam**

<Not Applicable>

### **MWh fuel consumed for self-generation of cooling**

<Not Applicable>

### **MWh fuel consumed for self-cogeneration or self-trigeneration**

458829.66

### **Emission factor**

0.676

### **Unit**

metric tons CO2e per metric ton

### **Emissions factor source**

Base Carbone ADEME - Fioul domestique France continentale - amont

### **Comment**

Fuel oil number 2 = Domestic fuel oil

### **Fuels (excluding feedstocks)**

Natural Gas

### **Heating value**

LHV (lower heating value)

### **Total fuel MWh consumed by the organization**

110169772.62

### **MWh fuel consumed for self-generation of electricity**

105745661.16

### **MWh fuel consumed for self-generation of heat**

17320.55

### **MWh fuel consumed for self-generation of steam**

<Not Applicable>

### **MWh fuel consumed for self-generation of cooling**

<Not Applicable>

### **MWh fuel consumed for self-cogeneration or self-trigeneration**

4406790.9

### **Emission factor**

0.0397

### **Unit**

metric tons CO2e per MWh

### **Emissions factor source**

Base Carbone ADEME - Gaz naturel Europe - amont

### **Comment**

### **Fuels (excluding feedstocks)**

Other, please specify (Industrial gas)

### **Heating value**

LHV (lower heating value)

### **Total fuel MWh consumed by the organization**

456032.78

### **MWh fuel consumed for self-generation of electricity**

437719.77

### **MWh fuel consumed for self-generation of heat**

71.7

### **MWh fuel consumed for self-generation of steam**

<Not Applicable>

### **MWh fuel consumed for self-generation of cooling**

<Not Applicable>

### **MWh fuel consumed for self-cogeneration or self-trigeneration**

18241.31

### **Emission factor**

0.968

### **Unit**

metric tons CO2 per MWh

### **Emissions factor source**

Base Carbone ADEME - Gaz naturel Europe - amont

### **Comment**

### **Fuels (excluding feedstocks)**

Biogas

### **Heating value**

LHV (lower heating value)

### **Total fuel MWh consumed by the organization**

487207.6

### **MWh fuel consumed for self-generation of electricity**

467719.3

### **MWh fuel consumed for self-generation of heat**

0

### **MWh fuel consumed for self-generation of steam**

<Not Applicable>

### **MWh fuel consumed for self-generation of cooling**

<Not Applicable>

### **MWh fuel consumed for self-cogeneration or self-trigeneration**

19488.3

### **Emission factor**

0.27

### **Unit**

metric tons CO2 per MWh

### **Emissions factor source**

FNADE – help guide pertaining to the statement on annual pollutant emissions in water, air, waste, and soils intended for operators of facilities specialising in non-hazardous waste incineration and the incineration of healthcare waste with a possible risk of infectiousness - Version 2 – October 2006

### **Comment**

Biogenic generation : counts to zero eCO2 emissions in scope 1

### **Fuels (excluding feedstocks)**

Non-Biomass Waste

### **Heating value**

LHV (lower heating value)

### **Total fuel MWh consumed by the organization**

1135235

### **MWh fuel consumed for self-generation of electricity**

1088658.09

### **MWh fuel consumed for self-generation of heat**

1167.51

### **MWh fuel consumed for self-generation of steam**

<Not Applicable>

### **MWh fuel consumed for self-generation of cooling**

<Not Applicable>

### **MWh fuel consumed for self-cogeneration or self-trigeneration**

45409.4

### **Emission factor**

95

### **Unit**

metric tons CO2e per GJ

### **Emissions factor source**

FNADE – help guide pertaining to the statement on annual pollutant emissions in water, air, waste, and soils intended for operators of facilities specialising in non-hazardous waste incineration and the incineration of healthcare waste with a possible risk of infectiousness - Version 2 – October 2006

### **Comment**

### **Fuels (excluding feedstocks)**

Other, please specify (Renewable incinarated waste)

### **Heating value**

LHV (lower heating value)

### **Total fuel MWh consumed by the organization**

1224911.99

### **MWh fuel consumed for self-generation of electricity**

1174655.77

### **MWh fuel consumed for self-generation of heat**

1259.74

### **MWh fuel consumed for self-generation of steam**

<Not Applicable>

### **MWh fuel consumed for self-generation of cooling**

<Not Applicable>

### **MWh fuel consumed for self-cogeneration or self-trigeneration**

48996.48

### **Emission factor**

0.35

### **Unit**

metric tons CO2 per MWh

### **Emissions factor source**

FNADE – help guide pertaining to the statement on annual pollutant emissions in water, air, waste, and soils intended for operators of facilities specialising in non-hazardous waste incineration and the incineration of healthcare waste with a possible risk of infectiousness - Version 2 – October 2006

### **Comment**

Biogenic generation : counts to zero eCO2 emissions in scope 1

### **Fuels (excluding feedstocks)**

Wood Waste

### **Heating value**

LHV (lower heating value)

### **Total fuel MWh consumed by the organization**

5921955.04

### **MWh fuel consumed for self-generation of electricity**

5678986.52

### **MWh fuel consumed for self-generation of heat**

6090.33

### **MWh fuel consumed for self-generation of steam**

<Not Applicable>

### **MWh fuel consumed for self-generation of cooling**

<Not Applicable>

### **MWh fuel consumed for self-cogeneration or self-trigeneration**

236878.2

### **Emission factor**

0.33

### **Unit**

metric tons CO2e per MWh

### **Emissions factor source**

FNADE – help guide pertaining to the statement on annual pollutant emissions in water, air, waste, and soils intended for operators of facilities specialising in non-hazardous waste incineration and the incineration of healthcare waste with a possible risk of infectiousness - Version 2 – October 2006

### **Comment**

Biogenic generation : counts to zero eCO2 emissions in scope 1

## **C-EU8.2d**

### **(C-EU8.2d) 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)**

3739

### **Gross electricity generation (GWh)**

3481.09

### **Net electricity generation (GWh)**

3419.6

### **Absolute scope 1 emissions (metric tons CO2e)**

3499780.725

### **Scope 1 emissions intensity (metric tons CO2e per GWh)**

1005.37

### **Comment**

Total emissions accounts for electricity and heat generation. Instead, generation accounts only for electricity. These consideration penalized the CO2 emissions intensity.

### **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**

### **Oil**

### **Nameplate capacity (MW)**

3988.17

### **Gross electricity generation (GWh)**

4813.96

### **Net electricity generation (GWh)**

4700.34

### **Absolute scope 1 emissions (metric tons CO2e)**

3440249.309

### **Scope 1 emissions intensity (metric tons CO2e per GWh)**

714.64

### **Comment**

Total emissions accounts for electricity and heat generation. Instead, generation accounts only for electricity. These consideration penalized the CO2 emissions intensity

### **Gas**

### **Nameplate capacity (MW)**

12066.41

### **Gross electricity generation (GWh)**

49905.89

### **Net electricity generation (GWh)**

49017.6

### **Absolute scope 1 emissions (metric tons CO2e)**

22494539.223

### **Scope 1 emissions intensity (metric tons CO2e per GWh)**

450.74

### **Comment**

Total emissions accounts for electricity and heat generation. Instead, generation accounts only for electricity. These consideration penalized the CO2 emissions intensity

### **Biomass**

### **Nameplate capacity (MW)**

240.44

### **Gross electricity generation (GWh)**

1493.49

### **Net electricity generation (GWh)**

1293.28

### **Absolute scope 1 emissions (metric tons CO2e)**

2901447.527

### **Scope 1 emissions intensity (metric tons CO2e per GWh)**

1942.73

### **Comment**

CO2 emission is calculated here for the sake of complete the form. They are not considered in the emission reported by the EDF group. Total emissions accounts for electricity and heat generation. Instead, generation accounts only for electricity. These consideration penalized the CO2 emissions intensity.

### **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**

### **Nuclear**

### **Nameplate capacity (MW)**

72952.5

### **Gross electricity generation (GWh)**

455779.7

### **Net electricity generation (GWh)**

437559.88

### **Absolute scope 1 emissions (metric tons CO2e)**

0

### **Scope 1 emissions intensity (metric tons CO2e per GWh)**

0

### **Comment**

### **Fossil-fuel plants fitted with CCS**

### **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**

### **Geothermal**

### **Nameplate capacity (MW)**

1

### **Gross electricity generation (GWh)**

4.19

### **Net electricity generation (GWh)**

4.19

### **Absolute scope 1 emissions (metric tons CO2e)**

0

### **Scope 1 emissions intensity (metric tons CO2e per GWh)**

0

### **Comment**

### **Hydropower**

### **Nameplate capacity (MW)**

21375.32

### **Gross electricity generation (GWh)**

45625.79

### **Net electricity generation (GWh)**

43707.44

### **Absolute scope 1 emissions (metric tons CO2e)**

0

### **Scope 1 emissions intensity (metric tons CO2e per GWh)**

0

### **Comment**

### **Wind**

### **Nameplate capacity (MW)**

6691.11

### **Gross electricity generation (GWh)**

16019.96

### **Net electricity generation (GWh)**

16008.04

### **Absolute scope 1 emissions (metric tons CO2e)**

0

### **Scope 1 emissions intensity (metric tons CO2e per GWh)**

0

### **Comment**

### **Solar**

### **Nameplate capacity (MW)**

921.38

### **Gross electricity generation (GWh)**

972.84

### **Net electricity generation (GWh)**

972.56

### **Absolute scope 1 emissions (metric tons CO2e)**

0

### **Scope 1 emissions intensity (metric tons CO2e per GWh)**

0

### **Comment**

### **Marine**

### **Nameplate capacity (MW)**

240

### **Gross electricity generation (GWh)**

633.85

### **Net electricity generation (GWh)**

531.65

### **Absolute scope 1 emissions (metric tons CO2e)**

0

### **Scope 1 emissions intensity (metric tons CO2e per GWh)**

0

### **Comment**

### **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**

### **Other non-renewable**

### **Nameplate capacity (MW)**

85

### **Gross electricity generation (GWh)**

396.16

### **Net electricity generation (GWh)**

396.07

### **Absolute scope 1 emissions (metric tons CO2e)**

129453.782

### **Scope 1 emissions intensity (metric tons CO2e per GWh)**

326.77

### **Comment**

Total emissions accounts for electricity and heat generation. Instead, generation accounts only for electricity. These consideration penalized the CO2 emissions intensity.

### **Total**

### **Nameplate capacity (MW)**

122300.33

### **Gross electricity generation (GWh)**

579126.91

### **Net electricity generation (GWh)**

557610.65

### **Absolute scope 1 emissions (metric tons CO2e)**

32465470.566

### **Scope 1 emissions intensity (metric tons CO2e per GWh)**

56.06

### **Comment**

Please, take in mind that CO2 emission is calculated here for the sake of complete the form. They are not considered in the emission reported by the EDF group.

## **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**

France

### **Voltage level**

Transmission (high voltage)

### **Annual load (GWh)**

537700

### **Annual energy losses (% of annual load)**

2.22

### **Scope where emissions from energy losses are accounted for**

Scope 2 (location-based)

### **Emissions from energy losses (metric tons CO2e)**

0

### **Length of network (km)**

105942

### **Number of connections**

8360

### **Area covered (km2)**

551695

### **Comment**

Created on 1 July 2000 and a subsidiary since 1 September 2005, the Electricity Transmission Network (RTE) is the owner and operator of the French electricity transmission network, which it operates, maintains and develops. With over 105,000 kilometres of high and extra high voltage circuits and 50 cross-border lines, this is Europe’s largest network. The area covered correspond to France mainland (source "IGN"). EDF holds a participation in RTE, but RTE is accounted for using the equity method. According to GHG protocol, Scope 2 emissions of entities accounted for using the equity method are not reported in the Scope 2 of the Group. See 2019 RTE Electric Report and 2019 EDF Universal Registration document page 48

### **Country/Region**

France

### **Voltage level**

Distribution (low voltage)

### **Annual load (GWh)**

388600

### **Annual energy losses (% of annual load)**

6.11

### **Scope where emissions from energy losses are accounted for**

Scope 2 (location-based)

### **Emissions from energy losses (metric tons CO2e)**

184441

### **Length of network (km)**

1377296

### **Number of connections**

38118946

### **Area covered (km2)**

641184

### **Comment**

EDF distribution activities are operated by 2 entities : Enedis for mainland France and IES for Corsica and French overseas territories. Enedis’ main objective is to operate and develop the public electricity distribution network, guaranteeing its security and safety, and overseeing the balance of electricity flows at all times. Enedis has been in operation since 1 January 2008. Initially called ERDF, it changed its name to Enedis on 1 June 2016. Enedis services around 95% of the population in mainland France. The remaining 5% are provided by Local Distribution Companies (LDCs). In 2019, Enedis distributed electricity to more than 36.9 million customers (points of delivery) and provided for the injection from 441,600 production sites in mainland France, thanks to a network of around 1.38 million kilometres. See our 2019 Universal Registration Document page 50 and Enedis “Chiffres clés 2019”. Island Energy Systems (IES) brings together the electricity systems operated by EDF which are not interconnected, or only slightly connected, to the mainland: Corsica, the overseas departments (except Mayotte) and the overseas territories of Saint-Barthélemy, Saint-Martin and Saint-Pierre-et-Miquelon as well as several Ponant islands (Sein, Ouessant, Molène). See 2019 Universal Registration Document page 54. Please note that electrical losses are inherent to the functioning of the distribution network and mainly result from physical effects which are directly dependent on the amount of electricity delivered. The area covered correspond to France mainland and French overseas territories. The number of connections correspond to the number of points of delivery by Enedis (36,951,446) and IES (1,167,500)

## **C9. Additional metrics**

## **C9.1**

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

### **Description**

Please select

### **Metric value**

### **Metric numerator**

### **Metric denominator (intensity metric only)**

### **% change from previous year**

### **Direction of change**

<Not Applicable>

### **Please explain**

## **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** |
| Nuclear | 7600000000 | 81 | 2020 | Includes all net investments for maintenance of existing assets and development of new projects |
| Hydropower | 400000000 | 4 | 2020 |  |
| Wind | 700000000 | 7 | 2020 | Includes all investments for development of new projects net of disposal of stakes in existing projects |
| Solar | 300000000 | 4 | 2020 | Includes all investments for development of new projects net of disposal of stakes in existing projects |
| Gas | 400000000 | 4 | 2020 |  |

## **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 | Mainly French smart metering programme for residential customers at 35 million sites | 700000000 | 14 | 2020 |
| Energy management services | Includes net investments in a range of energy management and IT/smart customer solutions as well as public lighting, CHP, charging infrastructure, etc. Covers residential, commercial and municipal customers. Detailed split not available on a forward looking basis. | 300000000 | 7 | 2020 |
| Other, please specify (Distribution grids) | Mainly includes net investments in maintenance, modernisation and development of distribution grids. Covers residential commercial and municipal customers. | 4200000000 | 79 | 2020 |

## **C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6**

### **(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?**

|  |  |  |
| --- | --- | --- |
|  | **Investment in low-carbon R&D** | **Comment** |
| Row 1 | Yes |  |

## **C-CO9.6a/C-EU9.6a/C-OG9.6a**

### **(C-CO9.6a/C-EU9.6a/C-OG9.6a) Provide details of your organization's investments in low-carbon R&D for your sector activities over the last three years.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Technology area** | **Stage of development in the reporting year** | **Average % of total R&D investment over the last 3 years** | **R&D investment figure in the reporting year (optional)** | **Comment** |
| Carbon capture and storage/utilisation | Full/commercial-scale demonstration | ≤20% |  | EDF group has been developing skills in CO2 capture for over 10 years, being involved in international research projects as well as building and operating a pilot capture unit on the Le Havre site. This €22 million demonstrator (25% co-funded by French research agency ADEME) has captured 1,900 tonnes of CO2 and enabled the technical and economic feasibility of several processes to be described. EDF group also actively monitors technologies that could result in a breakthrough in this field. See 2019 Universal Registration Document page 138. |
| Energy storage | Small scale commercial deployment | ≤20% |  | EDF’s Storage plan: In a changing energy landscape, EDF is speeding up the development of electricity storage to become the European leader in the sector. A pioneer in the field, the Group was already present in the main areas of application of storage technologies, in particular batteries and Pumped Storage Hydropower Plants (PSHP). EDF aims to develop 10GW of new storage facilities across the world by 2035 in addition to the 5GW already operated by the Group. EDF’s goals cover all electricity storage markets in order to ensure the proper functioning of the balance between the electricity system, private and business customers and regions. The Group aims, particularly, to be the leader in France and Europe in the individual customer market with its range of self-consumption offers integrating batteries. The African continent is also a priority market for the Group, which aims to develop a portfolio of 1.2 million “off-grid” customers (without access to electricity) by 2035. EDF has also invested in a number of Off Grid electrification companies, particularly in Ivory Coast, Ghana, Kenya, and Togo. These companies are operational and at the stage of building up their customer portfolio. The portfolio of storage projects that have been constructed or decided already amounts to 0.5GW. The main aim of the projects developed is to offer services that support the electricity system and mesh with renewable energy production to defer renewable energy dispatch onto the grid. EDF also strengthened its R&D capacity, doubling storage research investment to €70 million over the 2018-2020 period. See 2019 Universal Registration Document page 145 |
| Renewable energy | Applied research and development | ≤20% |  | Solar Plan : In December 2017, the EDF group announced the launch of a “solar plan” for the massive development of an installed capacity of 30 gigawatts in France between 2020 and 2035 reaching 30% of solar development in France. This project represents a total investment of €25 billion and will be promoted with partners. This ambition is aligned with the government’s goal of rebalancing France’s energy mix through the massive expansion of renewable energy capacity across the country. EDF’s Solar Power Plan is also expected to create tens of thousands of jobs in France during the construction period. The EDF Group will leverage all its resources in order to sustain a vigorous rate of expansion: - Identification and use of land from its portfolio of land assets: locations close to nuclear power plants, reconversion of industrial wasteland or dismantled sites, development of floating solar plants on hydroelectric sites; - Use of internal resources; Involvement of industrial and financial partners. Along with the above, EDF will also be working together with the public authorities to identify suitable parcels of land for the construction of new solar facilities. |
| Smart grids | Small scale commercial deployment | ≤20% |  | Together with a major real estate project partner, Dalkia has launched the first dual heating and electricity smart grid in France in the Nanterre Coeur Université eco-district: the smart grid is able to pool five sources of renewable and recovered energy (EnR&R) to supply homes, offices, and shops in the district with heating, hot water, and air conditioning. With at least 60% EnR&R used, this smart grid allows 100% self-consumption of the electricity generated, which will be adjusted in real time. Dalkia is one of EDF's subsidiaries. The EDF group has held a 99.94% equity interest since July 2014 in Dalkia, |
| Smart meters | Large scale commercial deployment | ≤20% |  | LINKY : The adaptation of the electricity grid to the new needs of French society is a major strategic challenge. To achieve this, Enedis continued the industrial deployment of the Linky system in 2019, based on a new generation of meters, called “smart meters” that can receive orders and send data without the physical involvement of a technician. This system represents the first stage of smart grid implementation or “Smart networks”. It involves equipping the distribution network with connected objects, including the Linky meters, in order to integrate renewable energy electricity generation, which has undergone a significant expansion, further ensuring the balance between generation and consumption at all points of the electricity grid, and enabling suppliers to offer new energy solutions to their customers. In 2019, the latter accelerated the implementation of new contractual offers made possible by the large-scale advent of Linky meters (differentiated and lower tariffs, for example for the use of “green” electricity generated by solar panels). With Linky, electricity consumption curves per day, per week or per month are available to customers. This facilitates the management of energy consumption and is a concrete lever that meets the expectations of the public authorities responsible for energy transition. As of the end of 2019, two out of three French homes were equipped with a Linky meter. At the end of 2019, the cumulative investment (2014-2019) already carried out amounted to €2,733 million, for 23.4 million Linky meters installed (including those used in the experiment), of which 21.6 million open to all services. As of the end of 2019, the percentage of Linky meters installed was 62.3%, compared to a target determined by the CRE for the end of 2019 of 61.4% |
| Other, please specify (Electric mobility Plan ) | Large scale commercial deployment | ≤20% |  | EDF group launched the Electric Mobility Plan in October 2018, thereby announcing its aim of becoming the leading energy provider in electric mobility by 2022 on its four major European markets. The Electric Mobility Plan focuses on three practical goals: becoming the leading supplier of electricity for electric vehicles by 2022, with the aim of powering 600,000 vehicles (a 30% market share); becoming the leading operator of charging stations, with the aim of rolling out 75,000 charging stations and providing its customers in Europe with access to 250,000 charging stations via interoperability by 2022, through its subsidiary Izivia; becoming the European leader in smart charging, with the aim of operating 4,000 smart charging stations by 2020. |

## **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 emissions, and attach the relevant statements.**

### **Verification or assurance cycle in place**

Annual process

### **Status in the current reporting year**

Complete

### **Type of verification or assurance**

Reasonable assurance

### **Attach the statement**

[edfgroup\_bilan-ges\_groupe\_2019\_va.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/kQ8KKIZN70ijYduzrGZ6zQ/edfgroupbilangesgroupe2019va.pdf)

[edfgroup\_bilan-ges\_groupe-edf\_2019\_vf.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/Rq0-7DNdWkKYNMWlRk6YpQ/edfgroupbilangesgroupeedf2019vf.pdf)

[edf-urd-annual-financial-report-2019-en.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/z6QLT1toSU2D2_QrhqmoBA/edfurdannualfinancialreport2019en.pdf)

### **Page/ section reference**

For the level of assurance, please see 2019 EDF Group Universal Registration document page 202: "EDF group direct greenhouse gas emissions (scope 1) (MtCO2eq)" "reasonable" For the proportion of reported emissions verified please see "edfgroup\_bilan-ges\_groupe\_2019\_va.pdf" attached, section Introduction, page 2: "EDF goes beyond the legal requirements and requests a verification by a third party ofmore than 70% of its emissions –of which 98% Scope 1, 73% Scope 2 and 66% Scope 3"

### **Relevant standard**

ISAE 3410

### **Proportion of reported emissions verified (%)**

98

## **C10.1b**

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

### **Scope 2 approach**

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**

[edfgroup\_bilan-ges\_groupe\_2019\_va.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/kQ8KKIZN70ijYduzrGZ6zQ/edfgroupbilangesgroupe2019va.pdf)

[edfgroup\_bilan-ges\_groupe-edf\_2019\_vf.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/Rq0-7DNdWkKYNMWlRk6YpQ/edfgroupbilangesgroupeedf2019vf.pdf)

### **Page/ section reference**

For the proportion of reported emissions verified please see "edfgroup\_bilan-ges\_groupe\_2019\_va.pdf" attached, section Introduction, page 2: "EDF goes beyond the legal requirements and requests a verification by a third party of more than 70% of its emissions –of which 98% Scope 1,73% Scope 2 and 66% Scope 3". This document is also available on our website: https://www.edf.fr/sites/default/files/contrib/groupe-edf/engagements/rapports-et-indicateurs/2020/edfgroup\_bilan-ges\_groupe\_2019\_va.pdf

### **Relevant standard**

ISAE 3410

### **Proportion of reported emissions verified (%)**

73

## **C10.1c**

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

### **Scope 3 category**

Scope 3: Use of sold products

### **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**

[edfgroup\_bilan-ges\_groupe\_2019\_va.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/kQ8KKIZN70ijYduzrGZ6zQ/edfgroupbilangesgroupe2019va.pdf)

[edfgroup\_bilan-ges\_groupe-edf\_2019\_vf.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/Rq0-7DNdWkKYNMWlRk6YpQ/edfgroupbilangesgroupeedf2019vf.pdf)

### **Page/section reference**

For the proportion of reported emissions verified please see "edfgroup\_bilan-ges\_groupe\_2019\_va.pdf" attached, section Introduction, page 2: "EDF goes beyond the legal requirements and requests a verification by a third party ofmore than 70% of its emissions –of which 98% Scope 1, 73% Scope 2 and 66% Scope 3". This document is also available on our website: https://www.edf.fr/sites/default/files/contrib/groupe-edf/engagements/rapports-et-indicateurs/2020/edfgroup\_bilan-ges\_groupe\_2019\_va.pdf

### **Relevant standard**

ISAE 3410

### **Proportion of reported emissions verified (%)**

66

### **Scope 3 category**

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)

### **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**

[edfgroup\_bilan-ges\_groupe\_2019\_va.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/kQ8KKIZN70ijYduzrGZ6zQ/edfgroupbilangesgroupe2019va.pdf)

[edfgroup\_bilan-ges\_groupe-edf\_2019\_vf.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/Rq0-7DNdWkKYNMWlRk6YpQ/edfgroupbilangesgroupeedf2019vf.pdf)

### **Page/section reference**

For the proportion of reported emissions verified please see "edfgroup\_bilan-ges\_groupe\_2019\_va.pdf" attached, section Introduction, page 2: "EDF goes beyond the legal requirements and requests a verification by a third party ofmore than 70% of its emissions –of which 98% Scope 1, 73% Scope 2 and 66% Scope 3". This document is also available on our website: https://www.edf.fr/sites/default/files/contrib/groupe-edf/engagements/rapports-et-indicateurs/2020/edfgroup\_bilan-ges\_groupe\_2019\_va.pdf

### **Relevant standard**

ISAE 3410

### **Proportion of reported emissions verified (%)**

66

### **Scope 3 category**

Scope 3: Waste generated in operations

### **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**

[edfgroup\_bilan-ges\_groupe\_2019\_va.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/kQ8KKIZN70ijYduzrGZ6zQ/edfgroupbilangesgroupe2019va.pdf)

[edfgroup\_bilan-ges\_groupe-edf\_2019\_vf.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/Rq0-7DNdWkKYNMWlRk6YpQ/edfgroupbilangesgroupeedf2019vf.pdf)

### **Page/section reference**

For the proportion of reported emissions verified please see "edfgroup\_bilan-ges\_groupe\_2019\_va.pdf" attached, section Introduction, page 2: "EDF goes beyond the legal requirements and requests a verification by a third party ofmore than 70% of its emissions –of which 98% Scope 1, 73% Scope 2 and 66% Scope 3". This document is also available on our website: https://www.edf.fr/sites/default/files/contrib/groupe-edf/engagements/rapports-et-indicateurs/2020/edfgroup\_bilan-ges\_groupe\_2019\_va.pdf

### **Relevant standard**

ISAE 3410

### **Proportion of reported emissions verified (%)**

66

## **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** |
| C4. Targets and performance | Change in Scope 1 emissions against a base year (not target related) | ISAE 3000 | We report the net installed renewable electrical generation capacities at Group level. It is one of the Environmental key performance indicators and outcomes that is verified by our Statutory Auditors, appointed as independent third party. See 2019 Universal Registration document attached page 202. This key non-financial performance indicator refers to key stake no. 2 “Renewal, extension and performance of the energy mix aimed at decarbonisation” described in our materiality matrix. EDF group is actively pursuing its development in renewable energies with the objective of doubling the installed capacity of the Group’s ENR and hydropower fleet from 28GW in 2014 to 50GW in 2030.  [edf-urd-annual-financial-report-2019-en.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/z6QLT1toSU2D2_QrhqmoBA/edfurdannualfinancialreport2019en.pdf) |
| C5. Emissions performance | Emissions reduction activities | ISAE 3000 | We report the EDF group’s Electric Vehicles rate in the fleet of light vehicles (%). It is one of the Environmental key performance indicators and outcomes that is verified by our Statutory Auditors, appointed as independent third party. See 2019 Universal Registration document attached page 202. This key non-financial performance indicator refers to key stake no. 5 ”Innovation, sustainable cities, and diversification of energy production methods” described in our materiality matrix. The EDF group was the first French Group to sign the “EV100” undertaking, which aims at having a fleet of 100% electric light vehicles by 2030. Of its fleet of light vehicles, currently more than 40,000 vehicles worldwide (mainly in Europe), more than 8% (over 3,500 Electric Vehicles, 800 more vehicles than by end 2018) is already electric. This Group Project includes both the vehicles and charging infrastructure (more than 1,500 sites to be equipped across the world by 2030).  [edf-urd-annual-financial-report-2019-en.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/z6QLT1toSU2D2_QrhqmoBA/edfurdannualfinancialreport2019en.pdf) |
| C5. Emissions performance | Year on year emissions intensity figure | ISAE 3000 | We report every year the carbon intensity at group level: CO2 emissions due to heat and electricity generation (gCO2/kWh). It is one of the Environmental key performance indicators and outcomes that is verified by our Statutory Auditors, appointed as independent third party. See 2019 Universal Registration document attached page 202. This key non-financial performance indicator refers to key stake no. 2 “Renewal, extension and performance of the energy mix aimed at decarbonisation” described in our materiality matrix.  [edf-urd-annual-financial-report-2019-en.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/z6QLT1toSU2D2_QrhqmoBA/edfurdannualfinancialreport2019en.pdf) |

## **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 schemes you are regulated by.**

### **EU ETS**

### **% of Scope 1 emissions covered by the ETS**

80

### **% of Scope 2 emissions covered by the ETS**

0

### **Period start date**

January 1 2019

### **Period end date**

December 31 2019

### **Allowances allocated**

573000

### **Allowances purchased**

17292000

### **Verified Scope 1 emissions in metric tons CO2e**

21788000

### **Verified Scope 2 emissions in metric tons CO2e**

0

### **Details of ownership**

Facilities we own and operate

### **Comment**

## **C11.1d**

### **(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?**

EDF has to ensure that it holds a sufficient volume of permits to cover GHG emissions of its installations subject to the EU ETS, on an annual basis as well as with a medium term vision of its needs and at the best possible economic conditions.

EDF manages compliance under the EU ETS as part of a risk management strategy applied to its assets portfolio. Risk hedging is based on:

- Expected CO2 emissions from installations covered by the scheme,

- CO2 emission reduction plans under the EDF Group commitment,

- the markets for EU ETS compliance instruments (allowances and credits) and their evolutions.

For that purpose, EDF Trading is the entity in charge of trading on the wholesale markets for CO2 emission permits on behalf of the EDF Group. Furthermore, EDF Trading is the exclusive interface for EDF and EDF Energy with the wholesale market for their hedging operations, and therefore, is responsible for the execution of their CO2 requirements.

EDF Trading is active across the carbon, biomass, green energy and weather derivatives markets. It is a prominent participant in the trading of CER (Certified Emission Reduction) and ERU (Emission Reduction Units) credits and manages a large portfolio of CDM (Clean Development Mechanism) projects.

## **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**

Drive low-carbon investment

Identify and seize low-carbon opportunities

Other, please specify (Value tests of existing assets)

### **GHG Scope**

Scope 1

### **Application**

As described along the response, carbon prices apply to investment decisions in new generation capacities and strategic review through value tests of existing assets in geographical areas where a public climate policy has been set up through taxes implementation or cap and trade systems like in the EU with EU ETS. Those prices mainly cover only direct CO2 emissions from power generation at this stage. Moreover, emissions from thermal assets to which the internal carbon pricing mechanism does not apply are also taken into account in the decision-making process so as to be in line with the EDF group’s emissions reduction targets currently being reviewed by the SBTi.

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

55

### **Variance of price(s) used**

As explained below (columns 6 and 7), for investments in areas regulated by the EU ETS, EDF considers different long term energy scenarios. Among other hypothesis, these scenarios incorporate contrasting hypotheses concerning EU-ETS price trajectories in the medium-long term (till 2050). The expected carbon price range considered to date in the scenarios is from 24 to 100 €/t CO2 in 2040. The “actual price” indicated above (column 4) corresponds to the median of this price range in 2040. Yet, what is used in the decision-making process is actually the whole set of price trajectories over the medium-long term associated with the different scenarios.

### **Type of internal carbon price**

Other, please specify (Expected real price)

### **Impact & implication**

97% of EDF Group’s net investments contribute to a low carbon energy transition and most of its activities are carbon-free which implies a very low Group’s carbon intensity at global level: 55 g/kWh of direct emissions to be compared with the power sector world average at 485 g/kWh. Besides, the Group is committed to reach carbon neutrality by 2050 and sets itself an emission reduction trajectory to achieve this. So the valuation of the Group assets is positively correlated to the emergence or the rise in external carbon prices and to strengthening policies to fight climate change in general, which is a rather unique position within the utility sector. For long term investment decisions, CO2 prices form a core part of EDF’s analysis and decision making process. EDF has chosen to use expected real CO2 price as internal carbon price for investment decisions in new generation capacities and strategic review through value tests of existing assets in geographical areas where a public climate policy has been set up through taxes implementation or cap and trade systems like in the EU with EU ETS. For investments in areas regulated by the EU ETS, which account for the major part of its activities, the Group considers different long term energy scenarios whose main drivers are GDP growth, commodity and technology prices, climate and energy regulation. Those scenarios incorporate contrasting assumptions concerning EU-ETS price trajectories in the medium-long term coming from a process involving models and experts input. The expected carbon price range considered to date in the scenarios is for instance from 24 to 100 €/tCO2 in 2040. All investment decisions in generation assets are tested on the basis of these scenarios and their CO2 price trajectories, so that investment decisions not robust enough to those tests will be rejected. For investments in non-regulated areas, carbon emissions are taken into account in the choice of technologies. EDF looks carefully at the technologies used in each country and aims to choose the best available technologies that are in line with future decarbonisation pathways. As an outcome of this approach, EDF has since 2015 drastically modified its investment portfolio and closed or disinvested in high carbon assets such as coal plants in France, UK and Poland. It has committed to stop producing electricity out of coal anywhere by 2030

## **C12. Engagement**

## **C12.1**

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

Yes, our suppliers

Yes, our customers

Yes, other partners in the value chain

## **C12.1a**

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

### **Type of engagement**

Engagement & incentivization (changing supplier behavior)

### **Details of engagement**

Run an engagement campaign to educate suppliers about climate change

### **% of suppliers by number**

75

### **% total procurement spend (direct and indirect)**

25

### **% of supplier-related Scope 3 emissions as reported in C6.5**

50

### **Rationale for the coverage of your engagement**

The “Sustainable Development Charter between EDF and its suppliers” forms one of the contract documents making up each contract and is binding on all suppliers and their own value chain. There’s a specific clause relating to Sustainable Development in the General and Particular Terms and Conditions of Purchases of the Group (clause n°11). While signing these terms, every supplier commits to respect and make his own suppliers respect social and environmental laws and principles listed in the Charter. This clause also enables EDF to submit their suppliers to CSR audits and evaluations during the contract period. Audit reports are always shared with the supplier. This reports contains recommendations to help the supplier changing his behavior, and emphasizes best practices as well. Following a non-satisfying audit, an action plan is requested. A follow-up audit is then programmed. See the extract of the charter in comment. Questions concerning GHG or air emissions are systematically included. The coverage figures indicated are conservative estimates, based on the fact that this approach is implemented by the Group Purchasing Department which manages EDF Group’s purchases, excluding fuel purchases and a portion of tertiary, IT and telecommunications purchases for certain subsidiaries. Number of suppliers : fuel purchases are not covered by this approach, but these represent only a very small number of suppliers. Some suppliers for tertiary, IT and telecommunications by affiliates are not covered either by the Group approach but may be covered by similar approaches developed by affiliates. So 75% is a conservative estimate. Procurement Spent : Fuel purchases represent about half of Group purchases in value, and the Group purchasing Department covers more than half of the non fuel purchases. Therefore the approach covers more than 25% of group purchases in value. % of supplier-related Scope 3 emissions as reported in C6.5 : nuclear fuel procurement is part of the Scope 3 emissions reported in C6.5 but represents a limited amount. After taking in consideration other purchases not covered by the Group’s Purchasing Department, it is possible to say that the approach covers more than 50% of Scope 3 emissions as stated in C6.5.

### **Impact of engagement, including measures of success**

Amongst nearly 200 questions of the CSR audits, about 20 questions focus on environmental, social and ethical commitments; about 20 questions are specific to environmental operational issues during manufacturing phase and on site: measurement and mitigation of environmental impacts, waste management, resources preservation…the completion of the carbon footprint assessment is always asked. In 2019, half of the audited suppliers had started or completed their carbon footprint evaluation. The CSR assessments were “satisfactory” or “acceptable with comments” in more than 80% of all audits. Following each non satisfying audit, an action plan is required to the supplier. A follow up audit shall be programmed in the following year to ensure the action plan has been adopted.

### **Comment**

Extract of the charter: “EDF and the supplier work together in a joint approach to identify the critical points in the supply chain in respect of the principles supported, to define the practical action points for improvement necessary to manage the related risks, and monitor them, with particular attention paid to the following points: Control of environmental impacts: resource conservation (water, energy, raw materials, development of new (substitute) technologies), reduction of impacts on biodiversity, reduction of greenhouse gas emissions, reduction and recovery of waste, and environmentally-friendly design. […]“. Every year, one part of our suppliers is being assessed (audits or CSR evaluations), allowing EDF Purchasing Department to verify compliance to their contractual commitments including the Charter.

## **C12.1b**

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

### **Type of engagement**

Education/information sharing

### **Details of engagement**

Run an engagement campaign to educate customers about the climate change impacts of (using) your products, goods, and/or services

### **% of customers by number**

100

### **% of customer - related Scope 3 emissions as reported in C6.5**

100

### **Portfolio coverage (total or outstanding)**

<Not Applicable>

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

EDF targets all customers but focusses particularly on residential customers. EDF supplies 30 million residential customers, and this group is the one that requires most education about energy use and climate change. EDF develops innovative digital offerings directed at this Group of customers, helping them manage their energy use and supporting them in their energy savings projects.

### **Impact of engagement, including measures of success**

There is an important variety of dedicated offers and their impact is not consolidated at Group level. Among them, we can mention in particular the impact of the E.quilibre Programme. This programme offers EDF customers in France a digital energy use tracking solution, accessible via their customer space on the website and the EDF&Moi app. Customers can monitor their energy use in kWh and in euros, identify their main sources of energy and/or gas use, compare their use to that of similar households, and benefit from personalised advice about making energy savings, for instance by setting an annual energy use goal accompanied by email or text message alerts if they go off target. For customers equipped with a Linky (2) smart meter who have given their consent, energy use data is available (in euros and in kWh) in daily or 30-minute increments. Customers who consult this energy use tracking solution more than two or three times a month achieve savings of up to 12% on their bills: An in-depth analysis of the impact of E.quilibre on the electricity consumption of customers shows the following concrete results : - Customers on a dual Day/Night tariff who are users of E.quilibre save on average 463 kWh/year. This applies to 2 088 000 customers. - Customers on a base tariff who are users of E.quilibre save on average 172 kWh/year. This applies to 1 398 000 customers. Customers equipped with a Linky smart meter who have given their consent also have access to “Fil d’Actu”, a dedicated news feed, via the EDF&Moi app. This timeline gives them daily news to help them understand their energy use and make energy savings, covering topics such as the impact of weather, similar households, the proportion of energy used in heating, appropriate environmentally-friendly practices, and so on. Over 47 million visits were recorded in 2019.

## **C12.1d**

### **(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.**

In 2019, EDF launched “Combating CO2, it starts with us”, which encourages employees to manage their energy consumption and reduce their carbon footprint.This programme is part of the CAP 2030 strategy, and meets an expectation highlighted by staff in “Let’s Talk Energy”. Currently targeting all Group employees in France, it promotes environmentally-friendly practices and provides access to preferential terms for the low-carbon sales offerings available from EDF and its subsidiaries. For electric mobility, they have access to a framework contract with motor vehicle suppliers selected for the “EV100” commitment on the EDF vehicle fleet as well as virtuous recharging solutions provided by EDF subsidiaries. Indeed, the EDF group was the first French Group to sign the “EV100” undertaking, which aims at having a fleet of 100% electric light vehicles by 2030. Of its fleet of light vehicles, currently more than 40,000 vehicles worldwide (mainly in Europe), more than 8% (over 3,500 Electric Vehicles, 800 more vehicles than by end 2018) is already electric. This Group Project includes both the vehicles and charging infrastructure (more than 1,500 sites to be equipped across the world by 2030).

These projects are carried out with various partners, including Nissan: EDF signed a cooperation agreement aimed to accelerate the rollout of electric mobility. Another example of a partner is Nuvve (a California start-up specialising in V2G), with whom EDF has created a joint venture called DREEV, to develop smart charging solutions.

## **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** |
| Climate finance | Support | EDF has engaged directly and through European associations with the European Union at different levels, through participation to public consultations, to Technical Experts Groups organized by European bodies, etc. EDF will continue to engage with the EC in 2020 and 2021 in the preparation of delegated acts. | EDF believes that the financial sector should consider the fight against climate change its first priority in its definition of sustainable finance. Moreover, in light of the urgency of addressing climate change, the financial sector should increase financial flows to enable the immediate deployment of the best available solutions for decarbonizing the economy. EDF believes as well that in order to redirect financial flows to sustainable activities, it is essential to promote long-term investment, for which i) a strong and predictable CO2 price and ii) long-term, stable accounting framework (as opposed to IFRS 9), are key drivers. EDF, directly and/or through trade associations or organizations of which it is a member, has been and will continue to be very active within the debate preparing the future regulation related to climate finance issues and will express positions (support, exclusions…) on the European legislation which will be adopted. |
| Other, please specify (Climate Law and 2030 Target Plan ) | Support | Regarding the Climate law, EDF participated in 2019/2020 to European consultations on the roadmap and on the EC proposal. EDF will continue to engage with the EP and the Council during the whole legislative process. | EDF believes that a carbon neutrality target for 2050 should be legally binding at EU level. EDF believes that at least -55% for the 2030 target should be set and believes that decarbonisation should be achieved mainly with carbon free electricity and strong/predicable carbon price, including a carbon price floor. EDF believes that the ETS must be further strengthened in coordination with the MSR review to increase the 2030 GHG emission reduction target. All sectors should be subject to a meaningful carbon pricing either directly or indirectly. In case of “overlapping” policies with the EU ETS, the impacts on the EU ETS should be compensated for to avoid depressed prices. EDF, directly and/or through trade associations or organizations of which it is a member, has been and will continue to be very active within the debate preparing the future regulation related to revised 2030 and beyond climate and energy targets and will express positions (support, exclusions…) on the European legislation which will be adopted. |
| Cap and trade | Support | EDF has been very active within the EU debate preparing the 2030 climate target climate/energy package for 2030 and the reform of the EU ETS. Over the last years, the EDF group contributed to various EU consultations and engaged directly in the stakeholder’s debate on the backloading and the structural reform which led to the adoption of the Market Stability Reserve and the reform of the EU ETS for the period 2021-2030. EDF will continue to closely monitor this dossier, in particular the results of the EC impact assessment regarding the 2030 target and the associated legislative proposals expected in 2020 and 2021. Moreover EDF has always been supportive of the French proposal to introduce a soft price corridor in the reform of EU ETS (with also the proposal to start at domestic level with a price floor similar to the one introduced some years ago in UK to build a progressive coalition of MS) in order to enhance predictability and confidence in the system to spur low carbon long term investment. EDF continues to support such an evolution of the EU ETS in the future. Other entities of the EDF Group have also been active on this topic, working with their national constituencies. In this regard, we quote the example of EDF Energy which welcomed the UK Government’s introduction of a carbon price floor from April 2013. | EDF believes the EU ETS should remain the cornerstone of the EU’s climate policy and reaffirms its commitment to a strong EU ETS for delivering cost-effective GHG reductions. In the context of a probably increased GHG emissions reduction target for 2030 and a 2050 climate neutrality target, the EU ETS must be further strengthened to provide a meaningful and predictable carbon price to spur sustainable investments in carbon neutral technologies. The following measures were identified in this regard: • The EU ETS cap should be rebased to a lower starting point and/or the Linear Reduction Factor should be increased to achieve a higher target • A minimum carbon price should be introduced in the EU ETS to enhance predictability and support low carbon capital-intensive investments needed for the energy transition. • As regards the forthcoming Market Stability Reserve (MSR) review in 2021, the update of design parameters must be carried out in close coordination with other EU ETS developments with the ultimate goal of maintaining market stability and meaningful EU ETS prices. • The interactions between EU-ETS and other European and national “overlapping” policies which also contribute to GHG reductions should be carefully addressed to avoid undermining the EU ETS price signal. All sectors outside the EU-ETS will have to tackle their emissions to reach climate neutrality and it is of utmost importance to have a carbon pricing consistent with climate ambition. The specificities of each sector –including for example respective abatement costs and price elasticity – should be carefully analysed to select the most effective carbon pricing instrument. EDF supports a scope extension of the EU ETS to include at least the maritime sector. EDF, directly and/or through trade associations or organizations of which it is a member, has been and will continue to be very active within the debate preparing the future regulation related to EU-ETS issues and will express positions (support, exclusions…) on the European legislation which will be adopted. |
| Other, please specify (Hydrogen) | Support | EDF, through its fully-owned subsidiary Hynamics, is a Member of Hydrogen Europe, and takes actively part to its Advocacy Task Force. The company is answering consultations and engaging into dialogue with public and private stakeholders on the EU hydrogen landscape and related objectives since 2019. The EU H2 strategy is expected to be launched by the Commission during summer 2020.. | While electrification remains a highly efficient decarbonisation pathway, there is a need for decarbonised gases for specific hard to abate emissions in sectors such as e.g. cement, refinery or steel industries as well as long distance heavy duty transport. The legal framework shall be based on a CO2 criteria and be supportive to low carbon solutions. In addition, hydrogen production facilities must be integrated into the overall power infrastructure, connected to the power grid, to effectively implement smart sector integration and reveal mutual benefits. Both production and use of clean hydrogen must be supported to kick-start the market. Finally, decarbonising the economy can surely be achieved while reinforcing EU energy independence, instead of pushing foreign imports forward. EDF, directly and/or through trade associations or organizations of which it is a member, has been and will continue to be very active within the debate preparing the future regulation related to hydrogen issues and will express positions (support, exclusions…) on the European legislation which will be adopted. |

## **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

### **Is your position on climate change consistent with theirs?**

Consistent

### **Please explain the trade association’s position**

EDF participates actively to the works of Eurelectric as a representative of the French Union of Electricity, in particular as regard the 2030 Climate and Energy Package including GHG emissions, renewable and energy efficiency policies and more recently the EU carbon neutrality objective. EDF generally supports the position developed by Eurelectric regarding these topics and the issue of the coherence between the different policies: EU ETS Directive, Renewable Energy Directive, Energy Efficiency Directive, EU Heating and Cooling Strategy, Regulation on the Governance of the Energy Union, etc. In these different fields, EDF participated within Eurelectric to the response to Consultations launched by the European Commission and to position papers, as well as to public events organized by the Association. In particular, regarding the EU ETS reform, the substance of the position is clear. The European electricity sector is committed to the Paris Agreement. It has announced its pledge to deliver carbon-neutral electricity well before 2050 and advocates that this decarbonized electricity should be the key energy carrier to support a deep decarbonisation of the whole European economy. In this context, Eurelectric called for a reform that would allow the emergence of an incentive carbon price signal and the economic efficiency of the decarbonisation of the power sector. In this regard, some measures proposed in the Clean Energy Package, if not addressed properly, were likely to have a negative impact on the functioning of the ETS. Eurelectric therefore drew attention to the need to not only strengthen the ETS, but also to protect the ETS system. Eurelectric called and continue to call for consistency between different policies and measures in order to avoid negative interactions of the various targets and instruments under the EU’s 2030 Climate & Energy Framework. Under the current mandate, the European Commission suggested the EU should set a net zero emission target by 2050. This objective is currently being discussed with the co-legislators. EDF as well as Eurelectric are supporting it. As a consequence of a more ambitious target by 2050, the 2030 target is expected to be increased as well. The European Commission suggested to raise it to a level between 50 and 55%. EDF is supporting a target of at least 55%. Eurelectric is currently discussing its own position.

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

EDF participates actively to the relevant Eurelectric (the Association of the Electricity Industry in Europe) task forces as member or chair and plays an active role in developing some common positions or writing some Eurelectric’s position papers and reports on various components of the European Climate and Energy policy. The Chairman of the Generation & Environment Committee, in charge of decarbonisation, and as such member of the Board, is a representative of UFE from EDF. EDF, with the UFE and Eurelectric, also contributes to various studies launched at the European level on some of these components.

## **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.**

EDF is a strong advocate for all initiatives in favour of the fight against climate change.

These include:

- The EV100 campaign by the Climate Group

- “We are still in”, the Bloomberg initiative calling for American actors to stay in the Paris Agreement

- WBCSD LCTPI solutions

- CLG Europe (linked to Prince Charles Foundation and University of Cambridge) initiatives in favour of climate, namely the Carbon Neutrality Campaign, and a campaign in favour of an increase in the EU GHG emissions reduction target to 55% for 2030

- Nuclear Innovation: Clean Energy Initiative

- TCFD recommendations

- Various initiatives from IETA, CEPS, CERRE, ERCST

## **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?**

EDF’s strategy is fully in line with the Paris accord. EDF’s vision of its future mix is based on nuclear and renewables, with strong ambitions in renewables and storage, and in decarbonised hydrogen by electrolysis. The Executive Committee therefore includes in its decision making trade-offs the alignment of its investments with the Paris Accord. EDF’s ambition is to roll out TCFD recommendations and therefore is fully conscious of the need for climate related risks to be assessed at all levels with the strong support of executive level sponsors. The Strategy Department is in charge of reviewing investment projects and the sustainability is systematically taken into account for future developments. Given EDF’s aim of carbon neutrality by 2050, all future investments are analyzed in light of their contribution to the Group’s emissions reduction. Furthermore, in May 2020, carbon neutrality has been defined as the company’s “raison d’être” and embedded in its Articles of Association.

Overall the EDF Group is following closely the European and international policy developments related to climate change issues, through continuous monitoring, but more importantly through direct involvement in the discussions on future policies (by means of stakeholder consultations). EDF is a strong advocate of a price for CO2 in France and Europe. EDF is in contact and discusses with National administrations through the EDF Public Affairs Division, with the European institutions through the EDF office in Brussels and through professional organizations. Establishment of positions, when EDF decides to express itself directly, are then confronted within a debate with the relevant actors and entities of the Group in order to ensure consistency with the overall strategy. The Steering Committee of Relations with public Authorities (COPIL RPP), composed of several members of the executive Committee, is a corporate level committee in charge of consistency and arbitrations on the group's positions at national or European level. It is supported by an advisory committee. This centralized process allows EDF to have a consistent position throughout the Group. At international level we are following directly the climate negotiation development and depict official bodies relevant to activities that matter for our sector (Technology Mechanism, GCF, as examples). Through professional organizations, like SDSN (Sustainable Development Solutions Network), WBCSD and/or ICC, etc., we work collectively so that the political debate is taking stock of the business realities of our sector. The international positioning and its consistency with the positions taken at national and EU levels is managed at the Executive Committee level.

## **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, incorporating the TCFD recommendations

### **Status**

Complete

### **Attach the document**

[edf-urd-annual-financial-report-2019-en.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/z6QLT1toSU2D2_QrhqmoBA/edfurdannualfinancialreport2019en.pdf)

### **Page/Section reference**

Please see our 2019 Universal Registration Document attached, page 195, section 3.6.4 "TCFD recommendations"

### **Content elements**

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

### **Comment**

## **C15. 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.**

## **C15.1**

### **(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.**

|  |  |  |
| --- | --- | --- |
|  | **Job title** | **Corresponding job category** |
| Row 1 | Group Senior Executive Vice-President, Innovation, Corporate Responsibility and Strategy | Board/Executive board |