



**GHG emissions report**  
**Opdenenergy**

2021





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# 1. Introduction

**Opdenenergy** is an **Independent Power Producer (IPP)**, focused on the production and management of solar photovoltaic and onshore wind energy assets in all its phases: **development, financing, construction, operation and maintenance.**

With more **than 15 years of experience**, we have a wide portfolio of renewable technology projects with an international presence and in continuous expansion, sustainability being a fundamental part of the strategic pillars of the Organization.

Currently, the company is active in eight geographies and has offices in **Spain, Italy, United Kingdom, Mexico, Chile and United States.**

***“To satisfy the energy needs of the market with competitive and reliable solutions, based on the use of renewable sources”***



# Promoting the low-carbon economy



Among the **strategic pillars** that define the Organization, the development of **renewable energy and sustainability stands out to promote a low-carbon economy.**

In order to improve its performance, Opdenenergy includes among the objectives of its Sustainability Master Plan the contribution to the decarbonization of the economy. This objective frames the evaluation of the inventory of direct and indirect emissions, the calculation of their intensity or the establishment of improvements in the management of the Carbon Footprint.

This report shows the results of calculation and management of Opdenenergy's Organizational Carbon Footprint, including the Greenhouse Gas (GHG) emissions inventory of **scopes 1, 2** and most relevant categories of **scope 3.**

## 2. General considerations

The GHG emissions report has been prepared in-house by Opdenenergy's sustainability functions.

In general, the following considerations have been taken into account:

- The guidelines established in the documents are followed: Requirements and guidelines for accounting and reporting of the GHG Protocol ("Corporate Accounting and Reporting Standard", "Scope 2 Guidance" and "Corporate Value Chain -Scope 3- Accounting and Reporting Standard"), Sixth ipcc assessment report (AR6).
- It is based on information collected for the period between **1<sup>st</sup> January 2021 and 31<sup>st</sup> December 2021**. In addition, information from previous years is included to analyze the evolution.
- The scope of application is all the activities of the OPDE Group on a global level, applying a **consolidation by financial control approach**.
- GHG emissions are classified as direct or indirect according to scopes 1, 2 and 3.
- All Kyoto Protocol greenhouse gases (CO<sub>2</sub>, CH<sub>4</sub>, NO<sub>2</sub>, HFC, PFC, SF<sub>6</sub> and NF<sub>3</sub>) are considered.
- The **base year** established is **2020**.

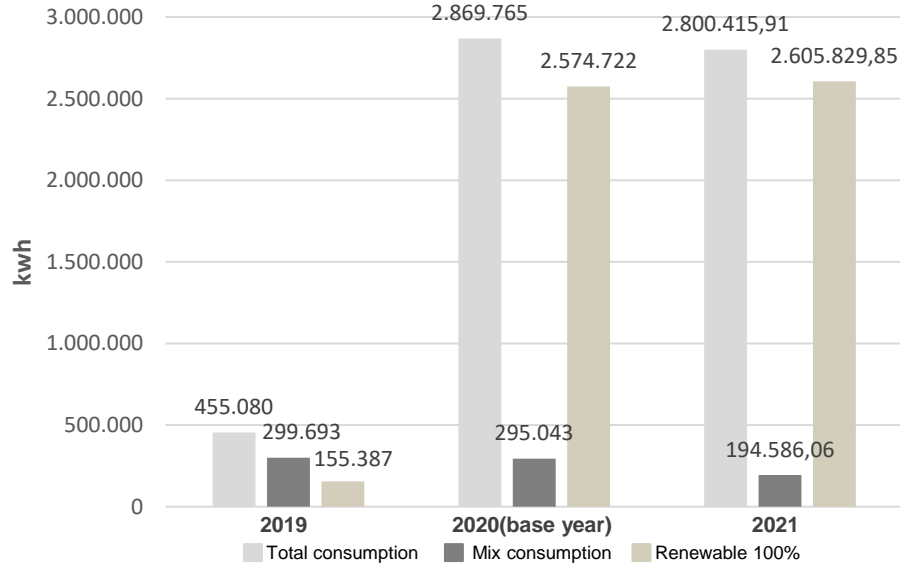
Note: More information in Annex 1



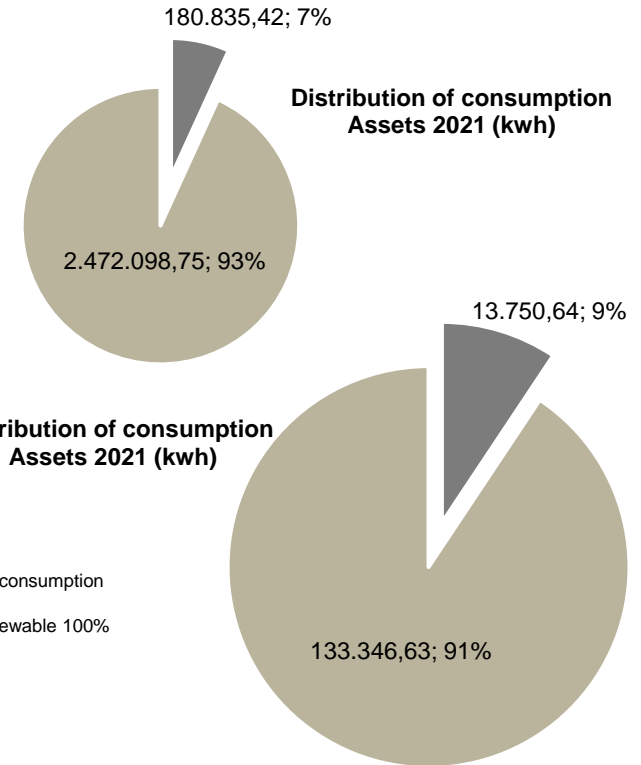
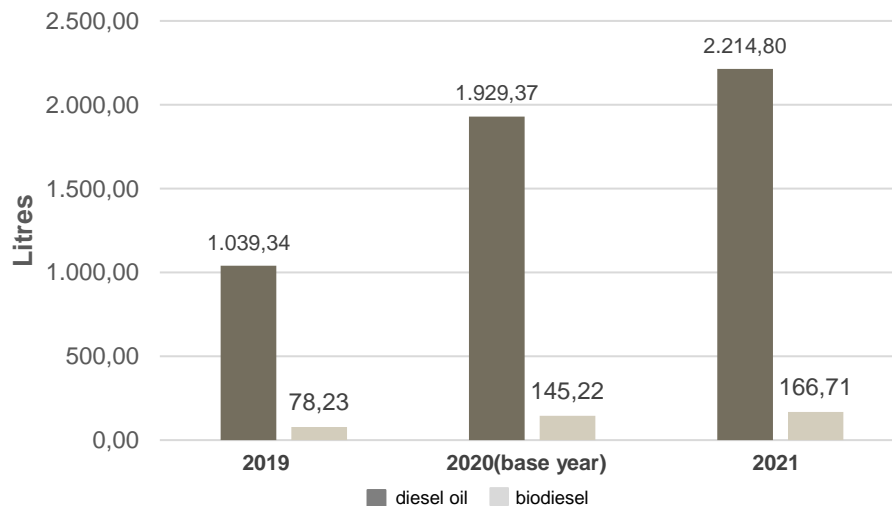


Main energy figures

Electricity consumption



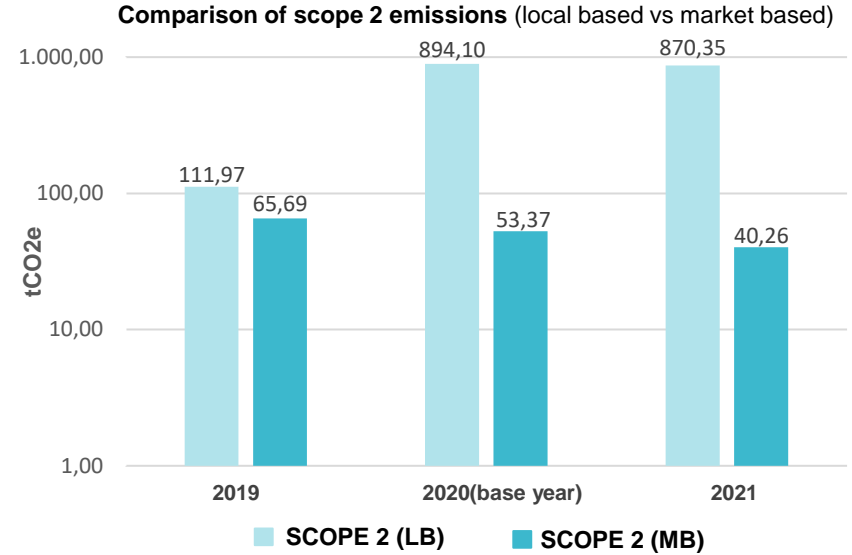
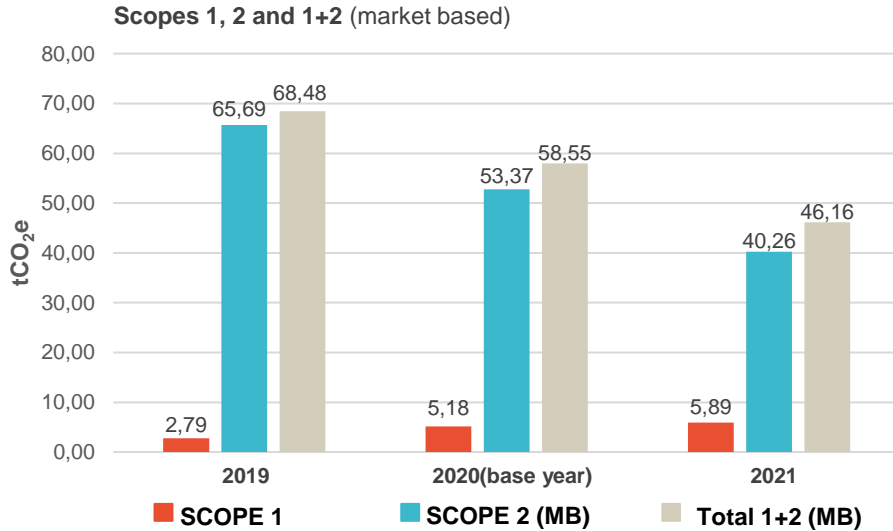
Fuel consumption



► **The proportion of energy consumed with 100% renewable certificate of origin increases** in comparison to the base year.

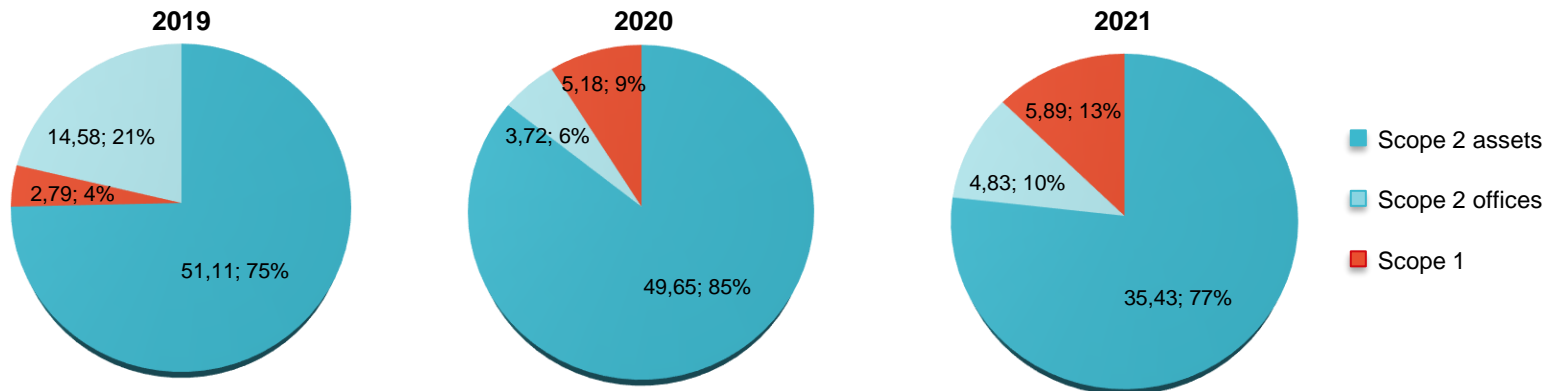
# 3. Results

## Evolution of scope 1 and 2 emissions

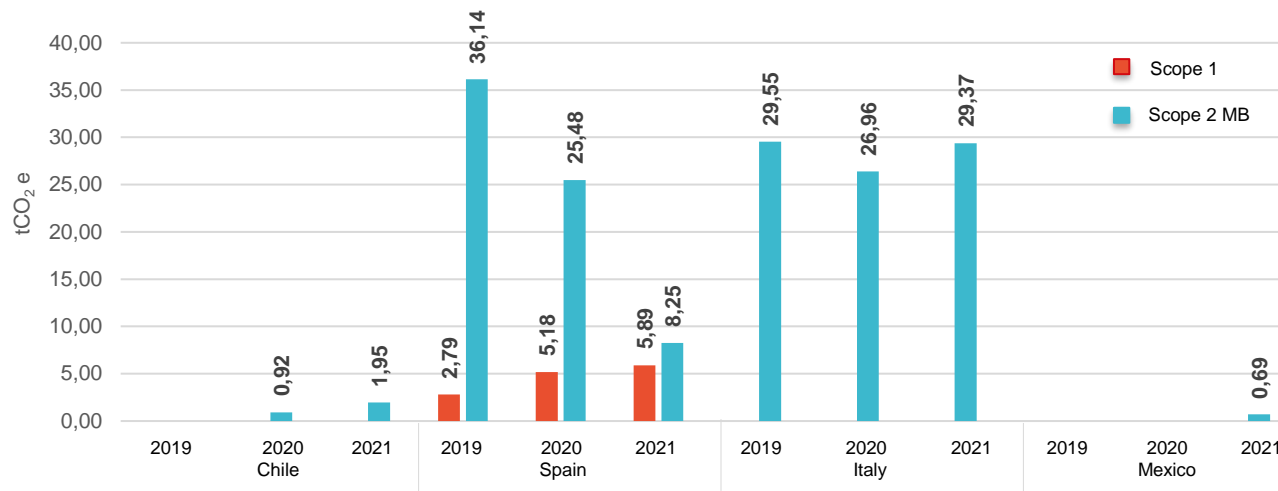


- ▶ Out-of-scope emissions (biogenic emissions): 0.002, 0.024 0.028 tCO<sub>2</sub>e respectively for the years 2019, 2020 and 2021
- ▶ **Scope 1+2 emissions have been reduced by 21.37% in 2021** compared to the base year

## Evolution of scope 1 and 2 emissions according to type of activity (market based)



Evolution of scope 1 and 2 emissions by country / business division

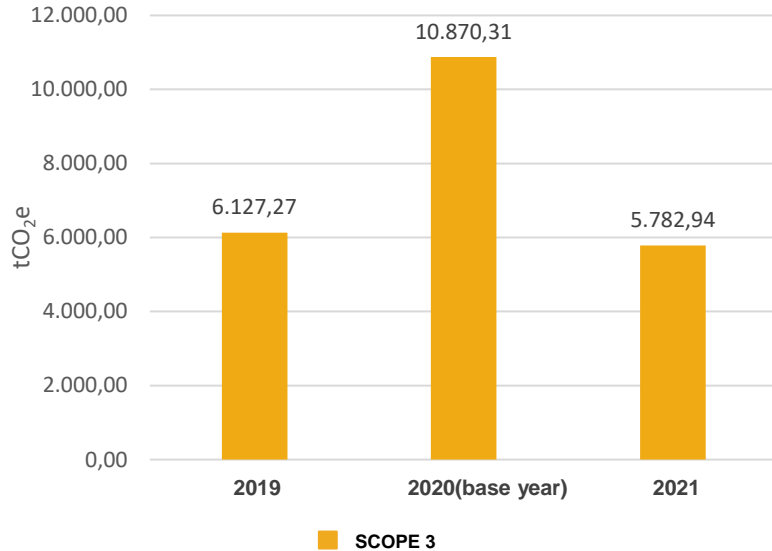


tCO <sub>2</sub> equivalent	Chile			Spain			Italy			Mexico		
	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
<b>Total Scope 1</b>	0,0	0,0	0,0	2,79	5,18	5,89	0,0	0,0	0,0	0,0	0,0	0,0
<b>Total Scope 2 (Market based)</b>	0,0	0,92	1,95	36,14	25,48	8,25	29,55	26,96	29,37	0,0	0,0	0,69

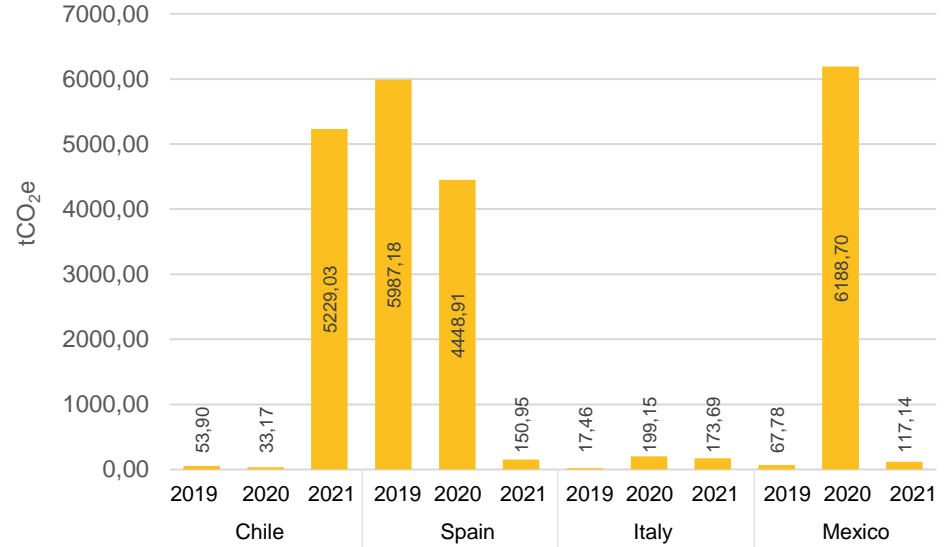
- ▶ Considering financial control approach consolidation, Spain is the only country that presents **Scope 1** emissions. Compared to indirect emissions, **direct emissions are unrepresentative** because there is only one source in the inventory. A moderate increase is observed in 2021 compared to the base year as a result of the change in the activity.
- ▶ In 2021 the highest **Scope 2** emissions are in Italy, since in other geographies they have been progressively reduced or are less high, since **the emission factors of the electricity consumed are lower according to a "market based" approach.**



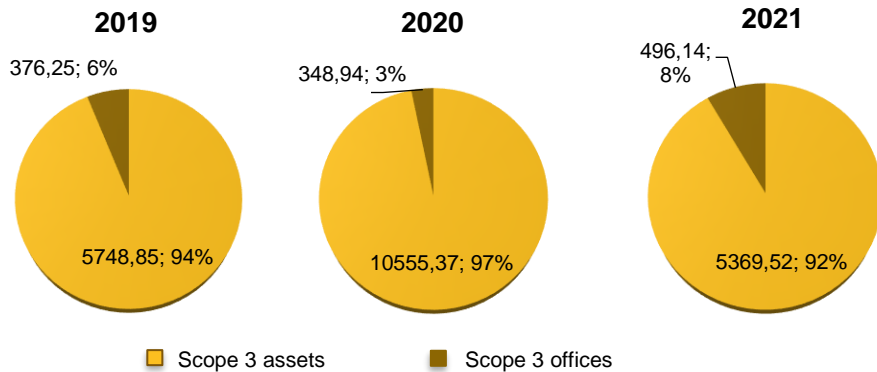
Evolution of scope 3 emissions



Evolution of scope 3 emissions by country / business division

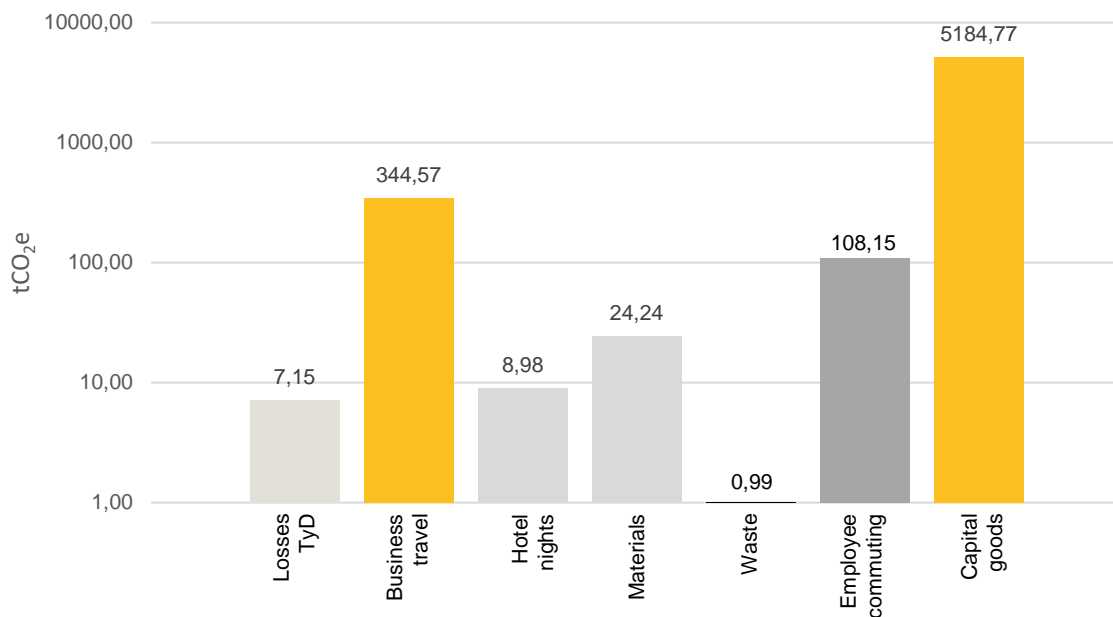


Evolution of scope 3 emissions by type of activity (tCO2e)



- ▶ In 2021, **total Scope 3 emissions have been reduced compared to the base year** and are more representative in the field of projects (energy assets).
- ▶ The highest incidence of emissions is directly related to the areas and periods that present a greater construction activity.

### Evolution of scope 3 emissions by category type in 2021



- ▶ By 2021, the categories with the highest Scope 3 emissions are the purchase of capital goods and business travel, so reduction efforts needs to be focused on this direction. On the other hand, the categories with the lowest emissions are waste management and electricity losses due to transport and distribution.
- ▶ Compared to the base year, there is a decrease in supplies of main equipment and its emissions; but the size of the Organization is increasing (number of employees) and some effects on indirect emissions of covid-19 are appreciated in a lesser extent (greater attendance, increased employee commuting and traveling, etc.).

### Summary table of scope 3 emissions by category type in previous years (tCO<sub>2</sub>e)

Year	TyD Losses	Bussiness travel	Hotel nights	Materials	Waste	Employee commuting	Capital goods	Investments
2019	7,56	283,18	8,58	6,87	1,16	72,30	5737,78	0
2020 (año base)	4,93	306,84	4,66	7,22	0,49	27,19	10406,50	0
2021	7,15	344,57	8,98	24,24	0,99	108,15	5184,77	0

Note: See annex I for more information on categories included and calculation boundaries in the Scope 3.

### Avoided emissions (tCO2e)

	Year	Spain	Italy	Mexico	Chile	UK	Total
Commissioned (*)	Previous	1.178.391	725.745	-	-	367.490	2.271.626,26
	2019	2.349.957	-	-	-	-	2.443.191
	2020	1.646.903	-	6.129.841	-	-	7.776.744
	2021	-	-	-	5.518.849	-	5.518.849
Operated (**)	Previous	-	-	-	-	-	-
	2019	2.330	3.340	-	-	-	5.670
	2020	10.282	3.205	95.311	-	-	108.797
	2021	87.309	2.987	31.777	33.022	-	155.096

**18,01 million tCO2e avoided are expected in commissioned and grid-connected Opdenenergy projects over their lifetime.**

**In 2021, 155.096 tCO2e have been avoided in projects operated by Opdenenergy.**

(\*) Estimated data according to the latest available versions of emission factors; considering the energy generated throughout the useful life (25 to 35 years depending on the project) for the projects commissioned in the year or reporting period, with theoretical maximum design productions, without equipment degradation.

(\*\*) Estimated data according to the latest available versions of emission factors; considering the energy generated by projects operated and participated in the year or reporting period.

Sources of factors: AIB European Residual Mix Factors (2019, 2020, 2021), National Emissions Registry, Ministry of Environment and Natural Resources of Mexico (2019, 2020) and Ministry of Energy of Chile (2021).

### Emission intensity

By MWp installed			
Year	MWp (installed)	Total Scope 1+2 (tCO <sub>2</sub> /MWp)	Total Scope 3 (tCO <sub>2</sub> /MWp)
2019	149,85	0,46	40,89
2020	255,42	0,23	42,56
2021	171,00	0,27	33,82

By MWh operated			
Year	MWh (operated)	Total Scope 1+2 (tCO <sub>2</sub> /MWh)	Total Scope 3 (tCO <sub>2</sub> /MWh)
2019	20445,01	0,0033	0,30
2020	629830,81	0,0001	0,02
2021	924609,76	0,00005	0,01

By turnover		
Year	Total Scope 1+2 (kgCO <sub>2</sub> /€)	Total Scope 3 (kgCO <sub>2</sub> /€)
2019	0,0005152	0,0460978
2020	0,0004169	0,0781769
2021	0,0010613	0,1329562

► In 2021, the intensity per MWp installed in scope 3 is reduced, with a slight uptick in 1+2 scope. The intensity per MWh operated is also reduced in all scopes with the increase of the portfolio in operation.

► The intensity by turnover represents a decoupling between sales and GHG emissions, not being the most appropriate indicator to analyze the evolution over the years.

## 4. Carbon Footprint Management



At Opdenenergy, **progress has been made in terms of sustainability** aimed at reducing the Organization's Carbon Footprint and improving its performance. Some of these advances are:

- Adoption of energy and climate change commitments in its policies.
- Prioritization of climate goals (SDGs 7 and 13) in the strategy and taking actions.
- Positioning as a 100% renewable pure player in all developed assets.
- Application of Best Available Technologies to maximize asset efficiency.
- Selection of corporate offices with sustainability criteria.
- Increase in the use of renewable energy with a guarantee of origin.

### Next steps:

- Improvement in the management of the Carbon Footprint of the Organization (reduction of uncertainties, own protocol, verification, etc.).
- Establish an Emission Reduction Plan with specific objectives and actions.
- Establish an Emissions Offset Plan that helps to achieve neutrality with respect to scopes 1 and 2, in those aspects where reductions are not possible.
- Align with internationally recognized initiatives in the fight against climate change.

# ANNEX I

## **GHG inventory methodology and principles**



## GHG inventory methodology and principles

For the preparation of this GHG emissions report, the methodological guidelines and principles shown below have been followed:

### Documents and standards

The guidelines established in the documents are followed: Requirements and guidelines for accounting and reporting of the GHG Protocol ("Corporate Accounting and Reporting Standard" and "Corporate Value Chain -Scope 3- Accounting and Reporting Standard"), Sixth evaluation report of the IPCC (AR6).

### Accounting and reporting

This report is based on the principles of relevance, completeness, coherence, transparency and precision, to ensure the representativeness and reliability of the emissions reported by Opdeenergy.

### Reporting perimeter

- **Organizational limit:** It is established as scope all the activities of the OPDE Group and its subsidiaries at a global level. For data reporting, a financial control approach has **been applied**.
- **Operational limit:**
  - GHG emissions are classified as direct or indirect according to scopes 1, 2 and 3. **Table 1** shows in detail the categories of emissions considered in the calculation of each scope.
  - All the greenhouse gases of the Kyoto Protocol are considered (CO<sub>2</sub>, CH<sub>4</sub>, NO<sub>2</sub>, HFCs, PFCs, SF<sub>6</sub> and NF<sub>3</sub>).
- **Temporary scope:** It is based on the information compiled for the period between **1<sup>st</sup> January 2021 and 31<sup>st</sup> December 2021**. Additionally, information from previous years is included to analyze the evolution.

### Base year and adjustments

2020 is set as the base year. No base year adjustments have been made in 2021.

## Exclusions

In this inventory there have been no relevant exclusions for scopes 1, 2 and 3. **Table 1** shows in detail the limits considered in the calculation of each scope.

## Calculation methodology

In general, two steps have been followed in the calculation of the emissions of each scope.

- Convert activity data to GHG emissions: **GHG emissions (t gas) = Activity data x Emission factor**
- Conversion of GHG emissions to tonnes of CO<sub>2</sub> equivalent (tCO<sub>2</sub>e):
  - Global Warming Potentials (GWPs) have been used for each GHG
  - **GHG emissions (tCO<sub>2</sub>e) = GHG emissions (t gas) x PCG**
- Sources of origin of the selected Emission Factors:
  - UK Government GHG Conversion Factors – 2020 (various categories)
  - AIB (2021). 2020 European Residual Mix Factors. Version 1 (electricity)
  - Ministry of Energy of Chile (2020) (electricity)
  - National Emissions Registry. Ministry of Environment and Natural Resources of Mexico (electricity)
  - U.S. Energy Information Administration. EIA (2019). (various categories)
  - CNMC (2020). Electricity Guarantee and Labelling Reports (electricity)
  - Factors published by different electricity supply companies (electricity – "market based")
  - Own calculations based on data from Supplier and Capital Goods Sustainability Reports (2020)
  - IPCC - AR 6 – 2021 (PCG y data adjusted from DEFRA , IPCC AR4 to AR6)
  - The sources have been selected by expert judgment, taking into account their international recognition, their suitability for the activity, their availability and their credibility.



**Inventory uncertainty and quality assessment**

Uncertainties due to errors arising from the quality of the activity data (AD) and the selected emission factors (EF) have been calculated. The type of origin of the data and its verification or not has been taken into account.

For the evaluation of uncertainty, it has been followed according to the own methodology based on the proposal by the GHG Protocol for GHG inventories in organization: "Guidance on uncertainty assessment in GHG inventories 1.0 (Sept. 2003)".

**Incertidumbres máximas:**

Years	Maximum Uncertainties (%)			
	Scope 1	Scope 2	Scope 3	Total
2019	20,62	5,41	13,26	12,89
2020	20,62	7,53	9,73	8,96
2021	20,62	7,55	12,7	11,01

**Discussion of the uncertainties obtained**

- For Scope 1, there is only one source of GHG emission (fuel consumption of the company vehicle). For this reason, the uncertainty of the category depends exclusively on the criteria selected for it. The emission factor provides the greatest uncertainty as it is a global emission factor according to its source.
- In the calculation of scope 2 emissions (energy consumption offices and assets), the uncertainty is similar in all the items considered for offices and assets. All the data used comes from consumer bills, and its factors mostly from official sources. The differences are due to the availability or not of complete data series and the number of extrapolations made.
- Finally, in the calculation of scope 3 emissions, the greatest uncertainty comes from the consumption of materials (computer equipment). This is because the data comes from an extrapolation and its factors are global in nature. In 2021, uncertainty also increases due to the calculation of emissions from electricity consumption in Chile's assets, as an assumption has been made in the FE.



**Table 1 . Detailed scope of GHG emissions considered in the emissions inventory**

Category	Description	Limits
<b>Scope 1</b> <i>Direct emissions</i>	GHG emissions from sources owned or controlled by the OPDE Group, including: - Emissions from fossil fuel consumption for stationary equipment (construction machinery, heaters, gas turbines...) - Mobile combustion: emissions from fuel consumption for own vehicles. - Fugitive and process emissions (refrigerants, insulators).	OPDE Group, formed by the parent company Opdenenergy Holding, S.A. and subsidiaries according to organizational boundaries. Emissions are considered for fuel consumption in own vehicles, and there are no other sources of scope 1 emissions.
<b>Scope 2</b> <i>Indirect energy emissions</i>	GHG emissions from imported energy (electricity, heat or steam) consumed by the OPDE Group according to location. Two figures of scope 2 are taken into account, applying the calculation criteria "market based" and "location based".	OPDE Group and dependent companies according to organizational limits. Consumption in corporate offices with physical headquarters and in assets in operation is considered.
<b>Scope 3</b> <i>Other indirect emissions</i>	GHG emissions whose occurrence is a consequence of the activity of the OPDE Group but comes from sources that are not owned or controlled by the OPDE Group. Scope 3 has been included includes the categories described below.	
<i>1. Energy transport and distribution</i>	Losses in the transmission and distribution (T&D) of the energy generated for consumption in the Organization (electricity), which are reported by the end user. Two figures of scope 2 are taken into account, applying the calculation criteria "market based" and "location based".	OPDE Group and dependent companies according to organizational limits. Consumption in corporate offices with physical headquarters and in assets in operation is considered.
<i>2. Business travel</i>	Emissions associated with business activities that require transportation of workers using means that are not owned by the Organization during the reporting year (means of transport not controlled by the OPDE Group). GHG emissions from hotel nights required on these journeys are also included.	OPDE Group and dependent companies according to organizational limits. Trips by rental car and train imputed to the countries where they have taken place. Aircraft charged to countries according to city of origin. Hotel nights charged in the country of destination except in cases where there is no factor, which will be charged to the country of origin.
<i>3. Materials</i>	Extraction, production and transportation of goods (materials) purchased or acquired in the reporting year, which have not been included in other scope 3 categories.	Paper consumption for offices Spain, Italy and Chile. For consumption of computer equipment, food and drink; organizational limits of the OPDE Group. Estimation of quantities consumed (tn) from expenditure (€).
<i>4. Wasted generated</i>	GHG emissions associated with the treatment or disposal of waste from the activity of the Organization during the reporting period. Treatment or disposal in facilities that are not owned or controlled by the OPDE Group.	Calculation for Spain offices.
<i>5. Mobility of employees to the workplace</i>	GHG emissions from the movement of workers between their homes and their jobs during the reporting year (using means of transport that are not owned or controlled by the OPDE Group).	OPDE Group and dependent companies according to organizational limits.
<i>6. Capital goods</i>	GHG emissions associated with the manufacture, by third parties, of the products purchased by the OPDE Group for the construction of its assets during the reporting year (critical equipment).	Calculation for assets of the OPDE Group. They are considered connected assets (CODs) in the reporting year. FE obtained by own calculations from Sustainability Reports of Suppliers of Capital Goods (2020).
<i>7. Investments</i>	Other investment issuances (including equity investments, debt and project financing) during the reporting year, not included in scope 1 or scope 2.	OPDE Group and dependent companies according to organizational limits. There have been no sources of emissions not accounted for in scope 1 and 2.

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