Grenergy
renovables

NET ZERO STRATEGY

GHG emission reduction and offset plan.

ESG Department

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1. PURPOSE OF THE DOCUMENT

The purpose of this document is to establish the basis and actions to achieve the goal to which Grenergy is committed in terms of climate change mitigation, to be Net Zero (scopes 1, 2 and 3) in 2040.

To this end, Grenergy prioritises, firstly, the implementation of emission reduction measures and, secondly, once it is considered that no further measures can be implemented, the offsetting of the resulting emissions in order to achieve Net Zero.

This document contains, on the one hand, a compilation of potential GHG emission reduction measures to be implemented (scopes 1, 2 and 3), and, on the other hand, some outlines on how net emissions offsetting will be carried out (scopes 1, 2 and 3)

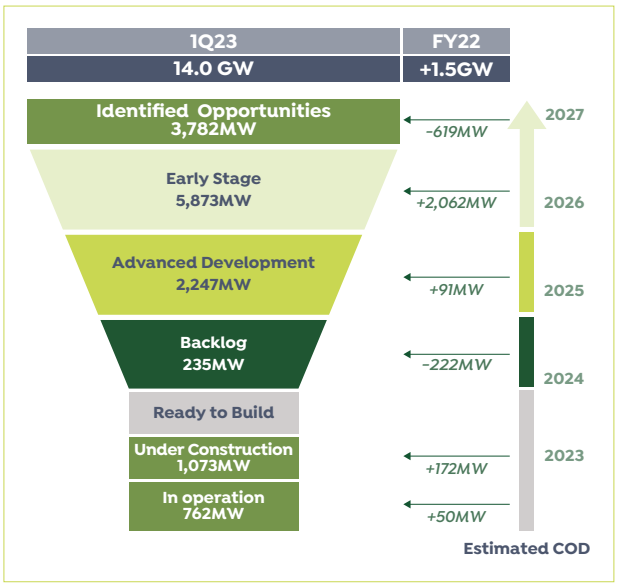
The measures included in this document are presented briefly as a preliminary step to the preparation of an exhaustive technical-economic feasibility report for the progressive implementation of each one of them, which will be prepared during 2024 and in which different areas of the company in the different geographies (Development, EPC, O&M/AM) will collaborate.

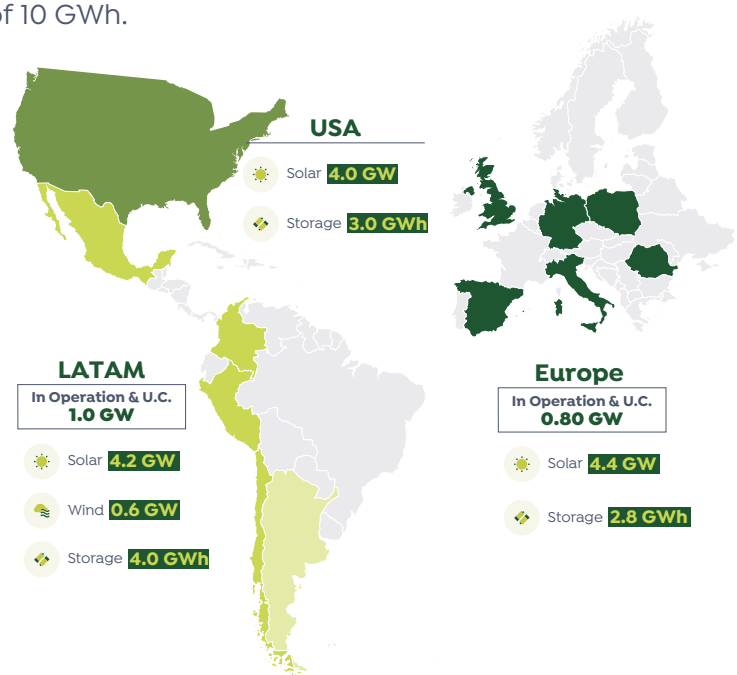
In addition, Grenergy will in 2024 develop a detailed decarbonisation strategy for Scope 3 of the carbon footprint and in 2026 create a full offset strategy based on the purchase of carbon credits for all three scopes.

2. GRENERGY AT A GLANCE

Grenergy is a listed, multinational company, leader in the independent production of renewable energy and a specialist in the development, construction and management of photovoltaic, wind and storage projects.

We are currently present in 11 countries, particularly in Europe (Spain, Italy, Germany, Poland and the United Kingdom), North America (United States) and Latin America (Chile, Peru, Mexico, Argentina and Colombia). In addition, we have a portfolio of 14GW of solar and wind projects, of which 1.8GW are in operation or under construction, and a storage portfolio of 10 GWh.





3. REGULATORY CONTEXT

3.1. European Green Deal

The global energy sector is undergoing a profound transformation process, where renewable energies are one of the key elements to accelerate the energy transition and thus achieve the climate neutrality goals that are being set by organisations, regions and countries.

The Green Deal (2020) aims to make Europe climate neutral by 2050 by mobilising at least EUR 1 trillion in sustainable investment over the next 10 years.

To achieve this goal, in March 2022 the European Union published the REPowerEU Plan[1]. It aims to make Europe independent of Russian fossil fuels and accelerate the transition to green energy.

Its main objectives are:

- Achieve at least a **55%** reduction in greenhouse gas (GHG) emissions by 2030 compared to 1990 levels
- Achieve more than **45%** share of renewable energy in the energy mix
- Achieve the PV target of **740 GW** by 2030
- Accelerate the deployment of renewable energy sources from **36%** in 2020 to **69%** in 2030
- Climate neutrality in 2050

3.2. National Integrated Energy and Climate Plan (PNIEC)

In reference to Spain, the PNIEC 2021-2030 was approved in March 2021 which sets ambitious targets aligned with European emission reduction targets. These are:

- The PNIEC aims for a **23%** reduction in greenhouse gas (GHG) emissions compared to 1990 This reduction target implies eliminating one out of every three tonnes of greenhouse gases currently emitted
- Achieve **74%** penetration of renewables in total electricity generation by 2030
- Achieve **42%** renewables of total final energy consumption, for the whole EU
- **39.6%** energy efficiency improvement
- Achieve a total installed capacity in the electricity sector of **161 GW** by 2030, of which **50 GW** will be wind energy; **39 GW** solar PV
- Achieve climate neutrality by reducing Spain's GHG emissions by at least **90%**
- Achieve a **100%** renewable electricity system by 2050

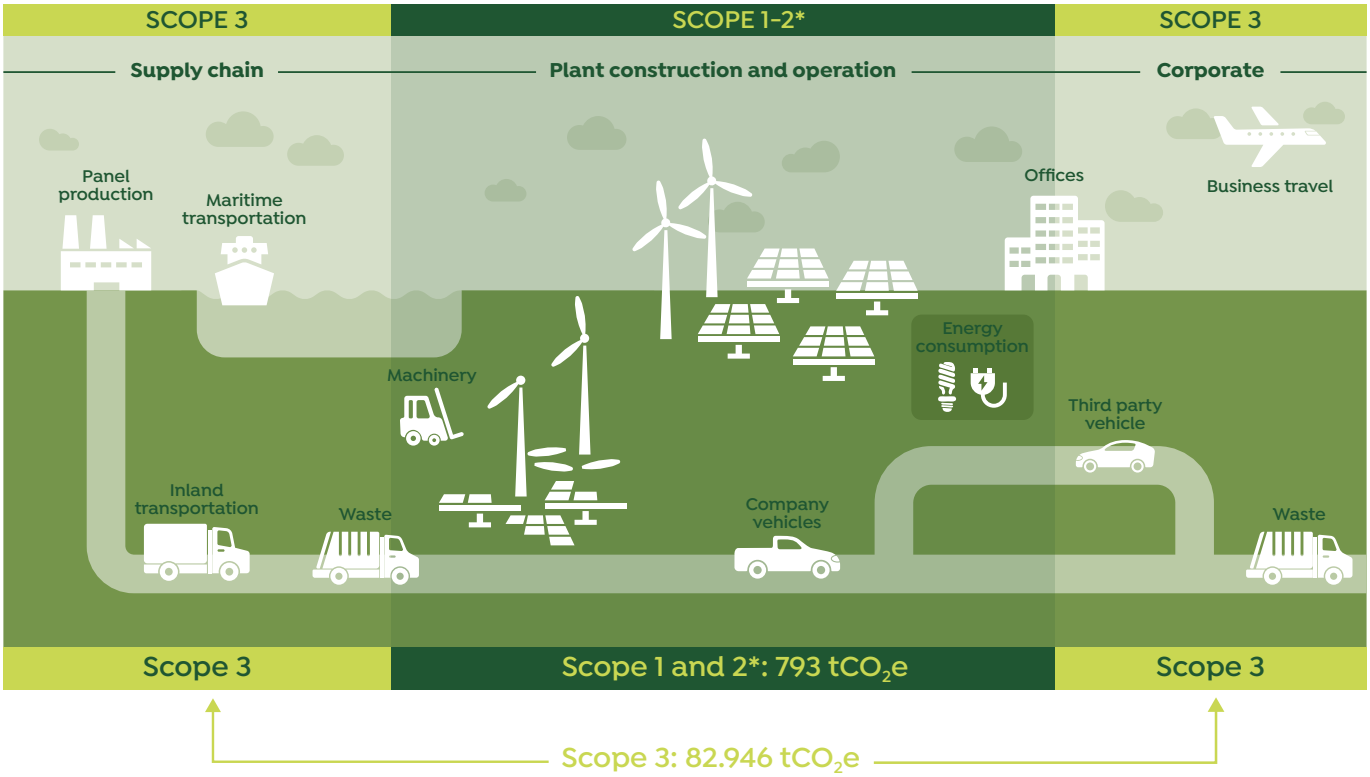
[1] *REPowerEU: Joint European action for more affordable, secure and sustainable energy (europa.eu)*

4. GRENERGY STATUS

Grenergy has been calculating and verifying the carbon footprint under the reference framework of the international standard **ISO 14064:1-2018** since 2021 in order to provide veracity and credibility to the reporting of GHG emissions by the activity of an organisation, as well as to identify opportunities for improvement of reduction and establish reduction plans.

Below is a summary infographic of the scope 1, 2 and 3 emissions emitted during 2022.

Mapping of GHG emission sources by Scope 1, 2 and 3[2].



**Scope 1: 307 tCO_2e and Scope 2 (market-based): 486 tCO_2e. Scope 2 (Location-based): 600 tCO_2e*

The calculations have obtained **third party verification** by the independent accredited entity KPMG, which ensures that the declaration made regarding greenhouse gas emissions is complete, consistent and transparent.

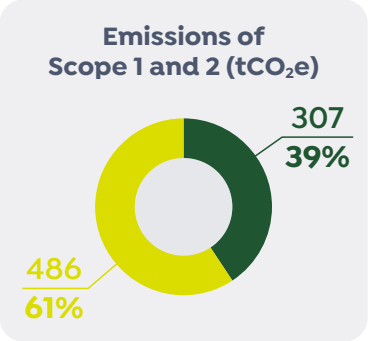
The period observed is from 1 January to 31 December 2022. Calculations are consolidated in tonnes of CO_2 equivalent, and include emissions for all GHGs relevant to the company: CO_2, CH_4, N_2O.

[2] ***Emission factors*** *used are from DEFRA GHG Conversion Factors 2022 and emission factors, April 2021, version 17. MITECO as well as official national energy mix sources.*

Scope 1 emissions: 307tCO_2e and include the following sources:

- Company vehicles
- Grenergy-operated machinery (machinery and generators)
- Refrigerant gas leaks (0)

SCOPE	SOURCE OF EMISSION	tCO_2e	% of Scope 1 emissions	% Reduction vs 2021
Scope 1	Company vehicles	282.97	35,6%	5,2%
Scope 1	Machinery operated by Grenergy	24.15	3,1%	-82%



Scope 2 emissions: 486tCO_2e and include the following sources[3]:

- Electricity consumption in offices
- Electricity consumption in projects

SCOPE	SOURCE OF EMISSION	tCO_2e	% of Scope 2 emissions	% Reduction vs 2021
Scope 2	Electricity consumption Projects	461.79	58,2%	34%
Scope 2	Electricity consumption Offices	24.30	3,1%	17.6%

In May 2023, Grenergy joined the **Science-based targets** initiative **(SBTI)**, a global benchmark for companies to set emission reduction targets. In this regard, it committed to achieving short- and long-term targets, as well as its commitment to be a Net Zero emissions company by 2050.

The objectives were validated by following the validation route of the objectives exclusively for small and medium-sized enterprises (SMEs) which consisted of:

- Reduce Scope 1 and Scope 2 GHG emissions by **42%** by 2030 (baseline 2021) as well as measuring and reducing Scope 3 emissions.
- Net Zero commitment in 2050 for all 3 scopes

However, as this is a target set for SMEs, Grenergy wants to go one step further and be more ambitious in the reduction of Scope 1, 2 and 3 emissions, as summarised in point 4 and 5.

[3] *Scope 2 emissions have considered the **market-based approach**. The calculation of emissions with the location-based approach amounts to 600 tCO2e.*

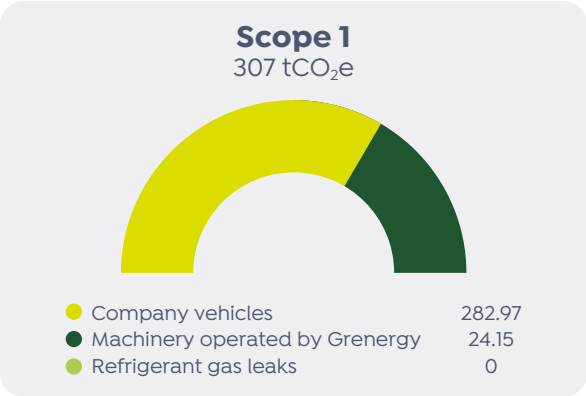
5. ROAD TO NEUTRALITY : GHG REDUCTION MEASURES

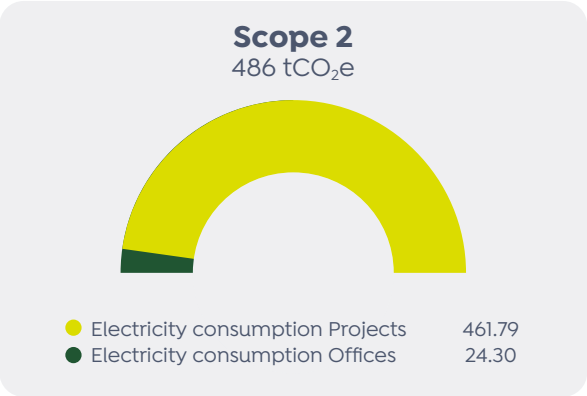
5.1 GHG emission reduction measures - Scopes 1 and 2

Grenergy is aware of the urgency to act on the climate crisis. Proof of this is that, according to the *Bloomberg New Energy Outlook*, 85% of the world's energy production will have to come from renewable energies if we are to achieve the global goal of "Net Zero emissions" by 2050.

The achievement of this goal would not be possible without significant investments in solar, wind and batteries and, as a leading IPP (independent power producer), we are agents of change and indispensable to the achievement of this goal. In this regard, Grenergy aims to develop 14 GW of renewable energy capacity and 5GW in operation and construction by 2025.

Grenergy has set **more ambitious targets** such as **Net Zero by 2040 for Scopes 1, 2 and 3**. To this end, it has set itself the target of **reducing absolute emissions by 60% by 2030 in Scopes 1 and 2, and a 50% reduction in relative emissions** (sales) **in Scope 3 by 2030**, and finally reaching **"Net Zero" by 2040**. This will contribute to the energy transition and help avoid millions of tons of CO_2 each year.





	tCO₂e	% of total scope 1+2	Number of measures	Emission reduction potential to 2030	Emission reduction potential to 2040
Scope 1					
Company vehicles	282.97	35.6%	2		
Generators operated by Grenergy	24.15	3,1%	2		100%
Scope 2					
Electricity consumption in offices	24.30	3,1%	2		100%
Electricity consumption of projects	461.8	58.2%	2		100%
TOTAL	**793**	**100%**	**8**	**60%**	**100%**

In order to achieve these targets, the following emission reduction measures have been established with different time objectives.

Measure	Description of the measure	Description of the measure
1	Replacement of executive leasing vehicles to plug-in hybrid or electric models, immediately for new incorporations and progressively for existing vehicles at the end of the leasing cycle.	2025
2	Gradual replacement of the diesel/gasoline fleet with EV fleet, 65% by 2030 and 100% by 2040.	65% substitution by 2030 and 100% substitution by 2040
3	Prioritise electricity consumption over the use of on-site generators wherever possible.	Continuous
4	Dissemination of energy efficiency measures to employees.	Continuous
5	Progressively replace office luminaires with LEDs.	2025
6	Replace conventional site generators with low-emission generators or, where appropriate, electric/battery/grid-fed generators.	2030
7	Conduct a project-level analysis of energy efficiency in all utility scale plants for the construction phase.	2025
8	Supply electricity from 100% certified renewable sources for the consumption of operating projects and offices.	Annual

Measure 1: Substitution of managerial vehicles to plug-in hybrid or electric models, immediately for new recruits and progressively for existing vehicles

At the moment, 50% of management vehicles are electric or plug-in hybrids. The goal is to reach 100% by 2025. Since 2021, the Madrid office garage has already had 18 three-phase chargers available for employees' electric or plug-in hybrid vehicles.

In the case of leasing vehicles, in which the vehicle becomes property after the cycle, either the purchase of the vehicle by the employee or the negotiation with the supplier company to replace the vehicle with an electric or hybrid vehicle must be negotiated.

Measure 2: Gradual replacement of the diesel/gasoline fleet with EV fleet, 65% by 2030 and 100% by 2040.

Fleet vehicles are those used by Development, EPC and O&M personnel, mainly pick-up models for which the hybrid and electric vehicle market has not yet reached the technological and economic maturity that would allow an immediate transition.

By 2030, 65% of the electric pick-up fleet is expected to be deployed and 100% of the pick-ups by 2040 (35.5% of the weight of Scope 1 in 2022).

Measure 3: Prioritise electricity consumption over the use of on-site generators wherever possible

The consumption of fuels used by generators during plant construction accounts for approximately 3% of Grenergy's total Scope 1 and 2 emissions. The proposed measure is to maximise the electrification of projects by connecting projects to the grid wherever possible.

While this measure is not always feasible, it is designed to ensure that electricity supply is prioritised over fossil fuels wherever possible.

To ensure low greenhouse gas emission consumption, the origin must be certified renewable or have IREC guarantees, which could be sourced and transferred at market price by Grenergy's own solar plants in operation.

Measure 4: Dissemination of energy-efficient practices among employees

Through this measure, the aim is to improve awareness and bring about changes in employee behaviour that will result in energy savings. The dissemination of good energy practices will have a greater impact in the offices in Madrid and Santiago de Chile, where the company has its two main offices, and the frequency of the training will be once a year.

Measure 5: Replace gradually the luminaires pending replacement to LED in the offices before 2025

Carry out the complete replacement of LED luminaires (corridors, offices, bathrooms, decorative...) at the headquarters in Spain, both at the corporate headquarters (Rafael Boti) and at the offices on Calle Cerro de los Gamos, and in the Titanium building in Chile.

Measure 6: Replace conventional site generators with low-emission generators

Generators operated by Grenergy on construction sites are responsible for 3% of the total Scope 1 and 2 emissions.

This measure proposes the replacement of conventional diesel generators used on site with environmentally friendly fuel generators (hydrogen generators or solar modular power generation stations, among others).

With a 2025 horizon, it is proposed to completely switch to **biofuel compatible generators**, capable of reducing greenhouse gas **emissions by 60% compared** to diesel. The fuel contributes to improved air quality, as B100 produces up to 80% less fine and ultrafine particulate emissions. Another advantage is that B100 does not pose a pollution risk, as it is classified as non-hazardous to humans and the environment.

Measure 7: Carry out a project-level analysis of energy efficiency in all utility scale plants for the construction phase

To ensure the energy efficiency opportunities of the projects, it is proposed as a measure to carry out an analysis at project level, prior to the start of construction works.

Energy efficiency opportunities to be adopted during construction will be assessed against the framework of the measures listed in this plan and a cost analysis adjusted to the needs of the project at the time.

Measure 8: Supply 100% certified renewable electricity for the consumption of operating projects and offices

Agreement to supply electricity from 100% renewable sources through a renewable energy contract with a green marketer.

5.2 GHG emission reduction measures - Scope 3

The manufacture, transport and installation of solar components (panels, inverters and structures) is the most carbon-intensive part of Grenergy's entire value chain.

Around 90% of the total carbon footprint emissions correspond to GHG emissions corresponding to the manufacture of the solar panels purchased by the Company and which will be used in the projects. For this reason, the reduction of these emissions is essential to achieve the following objectives:

- 50% relative emissions reduction (tCO_2/sales) in 2030 (base year: 2021).
- Net Zero emissions in 2040

At Grenergy, as a sign of transparency in our value chain, we measure different categories of scope 3. Below is a summary of the emissions reported by category for the 2022 carbon footprint.

Scope 3 emissions: 82.946 tCO_2e including the following sources:

EMITTING LAMP	tCO_2e	% of Scope 3 emissions	% Reduction vs 2021
Procurement of solar panels	75,681.01	90.38%	-139%
Logistics: maritime	2.949.23	3.52%	-211.5%
Machinery operated by third parties	1,681.89	2.01%	-25.2%
Flights	972.87	1.16%	68%
Hazardous waste Projects	414.74	0.50%	99.6%
Hazardous waste Offices	414.74	0.50%	100%
Non-hazardous waste Projects	290.15	0.35%	71.3%
Logistics: land	275.91	0.33%	-97.8%
Non-hazardous waste Offices	237.01	0.28%	99.9%
Rental vehicles	23.94	0.03%	-42.8%

Aware of the importance of reducing emissions in our value chain, in order to make our value chain Net Zero by 2040, we are implementing the following supplier measures:

Measure	Description of the measure	Description of the measure
9	Establish a sustainable travel policy	2025
10	Internal and external awareness-raising campaigns on fuel savings and efficient use of waste and water	Annual
11	Supporting panel, inverter and structure suppliers to report their carbon footprint calculations and achieve Net Zero by 2040	Annual
12	Selection of panel suppliers that report their life cycle CO_2 emissions and prioritisation of those with the lowest CO emissions$_2$ (all other things being equal in technical and economic terms)	Annual

Measure 9: Establishing a Sustainable Travel Policy

The objective of establishing an internal Sustainable Travel Policy or Programme is to establish best practices in terms of sustainability for business travel for all employees in order to minimise the environmental footprint of travel. Some recommendations to be included in this policy are: prioritising more sustainable means of transport (trains versus planes), prioritising virtual meetings over unnecessary travel, preferential selection of sustainable hotels, among others.

Measure 10: Internal and external awareness-raising campaigns on fuel savings and efficient use of waste and water

Carry out regular awareness-raising actions for staff (internal and subcontractors) to make efficient and responsible use of water and materials used in the office and on projects.

Measure 11:Selection of panel suppliers that report their life-cycle CO_2 emissions and prioritisation of those with the lowest CO_2

Grenergy has updated the procurement procedure with the aim of establishing ESG clauses in the general contracting clauses, as well as including the supplier approval process based on ESG criteria through the registration of our suppliers on the Aquilles platform. To this end, all our suppliers are asked to complete an ESG questionnaire with more or less non-financial information, including the reporting of scope 1, 2 and 3 emissions, according to different materiality criteria. In this way, priority will be given to those suppliers with lower CO emissions$_2$.

In 2024, Grenergy plans to draw up a catalogue with ESG "Go/No Go" criteria for the selection of suppliers prior to contracting, so that suppliers who do not meet these ESG criteria cannot be contracted, despite offering technically and economically viable products or services.

Measure 12: Supporting suppliers of panels, inverters and structures to report their carbon footprint calculations and achieve Net Zero by 2040

As a result of the collaboration with Aquilles, those strategic suppliers with the greatest opportunity for improvement in ESG performance will be accompanied by an action plan with specific measures and, in this way, improve the ESG Scoring of the suppliers. Some examples of possible actions would be the implementation of ESG awareness training talks, among others.

6. ROAD TO NEUTRALITY: EMISSIONS OFFSETS

6.1. Purchase of IRECs and/or guarantees of origin

About 60% of the total Scope 1 and 2 emissions are due to non-renewable electricity consumption of operating projects. In non-solar hours or in the absence of a wind resource, projects consume electricity needed for ancillary services.

In addition, it must be taken into account that, with the progressive connection of more plants to the grid, non-renewable electricity consumption will progressively increase. This is why it is essential to manage this point.

One of the most effective ways to achieve the reduction of Scope 2 emissions (electricity consumption projects) is to guarantee the supply of renewable origin and its corresponding certificate, for example, through the purchase at market price of IRECs and/or Guarantees of Origin (GoO) issued by our solar plants in operation through a holding company (e.g. Grenergy Power) registered in the IRECs System or GoO System, so that at the end of the year a REC certificate is issued offsetting the non-renewable electricity consumption of each project with the renewable production of each project: Grenergy Power) registered in the IRECs System or GdO System, in such a way that, at the end of the year, a REC certificate is issued offsetting the non-renewable electricity consumption of each project with the necessary renewable production (MW) of the registered plant. The objective is to be able to have a plant registered in the system in each country in order to be able to make use of the certificate compensation.

Estimate 2022:

A non-renewable electricity consumption of 775,876.73 KWh (<> 775.876MW) was obtained in all projects and knowing that the IREC price $/MW is 0.6/0.7 approx, the cost would be 500-550$ to reduce almost 60% of Scope 2.

However, only the emissions of the country that has a plant registered in the IREC/GdO System could be offset, with the cost of registration in the REC registry for each plant being approximately $3,000.

6.2. Acquisition of voluntary carbon credits

Grenergy is committed to becoming Net Zero in 2040 for scopes 1, 2 & 3, which means 10 years ahead of the European and national target. To this end, Grenergy will offset the GHG emissions that it has not been able to reduce (with the implementation of the GHG reduction measures in this plan) through the purchase of carbon credits on the voluntary market (VER). These credits are associated with the implementation of sustainable projects in national and international territory, prioritising developing economies. Grenergy may acquire or purchase carbon credits directly from other registered projects, from carbon funds or from its own projects (provided that they have been previously registered as offset projects because they are likely to be carbon sinks).

To achieve the target neutrality, Grenergy will purchase as many carbon credits as tons of CO_2 emitted, taking into account that 1tCO_2e <>1VER.

All VERs must be verified by an independent third party and must be developed and calculated according to one of the existing VER standards (VCS, etc.).

Grenergy may rely on international clearing reference entities such as VERRA or national clearing reference entities such as MITECO and/or a supporting trader in this transaction.

According to the Ecosystem Marketplace's State of the Voluntary Carbon Markets 2021 report, the voluntary carbon credit price for the renewable energy sector is $2.26/tCO$_2$e.

The amount of the purchase of carbon credits will be distributed individually within the company, following the polluter pays principle, i.e. a criterion and a categorisation of the company's areas will be established so that each one will face the compensation of emissions according to the weight it represents in the generation of emissions. This will lay the foundations for the establishment of an internal carbon price.

	2020			2021		
	Volume (MtCO$_2$e)	**Price (USD)**	**Value (USD)**	**Volume (MtCO$_2$e)**	**Price (USD)**	**Value (USD)**
Forestry and land use	57.8M	$5.40	$315.4M	227.7M	$5.80	$1,327.5M
Renewable energy	93.8M	$1.08	$101.5M	211.4M	$2.26	$479.1M
Chemical processes/Industrial manufacturing	1.8M	$2.15	$3.9M	17.3M	$3.12	$53.9M
Waste disposal	8.5M	$2.69	$22.8M	11.4M	$3.62	$41.2M
Energy Efficiency/Fuel swtiching	30.9M	$0.98	$30.4M	10.9M	$1.99	$21.9M
Household/Community devices	8.3M	$4.34	$36.2M	8.0M	$5.36	$43.3M
Transportation	1.1M	$0.64	$0.7M	5.4M	$1.16	$6.3M
Agriculture	0.5M	$10.38	$4.7M	1.0M	$8.81	$8.7M

Voluntary Carbon Market Transaction Volumes, Prices and values by category, 2020-2021

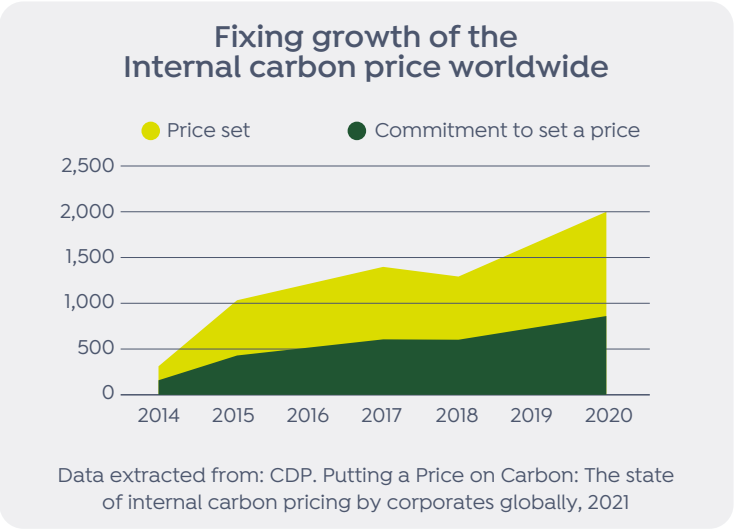
6.3. Establishing an internal carbon price

Carbon pricing is a financial and management tool that aims to monetise the costs of the economic, social and environmental consequences of GHG emissions. In short, to assign a price to CO emissions$_2$, in accordance with the polluter pays principle.

The advantages of putting a price on carbon are:

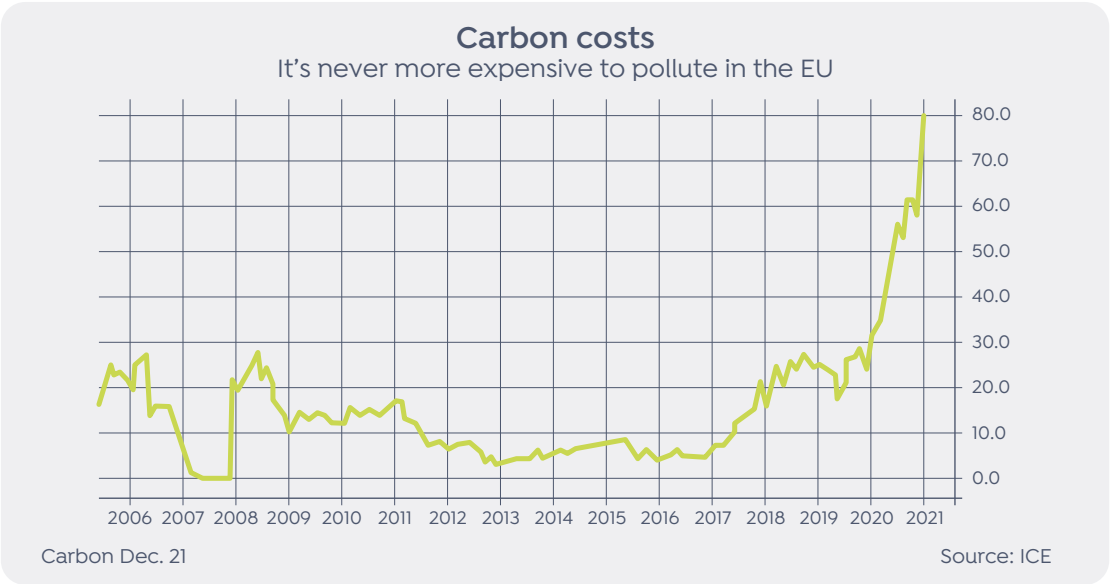
- Businesses/areas of the company become familiar with a new cost resulting from an actual/potential obligation.
- It gives a signal for a strategic shift/emission reduction to take place. The price has to be sufficient for that signal to be effective.
- Holds issuers accountable
- Incentives for sustainable investments
- Promotes innovation

By 2020, more than 2,000 companies, including almost half of the world's largest capitalised companies, reported that they were already using or planning to introduce internal carbon pricing within two years.



Growth in domestic carbon pricing. Prepared by Carbon Neutral with data from CDP.

According to the CDP 2021 report, the average internal carbon price used by companies is USD 25/tnCO_2eq. And its maximum value is US$ 200.



Carbon price developments in Europe

In this context, Grenergy wants to follow best practice in climate change mitigation issues and seeks to join companies that voluntarily set an internal carbon price (ICP) to value the cost of a unit of CO_2.

Furthermore, the TCFD defines a CIP as "an internally developed estimated cost of carbon emissions, which can be used both as a planning tool to help identify revenue

opportunities and risks, as an incentive to drive energy efficiency to reduce costs, and as a tool to guide capital investment decisions".

The PCI is therefore a strategic planning tool that, if applied correctly, can help organisations in their transition to a carbon-free economy, as the fees collected can have a real impact on operations decision-making. Companies are using the PCI as a strategic planning tool in managing climate-related business risks and preparing for the transition to a low-carbon economy.

The CIP varies according to the business regions and objectives of each company.

By attaching a monetary value to climate risks and translating them into uniform metrics, a company's financial managers can make the transition to a low-carbon economy an integral part of their business strategy.

Companies can reveal hidden opportunities, for example:

- Identify which business areas are most exposed to carbon emissions;
- Set material carbon reduction targets (and monitor progress);
- Incentivise business units to reduce their carbon exposure by linking the carbon price to the unit budget.
- Reallocate internalised carbon "revenues" to new green business lines, and
- Support banks/financial institutions in their portfolio lending decision-making process.

According to TCFD, carbon pricing is a key metric for scenario analysis. TCFD recommends companies to disclose:

- Assumptions made about the evolution of the carbon price over time (under the carbon fee framework and/or the ETS).
- Geographical scope of application
- Whether the carbon price would be applied only at the margin or as a base cost;
- Whether the price applies to economic sectors or to the whole economy, and in which regions;
- Whether to use a common carbon price (at various points in time) or differentiated prices.
- Assumptions on the scope and modality of a CO price2 through a tax or trade regime.

$$\text{Price on carbon } (\$/tCO_2e) = \frac{\text{Yearly funding requiered for initiatives } (\$)}{\text{Annual GHG emissions in boundary } (tCO_2e)}$$

Carbon pricing: Seven things to consider when establishing a carbon pricing program.

There are two main mechanisms through which a company can apply an internal price on carbon: hidden cost pricing (shadow price) or an internal tax or emissions trading system.

SHADOW PRICING

Shadow pricing is a theoretical or assumed cost per tonne of carbon emissions.

With the shadow price method, a cost of carbon is calculated within business processes, such as business case assessments, procurement procedures or the development of business strategies, to demonstrate the cost of the carbon implications of those business decisions. The resulting cost can be communicated to stakeholders.

Typically, the price is set at a high level that reflects the predicted future carbon price, such as the Bank of England's prediction of $100 per tonne. The shadow carbon price method helps a company understand carbon risk and prepare adequately, long before the shadow price becomes an actual price.

As a theoretical price, it may be easier to apply in a company, as there are no changes in departmental budgets or financial arrangements.

INTERNAL TAX OR TRADING SYSTEM

Alternatively, companies may choose to impose their own internal carbon tax or a trading system that is calculated across all departments of the company.

In an internal tax or trading system, the "tax" is actually collected. The specific mechanics of how the money is transferred within the firm must be designed to suit the needs of the firm. Typically, the price is set well below the shadow cost price.

Pricing needs to take into account the sensitivities of the company to the imposition of such a tax and the practicalities of how the money can be raised. There are various types of carbon pricing, such as the creation of a central fund or the design of a Cap & Trade system that mirrors external mechanisms such as the EU Emissions Trading Scheme. The money raised by this method would normally be reinvested in sustainability and carbon reduction projects.

This system is beneficial in raising funds to invest in carbon reductions and incentivising change.

CARBON PRICING

Once it has decided on the mechanism it will use to implement its internal carbon price, Grenergy will have to decide how it will calculate it. There are several ways to calculate the carbon price, including the following options:

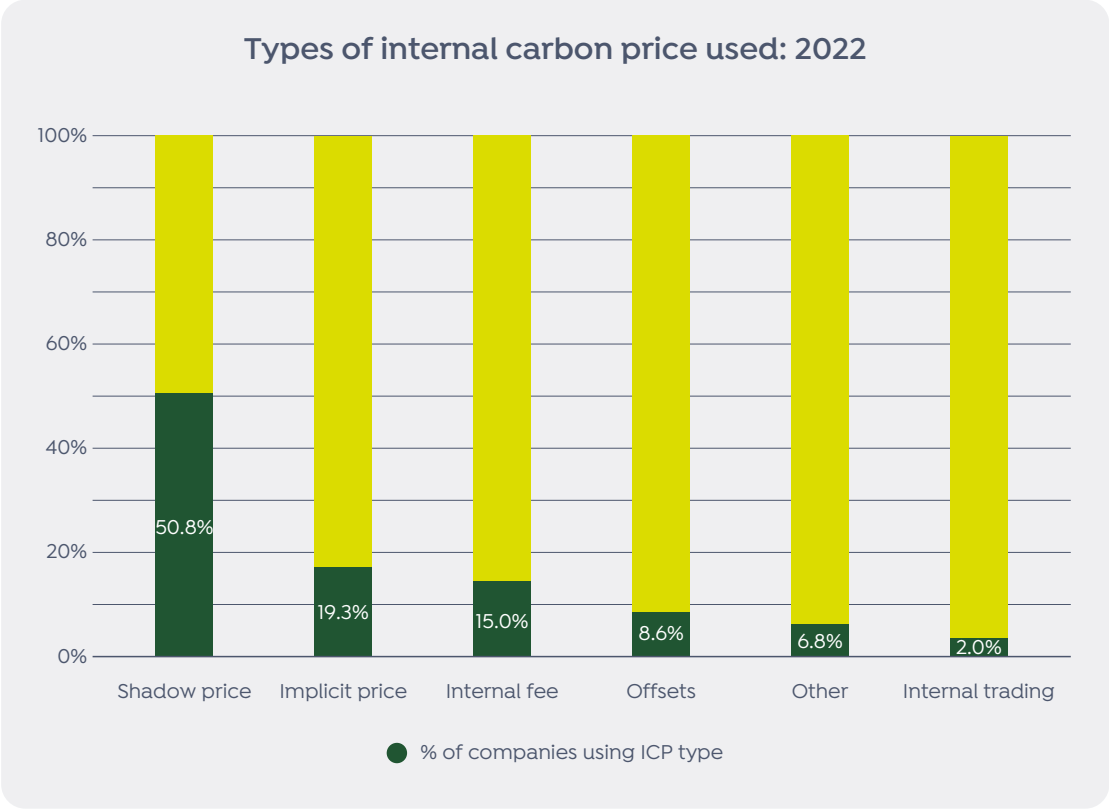
- **Externally published sources** - For a shadow price method, it is preferable to link your carbon price to an externally published source to reflect the risk element. There are a number of sources that can be used, such as the *UK Green Book* guidance or the *CDP Carbon Pricing Corridors*. It could also be linked to the cost of appropriate offsets, or to the costs of external mechanisms such as the European Emissions Trading Scheme (EU ETS). Using an externally published source can also be beneficial for governance processes and for keeping the CIP system up to date.
- **An internal bespoke carbon price** - For an internal tax or trading system, the calculation of an internal bespoke price would normally be most appropriate.

The price would be set taking into account internal sensitivities and should bereviewed periodically to understand the impact on decision-making and business operations.

- **Implicit price** - An implicit price is calculated from an understanding of how much the company spends on reducing GHG emissions. It is then applied to an understanding of where carbon is emitted in the company. A target may already exist along with an investment programme. The implicit price can be used for communication or cost allocation in the company.

- **Social Cost of Carbon** - Some companies may consider the social cost of carbon (SCC). This is a more complex and involved method that adds up all the quantifiable costs and benefits of emitting a tonne of CO_2 and usually takes into account a wider range of social impacts in the costing.

According to a *CDP* report, *Putting a price on carbon. The state of internal carbon pricing by corporates globally 2021*, although many companies use various types of carbon pricing depending on their needs, shadow pricing is the most widely used, with more than 5 out of 10 companies applying it.



A shadow price assigns a hypothetical cost of carbon to each ton of emissions as a tool to reveal hidden risks and opportunities in operations and supply chains, and to support strategic decision-making related to future capital investments.

Carbon prices vary depending on the extent of emissions and the type of price. The table below shows the average price per ton converted to US dollars. In addition to being the most common, shadow prices are the highest dollar value of any price type.

GHG Scope	Implicit price	Internal fee	Internal trading	Offsets	Shadow price
Scope 1	$28	$23	Insufficient data	$21	$25
Scope 2	$7	$64	Insufficient data	Insufficient data	$29
Scope 3	Insufficient data	$19	Insufficient data	Insufficient data	$49
Scope 1; Scope 2	$28	$22	$31	$2	$28
Scope 1; Scope 3	Insufficient data	Insufficient data	Insufficient data	Insufficient data	$25
Scope 1; Scope 2; Scope 3	$23	$11	Insufficient data	$7	$34

Price ranges by type

Price type	Median price per tonne (US$)	Maximum price per tonne (US$)
Implicit price	$27	$918
Internal fee	$18	$532
Internal trading	$27	$71
Offsets	$6	$35
Shadow price	$28	$459

Price ranges by region

Region	Median price USD	Maximum price USD
Africa	$8	$120
Asia	$28	$918
Europe	$28	$532
Latin America	$8	$100
North America	$23	$760
Oceania	$17	$297

Price ranges by industry

Industry	Median price USD	Maximum price USD	Unique companies with usable data
Power generation	$23	$112	77