

The graphic design of the Enel Group's Corporate Reporting is a symbolic way of representing the company, from electricity generation to electricity distribution and utilization.

Circular geometric shapes blend together to create a balanced system, emphasizing a focus on growth and on improving people's lives.





2023 GHG INVENTORY

Quantification and reporting of greenhouse gas emissions in accordance with the Corporate GHG Protocol

INDEX

01.	ENEL'S ZERO EMISSION AMBITION	5
02.	GREENHOUSE GAS EMISSIONS INVENTORY REPORT	7
	Introduction	7
	Organisational and Operational boundaries	7
	Baseline year and recalculation	9
	Calculation methodology and process	10
	Uncertainty Assessment	12
03.	2023 GHG EMISSIONS INVENTORY	13
	Scope 1 Emissions	15
	Scope 2 emissions	16
	Scope 3 emissions	17
	Intensity metrics	18
04		
U1.	ANNEXES	19
	2023 GHG inventory statement	19
	2022 restated baseline GHG Inventory Statement	20
	DNV Verification Statement	20
	List of Companies within the scope of the inventory	21

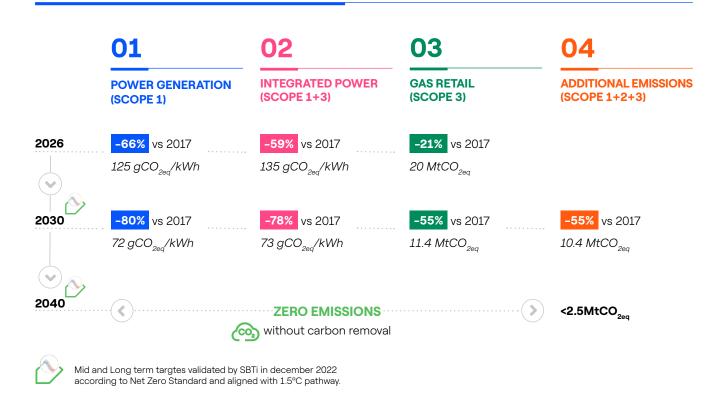


01. ENEL'S ZERO EMISSION AMBITION

Enel is leading the fight against climate change through its commitment to total decarbonization. By eliminating its direct and indirect greenhouse gas emissions and moving towards sustainable electrification powered by renewable energy, it contributes to limit the increase of global temperature to 1.5°C with respect to preindustrial era.

Enel aims to reach zero emissions by 2040, much earlier and much more ambitious than the global net zero goal set for 2050. Enel's decarbonization roadmap is built upon four different targets that cover direct and indirect emissions across the value chain, validated by Science Based Targets initiative (SBTi) in coherence with a 1.5°C pathway.

GHG REDUCTION TARGETS VALIDATED BY SBTI IN COHERENCE WITH 1.5 PATHWAY



The three main GHG reduction targets – covering power generation, power sales and gas sale activities – seek to mitigate 100% of related GHG emissions from 2017 baseline. Such ambition will be reached by promoting energy generation from renewable sources, completing the phase-out of fossil fuels, digitizing and upgrading power grid, and accelerating sustainable electrification. Specifically:

 by 2026, Enel's renewable capacity is expected to reach about 73 GW (including managed capacity), with the share of zero-emission generation reaching about 86% (including managed production). In addition, progress towards digitalization of networks will increase the share of digitalized customers to around 71%;

- by 2027, Enel will complete the phase-out of all its coalfired power plants;
- by 2030, around 85% of the installed capacity will be renewable (including managed capacity), with the share of zero-emission generation reaching about 90% (included managed production), and 100% of network customers will be fully digitalized;

 by 2040 all installed capacity will be 100% renewable, the Group will have phased-out both thermoelectric generation and retail gas activities and 100% of the electricity sold will be produced from renewable sources.

Enel's four GHG targets will consent a reduction of nearly 99% of total Group GHG emissions compared to 2017, beyond the overall 90% threshold expected by global standards. However, Group's ambition aims at reaching a complete decarboniza-

tion across its value chain, for which several exogenous factors shall be overcome in the short to medium term (including new carbon free solutions in the supply chain at large-scale, change of certain market conditions and policies to enable zero emissions business models). In case a marginal volume of residual emissions remains by 2040, expected to be below 2.5 MtCO_{2eq} and mostly related to indirect emissions (scope 2 and 3), that will be neutralized through carbon removal.



02. GREENHOUSE GAS EMISSIONS INVENTORY REPORT



Enel is committed to ensuring increased transparency and accountability on the Group's progress towards reducing greenhouse gas emissions across the entire value chain. As result, the Group discloses the GHG emissions inventory from its business activities – including the generation and distribution of electricity and the sale of electricity and gas to end customers – every year.

This public report is carried out in accordance with the international Greenhouse Gas Protocol – published by the World Business Council for Sustainable Development and World Resource Institute – and with the GRI standard (Global Reporting Initiative), and has been made public as part of Enel's Sustainability Report, which constitutes the consolidated non-financial Declaration (www.enel.com/investors/sustainability).

Organisational and Operational boundaries

Organisational boundaries

Direct and indirect greenhouse gas emissions are reported covering the following activities:

- Power Generation: including the construction and operation of thermoelectric, renewables and nuclear power plants.
- Power Distribution: including the construction and operation of electricity grids.
- Market: including the sale of electricity, gas and other energy solutions.
- Real Estate: including the management of buildings and vehicles fleet.

 Others: including the manufacturing of photovoltaic panels in Italy (3SUN factory), management of port terminals in Spain, and management of the Santa Barbara site in Italy (ex-mining site).

GHG data is collected following the Group's financial consolidation approach⁽¹⁾, hence it includes 100% of GHG emissions from facilities and activities where Enel has the financial control over the operations; except for the nuclear activity, managed under a shared financial control approach, so data is reported based on criteria in proportion to ownership.

⁽¹⁾ Annex I of the document includes the list of Companies included in the inventory.

Operational boundaries

Enel establishes operational boundaries based on the guidelines in the GHG Protocol, identifying GHG sources

across its value chain for all three scopes.

Scope 1 emissions

Direct GHG emissions refer to emissions from sources that are controlled by the Company. This category includes emissions derived from:

- Combustion processes, including CO₂, CH₄ and N₂O emissions from fossil fuels consumed in:
 - Thermoelectric generation activities, including gas and coal fired power plants, while also non-CO₂ emissions from biomass.
 - Auxiliary services (including gensets) in nuclear and renewable plants.
 - Auxiliary services (including gensets) in power distribution activities.
 - Transportation of fuels (LNG and coal) and subproducts (ashes and gravel) on vessels under own operational control.

- Heating systems and canteens in offices (diesel and natural gas), including all properties in all Business Lines and Group offices.
- Company vehicles fleet (diesel and gasoline).
- Fugitive emissions, including:
 - Fugitive NF₃ emissions in photovoltaic panels manufacturing
 - Fugitive CH₄ emissions in gas fired power plants.
 - Fugitive HFC emissions in thermoelectric and hydropower plants, offices, and PV manufacturing site
 - Fugitive SF₆ emissions in insulating systems for power generation and distribution activities.
 - Fugitive biogenic CH₄ emissions in hydroelectric basins.

Scope 2 emissions

Indirect GHG emissions derived from the company's activity but generated by other entities. In the case of Enel, these emissions relate to:

 Technical network losses: Emissions associated with the generation of electricity to offset the dissipation of energy from network losses relating to non-owned transmission systems and distribution losses from the network under Enel's operational control;

Electricity consumption: Production of electricity purchased from the network for own consumption in thermoelectric and hydropower plants, terminal ports, PV manufacturing sites, buildings and offices.

Scope 3 emissions

Scope 3 emissions are indirect emissions resulting from the company's activities that are generated by sources not owned or controlled by the company. This scope includes all material emissions associated with the Group's value chain not included in the previous scopes. In particular, the following Scope 3 categories from GHG Protocol are considered material for Enel's business:

- Category 1 purchase of goods and services:
 - GHG emissions from the supply chain, related to the production of goods and services delivered by suppliers.
- Category 3 Fuels and energy-related activities not included in Scope 1 and 2:
 - Category 3.A Upstream emissions of purchased fuels:
 - Coal and subproducts: combustion and fugitive GHG emissions during the mining and transportation by sea of coal used in thermoelectric power

- plants, along with subproducts (ashes)
- Natural Gas: combustion and fugitive GHG emissions from the extraction, transport, liquefaction and regasification, of gas used in thermoelectric plants for energy production and gas sold on the retail market to end customers.
- Gasoil and Biomass: combustion GHG emissions from the road transportation of fuel oil and biomass
- Category 3.D Generation of purchased electricity that is sold to end users: GHG Emissions for the generation of electricity purchased and sold to end customers in the power retail market.
- Category 4 Upstream transportation and distribution:
 - Combustion GHG emissions from road transport of other fuels, raw materials and waste.
- Category 11 Use of sold products:
 - Combustion GHG emissions from the use of the natural gas sold to end customers in the gas retail market.



Baseline year and recalculation

Enel defined 2017 as baseline year for its science-based targets in order to provide a more comprehensive view of the backward and forward-looking progress on its decarbonization roadmap.

However, the Group has defined 2022 financial year as the baseline for the purpose of the GHG emissions inventory. This is mainly due to relevant changes that took place in the company's perimeter after the disposal of some thermoelectric assets, as well as the last validation carried out by SBTi in December 2022 on Enel's mid and long terms according to the Net Zero Standard that caused several changes in the GHG accounting methodology of some GHG sources.

The following changes have taken place that require the recalculation of 2022 baseline:

Perimeter changes that took place in 2022:

- Russia: Enel finalized the sale of its entire stake in PJSC Enel Russia, equal to 56.43% of the latter's share capital. As result of the transaction, Enel disposed of all its Russian power generation assets, which included approximately 5.6 GW of conventional capacity and around 300 MW of wind capacity at different stages of development.
- Brazil: Enel sold its entire stake in the Brazilian power distribution company CELG Distribuição S.A. CELG D ("Enel Goiás"), equal to approximately 99.9% of the latter's share capital. The Group also sold its entire stake in the thermoelectric power plant located in Fortaleza (Ceará State), even though it did not operate in 2022 so there was no impact on GHG emissions.
- Italy: Enel completed the acquisition of the entire share capital of ERG Hydro Srl, owner of hydroelectric plants located in central Italy with an installed capaci-

- ty of 527 MW. Their biogenic ${\rm CH_4}$ emissions were not included in the 2022 GHG inventory, while they have been added to the restated 2022 baseline.
- Chile: Enel sold its entire stake in the thermoelectric power plant located in Diego Almagro (Chile), with an installed capacity of 24 MW, even though it did not operate in 2022 so there was no impact on GHG emissions

Methodology changes implemented in 2023 with impact on 2022 baseline:

- For the calculation of **scope 2** and **Scope 3 category 3.D** (Generation of purchased electricity that is sold to end users), the country emission factors of the power system (both for location and market based models) were updated. Enel is now relying on data from National Authorities for its core countries (Italy, Spain, Chile, Colombia, Peru, Brazil and United States) while it will continue to use data from third party providers for remaining all other countries.
- For the calculation of **Scope 2** emissions related to electricity consumption in power distribution business, it has been decided to consider such emissions as part of the calculation of scope 2 emissions from technical networks losses.
- For the calculation of scope 3 category 1 (purchase of goods and services), primary data and method calculation on specific works have been updated.
- For the calculation of Scope 3 category 11 (Use of sold products) emissions, Enel has updated the calculation methodology to align the calorific value considered for the natural gas volume sold to end customers with the corresponding IPCC factor.

As result, the 2022 restated baseline is the following:

	Total	Total		Scope 2	Scope 2	
tCO _{2eq}	Location Based	Market based	Scope 1	Location Based	Market Based	Scope 3
2022 baseline – Original	132,892,598	134,928,026	53,066,418	4,023,258	6,058,687	75,802,921
2022 Baseline - Restated	121,440,642	122,723,835	47,622,170	3,755,810	5,039,002	70,062,662

It is worth noting that restated 2022 figures disclosed in 2023 Sustainability Report differ from this baseline as the only restatement considered in 2023 Sustainability Report concerns the methodological changes, while the restate-

ment due to perimeter changes was not implemented, in accordance with the guidelines used by the Group for the disclosure of non-financial information in the Sustainability Report.

Calculation methodology and process

The internal policy in place "Definition and Method of GHG Emissions calculation", sets the common framework for the collection and analysis of GHG data and performance, considering internal and external purposes and both Group's and Enel stakeholders' possible benefits. The procedure collects and harmonizes definitions and methods, internally adopted and based on international standard, to quantify the impact of the Enel Group in GHG terms, describing all the business processes aimed to measure the various GHG related aspects.

GHG data and primary operational data are collected through the **Group's environmental database** on annual basis, except for specific GHG data in which the frequency is greater. Data is collected by technology and geography, directly from the different organisational levels (either

site level or country level, depending on the source) and undergo internal formal controls and consistency assessment and subsequent validation by the different business lines and at consolidated level.

In 2023, Enel launched an **action plan** to strengthen the GHG accountability process that, among other priorities, seek to: review and upgrade the calculation methodology of specific existing GHG sources; enhance existing processes and increase alignment with disclosure standards; and upgrade existing digital systems to collect GHG data. As result, the Group has already implemented some methodology changes as disclosed in section "base year and recalculation", while further actions will be developed throughout 2024.

GHG source	Calculation method
Scope 1	
GHG emissions (${\rm CO_2}$, ${\rm CH_4}$ and ${\rm N_2O}$) from the combustion of fuels for Thermoelectric generation activities, including CCGT, Oil&Gas and coal thermal plants and biomass.	GHG direct emissions are calculated for each combustion unit and fuel type at thermal power plant level, based on fuel consumption (for CO_2 , CH_4 and N2O) and the corresponding fuel-specific IPCC GHG emission factor; and/or through direct measurement at the chimney (only for CO_2).
	${\rm CO_2}$ emissions from thermoelectric generation operated within EU are subjected to yearly certification by an external certifier for the participation to the European mechanism of the Emission Trading System (ETS)
	${\rm CO_2}$ emissions from thermoelectric generation operated in Chile are subjected to yearly certification by environmental authority (Impuestos Verdes)
GHG emissions (CO ₂ , CH ₄ and N ₂ O) from the combustion of fuels for auxiliary engines in: • Auxiliary services (including gensets) in nuclear and renewable plants. • Auxiliary services (including gensets) in Power distribution activities. • Transportation of fuel and subproducts on vessels under own operational control. • Heating systems and canteens in buildings and offices • Company vehicles fleet.	GHG direct emissions are calculated based on fuel consumption and the corresponding fuel-specific IPCC GHG emission factor
Fugitive NF ₃ emissions in photovoltaic panels manufacturing	It is used for cleaning purposes during the PV panel manufacturing process in 3SUN Factory. They are periodically calculated as refills and correspondent ${\rm CO_{2eq}}$ emissions calculated by applying the correspondent GWP=16100.
Fugitive CH ₄ emissions in gas-fired power plants	Methane leakages are assessed from ${\rm CH_4}$ quantities measured and calculated with the LDAR (Leak detection and repair) methodology.
Fugitive HFCs emissions in thermoelectric and hydropower thermal plants, offices, and PV manufacturing sites	HFCs are present in air conditioning and refrigerants. leakages are periodically calculated from equipment refill and/or breakdown with consequent replacement and reported through the commercial name of the gas and the correspondent CO _{2eq} emission calculated by the corresponding GWP value.
Fugitive SF ₆ emissions in power generation and distribution activities	It is used in power plants and in high and medium voltage electrical equipment due to its capacity to isolate and extinguish electric arcs. SF_6 losses in the distribution network are periodically calculated through two components, SF_6 equipment refill and SF_6 equipment breakdowns, with consequent replacement, applying a GWP=23,500 convert them to CO_2 equivalent.



GHG source	Calculation method
Fugitive biogenic CH ₄ emissions in hydroelectric basins	Fugitive emissions of biogenic methane from hydroelectric plant basins are consequent to decomposition processes of flood organic material and algal material. They are calculated using the IPCC method and considering the area of the basin and the climate zone of their location.
Scope 2	
GHG emissions associated with electricity consumption	GHG emissions are calculated based on the total amount of energy consumed by the different Group's assets at country level, applying the corresponding country emission factor of the electricity system, with the following criteria:
	 For location-based model, the coefficient used represents the amount of GHG emissions released by the power plants connected to the energy system per unit of energy produced by these plants, measured in grams of CO_{2eq} per kWh. The factors are collected from Na- tional Authorities for core countries (Italy, Spain, Brazil, Colombia, Chile and USA), while from reliable third-party databases for non-core countries (Enerdata)
	 For market-based model, the volume of consumed energy bundled with renewable attributes (with origin certificates, RECs or similar) is considered as zero emissions, while a residual emission factor is applied to remaining amount of energy. This residual factor excludes the amount energy fed into the electricity system that is bundled with renewable attributes. Data is also collected from National Authorities for core countries and from reliable third-party databases for non-core countries (AIB) when available. Location-based factors are used in countries with no renewable certificate mechanisms managed by local governments.
GHG emissions associated with technical network losses	GHG emissions are calculated based on the amount of energy fed into the grid that exceeds the share produced by the Group in each country. This approach avoids any potential double counting with GHG emissions already included in Scope 1. Ultimately, the corresponding network losses ratio and country emission factor are applied (following the same criteria described above for location and market-based models).
Scope 3	
Category 1. Products and Services	GHG emissions from the supply chain, related to the production of goods and services purchased from suppliers, are calculated according to the following approach according to its type:
	 Main supplies: data from suppliers through EPD (Environmental Product Declaration) or ISO CFP 14067 certifications or from international databases based on LCA methodology (65% of total supplies)
	Other supplies: from the average emissions of the economic sector to which they belong.
	 Works: sustainable construction site data (wind / solar plants) Services: from average emissions of their corresponding economic sector
Category 3. Fuels and energy-related activities not included in Scope 1 and 2	Indirect GHG emissions related to:
	 Upstream coal: They consider fugitive CH₄ emissions from mining activities related to the amount of coal consumed in the Group's coal-fired power plants, relying on standard factors and assumptions. Furthermore, indirect emissions from coal transported by sea are also con- sidered, calculated considering the estimated volume of fuel consumed by third party vessels.
	 Upstream gas: they cover the entire value chain, from extraction to delivery, using secondary data for each specific phase, and covering CO₂. CH₄ (both from combustion and leakages) and N₂O. The calculation includes indirect emissions from both the gas volume consumed in thermoelectric power plants and sold in the retail market to end customers.
	• Upstream fuel-oil and biomass : they are calculated based on the volume transported by road, using secondary data and standard factors and assumptions.
	 Upstream electricity: Emissions from energy purchased to other producers and resold to end customers are calculated assuming the integrated position of the Group at country level, so that the amount of energy is estimated as the difference between energy sales and own pro- duction, considering also the additional amount of energy required to cover related technical grid losses, and ultimately applying the same country emission factors used for Scope 2 cal- culation (location based).
Category 4. Upstream transportation and distribution	Indirect GHG emissions related to the fuel consumed from road transportation of other fuels (not included in category 3), raw materials and waste. They are calculated based on the volume transported by road, using secondary data and standard factors and assumptions.
Category 11. Use of sold products	Indirect GHG emissions related to the use of the natural gas sold to end customers in the gas retail market. They are calculated from the amount of energy sold, implementing the corresponding emission factors from IPCC.

Uncertainty Assessment

Scope 1

94.9% of Scope 1 emissions relate to the combustion of fossil fuels for electricity generation in thermoelectric power plants (including, oil, gas and CCGT), while 83% are regulated by Emission Trading Systems or similar, so that the uncertainty is assured by local regulation certification schemes

The greenhouse gas emissions (measured in CO_{2eq}) for the generation of CH_4 and N_2O are calculated based on the fuels consumption uploaded in the Group's database on

annual base and subject to internal control mechanisms. The fuel volumes used in power plants are subject to metrological checks also for billing purposes.

For other greenhouse gas emissions values, related to fugitive emissions, data is collected and calculated using official sources, including the IPCC emission factors (Fifth Assessment Report (AR5 - 100 year) and GWP of the GHG Protocol.

Scope 2

Scope 2 emissions calculation from technical network losses rely on operating data, considering the volume of energy injected in the network and the percentage of technical network losses, whose calculation is governed by internal procedures compliant with local regulation and with recognized standards with minimum degree of uncertainty.

Measures are also implemented to manage / decrease the associated uncertainty through periodic internal reviews

of the process of managing business data and the results obtained.

Country energy emission factors are extracted from official sources for Group's core countries (Italy, Spain, Chile, Colombia, Brazil and United States), while from reliable third data providers for non-core countries. The selection of these emission factors is intended to minimise uncertainty as much as possible.

Scope 3

With reference to Scope 3 – Category 1 (Products and services), it is possible to qualitatively assess a low level of uncertainty for the calculation of the emissions of the strategic categories, based on the average of the data obtained directly from suppliers through EPD (Environmental Product Declaration) or ISO CFP 14067 certifications; an average level of uncertainty can be assessed for the categories estimated through international databases based on LCA methodologies and a medium / high level of uncertainty can be reported for the tail categories be

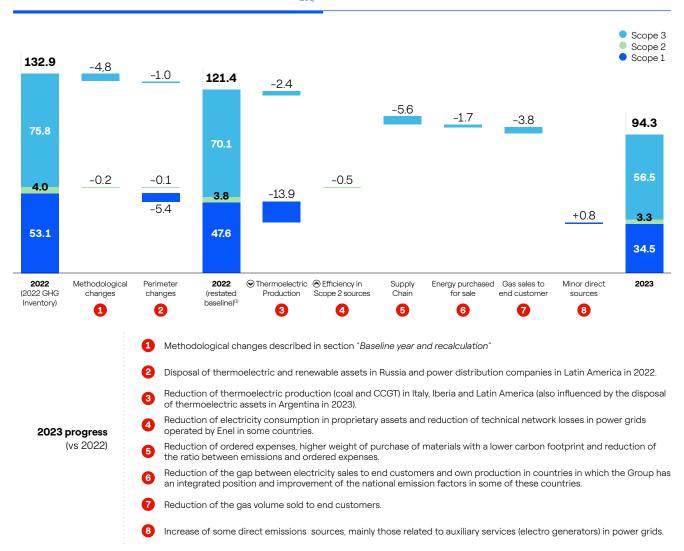
estimated using the average emission factors of the economic sector to which they belong.

Concerning Scope 3 – Category 3 (Fuel and energy related activities not included in scope 1 or 2) Scope 3 – Category 4 and Scope 3 – Category 11 GHG emissions are calculated based on operational data collected through certified financial and non financial accounting systems, implementing carbon factors derived from IPCC, National Authorities, reliable third party data providers or even existing contracts.



03. 2023 GHG EMISSIONS INVENTORY

GHG EMISSIONS PROGRESS IN 2023 (MtCO_{2ea})



- (1) 2022 baseline restated for the elaboration of the 2023 GHG inventory.
- (2) Scope 2 figures refer to the location based model.

In 2023, direct and indirect absolute emissions (including scope 1, 2 and 3) amounted to 94,321,654 tCO_{2eq'}, reaching the lowest rate ever and breaching the increasing trend experienced in 2021 and 2022 as consequence of global energy crisis. In particular, total emissions were reduced by 22.3% with respect to 2022 restated baseline⁽²⁾.

This is mainly due to an overall improvement in main operational performance metrics, which contributed to reduce direct and indirect emissions across the entire value chain, including, among others:

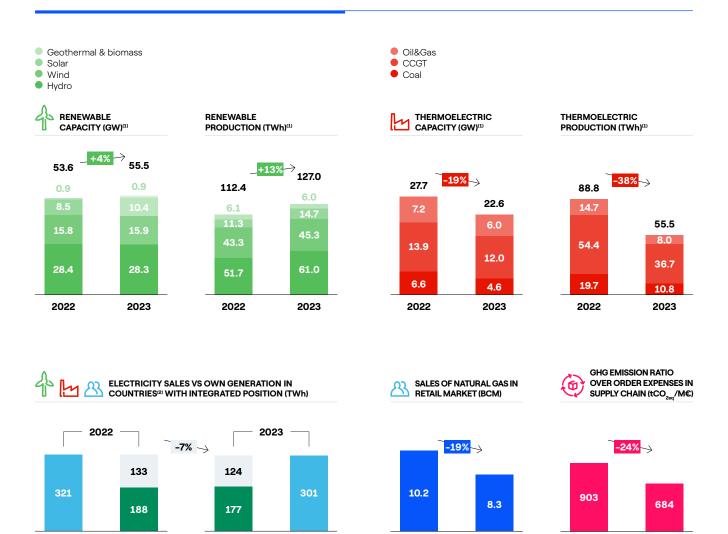
the reduction of the thermoelectric capacity and production and the increase of renewable capacity and production;

^{(2) 2022} restated baseline includes methodological changes and perimeter changes, being different to 2022 FY figures disclosed in 2023 Sustainability Report. Further details can be found in section "base year and recalculation".

- the reduction of the gap between the electricity sales in the retail market and the own production in some countries:
- the reduction of the volume of natural gas sold to end customers;
- the reduction of the ordered expenses in 2023 and the improvement of the ratio between GHG emissions and the supply chain expenses.

Furthermore, the digitalization and automation of the power grids also contribute by reducing network losses and enabling the development of renewables, playing a key role in the Group's decarbonization performance, while also in the decarbonization of the energy systems in which the group operates.

OPERATIONAL PERFORMANCE METRICS WITH HIGHEST INFLUENCE ON ABSOLUTE GHG EMISSIONS (SCOPE 1, 2 AND 3)



Gap between electricity sales and own generation, relevant for Scope 3 (Category 3.D) calculation (as described on page 11)

Electricity

Generation

2022

2023

2022

Electricity

Generation

Electricity

Sales



2023

Electricity

Sales

⁽¹⁾ Consolidated capacity and production. They also include operational data from assets in operation in 2022 and 2023 until their disposal date. In addition, Enel produced 24.9 TWh from nuclear in 2023 (with respect to 26.6 TWh in 2022)

⁽²⁾ Italiy, Spain, Brazil, Chile, Colombia, Argentina, Peru and Romania (until its disposal)

Scope 1 Emissions

		TC	OTAL (tCO _{2eq})		2023 - Fuel c	ombustio	n (tCO _{2eq})	2	2023- F	ugitive	emission	ıs (tCO _{2eq})
Activity	GHG Source description	2023	2022(3)	%	CO2	CH₄	N ₂ O	SF ₆	HFCs	NF ₃	CH ₄ non bio	CH₄ bio
	Thermoelectric generation activities, including gas and coal fired power plants, while also non CO ₂ emissions from biomass	32,744,581	46,673,193	-29.8%	32,624,745	43,029	76,807	-	-	-	-	
	Auxiliary engines in nuclear and renewable plants.	12,835	19,077	-32.7%	12,796	14	26	-	-	-	-	-
٨	Transportation of fuels (LNG and coal) and subproducts (ashes and gravel) on vessels under own operational control	151,498	148,917	1,7%	149,741	17	1,739	-	-	-	-	-
Power	Fugitive CH ₄ emissions in gas fired power plants	2,167	5,317	-59,2%	-	-	-	-	-	-	2,167	-
Generation	Fugitive SF ₆ emissions in insulating systems for power generation	45,310	37,743	20.1%	-	-	-	45,310	-	-	-	-
	Fugitive HFCs emissions in thermoelectric and hydropower plants, and PV manufacturing sites	1,427	4,392	-67.5%	-	-	-	-	1,427	-	-	-
	Fugitive NF ₃ emissions in photovoltaic panels manufacturing	0	4	-100.0%	-	-	-	-	-	-	-	
	Fugitive biogenic CH ₄ emissions in hydroelectric basins	328,093	323,598	1.4%	-	-	-	-	-	-	-	328,093
ال	Auxiliary engines in power distribution activities.	1,032,588	223,077	362.9%	1,029,180	1,178	2,230	-	-	-	-	-
Power Distribution	Fugitive SF ₆ emissions in insulating systems for power distribution	101,429	105,173	-3.6%	-	-	-	101,429	-	-	-	-
	Heating systems and canteens in offices (diesel and natural gas), including all properties in all Business Lines and Group offices.	6,177	6,385	-3.3%	6,170	3	4	-	-	-	-	-
Real Estate Management	Company vehicles fleet (diesel and gasoline)	80,772	74,516	8.4%	78,871	351	1,551	-	-	-	-	-
	Fugitive HFCs emissions in buildings	3,680	776	374.1%	-				3,680			
TOTAL		34,510,557	47,622,170	27.5%	33,901,503	44,592	82,356	146,739	5,106	0	2,167	328,093

In 2023, Scope 1 GHG emissions amounted to 34,510,557 tCO $_{\rm 2eq'}$ representing 36.6% of total GHG emissions and entailing a significant reduction with respect to 2022 restated baseline⁽³⁾ (27.5% lower).

The share of Scope 1 GHG emissions (including CO_2 , CH_4 and $\mathrm{N}_2\mathrm{O}$) related to fuel combustion process for power generation accounted for more than 94.9% of the total value of Scope 1. These emissions, which amounted 32,744,581

^{(3) 2022} restated baseline includes methodological changes and perimeter changes, being different to 2022 FY figures disclosed in 2023 Sustainability Report. Further details can be found in section "base year and recalculation"

tCO_{2eq}, were reduced by 29.8% compared to 2022 restated baseline⁽⁴⁾ as consequence of a remarkable reduction in thermoelectric production with respect to 2022 (thermoelectric production was reduced by 38% considering thermoelectric assets disposed in 2022, while 30% excluding them). Furthermore, renewable energy production was increased by 13% compared to 2022 (with an outstanding increase of hydroelectric and solar production by 18% and 29%, respectively), which contributed to displace energy production from fossil fuels.

The percentage of emissions subject to local regulatory schemes were of 83.0%, with the following breakdown:

• 74.1% of total Scope 1 emissions related to power plants under the EU-ETS program in Italy and Spain.

 8.9% of total Scope 1 emissions related to power plants under the green tax system in Chile (Sistema de Impuestos Verdes).

Other Scope 1 GHG emissions (including those from auxiliary services in power plants and distribution sites, fugitive emissions, vehicles fleet, buildings and fuel transportation in own vessels) amounted to 1,765,976 $\rm tCO_{2eq}$ combined, representing 5.1% of total Scope 1 emissions.

Concerning electricity production from biomass, $\mathrm{CH_4}$ and $\mathrm{N_2O}$ direct emissions were equal to 28,631.40 $\mathrm{tCO_{2eq}}$ in 2023 and are included in Scope 1 emissions calculation. However direct biogenic $\mathrm{CO_2}$ emissions, equal to 96,277 $\mathrm{tCO_{2eq'}}$ are disclosed separately from the GHG inventory following GHG Protocol guidelines.

Scope 2 emissions

		LOC	LOCATION BASED			RKET BASED		
		TOTAL (tCO _{2eq})			OTAL (tCO _{2eq}) TOTAL (tCO _{2eq})			
Activity	GHG Source description	2023	2022(4)	%	2023	2022(4)	%	
As n	Electricity consumption from the grid in power plants, including hydro pumped-storage plants	568,045	656,313	-13.4%	797,733	867,282	-8.0%	
Power Generation and others	Electricity consumption from the grid in terminal ports in Spain, PV manufacturing site in Italy (3SUN) and non-operating mine site in Italy (Santa Barbara)	6,624	3,975	66.7%	1,433	1,630	-12.1%	
Power Distribution	GHG emissions associated with technical network losses	2,675,141	3,061,360	-12.6%	3,698,260	4,144,656	-10.8%	
Real Estate Management	Electricity consumption in buildings and offices	27,865	34,162	-18.4%	8,735	25,435	-65.7%	
	Subtotal from electricity consumption	602,534	694,450	-13.2%	807,901	894,346	-9.7%	
	Subtotal from technical network losses	2,675,141	3,061,360	-12.6%	3,698,260	4,144,656	-10.8%	
	Total Scope 2	3,277,674	3,755,810	-12.7%	4,506,161	5,039,002	-10.6%	

In 2023, Scope 2 GHG emissions amounted to 3,277,674 ${\rm tCO}_{\rm 2eq}$ according to the location based approach, representing 3.5% of total GHG emissions, while 12.7% lower than 2022 restated baseline. Instead, they amounted to 4,506,161 ${\rm tCO}_{\rm 2eq}$ considering the market-based model. The two sources related to Scope 2 emissions experienced a decreased with respect to 2022 restated baseline. In particular:

 Scope 2 emissions from electricity consumed by the Group decreased by 13.2% as consequence of a reduction in the electricity consumed in power generation assets and company buildings, along with the improve-

- ment in the local emission factors in some countries where the Group operates, amounting to 602,534 $tCO_{2eq'}$ considering location-based approach.
- Scope 2 emissions from technical networks losses decreased by 12.6%, as consequence of the technical losses' reduction in most countries with power distribution activities, while also supported by the improvement of some local emission factors, amounting to 2,675,141 tCO_{2ea}, considering location-based approach.

^{(4) 2022} restated baseline includes methodological changes and perimeter changes, being different to 2022 FY figures disclosed in 2023 Sustainability Report. Further details can be found in section "base year and recalculation"



Scope 3 emissions

		Т	OTAL (tCO _{2eq})	
Activity	GHG Source description	2023	2022(5)	%
Upstream So	cope 3 emissions			
All	Category 1 - Purchase of goods and Services	8,815,466	14,411,116	-38.8%
A	Category 3 - Fuels and energy-related activities not included in Scope 1 and 2:			
49 12	Category 3A - Upstream emissions of purchased coal, including subproducts	1,028,425	1,882,384	-45.4%
Power	Category 3A - Upstream emissions of purchased natural gas	5,890,020	7,449,194	-20.9%
Generation and others	Category 3A - Upstream emissions of purchased fueloil, biomass and others	5,151	5,934	-13.2%
Market	Category 3D – Third parties' generation of purchased electricity that is sold to end customers	23,995,410	25,670,586	-6.5%
All	Category 4 - Upstream transportation and distribution	9,352	9,842	-5.0%
Downstream	n Scope 3 emissions			
All Market	Category 11 - Use of sold products: Use of natural gas sold to end customers in retail market	16,789,600	20,633,606	-18.6%
TOTAL		56,533,423	70,062,662	-19.3%

In 2023, Scope 3 GHG emissions amounted to 56,533,423 tCO $_{\rm 2eq'}$ representing 60.0% of total GHG emissions, and were decreased by 19.3% compared to 2022 restated baseline⁽⁵⁾.

All sources within Scope 3 experienced a remarkable reduction, in particular:

- Indirect GHG emissions from the supply chain (category 1) amounted to 8,815,466 tCO_{2eq}, 38.8% lower than 2022 restated baseline⁽⁵⁾, due to a reduction in the absolute amount of order expenses, the acquisition of materials with lower carbon footprint, and the reduction of the emission factors as consequence of the suppliers' decarbonization process; overall causing a 24% decrease in the ratio of emissions per unit of order expense (from 903 tCO_{2eq}/M€ in 2022 to 684 tCO_{2eq}/M€ in 2023).
- Indirect GHG emissions from upstream coal (Category 3.A), including mining and sea transportation (including also ashes), amounted to 1,028,425 tCO2eq, experiencing a reduction of 45.4% as consequence of the decrease by more than 45% in the production of coal-fired power plants (from 19.7 TWh 2022 to 10.8 TWh in 2023)
- Indirect GHG emissions from upstream gas (category 3.A), including extraction and transportation of natural gas consumed in gas-fired power plants and natural gas sold in retail market, amounted to 5,890,020 tCO_{2eq}, which entails a decrease of 20.9% from 2022 restated baseline⁽⁵⁾, influenced by a notable reduction in gas-fired

- production (both CCGT and oil&gas), as well as the reduction in gas retail sales (sold volumes decreased by 19%, from 10.2 bcm in 2022 to 8.3 bcm in 2023).
- Indirect GHG emissions from other fuels and purchased biomass (category 3.A), amounted 5,151 tCO_{2eq}, 13,2% lower than 2022. During 2023 Enel has not purchased and transported biomass in Italy as the total amount burned in power plants correspond to what stored in 2022.
- Indirect GHG emissions from third parties' generation of purchased electricity that is sold to end customers (category 3.D), amounted to 23,995,410 tCO_{2eq}. They were decreased by 6.5% from 2022 restated baseline⁽⁵⁾ due to, firstly, an overall reduction of 7% in the gap between energy sales to end customers (including also from distribution system operators in regulated markets) and own production in the countries in which the Group has an integrated position (Italy, Spain, Brazil, Chile, Colombia, Argentina and Peru), and secondly, the improvement of the emisson factors of the energy systems in some of these countries.
- Indirect GHG emissions from sold products (category 11), related to the use of natural gas sold to end customers in retail market, amounted to 16,789,600 tCO_{2eq}. They were decreased by 18.6% from 2022 due to a 19% reduction in the volumes of natural gas sold to end customers.

^{(5) 2022} restated baseline includes methodological changes and perimeter changes, being different to 2022 FY figures disclosed in 2023 Sustainability Report. Further details can be found in section "base year and recalculation"

Intensity metrics

The main indicators relating to the Group's specific emissions, which constitute the two GHG intensity reduction targets validated by SBTi, experienced the following performance:

- The ratio between total Group Scope 1 GHG emissions (including CO₂, CH₄ and N₂O) from power generation and the net Group's total production (excluding production from pumped storage hydropower storage), amounted to 160 gCO_{2eq}/kWh in 2023.
- The ratio between the combination of Group Scope 1 GHG emissions (including CO₂, CH₄ and N₂O) (measured in gCO_{2eq}) and Group Scope 3 greenhouse gas emissions from the generation of purchased electricity that is sold to end customers (measured in gCO_{2eq}), and the amount of electricity production (measured in kWh) (excluding production from pumped storage hydropower) and purchased electricity (measured in kWh). For 2023, this ratio amounted to 168 gCO_{2eq}/kWh.



ANNEXES

2023 GHG inventory statement

The GHG inventory statements for 2023 were audited by DNV, with a reasonable level of certainty for Scope 1 and Scope 2 emissions, and with a limited level of certainty for Scope 3 emissions included in the inventory's scope of application. The audit was conducted according to Stan-

dard ISO 14064-3 for the compliance of Greenhouse Gas (GHG) Inventories with the WBCSD/WRI Corporate accounting and Reporting Standard (GHG Protocol). The total emissions subject to verification are shown below:

				2023			
GHGs (tCO _{2eq})	TOTAL	CO2	CH₄	N ₂ O	SF ₆	HFCs	NF ₃
DIRECT EMISSIONS SCOPE 1	34,510,557	33,901,503	374,852	82,356	146,739	5,106	0
From Electricity Power Generation (fossil combustion to produce electricity)	32,744,581	32,624,745	43,029	76,807			
Other ⁽¹⁾ Scope 1 emissions	1,765,976	1,276,757	331,823	5,549	146,739	5,106	0

ENERGY INDIRECT EMISSIONS SCOPE 2	
Location based	3,277,674
From electricity purchased and consumed from the grid	602,534
From technical losses on the distribution grid	2,675,141
Market based	4,506,161
From electricity purchased and consumed from the grid	807,901
From technical losses on the distribution grid	3,698,260

OTHER INDIRECT EMISSIONS SCOPE 3	56,533,423
Cat.1 Purchased goods and service-	8,815,466
Cat.3 Fuel and Energy related activities	30,919,006
Cat.4 Upstream transportation and distribution	9,352
Cat.11 natural gas sold in the retail market	16,789,600

TOTAL EMISSIONS (Location Based)	94,321,654
TOTAL EMISSIONS (Market Based)	95,550,141

CO ₂ emissions from Biomass (not included in Scope 1)	96,277

(1) It includes:

[•] fuel combustion emissions from: auxiliary engines in nuclear and renewable plants and in distribution sites; transportation of fuels and subproducts on vessels under own operational control; heating systems and canteens in offices; company vehicles

[•] fugitive emissions from: photovoltaic panels manufacturing (NF₃), methane leakages in gas fired power plants (CH₄), HFC leakages in thermoelectric and hydropower plants, offices and PV manufacturing site; SF₆ leakages in insulating systems for power generation and distribution; biogenic CH₄ emissions in hydroelectric basins

2022 restated baseline GHG Inventory Statement

				2022			
GHGs (tCO _{2eq})	TOTAL	CO2	CH₄	N ₂ O	SF ₆	HFCs	NF ₃
DIRECT EMISSIONS SCOPE 1	47,622,170	46,965,499	383,577	125,006	142,916	5,168	4
From Electricity Power Generation (fossil combustion to produce electricity)	46,673,193	46,495,797	54,160	123,236			
Other ⁽¹⁾ Scope 1 emissions	948,977	469,702	329,417	1,770	142,916	5,168	4

ENERGY INDIRECT EMISSIONS SCOPE 2	
Location based	3,755,810
From electricity purchased and consumed from the grid	694,450
From technical losses on the distribution grid	3,061,360
Market based	5,039,002
From electricity purchased and consumed from the grid	894,346
From technical losses on the distribution grid	4,144,656

OTHER INDIRECT EMISSIONS SCOPE 3	70,062,662
Cat.1 Purchased goods and service-	14,411,116
Cat.3 Fuel and Energy related activities	35,008,098
Cat.4 Upstream transportation and distribution	9,842
Cat.11 natural gas sold in the retail market	20,633,606

TOTAL EMISSIONS (Location Based)	121,440,642
TOTAL EMISSIONS (Market Based)	122,723,835
CO ₂ emissions from Biomass (not included in Scope 1)	114,838

(1) It includes:



[•] fuel combustion emissions from: auxiliary services (including gensets) in nuclear and renewable plants and in distribution sites; transportation of fuels and subproducts on vessels under own operational control; heating systems and canteens in offices; company vehicles

[•] fugitive emissions from: photovoltaic panels manufacturing (NF₃), methane leakages in gas fired power plants (CH₄), HFC leakages in thermoelectric and hydropower plants, offices and PV manufacturing site; SF₆ leakages in insulating systems for power generation and distribution; biogenic CH₄ emissions in hydroelectric basins

DNV Verification Statement



DNV Business Assurance (DNV) has been commissioned by the management of ENEL SpA to carry out an independent verification of:

- its Greenhouse Gas (GHG) emissions Inventory relative to the 2023 Calendar Year
- the recalculation of its GHG Baseline Year (2022 Calendar Year)
- the "Scope 1 GHG emissions intensity related to Power Generation" & "Scope 1 and 3 GHG emissions intensity related to Integrated Power" metrics for 2023 Calendar Year

ENEL SpA has sole responsibility for preparation of the data and external report. DNV, in performing our assurance work, is responsible to the management of ENEL SpA. Our assurance statement, however, represents our independent opinion and is intended to inform all stakeholders including ENEL SpA.

Verified GHG Emissions (tCO_{2-eq})

Greenhouse Gas Emissions Scopes	2023	2022
Direct (Scope 1) GHG Emissions (*)	34 510 557	47 622 170
Energy Indirect (Scope 2) GHG Emission (Located Based)	3 277 674	3 755 810
Energy Indirect (Scope 2) GHG Emission (Market Based)	4 506 161	5 039 002
Other Indirect (Scope 3) GHG Emissions	56 533 423	70 062 662
CO ₂ biogenic from biomass combustion (**)	96 277	114 838

^(*) it includes CH₄ and N₂O biogenic emissions

Verified GHG Intensity Metrics (gCO_{2-eq}/Kwh)

Metrics (***)	2023
Scope 1 GHG emissions intensity related to Power Generation	160
Scope 1 and 3 GHG emissions intensity related to Integrated Power	168
/***) Matrice definitions can be found in the among of this statement	

Assurance Opinion

Based on the verification process conducted by DNV as explained in the annex of this statement:

- we provide a reasonable assurance of Scope 1, Scope 2 GHG emissions as DNV found them to be
 - materially correct;
 - a fair representation of GHG emissions information; and
 - in accordance with the Verification Criteria
- we provide a limited assurance of the Scope 3 GHG Emissions as DNV found no evidence showing them to be
 - not materially correct;
 - not a fair representation of GHG emissions information; and
 - not in accordance with the Verification Criteria

DNV Business Assurance USA, Inc.

25 March 2024

Lead Verifier Francisco Zamarron

Technical Reviewer

Piergiorgio Moretti

Shruthi Bachamanda



DNV Business Assurance USA, Inc., 1400 Ravello Drive, Katy, TX 77449

Approver

^(**) direct CO₂ biogenic emissions are reported separately as per §4 of The GHG Protocol



STATEMENT ANNEX

Verification Objective

To assess conformance with applicable verification criteria, including the principles and requirements of relevant standards or GHG programmes within the scope of the verification; of: 1) the organization's GHG emissions inventory as reported in the external GHG Inventory Report entitled "2023 GHG Inventory - Quantification and Reporting of greenhouse gas emissions in accordance with the Corporate GHG Protocol" rev. 25 March 2023; 2) any significant changes in the organization's GHG inventory since the last reporting period; and 3) the organization's GHG-related controls.

Verification Scope

- The organizational boundaries defined by the legal entities of the ENEL group described in this
- Direct (Scope 1) GHG emissions from the following sources: combustion of fuels in stationary and mobile sources, HFCs leaks from cooling systems, SF6 leaks from generation and distribution systems, CH4 fugitive from hydro-basins and NF3 leaks from solar panel production.
- Indirect (Scope2) GHG emissions from the following sources: electricity consumption and technical network losses from distribution.
- Other indirect (Scope 3) GHG emissions from activities of the following GHG Protocol Categories:
 - Cat.1-Purchased good and services: Purchased good and services from the supply chain
 - Cat.3-Fuel and Energy related activities: Coal and Natural Gas extraction and fuel transport and purchase of electricity to third party producers to be sold in the retail market
 - Cat.4-Upstream transportation & distribution: raw materials and waste transport
 - o Cat.11-Use of sold products: use of gas sold in the retail market
- The following greenhouse gases: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), sulphur hexafluoride (SF6), nitrogen trifluoride (NF3), hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs).
- The following carbon intensity metrics:
 - "Scope 1 Power Intensity Metric"- Ratio between the Group Scope 1 GHG emissions (including CO₂, CH₄ and N₂O) from electricity production, expressed in grams of CO2eq, and net electricity (electricity sent to the grid) production excluding the electricity produced by hydro-pump storage, expressed in kwh.
 - "Scope 1+3 Power Intensity Metric" Ratio between the sum of the Group Scope 1 GHG emissions (including CO2, CH4 and N2O) from electricity production plus the Group Scope 3 GHG emissions from production of purchased electricity sold to end customers, expressed in grams of CO2eq, and the sum of the net electricity (electricity sent to the grid) production excluding the electricity produced by hydro-pump storage plus purchased electricity, expressed in kwh
- ENEL GHG Inventory for the Reporting Period from 1 January 2023 to 31 Dec 2023 and the recalculation of the GHG Baseline Year (from 1 January 2022 to 31 Dec 2022) quantified according to the financial control consolidation approach





STATEMENT ANNEX

Verification Level of Assurance

The verification was conducted by DNV, to a reasonable level of assurance for all Scope 1 and Scope 2 GHG emissions and a limited level of assurance for Scope 3 GHG emissions

Materiality Level

Errors / omissions which represent, single or aggregated, the 5% of total emissions are considered material.

Verification Criteria

"The Greenhouse Gas Protocol" and its amendment "GHG Protocol Scope 2 Guidance" issued by the World Business Council for Sustainable Development (WBCSD) and the Word Resources Institute (WRI)

Verification Protocols

"ISO 14064-3: 2019: Greenhouse gases - Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions"

Independence

DNV was not involved in the preparation of any part of ENEL's data or report. We adopt a balanced approach towards all stakeholders when performing our evaluation.



List of ENEL Legal Entities within the GHG Inventory Boundaries

Enel Argentina SA

Edesur

Central Dock Sud

Enel Generación Costanera

Enel Generación El Chocon

Enel Brasil S.A

Enel Green Power Brasil partecipacoes Ltda

Enel Green Power Cachoeira Dourada

Enel Green Power Volta Grande

Enel Cien

Enel Distribución Ceará

Enel Distribución Río

Enel Distribución Sao Paulo

Enel Chile SA

Enel Generación Chile

Enel Green Power Chile Ltda

Enel Distribución Chile

Enel Colombia SA

Enel Green Power Costa Rica

Enel Green Power Hellas

Enel Green Power Guatemala

Endesa

Endesa Generación

Endesa Red

Enel Green Power India Privated Limited

Enel Italia SpA

Enel Produzione IT

Enel Green Power Italia SRL

Enel Green Power SpA

e-distribuzione

Enel Green Power Mexico S de RL de CV

Enel Green Power Panama

Enel Peru SA

Enel Generación Perú

Enel Generación Piura

Enel Distribución Perú

Enel Green Power Romania

Enel Distributie Banat

Enel Distributie Dobrogea

Enel Distributie Muntenia

Enel Green Power RSA (Pty) **Enel North America INC**

Enel X

DNV Business Assurance USA, Inc. 25 March 2024

ANSI National Accreditation Board ACCREDITED ISO 14065 VERIFICATION BODY

Lead Verifier Francisco Zamarron **Technical Reviewer** Piergiorgio Moretti

Approver

Shruthi Bachamanda

The purpose of the DNV group of companies is to promote safe and sustainable futures. The USA & Canada Sustainability team is part of DNV Business Assurance, a global provider of certification, verification, assessment and training services, helping customers to build sustainable business performance. www.dnv.com/sustainability

List of Companies within the scope of the inventory

Note: Group companies with thermoelectric, nuclear and renewable energy production plants, photovoltaic panels production, and offices in the countries of operational presence relating to energy production and distribution activities fall within the perimeter.

Company
Enel Argentina SA
Edesur
Central Dock Sud
Enel Generación Costanera
Enel Generación El Chocon
Enel Brasil S.A
Enel Green Power Brasil partecipacoes Ltda
Enel Green Power Cachoeira Dourada
Enel Green Power Volta Grande
Enel Cien
Enel Distribución Ceará
Enel Distribución Río
Enel Distribución Sao Paulo
Enel Chile SA
Enel Generación Chile
Enel Green Power Chile Ltda
Enel Distribución Chile
Enel Colombia SA
Enel Green Power Costa Rica
Enel Green Power Hellas
Enel Green Power Guatemala
Endesa
Endesa Generación
Endesa Red
Enel Green Power India Privated Limited
Enel Italia SpA
Enel Produzione IT
Enel Green Power Italia SRL
Enel Green Power SpA
e-distribuzione
Enel Green Power Mexico S de RL de CV
Enel Green Power Panama
Enel Peru SA
Enel Generación Perú
Enel Generación Piura
Enel Distribución Perú
Enel Green Power Romania
Enel Distributie Banat
Enel Distributie Dobrogea
Enel Distributie Dobrogea Enel Distributie Muntenia
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