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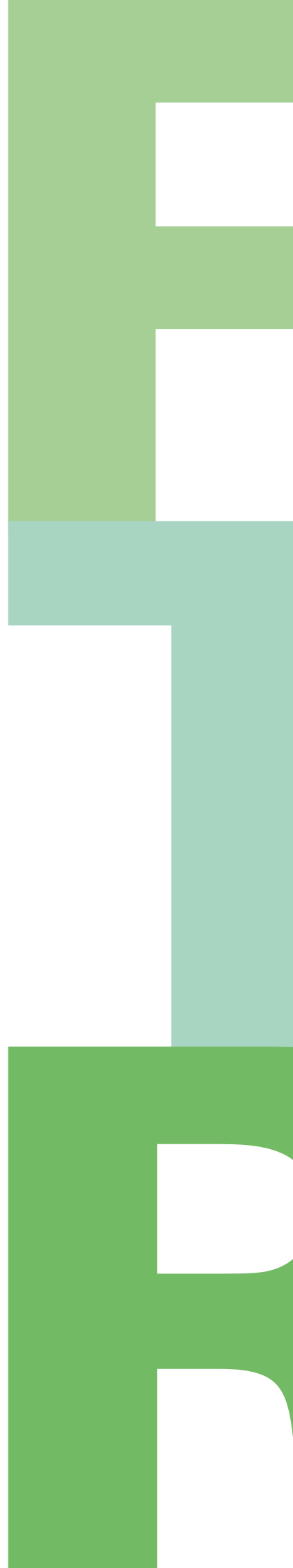
WE EMPOWER SUSTAINABLE PROGRESS.

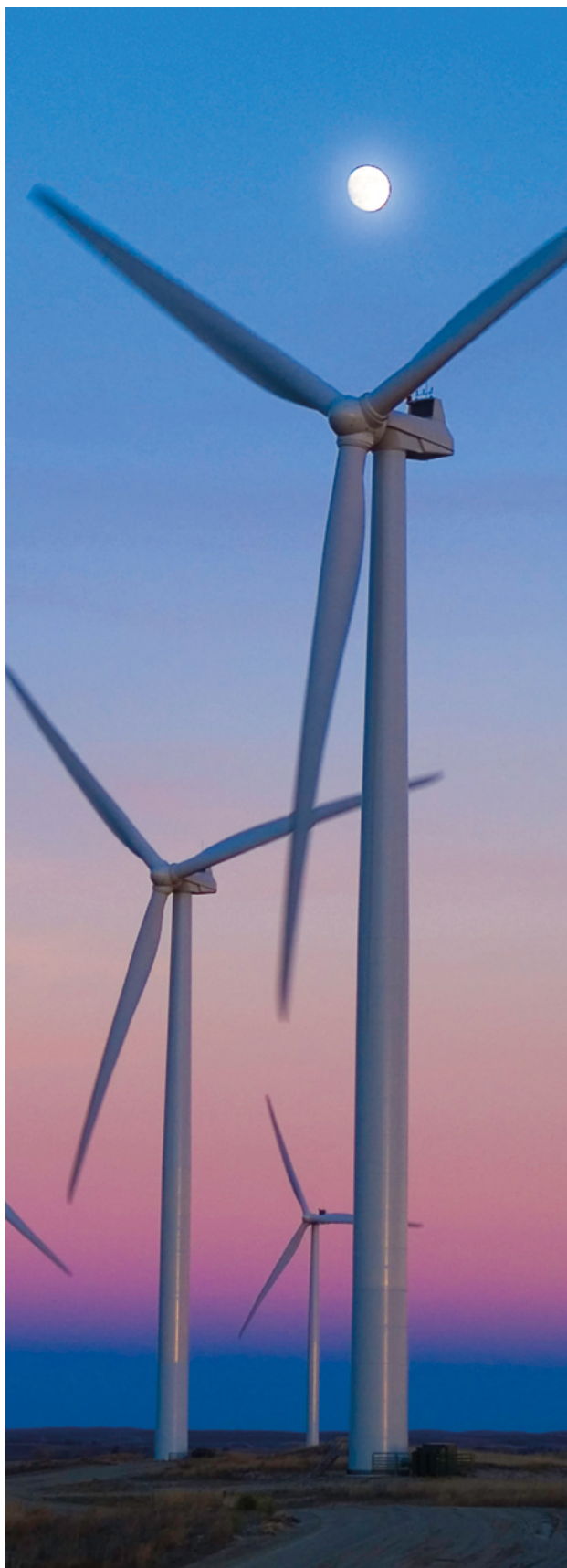
COMMITMENT TO THE FIGHT AGAINST CLIMATE CHANGE 2019





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THE FIGHT AGAINST
CLIMATE CHANGE 2019





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Energy transition - Commitment to the fight against climate change (1/2)

Plan

2019

>

2021

Growth across low-carbon technologies and services

SDG	ACTIVITIES	TARGETS	2019 RESULTS	CATEGORIES
13	Reduction of CO ₂ specific emissions from total net production	230 g/kWh _{eq} in 2030 ¹	296 gCO ₂ /kWh _{eq} ²	E Environmental footprint
7 13	Development of additional renewable capacity and reduction of thermal capacity	+11.6 GW additional renewable capacity ³ -7 GW thermal capacity	+3.6 GW renewable capacity -4.1 GW thermal capacity	I Industrial growth E Environmental management
13	Implementation of environmental international best practices to selected coal plants	340 mil euros of investments for environmental retrofit	145 mil euros	E Environmental management
9 13	Electrification, storage and real-time demand response	9.9 GW of demand response 173 MW/year of storage capacity ⁴	6.3 GW of demand response 110 MW of storage capacity ⁵	T Technologies and digitalization I Industrial growth E Environmental management S Social inclusion
11 17	> Roll out of fiber optic network in Italy > MBA-PhD training about resilience in the countries where the Group operates	> 240 municipalities involved > 600 people involved	Initiative being redefined for the 2020-2030 period 204 people involved	E Environmental management S Social inclusion G Partnerships



Plan 2020 > 2022 Decarbonization

SDG	ACTIVITIES	TARGETS	CATEGORIES
13	Reduction of CO ₂ specific emissions from total net production	125 g/kWh _{eq} in 2030 ⁶	E Environmental footprint
7 13	Development of additional renewable capacity and reduction of thermal capacity	+14.1 GW of renewable capacity ⁷ -6.2 GW of thermal capacity ⁸	I Industrial growth E Environmental management
13	Implementation of environmental international best practices to selected coal plants	187 mil euros of investments for environmental retrofit	E Environmental management
9 13	Storage and real-time demand response	10.1 GW of demand response 439 MW of storage	T Technologies and digitalization I Industrial growth E Environmental management S Social inclusion
11 17	MBA-PhD training about resilience in the countries where the Group operates	600 people involved	E Environmental management S Social inclusion G Partnerships

1 Target prior to redefinition and certification by the Science Based Targets initiative, which took place in September 2019. Following this redefinition, the new target for reducing CO₂ emissions by 2030 is equal to 125 gCO₂/kWh_{eq}.

2 The value only considers the consolidated capacity. In relation to the overall value of the capacity managed, CO₂ emissions amount to 284 gCO₂/kWh_{eq}.

3 This includes acquisitions amounting to 0.2 GW and 0.4 GW of managed capacity.

4 Target redefined based on only the scope of Enel X.

5 Includes the contribution of the Global Power Generation Business Line.

6 The target for reducing CO₂ emissions by 2030 was redefined and certified by the Science Based Targets initiative in September 2019. Following this redefinition, in 2022 the specific emissions of CO₂ will be lower than 220 gCO₂/kWh_{eq}.

7 Includes managed capacity.

8 Includes nuclear.

Energy transition - Commitment to the fight against climate change (2/2)

Plan

2019

>

2021

Growth across low-carbon technologies and services

SDG	ACTIVITIES	2021 TARGETS	2019 RESULTS	CATEGORIES
12	Methodology finalization for Group's circular financial metrics and extension to the Business Lines		Performed the analysis of the methodology for the Group's circular EBITDA	<div>E</div> Circular economy <div>I</div> Industrial growth
12	Development of Circular Community activities		Created a circular economy community	<div>E</div> Circular economy
12 17	Launch of the internal Circular Academy		Started the planning of the Circular Academy	<div>E</div> Circular economy
12	Strengthening of partnerships and collaborations about the circular economy (CE)		<ul style="list-style-type: none"> > Extension of the circular economy alliance > Membership in the Ellen MacArthur Foundation > Members of ICESP¹ > Members of the Expert Group Financing Circular Economy > Members of the European Remanufacturing Council > Participation in the WBCSD Factor10 on Policy 	<div>E</div> Circular economy <div>G</div> Partnerships
12	New countries involved in the CE strategy	5 new countries	8 new countries involved ²	<div>E</div> Circular economy <div>I</div> Operational efficiency
12	New CE projects launched, inter- and intra-divisions	6 projects	4 new projects launched ³	<div>E</div> Circular economy <div>I</div> Operational efficiency



Plan 2020 > 2022 Decarbonization

SDG	ACTIVITIES/TARGETS	CATEGORIES
12	> Development of Circular Community activities	E Circular economy
17	> Launch of the Circular Academy	I Industrial growth
	> Promotion of the culture and best practices of a circular economy on a Global Business Line, Global Procurement and Country level	
12	Definition and application, in collaboration with various company areas, of circular economy solutions	E Circular economy I Industrial growth I Operational efficiency
12	Creation of an ecosystem committed to the topic of circular economy in the most relevant Countries where the company is present	E Circular economy I Operational efficiency
12	Definition and application of suitable industrial and financial circularity metrics, to support and enhance circular economy activities with the involvement of the relevant business areas	E Circular economy I Industrial growth
12	Strengthening of partnerships and collaborations	E Circular economy G Partnerships

1 Italian Circular Economy Stakeholders Platform.

2 The involved countries are Spain, Italy, Argentina, Brazil, Chile, Colombia, Peru, USA and Canada.

3 The started projects relate to "power plant equipment decommissioning", "circular smart meter", "end of life wind plant" and the extension of the circular economy in Enel X.

LINK Sustainability Report

*At a Glance
Sound governance
Performance indicators*

LINK

Annual Report
Report on corporate governance
Remuneration report

Commitment to the fight against climate change

296 g/kWh_{eq}

specific CO₂ emissions from total net production

70%

reduction in direct CO₂ emissions per kWh_{eq} (Scope 1) by 2030, in comparison to 2017 (SBTi certified target)

50%

renewable net installed capacity

91%

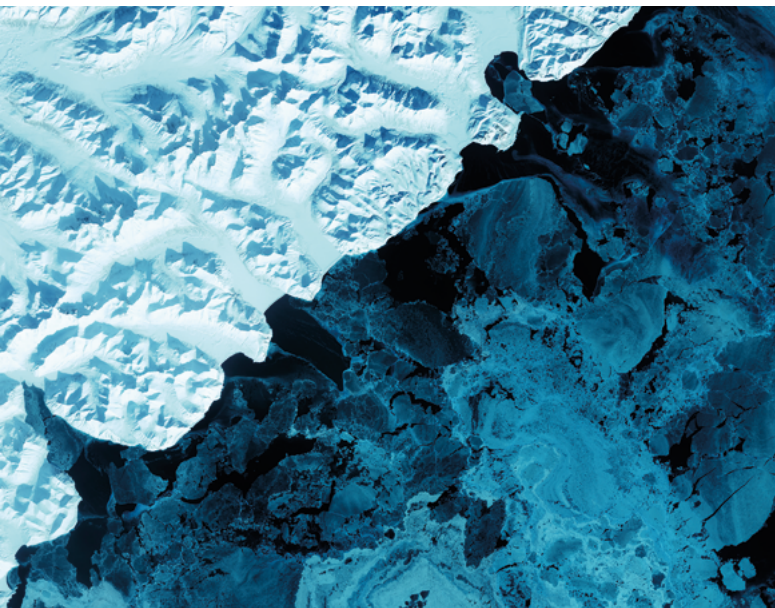
EBITDA from low-carbon products, services and technologies

Enel's action against climate change

According to the estimates of the IPCC¹ (Intergovernmental Panel on Climate Change), global warming has become a reality. The temperature has increased 1 °C compared with pre-industrial levels and, if it continues to grow at the current rate, the increase will probably reach 1.5 °C between 2030 and 2050. The greenhouse gas (GHG) emissions have been constantly increasing over the past decade and there is no clear signal that they will peak over the upcoming years. The scientific community is asking for urgent action to speed up the transition towards a zero-emissions economy in order to minimise the impact of climate change. In 2019, the United Nations Environment Programme (UNEP) pointed out that, if global greenhouse gas emissions are not reduced 7.6% every year between 2020 and 2030, it will not be possible to reach the targets of the Paris Agreement.

In this context, it is essential to promote collaboration between governments, companies, financial institutions and civil society by developing the awareness of the various stakeholders about topics related to climate change. Companies play a fundamental role as they are responsible for the majority of global emissions but, at the same time, they have a unique ability to develop innovative solutions to contribute towards their reduction on a large scale. The electricity sector can work towards reducing emissions related to the energy production and at the same time promote the electrification of the energy demand in order to support the decarbonization of other industries and services. Being aware of this challenge, Enel **has set itself the objective of reaching the decarbonization of its energy mix by 2050**, as announced publicly in 2015 when the United Nations launched its sustainable development goals, with particular reference to SDG 13 "Climate

¹ The IPCC, founded by UNEP (United Nations Environment Programme) and WMO (World Meteorological Organization) in 1988, is the main international organization for climate change monitoring. The IPCC provides regular assessments of the scientific basis of climate change aimed at supporting governments in the definition of climate policies.



action". Therefore it is committed to developing a **business model in line with the goals of the Paris Agreement** to maintain the average increase of the global temperature below 2 °C compared with pre-industrial levels and to continue to limit the increase to 1.5 °C. In 2019, the Group reaffirmed this commitment once again by responding to the call to action from the United Nations, being the first Italian company that signed the **pledge to limit the rise in global temperatures to 1.5 °C and to achieving zero emissions by 2050**. Enel also pledged to set interim quantitative targets in line with the criteria of the Science Based Targets initiative (SBTi), by which a new target of **70% reduction in its own direct greenhouse gas emissions per kWh_{eq} by 2030**, as compared with 2017 base year, was announced in September 2019.

Particular attention is placed on the **climate change adaptation policies** in order to increase the resilience of the assets along the entire value chain, thereby limiting potentially negative impacts and guaranteeing a safe and sustainable energy service in all the countries where the Group operates.

In order to guarantee increased transparency in its communications and relationships with its stakeholders, Enel periodically reports on its related activities in line with the international standards of the **GRI** (Global Reporting Initiative) and is publicly committed to adopting the recommendations of the **Task force on Climate-related Financial Disclosures (TCFD) of the Financial Stability Board**, which

in June 2017 published specific recommendations for the voluntary reporting of the financial impact of climate risks. The Group has also integrated the **"Guidelines on reporting climate-related information"** published by the European Commission in June 2019, taking into consideration the results of the first work performed by the European Lab Project Task Force on Climate-related Reporting (PTF CRR), which collects the relative good practices ("How to improve climate-related reporting").

A zero emissions system in the second half of the current century, as foreseen by the Paris Agreement, will require significant technological, social and economic transformations. For this reason, the transition must also be just, promoting the creation of sustainable and decent jobs. Therefore the climate action must be accompanied by the promotion of a **just and inclusive transition** and the creation of sustainable and decent jobs.

A just and inclusive transition

Enel is convinced that decarbonization is an opportunity for the entire society, but it is fundamental that the benefits of energy transition are shared, accompanying it with wide-scale measures that support climatic, energy, environmental, industrial and social aspects.

Enel's commitment to the United Nations

In July 2019, Enel's Chief Executive Officer signed the "just transition" commitment promoted by the United Nations, which commits the Company to guaranteeing that the new jobs will be fair, decent and inclusive. Enel is committed to respecting the following international standards both within the company and having them respected by its suppliers:

- social dialogue with workers and their trade unions;
- respect for worker rights (including those regarding safety) on the basis of the requirements of the International Labour Organization - ILO;
- social protection, including pensions and health care;
- salary guarantee, also those in line with the ILO directives.

The importance of local actions

In **Italy** Enel manages **Futur-e**, a project for the requalification of 23 power plants, with the goal of finding new solutions and methods of use based on the criteria of social, environmental and economic sustainability. This activity is in close collaboration with local administrations, companies and communities to develop energy reconversion and the circular economy, while promoting innovation.

In 2019 the project was also extended to the thermoelectric plants in **Spain** for which decommissioning by the end of 2020 has been announced. In particular, the project related to the Compostilla power plant involves specific areas of action that range from the active search for employment for directly involved personnel to training for improving the employability of plant personnel and the local community, as well as the promotion of economic, employment and sustainability activities in the area of reference.

Awareness and research activities

The **Just E-volution 2030** study carried out by The European House - Ambrosetti in collaboration with Enel and Fondazione Centro Studi Enel was presented in September 2019. The study used an innovative econometric model to estimate the impact of the energy transition in progress, supported by increasing electrification, digitalization and generation from renewable sources, on industrial production, employment, air quality in the European Union and in more specifically in Italy, Spain and Romania.

Enel and the global climate change context

The policies and regulatory framework on climate change in 2019

Conference of the Parties (COP)

The Conference of the Parties (COP) of the United Nations Framework Convention on Climate Change meets once a year with all the countries that signed the Kyoto Protocol and the Paris Agreement, which are the two main international treaties that reflect the global commitment to combat climate change.

In particular, the agreement that was reached during the **2015 United Nations Climate Change Conference in Paris** (COP21) marked a fundamental step towards climate action. The conference instituted a shared approach on a global level to reduce the greenhouse gas emissions that cause climate change. This is supported by sound regulatory governance which however still lacks the rules that would permit the redistribution amongst the individual countries of the additional reduction that is necessary to reach the main objective of the agreement. The objective is to maintain the average increase in world temperature well below 2 °C as compared to pre-industrial levels, aiming to limit it to 1.5 °C. **COP25** was held in Spain in 2019 with the objective of promoting further progress in the key points of the Paris Agreement, in particular article 6 regarding international carbon markets. COP25 also concentrated on pushing countries to reinforce their ambitions in view of the presentation in 2020 of new and updated national action plans for climate change (NDC - Nationally Determined Contribution). Enel and its Spanish subsidiary Endesa have played a proactive role as a conference sponsor. They convened and participated in various side events and governmental meetings that were held during the conference.

“European Green Deal”

On December 11, 2019, the European Commission presented the “European Green Deal” (EGD), a growth strategy that aims to improve the well-being of persons. The European Union intends to achieve net zero emission by 2050, protect human, animal and plant life by reducing pollution, help companies become world leaders in clean products and technology, contribute towards a just and inclusive transition. On March 4, 2020 the Commission presented the first European legislative proposal regarding climate to transform this political commitment into a legal obligation and stimulate investments. To achieve these objectives, all of the following sectors must act:

- energy: decarbonize the energy sector;
- construction: restructure buildings, help people reduce their energy bills and energy use;
- industry: support the industry to innovate and become world green economy leaders;
- mobility: introduce cleaner, more economic and healthier private and public means of transport.

An assessment of measures to define a more ambitious greenhouse gas emissions reduction target for 2030 is en-



visioned: 50-55% less than the current target of 40%. To this end, the European Commission will launch a review of all relevant climate-related policy instruments in order to align them with the new climate targets: *in primis* the Emissions Trading Scheme (ETS) and the possibility of extending it to new sectors, the Energy Taxation Directive and the introduction of a “carbon border adjustment mechanism” for specific sectors aimed at reducing the risk of “carbon leakage” and preserving the competitiveness of EU industry.

A proposal has been advanced for a new sustainable investment plan that includes a “just transition mechanism” and a “just transition fund” aimed at helping vulnerable regions and sectors that are heavily dependent on fossil fuels and mobilising the funds necessary to achieve the objectives of the European Green Deal.

“Clean Energy for all Europeans” legislative package

The “Clean Energy for all Europeans” legislative package, proposed by the European Commission in 2016, laid the foundation necessary for achieving greater integration and regionalisation of markets for electricity, balancing, flexibility services and capacity. Following the inter-institutional agreement reached in 2018, the following regulations and directives completing the package were published in the Official Journal of the European Union on 14 June 2019: the Electricity Market Regulation (2019/943), the ACER Regulation (2019/942), the Risk Preparedness Regulation (2019/941) and the Electricity Market Directive (2019/944). The measures entered force on July 4, 2019, with the regulations taking immediate effect, while the directive must be transposed into the law of the various

EU countries by December 31, 2020.

The new legislation fosters the integration of the different technologies and the participation of diverse market operators. It also opens up the possible development of mechanisms to provide long-term signals to investment in decarbonization (e.g. auctions, PPAs) and the adequacy of the electricity system (the capacity market).

Enel’s positioning

The European Union’s decision-making and regulatory processes affect the on-going energy transition, effecting company business models, the behaviours of consumers and individual citizens, with a direct impact on legislative framework implemented on a national level in the countries in which the Group operates. Furthermore, regarding its transnational nature and the current global challenges, the European legislative process is becoming increasingly complex and, for that purpose, closer collaboration is required between EU institutions and the other stakeholders.

In this context, Enel decided a few years ago to establish the Europe and Euro-Mediterranean Affairs Function, which monitors relevant topics and represents the Group on a European level in relation to institutions, organisations, associations and other active parties. A specific unit is dedicated to consolidating and representing the Group’s position on policies regarding climate change, low-carbon emission strategies, international carbon market regulation, the environment and the safety of procurements. Enel will therefore use this unit to support climate protection and follow the involvement of institutional stakeholders, professional associations, non-governmental organisations and the academic world. This activity of involving the stakeholders contributes towards the evolution of the European regulatory framework

towards ambitious climate objectives. Coordination is also guaranteed with the various company areas and the different countries of the Group in order to ensure that all of the regulatory processes in which the company is asked to participate, on a European and national level, will be fully in line with Enel's strategy towards the promotion of a low carbon energy model and the electrification of energy demand.

Enel welcomes the various climate policies and regulatory measures announced and implemented in 2019 in the various geographical areas where it operates, in particular in Europe. For this reason, the company considers the **Green New Deal** presented by the European Commission as a great opportunity for accelerating the European Union's path towards a decarbonized and sustainable economy, which in turn will bring business opportunities that are in line with the Group's strategy and sustainable business model.

During 2019, Enel also actively participated in public consultations, meetings, conferences, workshops and events concerning the four measures published as part of the **Clean Energy Package**. It welcomes the recognition of energy efficiency as a key pillar towards the transition to low carbon emissions energy and contributes towards establishing a reliable system for increasing the renewables and meeting the challenges of the future electric energy markets in an efficient manner in terms of costs and promoting cooperation among Member States. The fixed objectives will stimulate Europe's industrial competitiveness, boost renewable energies, create new jobs, reduce energy bills, contribute towards facing energy poverty and improve air quality.

Enel is also working together with the governments and stakeholders in Europe, Latin America and Africa to develop an **energy transition roadmap** with an open approach, sharing policy design and technical knowledge to contribute towards the implementation of the Paris Agreement. Their development typically involves four main activities: a) greenhouse gas scenarios for 2050, developing technological mixes on an economic level and corresponding emission profiles in line with the objectives of decarbonization and the national circumstances; b) greenhouse gas emission scenarios for 2030 that identify intermediate objectives in line with the 2050 scenarios and outline the trajectories to follow to reach the long-term decarbonization objectives; c) political recommendations targeted towards creating a political and regulatory context that is favourable for the investments necessary for an efficient energy transition and for reaching the 2030 and 2050 objectives; d) dialogues between the concerned parties that enable participation with the institu-



tions, the NGOs and other operations in an open exchange regarding the most critical issues to guarantee the success of the energy transitions.

Enel's position on carbon pricing

Enel believes that the "cap and trade" system is the most efficient method for reducing emissions, especially in industrialised economies. The definition of an absolute emissions objective guarantees the efficiency in reaching the environmental objective, whereas the signal of the price fixed by the market guarantees economic efficiency and minimisation of costs. In general, Enel believes that the institution of a "cap and trade" system that is based on a solid regulatory framework guarantees the certainty of long-term climatic objectives and permits market mechanisms to determine prices that are coherent with the macroeconomic cycles and with market conditions. Instead, environmental taxation works well for countries with a weaker institutional framework and for sectors with distributed sources of emissions. The debate regarding the suitability of "cap and trade" or a carbon tax must be developed from a multitude of perspectives, balancing the cost-effectiveness of policy instruments with technical and political feasibility. The selection of the policy option should also include an evaluation of the sectors that must be covered by the system as well as an assessment of the current policy framework.

Therefore, Enel recognises the role of EU ETS in providing a suitable price signal associated with CO₂ emissions in the

European Union and welcomes the results of the revision of the EU ETS Directive for 2021-2030. The EU ETS makes it possible to utilise the already existing framework harmonised on a European level, which guarantees technological neutrality and the uniform treatment of market operators. To summarise, the EU ETS is the cornerstone of the EU's climatic policies, which are also supplemented by other policies that permit reaching the climatic objectives while protecting the competitiveness of the EU's industry system. Based on these considerations, the Enel Group does not favour the introduction of national carbon taxes (or a carbon price "floor") in the EU's ETS sectors, as this would significantly distort competition within the European single market and increase the overall cost of reaching the desired environmental result.

In areas outside of the European Union (such as Latin America), Enel's assets are increasingly covered by carbon pricing schemes, mainly carbon taxes that are transformed into "cap and trade" schemes, both national as well as through regional connections, over the medium-long term.

Action platforms and partnerships for facing climate change

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The Group plays an active role in various sector associations and organisations with the objective of promoting topics regarding energy transition on a national and global level. Some of the international associations with which Enel collaborated actively in 2019 are listed below (see also the "Sound governance" chapter).

Three Percent Club - The Group joined this platform launched within the Energy Transition Coalition of the UN Climate Action Summit held in September 2019. It is a platform of 15 governments, 13 businesses and international organizations committed to help put the world on the necessary path to achieve the required improvements to meet the Paris Agreement, driving a 3% annual global increase in energy efficiency.

Climate Finance Leadership Initiative (CFLI) - Enel is a founding partner of the initiative, launched by Michael R. Bloomberg, inspired by the Secretary-General of the United Nations and aimed to promote private sector investments in response to climate change.

eurelectric - Under the chairmanship of Enel, eurelectric adopted a long-term view of the European electrical sec-

tor through which it is committed to reaching a zero carbon emissions electrical energy mix in Europe much earlier than 2050 and to increasing energy efficiency and the electrification of energy demand in order to mitigate the effects of climate change. Enel's Chief Executive Officer ended his term as Chairman in June 2019.

Global Sustainable Electricity Partnership (GSEP) - The objective of the partnership is to guide sustainable energy development by electrifying and connecting communities all over the world. Enel will chair the GSEP for the 2019-2020 financial year, with the Enel X CEO acting as the Chairman, and will host the executive meetings, promoting the best electrification practices and encouraging its shareholders to share examples of virtuous active partnerships as the topic of the year.

Wind Europe - The aim of this association, guided by the companies, is to promote national and international policies and initiatives targeted towards reinforcing market development infrastructures and technologies connected to wind energy, on a European and global level. During 2019, Enel was part of the Board of Directors and, overall, 13 of the 19 work groups and task forces.

Solar Power Europe - This company-led association represents various organisations that play an active role along the entire value chain, with the objective of outlining the regulatory context and improving business opportunities related to solar energy in Europe. Enel has been widely represented within this association during 2018, by holding the position of Vice-Chairman both for the Board of Directors as well as the Strategic Committee and also by playing an active role in different task forces during the course of the year.

SmartEn - SmartEn is a leading association in the digital and decentralised energy solution sector that concentrates on energy transition through intelligent cooperation among consumer, grid, transmission and generation sectors which all play an equally important role in an integrated energy system. In 2019, Enel played an active role in the Board of Directors as well as in various work groups that were established to promote sustainable decentralised energy solutions.

E.DSO for Smart Grids - The European Distribution System Operators (E.DSO) is the primary interface between distributors and European institutions by promoting large-scale development and the experimentation of technologies for smart grids in real situations, as well as new market and regulatory models aimed at reaching the European Union's energy and climate objectives. Enel is the Vice-Chairman of the Board of Directors together with other players of

the international electricity grid.

European Association for Storage of Energy (EASE) -

EASE is the main association that represents organisations active along the entire value chain of energy storage. During 2019, Enel covered various key roles in the governance system and also participated in preparing position papers targeted towards promoting the role of energy accumulation in a decarbonized energy system.

International Emissions Trading Association (IETA) -

This non-profit business organisation allows companies to engage themselves in a climate action that is coherent with the objectives of the “United Nations Framework Convention on Climate Change” and introduces efficient exchange systems based on the greenhouse gas emissions market. In 2019, IETA’s work was particularly focused on the EU level, supporting the study of the imminent EU Green Deal and, on the Latin American level, supporting the discussions on adopting the carbon price in Latin America. Enel is a member of the IETA Board of Directors and is actively involved in various work groups and activities.

RES4Africa - A network of international leaders that represents the entire renewable energy value chain and supports the creation of a favourable environment for investment in renewable energies and strategic partnerships in Africa. Through Enel Green Power, the Enel Group is one of the promoting members and currently chairs the association.

The stakeholder engagement process

Customers, consumers, influencers, civil society and local communities

Climate change is a challenge that concerns the entire society. Enel promotes the involvement of its main stakeholders in order to increase their awareness and develop a constructive dialogue that can provide a valuable contribution towards the creation of solutions that mitigate climate change and create value for the Group. The most relevant actions carried out in 2019 include:

→ **materiality analysis:** climate change, in terms of priority for stakeholders and Company performance in the various countries in which it operates, was one of the topics covered when identifying the main priorities for the stakeholders for sustainability planning;



- **Enel Focus On:** a series of informal meetings was held in New York, Addis Ababa, Bogotá and Santiago de Chile in order to involve the main players and influencers and start an open dialogue with Group management on the main challenges of energy transition. Various climate-related topics were covered, such as renewable energy powered electrification in a zero emissions future, electric mobility and energy efficiency;
- **social media:** in 2019 Enel continued using social media to raise public awareness about topics related to climate change, including decarbonization, renewable energies, electrification, electric mobility and responsible energy consumption;
- **Twenergy:** is a digital ecosystem launched by Enel’s Spanish subsidiary Endesa, with the objective of encouraging responsible energy consumption by collecting the opinions of experts on energy efficiency through articles, digital meetings and by supporting various sector initiatives;
- **raising the awareness of local communities:** with the Creating Shared Value (CSV) model, Enel has organised various workshops with the local communities involved in its activities in the various geographical areas, making them aware of topics connected to climate change and explaining how renewables are an extremely effective solution, with benefits not only for the environment but also for the creation of new jobs and for social-economic development.

Enel at the UN Climate Action Summit 2019

In September 2019, Enel participated in the United Nations Climate Action Summit, the most important global event on climate change, gathering Heads of States, corporate as well as civil society and policy leaders to take increasing ambitious actions to address this challenge, also by pushing for the transformation of economies in line with the UN Sustainable Development Goals (SDGs).

The Summit, which was the first event of its kind to be convened by UN Secretary-General, focused on a set of action areas, including the energy transition, climate finance and carbon pricing, as well as infrastructure and cities, to boost ambition and accelerate action to implement the goals of the 2015 Paris Agreement.

Enel played a crucial role participating in the **Energy Transition Coalition** track, being involved in the Italian flagship initiative “**Catalysing the Energy Transition through Digital Power Infrastructure**” which aims at catalysing the energy transition by promoting digital infrastructures and renewable energy, particularly in developing countries.

Furthermore, Enel’s CEO, attended also the UN Private Sector Forum. Hosted by the UN Secretary-General and organised by the UN Global Compact, the event gathered Chief Executives, young climate leaders, Heads of State and Government as well as UN leaders on the occasion of the Summit, stirring a multi- stakeholder, intergenerational dialogue to share an urgent and collective course of action in tackling the climate crisis.

Enel’s proactive engagement and leadership was highlighted through the commitment to two important pledges on the occasion of the Summit:

- **Business Ambition for 1.5°C - Our Only Future**, through which Enel committed to reach net-zero emissions by no later than 2050, in line with limiting the rise in global temperatures to 1.5 °C with respect to pre-industrial levels;
- **Just transition & green, decent jobs**, through which Enel committed to promote a just energy transition while respecting the international labour standards across its business.

Further information on the pledges and its implementation can be found in the present chapter.

Our people

In 2019, Enel involved all the people that work for the Company in awareness activities in order to increase their involvement in climate change aspects and promote a **culture of innovation** and **business entrepreneurship** on a global level to overcome the energy challenges.

Enel Days 2019, which are annual company events, promoted discussions and exchanges about topics such as electrification, decarbonization, digitalization and urbanisation. The main priorities of the Strategic Plan for the next three years were presented, in line with what was communicated to the financial community during the Capital Markets Day.

On a local level, Enel has also launched **awareness campaigns** on sustainability and climate change, such as the internal campaign launched in Spain concerning the UN SDG commitments, including SDG 13 “Climate action”. On the occasion of the United Nations Climate Summit,

specific internal communication campaigns were organised to illustrate the main events and discuss the new challenges and opportunities that emerged during the event.

Finally, Enel collects the opinion of its employees on annual basis as part of the materiality analysis carried out to define the objectives of the Sustainability Plan.



Enel's impact on climate change

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Electricity is essential to guarantee the sustainable progress of modern societies and represents a key factor in reaching the goals of the United Nations 2030 Agenda, in particular SDG 7, to guarantee everyone accessible, reliable, sustainable and modern energy, and SDG 13, regarding climate action. The **electricity production** has always played a key role in climate change, as the use of fossil fuels is a considerable source of greenhouse gas emissions. Technological development, in particular in the area of renewable energies, has however completely transformed this scenario by making electricity one of the main solutions for reducing the carbon footprint world-wide. Enel is aware of these impacts and implements specific actions to minimise them, promoting the decarbonization of the energy system and the electrification of the energy demand. As a result, this reduces the greenhouse gas emissions along the entire value chain.

Enel's electricity production from fossil fuels (mainly coal and gas) has traditionally represented the main source of greenhouse gas emissions. In particular, in 2019 the direct emissions (Scope 1) related to generation from fossil fuels were around 69.4 mil t CO₂, whereas indirect emissions (Scope 3) related to the extraction and transport of fuels were equal to 4.0 mil t_{eq} of CO₂ (considering also those relating to the transport of raw materials and waste). Enel is minimising this impact by accelerating the decommissioning of coal plants, with a reduction of capacity in 2019 equal to 4.1 GW. In parallel, the Group is increasing the development of renewable capacity that, together with the contribution of nuclear generation, has avoided 77 mil t of CO₂ emissions. Furthermore, Enel is actively committed to the development of energy storage systems that support the integration of renewable capacity, with a total installed capacity of 110 MW in 2019. The decarbonization of the energy mix

also has a positive impact on the reduction of indirect greenhouse gas emissions (Scope 2) associated with the acquisition of electricity to cover the requirements of business activities.

The management of the **electricity network** involves the generation of indirect greenhouse gas emissions (Scope 2) associated with energy losses on the grid, equal to 3.8 mil t_{eq} of CO₂ in 2019. Enel is actively investing in the digitalization and automation of the electricity grid to reduce these losses and increase reliability, while promoting the diffusion of renewables in the energy system.

Even if Enel does not have a direct impact in terms of greenhouse gas emissions in the **retail market**, the use of products sold by its own customers generates greenhouse gas emissions that are accounted for as indirect emissions (Scope 3). In particular, the emissions connected to the use of electricity sold to customers equalled around 29.0 mil t_{eq} of CO₂, whereas those related to gas sold equalled 23.9 mil t_{eq} of CO₂. Enel regularly monitors these emissions and adopts measures aimed at minimising them. In particular, Enel is committed to reducing its indirect emissions associated with the sale of natural gas on the retail market 16% by 2030, with respect to the 2017 values. This goal has been certified by the Science Based Targets initiative.

Finally, Enel offers its customers sustainable energy solutions to reduce the carbon footprint of their energy consumption in a wide range of sectors, including transport, buildings as well as industrial processes and services. For example, with Enel X the Group is promoting the deployment of charging infrastructures for electrical vehicles (79,565 charging points installed in 2019), the development of energy efficiency solutions, distributed generation, consultancy services, smart public lighting and circular cities.

Enel's impact on climate change in 2019

POSITIVE IMPACTS	CO ₂ free production ¹	Electricity network digitalization	Electrification of the energy demand and promotion of energy efficiency
	<p>77 mil t CO₂ avoided</p> <ul style="list-style-type: none"> Avoided CO₂ emissions from electricity production Contribution towards the reduction of CO₂ emissions in other sectors² through a zero emissions energy mix 	<p>44.7 mil end users with active smart meters</p> <ul style="list-style-type: none"> By providing data in quasi real time, smart meters permit an efficient management of the energy supply and demand, promoting informed and sustainable consumption 	<p>79,565 charging points for electric mobility</p> <ul style="list-style-type: none"> Contribution towards reducing CO₂ emissions in other sectors through the electrification of consumption, including transport by promoting electric mobility Energy efficiency solutions for reducing consumption (residential, city and industry)
	<p>110 MW</p> <p>Increase in storage capacity³</p>	<p>3.2 service interruptions per client (SAIFI)⁵</p> <ul style="list-style-type: none"> A reliable and resilient network contributes towards reducing the CO₂ emissions associated with grid losses 	



NEGATIVE IMPACTS	Thermal production	Electricity network losses	Sale of retail electricity and gas
	<p>around 69.4 mil t CO₂</p> <ul style="list-style-type: none"> Direct CO₂ emissions for electricity production (Scope 1)⁴ 	<p>3.8 mil t_{eq} CO₂</p> <ul style="list-style-type: none"> Indirect CO₂ emissions associated with network losses (Scope 2)⁶ 	<p>around 29.0 mil t_{eq} CO₂</p> <ul style="list-style-type: none"> CO₂ emissions associated with the use of electricity sold on the retail market (Scope 3)
	<p>4.0 mil t_{eq} CO₂</p> <ul style="list-style-type: none"> Indirect CO₂ emissions deriving from the extraction and transport of fuel, raw materials and waste 		<p>23.9 mil t_{eq} CO₂</p> <ul style="list-style-type: none"> CO₂ emissions associated with the use of natural gas sold on the retail market (Scope 3)

1 Includes the electricity production from renewable and nuclear sources.

2 The GHG Protocol requires considering the consumption of electricity when calculating the Company's carbon footprint as indirect emissions (Scope 2).

3 Includes the contribution of the "Global Power Generation" Business Line.

4 Other Scope 1 emissions are equal to 0.4 mil t CO₂. See the paragraph "Greenhouse gas emissions" for further details.

5 SAIFI, System Average Interruption Frequency Index.

6 Other Scope 2 emissions are equal to 1.5 mil t CO₂ (according to location-based methodology). See the paragraph "Greenhouse gas emissions" for further details.

The Enel governance model to tackle climate change

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Enel's organisational and corporate governance model defines specific tasks and responsibilities for which the Company's main governance bodies are responsible, guaranteeing that the risks and opportunities related to climate change are suitably taken into consideration during all important company decision-making processes.

Competences of corporate bodies in relation to climate change

The **Board of Directors of Enel SpA** is responsible for examining and approving the corporate strategy, including the Group's annual budget and business plan, which incorporate the main objectives and actions that the Company plans to undertake to lead the energy transition and tackle climate change. 14 meetings held by the Board of Directors in 2019, in 8 of which they addressed issues connected with climate and their impact on strategies, operations and sustainability.

The Board of Directors is supported mainly by two board-level committees for the topic of climate change:

- **Corporate Governance and Sustainability Committee** - It assists the Board of Directors in assessment and decision-making activities concerning, among other things, sustainability, including any relevant climate issues connected with the operations of the Company and its interaction with all stakeholders. 8 meetings held by the Committee in 2019, in 5 of which they addressed issues connected with climate and their impact on strategies, operations and sustainability;
- **Control and Risk Committee** - It supports the Board of Directors in performing its duties regarding internal control and risk management. It also examines the contents of the corporate disclosure on climate issues of the Annual Report and the Sustainability Report, issuing a prior opinion to the Board of Directors, called

to approve those documents. 12 meetings held by the Committee in 2019, in 6 of which they addressed issues connected with climate and their impact on strategies, operations and sustainability.

In 2019, the company also organised a special **induction** program to provide the directors with an understanding of the sectors in which the Group operates, including issues related to climate change and the related impact on industrial strategy and corporate operations.

Chairman - In the exercise of the function of stimulating and coordinating the activities of the Board of Directors, and ascertaining that the Board's resolutions are carried out, the Chairman plays a proactive role in the process of approving and monitoring corporate and sustainability strategies, for which the fight against climate change is a priority. In addition, during 2019 the Chairman also chaired the Corporate Governance and Sustainability Committee.

Chief Executive Officer and General Manager - He is responsible for defining and supervising a sustainable business model, delineating a strategy for leading energy transition towards a low-carbon model. Furthermore he represents Enel in various initiatives that deal with climate change, holding positions of leadership in world-renowned institutions.

The Enel organisational model for management of climate-related issues

Enel has a management team that assigns the responsibilities related to climate topics to the specific Functions that contribute towards guiding Enel's leadership in energy transition. Each area is responsible for managing the risks and opportunities related to climate change for their own area of competence.

The **Holding Functions** are responsible for consolidating the scenario analysis and managing the strategic and financial planning process aimed towards promoting a sustain-



able business model by putting the fight against climate change at the centre of its strategy.

The **Global Business Lines** are responsible for the development of activities related to promoting renewable generation, the optimisation of heat capacity, the digitalization of the electricity grid and the development of business solutions that enable energy transition and the fight against climate change. In 2019, Enel Green Power and Global Thermal Generation merged, creating Global Power Generation, which confirms the guiding role of the Enel Group in energy transition, by means of an integrated process of decarbonization and the sustainable development of renewable capacity. The **Global Service Functions** are responsible for adopting sustainable criteria, including climate change, in supply chain management and developing digital solutions that develop the development of technologies enabling energy transition and the fight against climate change.

On a local level, the **Regions and Countries** have the task of promoting decarbonization and guiding the energy transition towards a low carbon business model, within their areas of responsibility. Furthermore, the Europe and Euro-Mediterranean Affairs Function is responsible for defining the Group's position on climate change, low carbon policies and the regulation of the international carbon market on a European level. Additionally, the **Group Investments Committee**, chaired by the Chief Executive Officer, grants approval for the expenses for investments related to business development. This committee also has the task of guaranteeing that all investments are fully in line with the Group's commitment to promoting a low carbon business model and reaching decarbonization by 2050.

Incentives system concerning climate change

The Company's remuneration policy includes different mechanisms for the purpose of progressing towards energy transition, in particular:

- a variable short-term remuneration (MBO) that can include objectives relative to the specific company function of each manager. For example, they can include objectives related to the development of renewable energies for the manager in the Global Power Generation Business Line or related to energy transition solutions in the Enel X Global Business Line. Furthermore, the new MBO system assigned to the CEO for 2020 envisions the addition of a new quantitative climate objective connected to the growth of the renewable net installed capacity in comparison to the total net installed capacity, which represents the 15% short-term variable retribution;
- a long-term variable remuneration that, starting in 2018, includes a quantitative climate objective, that is, the reduction of Enel Group CO₂ emissions per kWh_{eq} over the next three years, which represents 10% of total long-term variable retribution;

The Enel governance model to face climate change

BOARD OF DIRECTORS LEVEL

MAIN FUNCTIONS RELATED TO CLIMATE CHANGE

Chairman

P

Control and Risks Committee

Board of Directors

Corporate Governance and Sustainability Committee

Oversight of the climate strategy and coordination of the Board of Directors

Climate strategy oversight (risks, planning and disclosure)

Definition and oversight of the sustainable business model towards leading the energy transition

Chief Executive Officer

A

MANAGEMENT LEVEL

Holding Functions

Global Service Functions

Global Business Lines

Regions and Countries

Group Investment Committee

Definition of the Strategic Plan and actions to manage the risks and opportunities related to climate change and energy transition

Approval of investments aligned with Enel's climate change related goals

Climate scenarios

The Group develops short, medium and long-term scenarios for the energy industry and for macroeconomic and financial conditions in order to support its strategic and industrial planning, the evaluation of investments and extraordinary corporate transactions. The role of climate change in these scenarios is increasingly important in terms of:

- acute events (heat waves, flooding, hurricanes, etc.) and their potential impact on industrial assets;
- chronic phenomena related to structural changes in the climate, such as the rising trend in temperatures, rising sea levels, etc., which give rise to changes in the output of generation plants and in electricity consumption profiles in the residential and commercial sectors;
- transition of the various industrial and business sectors towards a green economy characterised by ever lower emissions levels.

The issues connected with future trends in climate variables (in terms of acute and chronic phenomena) define the so-called “**physical scenario**”, while the issues associated with the industrial and economic transition towards solutions to reduce atmospheric concentrations of CO₂ are the characteristic elements of the “**transition scenario**”. The adoption of these scenarios and their integration into corporate processes takes account of the guidelines of the TCFD and enables the assessment of the risks and opportunities connected with climate change.

The physical climate scenario

Among the climate projections developed by the Intergovernmental Panel on Climate Change (IPCC) on a global scale, the Group has selected two representing a specific level of emissions (the so-called “Representative Concentration Pathway”):

- **Representative Concentration Pathway 2.6 (RCP 2.6):** compatible with global warming of less than 2 °C above pre-industrial levels by 2100, or an average of about 1 °C in 2081-2100;
- **Representative Concentration Pathway 8.5 (RCP 8.5):** compatible with a scenario where no particular measures

are taken to combat climate change, a so-called “business as usual scenario”. In this scenario, a mean global temperature increase of about 4.3 °C above pre-industrial levels is forecast for 2081-2100.

In the RCP 8.5 climate projections, the Mediterranean and Central/South America will experience a significant increase in average temperatures and substantial decline in precipitation, with the effects becoming more pronounced in the second half of the century and the impact increasing up to 2100. In the RCP 2.6 scenario, the effects will be similar but less intense, with the trend slowing in the second half of the century, thereby producing a substantial differential between the two scenarios in 2100.

The scenarios are global in nature. Accordingly, in order to determine their effects in the areas of relevance for the Group, a collaborative initiative has been started with the Earth Sciences department of the International Center for Theoretical Physics (ICTP) of Trieste. As part of this collaboration, the ICTP provides projections for the major climate variables with a grid resolution of 50 km² and a forecast horizon running from 2030 to 2050. The main variables are average temperatures, rainfall and snowfall and solar radiation. The first phase of the study conducted in 2019 involved Italy and Spain, with the consequent definition of a preliminary physical scenario.

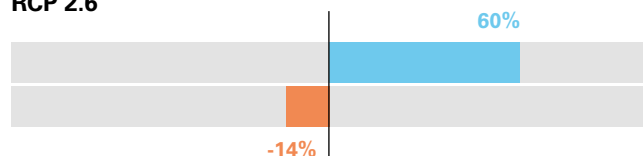
Italy

Acute phenomena: in the 2030-2050 period, heat waves are expected to increase appreciably both in terms of frequency and geographical distribution, especially in the southern regions of the country. In these scenarios, the intensity of extreme rain and snowfall events increases sharply, but their frequency declines compared with historic trends.

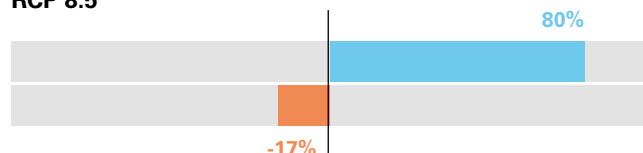
Chronic phenomena: the average annual temperature is expected to increase over the 2030-2050 period in both the RCP 2.6 and 8.5 scenarios. In the RCP 8.5 scenario, the temperature is expected to be an average of 0.4 °C compared with the RCP 2.6 scenario in the 2030-2050 period, with the differential then widening significantly in the second half of the century. Chronic changes in temperature can be analysed to obtain information on the potential effects on cooling and heating demand in local energy systems. In terms

of heating days (HDs), i.e. days with a temperature below 15 °C, and cooling days (CDs), or days with a temperature above 24 °C, the 2030-2050 period will see HDs decrease by 14% and CDs increase by 60% in the RCP 2.6 scenario, while the RCP 8.5 scenario will see a larger decline in HDs (-17%) and a larger increase in CDs (+80%).

RCP 2.6



RCP 8.5



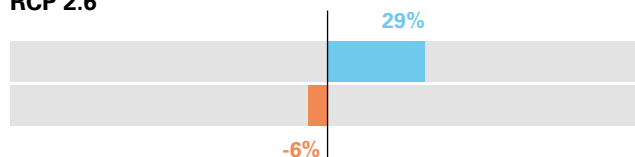
■ Heating days (HD)
■ Cooling days (CD)

Spain

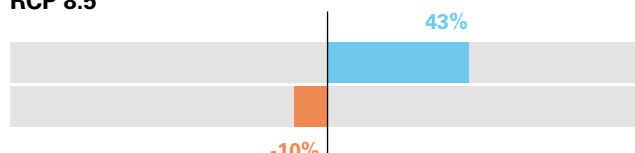
Acute phenomena: over the 2030-2050 period, heat waves are expected to increase appreciably in frequency, with their geographical spread expected to expand, especially in the southern area of the country. Extreme rainfall will increase in intensity but their frequency will decline. At the same time, extreme snowfalls will largely remain located in the current geographical areas but their frequency and intensity could decline sharply.

Chronic phenomena: the average annual temperature is expected to increase over the 2030-2050 period in both the RCP 2.6 and 8.5 scenarios. In the RCP 8.5 scenario, the temperature is expected to rise by an average of 0.4 °C compared with the RCP 2.6 scenario in the 2030-2050 period, with the differential then widening significantly in the second half of the century. In terms of heating days (HDs) and cooling days (CDs) the 2030-2050 period will see HDs decrease by 6% and CDs increase by 29% in the RCP 2.6 scenario, while the RCP 8.5 scenario will see a larger decline in HDs (-10%) and a larger increase in CDs (+43%).

RCP 2.6



RCP 8.5



■ Heating days (HD)
■ Cooling days (CD)

The transition scenario

The transition scenario depicts the evolution of industrial and business sectors in an economic, social and regulatory context consistent with different trends in greenhouse gas (GHG) emissions and, therefore, is correlated with the RCP 2.6 and 8.5 climate scenarios. The Group has therefore equipped itself with quantitative tools that incorporate assumptions regarding the context to produce corresponding projections for energy demand, electricity demand, electricity production, the penetration of renewables and electric vehicles, etc.: in short, all the variables that characterize a national energy system relevant to the Group's activities.

In defining the transition scenarios, we distinguish between:

- assumptions concerning the global macroeconomic and energy context in terms of commodity prices, interest rates, gross domestic product, etc., using international benchmarks produced by entities such as the **International Energy Agency (IEA)**, **Bloomberg New Energy Finance (BNEF)**, **International Institute for Applied Systems Analysis (IIASA)**, etc. As regards IIASA, for example, consideration was given to the fundamentals driving the "Shared Socioeconomic Pathways" (SSPs), in which general energy scenarios related to physical climatic scenarios are developed. The information deriving from the "SSPs" is used to support long-term forecasts on commodity prices;
- assumptions concerning local policies and regulatory measures associated with the fight against climate change, such as the reduction of carbon dioxide emis-

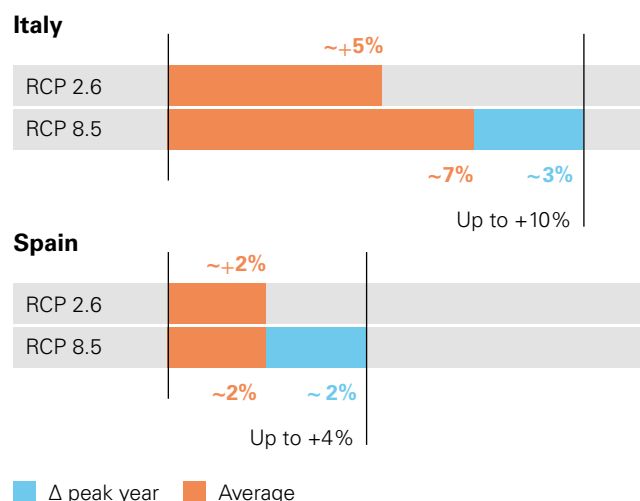
sions, the efficiency of the energy system, the decarbonization of the electricity sector, the reduction of oil consumption, etc. For Italy and Spain, reference is made to those countries' integrated **National Energy and Climate Plans** (NECPs), which are also approved at the European level, while outside Europe, reference is made to the respective national energy programs of the countries involved.

In order to define the transition scenario for the electricity sector, the Group considers the elements described above (physical scenarios, assumptions about the macro and energy context, regulatory developments) as prerequisites for the assessment of future projections of electricity demand, electricity generation, renewables, etc.

In this context, the effect of temperature on electricity demand in the long term (2030-2050) has been estimated. Italian electricity demand is provisionally forecast to increase on average by up to 5%, due to the combined effect of the chronic increase in temperature and the transition of the system towards greater electrification of energy consumption. Moreover, in the RCP 8.5 physical scenario the probability of extremely hot years increases, leading to a future increase of up to 10% in electricity demand, together with the risks associated with more frequent extreme weather events. In the case of Spain, however, over the same time horizon the chronic effects would involve an average increase in demand of around 2% and, in the possible peak year of the RCP 8.5 scenario, it could reach +4%. The smaller increase

in electricity demand in the Spain compared with Italy mainly reflects to the narrower scope for the future electrification of consumption, as it is currently already largely electrified as a consequence of the presence of nuclear power in the country. These effects only reflect the long-term impact of temperature on electricity demand and the inertial evolution of the national energy system. They do not consider the repercussions of climate change on economies underscored in the IPCC's special report on global warming, which could also have indirect effects on economies and, therefore, on electricity demand.

Effects on energy demand (2030-2050)



The strategy to tackle climate change

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The strategy of the Enel Group has proven its ability to create sustainable long-term value, integrating the themes of sustainability and close attention to climate change issues. The Group is among the leaders guiding the energy transition through the decarbonization of electricity generation and the electrification of energy consumption, which represent opportunities both to increase value creation and to contribute positively to more rapid achievement of the Sustainable Development Goals set by the United Nations (SDGs) in the 2030 Agenda, placing SDG 13 for the fight

against climate change at the centre of its strategy. As a result, the 2020-2022 Strategic Plan is based on a renewed set of "purpose driven" strategic pillars that represent the main industry trends connected to energy transition and the fight against climate change, also identifying the main transformation enablers. The trends in decarbonization and electrification, which are naturally connected with the generation and sale of electricity, will be enabled by the development of increasingly digital grids and the evolution towards a platform-based business model.

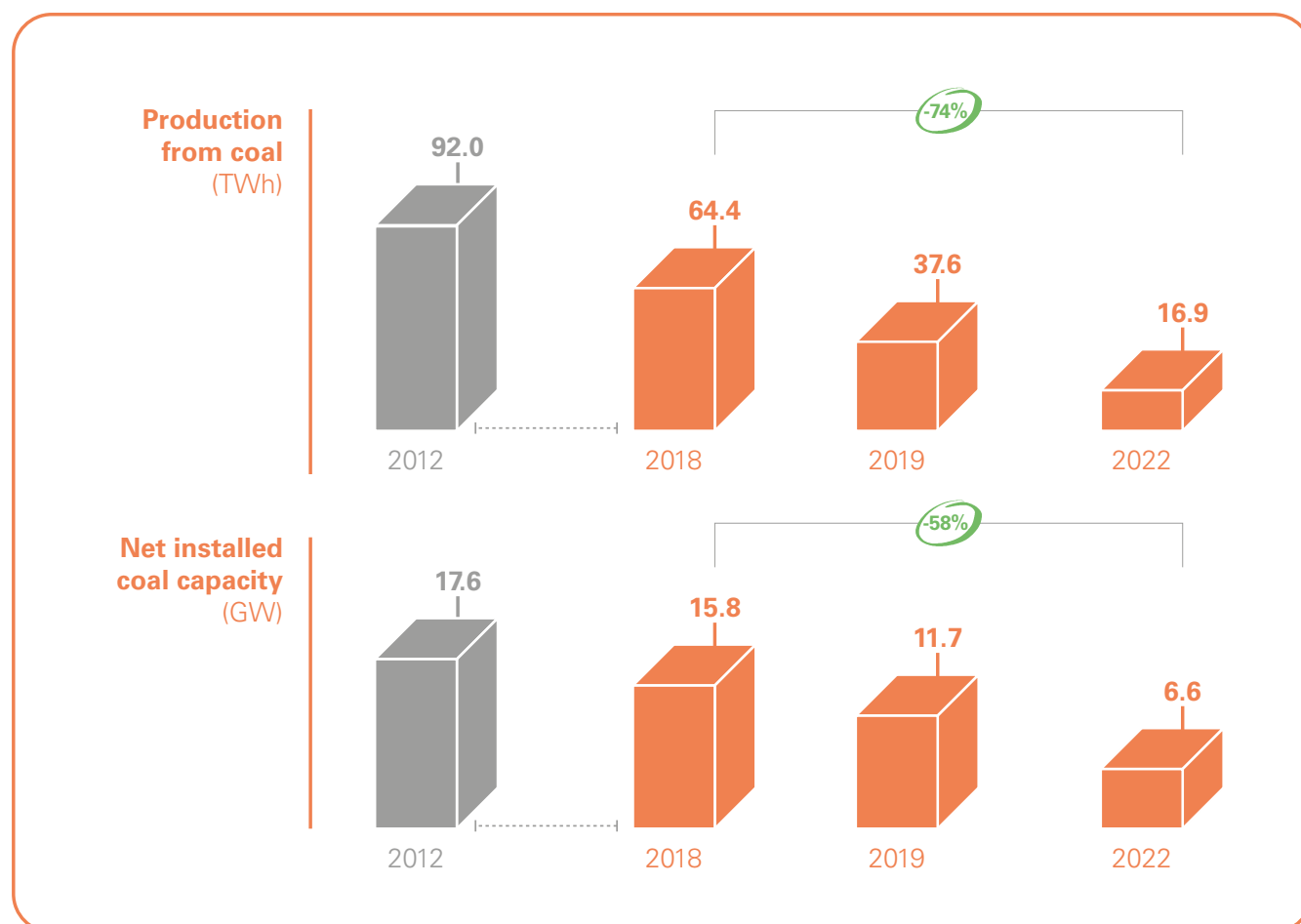
Thanks to the strategies implemented in the field, the Group could achieve an ordinary low-carbon EBITDA of 18.3 billion euros in 2022 that will bring the contribution of products, services and technologies with low-carbon emissions to 91% of the total ordinary EBITDA. During the period of the Plan, in compliance with the objectives of EBITDA, more than 90% of Capex will be destined to products, services and technologies with low-carbon emissions.

Decarbonization

In terms of decarbonization, in a configuration of the scenario² consistent with limiting global warming within the levels established with the Paris Agreement, installed renewables

capacity should increase from 35% in 2018 to 69% in 2040 thanks to the progressive decline in generation costs and to the increased public awareness of climate issues. This evolution of the system towards more variable sources will require greater flexibility to manage the balance between generation and consumption. Accordingly, demand response and storage technologies are also expected to grow significantly, also in this case boosted by a steep decline in costs, which are expected to halve over the next 20 years.

The major decarbonization objectives of plan will therefore be achieved thanks to an acceleration of renewables development as well as the **progressive decommissioning of coal-fired plants**. The objective is to achieve an entirely marginal level of coal generation by 2030, with a 74% decrease in production by 2022.



² Sustainable Development Scenario IEA (International Energy Agency), World Energy Outlook 2019.



The target for **increasing renewables capacity** is expected to rise by 14.1 GW (11.6 GW considering exclusively the net installed capacity) in 2020-2022 and will be achieved through a number of strategic lines of development:

- 5.4 GW will be developed in countries such as Italy, Spain and Chile, where new investments in renewable energy will support the decarbonization of the generation fleet;
- 5.1 GW will mainly be developed in Brazil and the United States, where an increasing number of large customers are moving from the regulated market to purchase electricity from renewable sources developed primarily through long-term power purchase agreements (PPA);
- 3.6 GW will be developed to support our presence in recently opened markets or in entirely new markets, both directly and through joint ventures.

Thanks to these initiatives, 60% of the Group's total installed capacity in 2022 will be renewable.

In order to support the decarbonization process, the plan also envisages a significant contribution from the new flexibility services provided by Enel X. Demand response capacity will expand from 6.3 GW in 2019 to over 10.1 GW in 2022, while storage services will increase from the current 110 MW to about 440 MW in 2022.

Electrification

Electrification, which means the substitution of electricity for other commodities in energy consumption, will play a central role in the Enel Group strategy.

In line with the IEA sustainable development scenario, the share of electricity in final global energy consumption should reach 43%³ in 2040 (from 24% in 2018). This scenario assumes a significant increase in the average annual

³ Figure referred to "useful energy", intended as the energy that is available to end-users to satisfy their needs (source IEA WEO 2019 SDS).

investment for end use, which in 2030-2040 should be almost 5 times that in 2018.

The opportunities deriving from this trend will involve a broad spectrum of activities, ranging from distributed generation to energy efficiency upgrading for buildings and electric vehicle infrastructure, thus supporting the growth of companies that move first. Enel's plan seeks to achieve a stable market share in the free markets of European countries, supported by a 65% increase in the number of customers and 21% growth in volumes sold on the free market in 2022.

Further impetus to the electrification process will come from **electric mobility**, with the installation of about 736,000 recharging points by 2022, and more generally **from the new services offered by Enel X**, which will permit developing business models oriented towards promoting the decarbonization of other industrial sectors and services.

Enabling infrastructure

In order to adequately support value creation from these two macro trends, the plan identifies **electricity distribution network** as one of the main enablers. The evolution of the role of distributors will be a key factor in supporting the greater complexity involved with distributed renewables generation and electric mobility, in managing the digitalization process driven by innovative services offered to customers and in ensuring the resilience of the energy system in view of the impacts of climate change. As a result, Enel will continue to invest in **network digitalization** between 2020 and 2022, increasing the number of second generation smart meters from 13.1 million to 28.8 million.

Platforms and ecosystems

Enel will adopt a **platform-based** model on a global level for its grids, in retail and in Enel X, which will make it possible to standardise and optimise the operating processes by supporting the obtainment of the efficiencies set forth in the Plan, and promote the establishment of new business opportunities that promote an energy model that is free from greenhouse gas emissions.

Main risks and opportunities linked to climate change

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The identification, assessment and management of risks and opportunities

The process of defining the Group's strategy is accompanied by a careful analysis of the risks and opportunities connected to it, also including the aspects related to climate change.

Every year, before approving the Strategic Plan, the Control and Risk Committee, which is appointed by the Board of Directors, is presented with a quantitative analysis of the risks and opportunities related to the Group's strategic positioning, which includes aspects related to the climate, such as regulatory factors and weather-climatic events.

Climate change and the energy transition will impact Group activities in a variety of ways. In order to identify the main types of risk and opportunity and their impact on the business associated with them in a structured manner consistent with the TCFD, we have adopted a **framework** that explicitly represents the main relationships between scenario variables and types of risk and opportunity, specifying the strategic and operational approaches to managing them, comprising mitigation and adaptation measures.

There are two main macro-categories of risks/opportunities: those connected with developments in physical variables and those linked to the evolution of the transition scenarios. Physical risks are divided in turn between acute (i.e. extreme events) and chronic, with the former linked to extremely intense meteorological conditions and the latter to more gradual but structural changes in climate conditions.

Extreme events expose the Group to the risk of prolonged unavailability of assets and infrastructure, the cost of restoring service, customer disruptions and so on. Chronic changes in climate conditions expose the Group to other risks or opportunities: for example, structural changes in temperature could cause changes in electricity demand and have an impact on output, while alterations in rainfall or wind conditions could impact the Group's business by increasing or decreasing potential electricity generation.

The energy transition towards a more sustainable model characterised by a gradual reduction of CO₂ emissions has risks and opportunities connected both with changes in the regulatory and legal context and trends in technology development, electrification and the consequent market developments.

Consistent with the climate and transition scenarios used by Enel to determine risks and opportunities, the main transition-related phenomena are beginning to emerge in relation to customer behaviour, industrial strategies being adopted in all economic sectors and regulatory policies. Between 2020 and 2030, the transition trends will become visible in response to the evolution of the context: the Enel Group has decided to facilitate the transition, and is therefore ready to seize all the opportunities that may arise from an acceleration in that transition. As discussed previously, our strategic choices, which are already strongly oriented towards the energy transition, with more than 90% of investment dedicated to the transition, enable us to incorporate risk mitigation and opportunity maximisation "by design", adopting a positioning that takes account of the medium and long-term phenomena we have identified. The strategic choices are accompanied by the operating best practices adopted by the Group.

The framework illustrated on the next page also highlights the relationships that link the physical and transition scenarios with the potential impact on the Group's business. These effects can be assessed from the perspective of **three time horizons**: the short term (1-3 years), in which sensitivity analyses based on the Strategic Plan presented to investors in 2019 can be performed; the medium term (until 2030), in which it is possible to assess the effects of the energy transition; and the long terms (2030-2050), in which chronic structural changes in the climate should begin to emerge. The main sources of risk and opportunity identified, the best practices for the operational management of weather and climate phenomena, and the qualitative and quantitative impact assessments performed to date are discussed below. As declared by the TCFD, the process of disclosing information on the risks and opportunities connected with climate change will be gradual and incremental from year to year.

SCENARIO PHENOMENA	TIME HORIZON	RISK & OPPORTUNITY CATEGORY	DESCRIPTION	IMPACT	MANAGEMENT APPROACH
Acute physical	From the short term (1-3 years)	Extreme events	Risk: especially extreme weather/climate events.	Extreme events can damage assets and interrupt operations.	The Group adopts best practices to manage the restoration of service as quickly as possible. It also works to implement investments in resilience (for Italy) . With regard to risk assessment in insurance, the Group has a loss prevention program for property risk that also assesses the main exposures to natural events. Looking forward, the assessments will also include the potential impacts of long-term trends in the most significant climate variables.
Chronic physical	From the long term (2030-2050)	Market	Risk/opportunity: increase or decrease in electricity demand ; increase or decrease in electricity production .	Electricity demand is also affected by temperature, whose fluctuation can impact our business.	The Group's geographical and technological diversification means that the impact of changes (positive and negative) in a single variable is mitigated at the global level. In order to ensure that operations always take account of weather and climate phenomena, the Group adopts a range of practices such as, for example, weather forecasting, real-time monitoring of plants and long-term climate scenarios.
Transition	From the medium term (2022-2030)	Policy & Regulation	Risk/opportunity: policies on CO ₂ prices and emissions, energy transition incentives, greater scope for investment in renewables and resilience regulation.	Policies concerning the energy transition and resilience can impact the volume of and returns on investments.	The Group is minimizing its exposure to risks through the progressive decarbonization of its generation fleet. The Group's strategic actions, which are focused on investment in renewables, networks and customers, enable it to mitigate potential threats and exploit the opportunities connected with the energy transition. The Group is also actively contributing to the development of public policies.
Transition	From the medium term (2022-2030)	Market	Risk/opportunity: changes in the prices of commodities and energy, evolution of energy mix, changes in retail consumption, changes in competitive environment.	Considering two alternative transition scenarios, the Group assesses the impact of trends in the proportion of renewable sources in the energy mix, electrification and the penetration of EVs to estimate their potential impacts.	The Group is maximizing opportunities by adopting a strategy founded on the energy transition and the rapid expansion of renewable generation and the electrification of energy consumption .
Transition	From the medium term (2022-2030)	Product & Services	Opportunity: increase in margins and greater scope for investment as a consequence of the transition in terms of greater penetration of new electrical technologies for residential consumption and electric transportation .	Trends in the electrification of transportation and residential consumption will potentially have an impact on Enel's business.	The Group is maximizing opportunities thanks to its strong positioning in new businesses and services .
	From the medium term (2022-2030)	Technology		Considering two alternative transition scenarios, the Group assesses the potential opportunities to scale up current businesses in response to trends in the electrification of transportation.	The Group is maximizing opportunities thanks to its strong positioning in global networks .

Identification, assessment and management of physical risks and opportunities

Taking the IPCC scenarios as our reference point, developments in the following physical variables and the associated operational and industrial impacts connected with potential risks and opportunities are assessed.

Chronic physical risks

The climate scenarios developed with the ICTP do not provide definitive indications of structural changes before 2030, but changes could begin to emerge between 2030 and 2050.

The main impacts of **chronic physical changes** would be reflected in the following variables:

- **Electricity demand:** variation in the average temperature level with a potential increase or reduction in electricity demand.
- **Thermal generation:** variation in the level and average temperatures of the oceans and rivers, with effects on thermal generation.
- **Hydroelectric generation:** variation in the average level of rainfall and snowfall and temperatures with a potential increase or reduction in hydro generation;

SCENARIO PHENOMENA	RISK & OPPORTUNITY CATEGORY	DESCRIPTION	TIME HORIZON ¹	IMPACT DESCRIPTION
Chronic physical	Market	Risk/opportunity: increase or decrease in electricity demand.	Short term	Electricity demand is also affected by temperature, whose fluctuations can have an impact on Enel's business. Although structural changes should not emerge in the short/medium-term, in order to assess the sensitivity of Group performance to potential temperature variations, Enel has performed an analysis of sensitivity to changes of +/-1% in electricity demand for the Group as a whole.
Chronic physical	Market	Risk/opportunity: increase or decrease in renewables generation.	Short term	Renewables generation is also affected by the availability of resources, whose fluctuations can have an impact on our business. Although structural changes should not emerge in the short/medium-term, in order to assess the sensitivity of Group performance to potential temperature variations, we have performed an analysis of sensitivity to changes of +/-10% in potential electricity output by technology.

¹ Time horizon: short (2020-2022); medium (up to 2030); long (2030-2050).

- **Solar generation:** variation in the average level of solar radiation, temperature and rainfall with a potential increase or reduction in solar generation;
- **Wind generation:** variation in the average wind level with a potential increase or reduction in wind generation.


The Group will work to estimate the relationships between changes in physical variables and the change in the potential output of individual plants in the different categories of electricity generation technology.



Scenario analysis has shown that chronic structural changes in the trends of physical variables will begin to occur after 2030. However, in order to obtain an indicative estimate of the potential impacts, it is possible to test sensitivity of the Business Plan to the factors potentially influenced by the physical scenario, regardless of any direct relationship

with climate variables. Of course, such stress testing has an extremely low probability of occurrence based on historical events and geographical diversification. The variables examined are:

- electricity demand (+/-1% per year), whose variations can potentially impact the generation and retail businesses. It was stress tested for all countries in which the Group operates;
- the output potential of renewables plants was also stressed (+/-10% over a single year). Variations in this variable can potentially impact the generation business. It at the individual technology level around the globe.

The data reported show the effect on a single year for a single generation technology and include both the volume and price effects.

GLOBAL BUSINESS LINE AFFECTED	SCOPE	QUANTIFICATION - TYPE OF IMPACT		UPSIDE/ DOWNSIDE	QUANTIFICATION - RANGE	
					< 100 MIL EUROS	100-300 MIL EUROS
Global Power Generation 	Group	EBITDA/year	+1%	Upside		
			-1%	Downside		
Global Power Generation 	Group potential hydroelectric production	EBITDA/year	+10%	Upside		
			-10%	Downside		
	Group potential wind production	EBITDA/year	+10%	Upside		
			-10%	Downside		
	Group potential solar production	EBITDA/year	+10%	Upside		
			-10%	Downside		

-  Upside scenario current policies
-  Downside scenario current policies

Acute physical risks

With regard to acute physical phenomena, the incidence and frequency of extreme physical phenomena can cause significant and unexpected physical damage to assets and generate negative externalities associated with the interruption of service.

To assess the scale of the risks of extreme climate events, the scenario results will be assessed in terms of the frequency and intensity of the key phenomena, together with technical information on generation assets, taking account of the differing levels of resilience, and identifying metrics to measure potential losses and any externalities caused by the interruption of business operations.

The intensification of the effects of climate change means it is essential to adopt adaptive behaviours: each catastrophic event represents a lesson learned for Enel, from which we draw inspiration to strengthen design techniques and preventive measures to ensure the resilience of the asset portfolio.

From this perspective, the method and the information extracted from the *ex post* analysis of events play a crucial role in determining the processes and practices to be deployed in mitigating such events in the future.

Power generation

As regards generation, over time the Group has implemented targeted measures at specific sites and established *ad hoc* management activities and processes.

Measures implemented for specific sites in recent years include:

- improving cooling water management systems for certain plants in order to counter the problems caused by the decline in water levels on rivers, such as the Po in Italy;
- installing fogging systems to improve the flow of inlet air and offset the reduction in power output caused by the increase in ambient temperature in CCGTs;
- installing drainage pumps, raising embankments, periodic cleaning of canals and interventions to consolidate land adjacent to plants to prevent landslides in order to mitigate flood risks.

The Group adopts a series of best practices to manage the impact of **weather events** on power generation, such as:

- **weather forecasting** both to monitor renewable resource availability and detect extreme events, with warning systems to ensure the protection of people and assets;

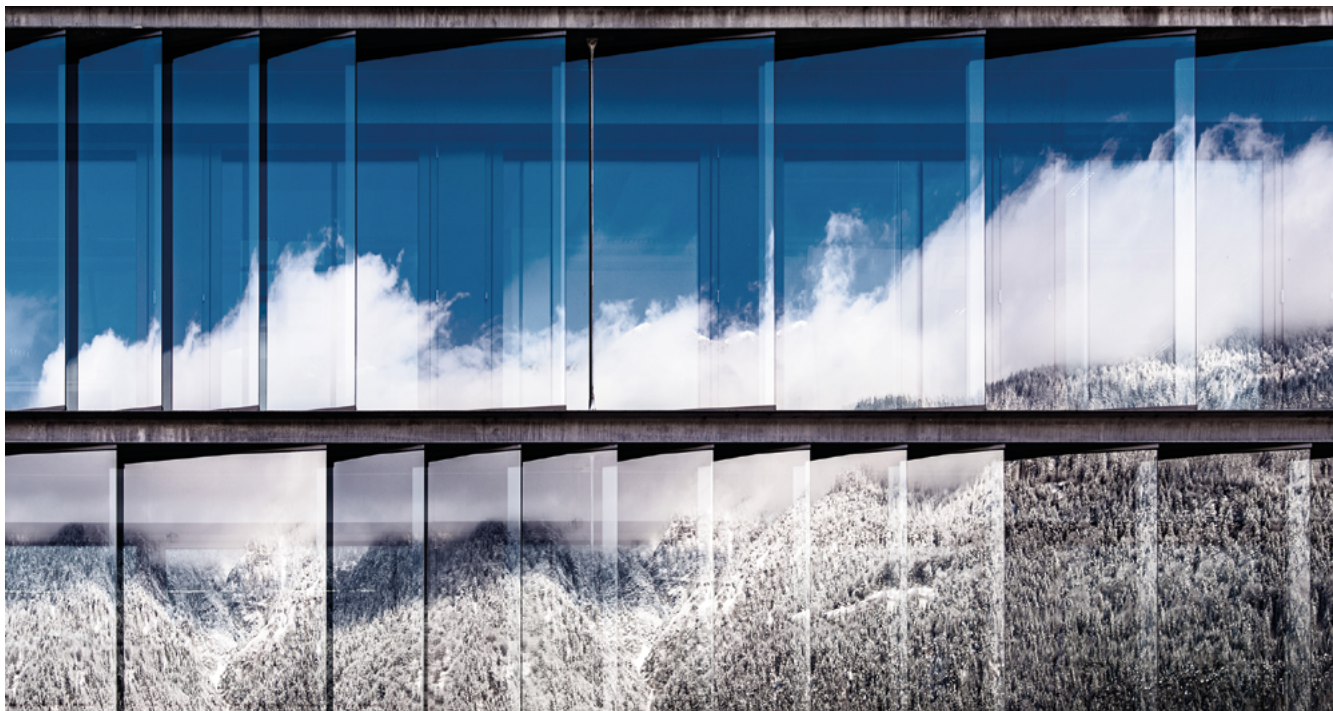
- **insurance policies**, to cover damage to assets and the negative externalities caused, for example, by lost electricity generation;
- the **real-time remote monitoring of** electricity power plants;
- **safe rooms in areas exposed to tornadoes and hurricanes**, such as the wind plants in Oklahoma in the United States.

In addition, in order to ensure rapid response to adverse events, the Group has adopted specific emergency management procedures with protocols for real-time communication and management to restore operations rapidly and standard checklists for damage assessment and the safe return to service for all plants as rapidly as possible.

Infrastructure & Networks

The Enel Group's Infrastructure and Networks Global Business Line has adopted a more complex and **innovative approach to respond to such extreme events denominated "4R", in addition to the measures already envisaged to upgrade and improve the** electricity distribution **grid**. This new approach has been structured over the past few years in a body of documentation that governs the measures to be taken in preparation for a grid emergency once the damage has been caused. More specifically, the 4R strategy comprises:

- an initial **"Risk prevention"** phase, which includes all actions to reduce the probability of losing grid components due to an event and/or to minimise its effects. This is pursued both through measures to enhance the robustness of grid infrastructure in extreme weather events and maintenance measures. Measures to reinforce the grid have been implemented not only to improve service quality in general, but also to reduce the risk of prolonged or widespread outages in the event of a malfunction, using a probabilistic approach. This approach has mainly been used to reduce the risk of outages at critical installations (primary substations) or for particular grid configurations (where no alternative power supply routes are available);
- in Italy, to prevent service interruptions due to the breakage of overhead power lines as a result of snowfall, the risk of such interruptions has been assessed on the basis of the probability of losing segments of the grid and then calculating the relative impact in terms of customers without power and the loss in terms of power not delivered. To address these risks,



investments include the targeted replacement of un-insulated lines with insulated conductors, increasing the number of alternative routes to restore power and the use of remote control systems to isolate the section of the grid affected by the fault as quickly as possible;

- again in Italy, the measures to increase resilience are contained in the three-year investment plan of E-Distribuzione and are designed to limit the risk of service interruptions caused by the main critical factors that may impact E-Distribuzione's medium-voltage grid. The measures for the 2017-2021 period involve some 4 million customers and over 7,000 km of medium-voltage lines;
- a subsequent **"Readiness"** phase that includes all measures to improve the timeliness with which potentially risky events are identified, ensuring coordination with the Civil Protection Department and local officials, as well as to prepare intervention measures once a fault has occurred. Examples of measures include systems for forecasting meteorological events and their impact on the grid, the provisioning of adequate equipment to build temporary plant or emergency grid structures, the preparation of operational plans and the organisation of exercises. One of the most important measures is certainly the definition of agreements for the mobilisation of designated extraordinary resources to respond to an emergency. These include both internal resources and the resources of contracting companies operating in other areas of a country and/or in other countries;

- the third phase is the **"Response"** phase, meaning the operational response capacity for a specific extreme event, which is directly correlated with the ability to mobilise operational resources in the field and with the availability of grid backup and redundancies;
- the final phase is the **"Recovery"** phase, which seeks to restore an acceptable and safe level of service in the shortest possible time.

Response and Recovery are complementary. The philosophy that guides interventions in these two phases is that exceptional resources must be used to deal with exceptional events, and that all the available resources prepared in the readiness phase must therefore be mobilised. The assessment of the damage caused to the grid is the first activity to be performed. Enel promptly activates a task force of specialised technicians and deploys special equipment (helicopters and generators) to restore service, and mobilises personnel from other areas/countries. Great attention is paid in these phases to communication with all the players involved and the determination of the most effective strategy to manage the repair of power lines and the restoration of service to customers.

In this regard, the Enel Group in Italy is a permanent guest of the Operations Committee of the National Civil Protection Department and has signed protocols with both the National Civil Protection Department and Regional Civil Protection Departments in order to facilitate communication in emergency situations, joint training and any other initiative that makes collaboration with the civil protection system more effective and rapid.

Identification, assessment and management of transition-related risks and opportunities

As regards the risks and opportunities associated with transition variables, Enel uses the different reference scenarios in combination with the various elements that make up the risk identification process (e.g. competitive context, long-term vision of the industry, materiality analysis, etc.). Priority is given to the most material phenomena. The main risks and opportunities identified within this framework are described below.

Policy and Regulation

- **Limits on emissions and carbon pricing:** the enactment of laws and regulations that introduce more stringent emissions limits by government action (non-market driven) and market-based mechanisms, such as a carbon tax in non-ETS (Emissions Trading System) sectors or an expansion of the ETS in other sectors.
 - > **Opportunities:** command & control regulations and market-based mechanisms strengthening CO₂ price signals to foster investment in carbon-free technologies.
 - > **Risk:** lack of a coordinated approach among the various actors and policy-makers involved and limited effectiveness of the policy instruments deployed, with an impact on the speed of the trend towards electrification and decarbonization in the various sectors, compared with a decisive group strategy focused on the energy transition.
- **Incentives for the energy transition:** development incentives and opportunities with a view to the energy transition, consequently guiding the energy system towards the use of low-emission energy resources as the mainstream approach in the energy mixes of countries, greater electrification of energy consumption, energy efficiency, flexibility of the electrical system and upgrading of infrastructure, with a positive impact on the return on investment and new business opportunities.
 - > **Opportunities:** additional volumes and greater margins due to additional investment in the electricity industry, in line with the electrification strategy, decarbonization and the upgrading of enabling infrastructure.
- > **Risks:** obstacles to achieving energy transition targets due to regulatory systems that do not effectively support the energy transition, delays in permitting, no upgrading of the electricity grid, etc.
- **Resilience regulation** To improve standards or introduce *ad hoc* mechanisms to incentivise investments in resilience in the context of the evolution of climate change.
 - > **Opportunities:** benefits from investments that reduce service quality and continuity risks for the community.
 - > **Risks:** in the case of especially severe extreme events with a greater-than-expected impact, there is a risk that recovery could be slower than planned, with an associated reputational risk.
- **Financial measures for the energy transition:** Incentives for the energy transition through appropriate policy measures and financial instruments, which should be capable of supporting an investment framework and a long-term, credible and stable positioning of policy-makers. Introduction of rules and/or public and private financial instruments (e.g. funds, mechanisms, taxonomies, benchmarks) aimed at integrating sustainability into financial markets and public finance instruments.
 - > **Opportunities:** the creation of new markets and sustainable finance products consistent with the investment framework, activating greater public resources for decarbonization and access to financial resources in line with energy transition objectives and the related impact on costs and on finance charges; introduction of subsidised support tools (funds and calls) for the transition.
 - > **Risks:** actions and instruments are not sufficient to provide incentives consistent with an overall positioning tailored to the energy transition, uncertainty or slowdown in the introduction of new instruments and rules due to the deterioration in the public finances or differences in application in the geographic areas in which the Group operates.



Market

→ **Market dynamics**, such as those connected with the variability of commodity prices, the increase in electricity consumption due to the energy transition and the penetration of renewables, have an impact on business drivers, with effects on margins and on electricity generation and sales volumes.

- > **Opportunities:** positive effects associated with the growth in electricity demand and the greater room for renewables and all sources of flexibility.
- > **Risks:** less room in the market for residual thermal generation technologies in the short term. However, as the penetration of renewables in the electricity mix increases, the system could require greater flexibility, including regulated gas-fired generation.

Technology

→ **Gradual penetration of new technologies** such as storage and demand response; digital lever to transform operating models and “platform” business models.

- > **Opportunities:** investments in developing technology solutions.

Products and Services

→ **Electrification of residential energy consumption:** With the gradual electrification of end uses, the penetration of products with lower costs and a smaller impact in terms of residential emissions will expand (for example, the use of heat pumps for heating and cooling).

- > **Opportunities:** increase in electricity consumption.

- > **Risks:** additional competition in this market segment.

→ **Electric mobility and electrification of industrial energy consumption:** Use of more efficient and effective modes of transportation from the point of view of climate change, with a special focus on the development of electric mobility and charging infrastructure; electrification of large-scale industrial energy users.

- > **Opportunities:** Positive effects of the increase in electricity demand and greater margins connected with the penetration of electric transportation.

The Group has already taken strategic actions to mitigate potential risks and exploit the opportunities offered by the energy transition. Thanks to our industrial and financial strategy incorporating ESG factors, an integrated approach shaped by sustainability and innovation makes it possible to create shared long-term value.

A strategy focused on complete decarbonization and the energy transition makes the Group resilient to the risks associated with the introduction of more ambitious policies for emissions reductions and maximises opportunities for the development of renewable generation, infrastructure and enabling technologies.

Unlike chronic climate impacts, developments in the transition scenario could have impacts in the short and medium term (by 2030) as well.

As with climate variables, the current Business Plan (2020-2022) can be tested for its sensitivity to the fac-

tors potentially influenced by the transition scenario, with particular regard to the price of CO₂ (ETS). Examining the main transition variables, the price of CO₂ appears to be an especially reliable driver of regulatory measures that could accelerate the transition process.

To assess the impact of possible changes in this driver, the effects of a potential change of +/-10% in the CO₂ price for Italy and Spain are determined. This price change would modify the equilibrium price of both wholesale markets, with repercussions on the margins of Global Power Generation for both thermal and renewable plants.

To quantify the risks and opportunities engendered by the energy transition in the medium term, two scenarios have been considered for Italy and Spain:

→ **“Current policies” scenario**: based on the current energy transition policies of Italy and Spain (PNIEC), which are presumably consistent with an intermedi-

ate climate scenario between RCP 8.5 and RCP 2.6. The “current policies” scenario considered for the two countries, while among the less ambitious scenarios of RCP 2.6, represents a plausible outlook in that it derives from policies that have already been approved and which will probably not be disregarded. At a global level, however, if the world’s leading countries do not adopt effective decarbonization policies, instead pursuing policies that produce no change or actually worsen conditions, the “current policies” approach could still lead to a climate scenario in line with RCP 8.5;

→ **“Accelerated policies” scenario**: based on potentially rapid transition policies aimed at achieving CO₂ reduction targets that are presumably consistent with the RCP 2.6 scenario. This scenario also incorporates an increase in energy efficiency and a drive to electri-

SCENARIO PHENOMENA	RISK & OPPORTUNITY CATEGORY	DESCRIPTION	TIME HORIZON ¹	IMPACT DESCRIPTION
Transition	Policy & Regulation	Risk : impact on margin due to measures affecting CO ₂ price.	Short/medium terms	Considering the potential impact of regulatory measures to incentivize energy transition, the Group assesses the exposure to changes of +/-10% in the price of CO₂ using sensitivity analysis.
Transition	Market	Opportunity : increase in margins due to impact of transition on electrification of energy consumption. Risk : increase in competition and possible decrease in market share.	Medium term	Considering two alternative transition scenarios, the Group assesses the impact of trends in efficiency, the adoption of electric devices and the penetration of EVs to estimate its potential effect on electricity demand.
Transition	Products & Services	Opportunity : increase in margins and greater scope for investment due to impact of transition in terms of penetration of new technologies and electric transportation .	Medium term	Considering two alternative transition scenarios, the Group has assessed the impact of trends in the electrification of transportation and residential consumption to assess the potential effects.

¹ Time horizon: short (2020-2022); medium (up to 2030); long (2030-2050).

fy end-user energy consumption.












Considering these transition scenarios and models of the energy system, Enel determined their impact on the variables that most greatly affect our business, such as electricity demand, the system energy mix and the increase in electricity consumption due to the electrification of final consumption.

The transition effects over the medium term can produce new opportunities, thanks to the growth of renewables, and potential risks linked to the loss of profitability for thermal plants. Based on assumptions about future regulatory developments and market trends, it is possible to forecast developments in output in the Group's electricity markets (for now, Italy and Spain only) and unit margins. These considerations offer a basis for determining the Group's possible strategic positioning in terms of resource allocation (for example, maintaining or increasing

our market share in renewables or accelerating the phase-out of obsolete technologies).

By 2030, the dynamics of the energy transition may produce significant opportunities in the retail electricity market. The progressive electrification of final consumption, especially in transportation and the residential sector, will lead to a significant increase in electricity consumption.

Considering the transition scenarios developed by the Group for Italy and Spain, the increase in electricity consumption in the domestic segment could produce an increase of more than 300 million euros in EBITDA by 2030 compared with 2022. Considering a more optimistic transition scenario, i.e. one with a higher electrification rate for transportation and heating/cooling, the effects could be even greater, leaving unchanged the assumptions for margins and market share set out in the Plan.

GLOBAL BUSINESS LINE AFFECTED	SCOPE	QUANTIFICATION - TYPE OF IMPACT		UPSIDE/ DOWNSIDE	QUANTIFICATION - RANGE				IMPACT WITH ACCELERATED TRANSITION
					< 100 MIL EUROS	100-300 MIL EUROS	> 300 MIL EUROS		
Global Power Generation 	Italy and Iberia	EBITDA/Year	+10%	Upside					
			-10%	Downside					
Retail 	Italy and Iberia	EBITDA 2030 vs 2022		Upside					
Enel X 	Italy and Iberia	Gross Margin		Upside					
 Upside scenario current policies  Downside scenario current policies									

Enel's performance in the fight against climate change

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Direct and indirect GHG (greenhouse gas) emissions

The trend of direct and indirect greenhouse gas emissions over the past years, in line with the GHG protocol, is provided below.

GREENHOUSE GAS EMISSIONS ⁽¹⁾	UM	2019	2018	2017
Total direct a gas emissions (Scope 1)	mil t eq	69.98	95.23	105.96
- of which CO ₂ emissions from the electricity production and heat	mil t	69.39	94.44	105.20
- of which other direct emissions due to electricity production ⁽²⁾ and other activities	mil t eq	0.60	0.79	0.76
Total indirect greenhouse gas emissions (Scope 2, location based)	mil t eq	5.37	5.08	5.00
- of which indirect emissions from electricity purchased from the network (civil uses, hydroelectric and thermoelectric plants)	mil t eq	1.55	1.40	1.50
- of which indirect emissions deriving from technical losses from Enel's distribution network and electricity system's transmission network	mil t eq	3.82	3.68	3.50
Indirect greenhouse gas emissions (Scope 2, market based) ⁽³⁾	mil t eq	2.30	2.11	2.19
Total of other indirect greenhouse gas emissions (Scope 3)	mil t eq	56.92	59.56	57.88
- of which indirect emissions deriving from the extraction and transport of fossil fuels, raw materials and waste (upstream)	mil t eq	4.02	6.76	7.13
- of which indirect emissions deriving from the use of sold products (electricity)	mil t eq	28.98	27.39	25.46
- of which indirect emissions deriving from the use of sold products (gas)	mil t eq	23.92	25.41	25.29
Total CO ₂ avoided emissions ⁽⁴⁾	mil t	77.0	78.5	71.3

1 The methodology and sources considered for calculating greenhouse gas emissions (Scope 1, 2, 3) are detailed in the following paragraph. The values for 2018 and 2017 were modified by adding the new calculation categories introduced in 2019. The Scope 2 emissions for electricity purchased from the grid were recalculated due to the expansion of the calculation basis. Regarding the year-over-year data comparison and the relative sums, the figures shown in the table regarding year-over-year data comparison and subset additions are calculated considering decimal digits that may not be disclosed in the table.

2 For all combustion processes from fossil sources, the production of N₂O (GWP = 265) and CH₄ (GWP = 28) expressed in CO₂ equivalent are included. These values, not present in the 2017 and 2018 reporting, were recalculated for the previous two years. The calculation of the other activities also includes CO₂ equivalent emissions from the combustion of diesel fuel in the generating sets, from the fuel of the company fleet, from the fuel used in the offices for heating and canteens, fluorinated gases and ODS, SF₆ and NF₃.

3 The values do not include the emissions from technical losses of the Enel distribution grid, which were calculated only as location based.

4 Avoided emissions are calculated as the sum of the emissions avoided in the different countries where Enel is present. The resulting value is the product of the generation of electricity obtained from a renewable or nuclear sources and the specific CO₂ emissions from the thermoelectric generation of the country in which Enel is present.

The GHG inventory statements were audited by DNV GL, one of the main certification entities world-wide, with a reasonable level of certainty for Scope 1, Scope 2 and Scope 3 emissions, as limited to the sale of natural gas, and with a limited level of certainty for the other Scope 3 emissions included within the scope of application of the inventory. The audit was conducted according to Standard ISO 4064-3 for the compliance of greenhouse gas (GHG) inventories with the WBCSD/WRI Corporate Accounting and Reporting Standard (GHG Protocol).

Scope 1 emissions

In 2019, the **direct CO₂ emissions (Scope 1)** were equal to approximately 70 mil t, with a 27% decrease as compared to 2018 mainly due to reduced thermal generation and in particular a reduction in the coal component (-42% as compared to 2018). The considerable share of these emissions originates from the energy production **in thermal power plants** fuelled by coal, oil & gas and combined cycles. The percentage of emissions related to EU ETS is equal to 49.5% of the total Scope 1. Scope 1 also includes the CO₂ emissions generated during the petrol and diesel combustion process in the engines of machines controlled by the

Company and by the combustion of diesel in the auxiliary motors used in renewable (hydroelectric) and nuclear technologies, as well as the distribution of electricity. The combustion processes from fossil fuels also include the generation of N_2O (GWP=265) and CH_4 (GWP=28) expressed as a CO_2 equivalent. These values were recalculated also for the two previous years.

Other direct CO_2 equivalent emissions originated from the **leakage to the atmosphere of SF_6** (GWP=23,500) which occurs mainly within the scope of electricity distribution and, secondarily in energy power plants. SF_6 is used in high and medium voltage electrical equipment due to its capacity to isolate and extinguish electric arcs and as of today it is irreplaceable for these applications. The quantities released to the atmosphere in 2019 as related to the entire perimeter of the Group amount to 8,367 kg, which equals 197 thousand t of CO_2 equivalent. In percentage terms, SF_6 contributes towards 0.28% of Scope 1 emissions, which represents an extremely limited amount. As regards Scope 1, Enel considers the emissions of leakage to the atmosphere of gases and mixtures containing greenhouse gas that were calculated by applying the average global warming potential value of the family gases.

Scope 2 emissions

Scope 2 emissions concern the **indirect emissions deriving from the generation of the electricity purchased and consumed by the Company**. Scope 2 includes the CO_2 emissions associated with electricity consumption taken from the electricity network for civil uses or for the generation of energy in thermoelectric and hydroelectric plants. Since 2016, all supplies of electricity for the offices and Italian power plants come from renewable sources. This supply includes the issue of green certificates by the competent authority. The calculation of Scope 2 for the consumption of energy taken from the network is reported according to two points of view, one is location based, equal to 1.55 mil t_{eq} , and the other is market based, equal to 2.30 mil t_{eq} .

In compliance with the GHG protocol, this category includes the indirect emissions deriving from technical losses from Enel's distribution network and the transmission network of the electricity system in which the Group operates, calculated for all countries of operation for 2017-2019. The emissions caused by the losses were calculated based on the part of energy that exceeds the quota produced in the considered country, to avoid the double accounting of emissions already included in Scope 1. An additional division was made for the fraction distributed

and sold in the retail market by Enel and for the share distributed on behalf of other market competitors. These losses, as for Scope 2 for Enel's distribution and transmission network, were calculated based on the market share exceeding generation. In 2019, the total value of Scope 2 for distribution and transmission grid losses equalled approximately 3.8 mil t_{eq} (according to the location-based methodology).

Scope 3 emissions

Scope 3 emissions are all indirect emissions (not included in Scope 2) that occur in Enel's entire value chain, from generation and transport to the sale of energy. They do not derive from controlled or owned sources.

With reference to the power generation business, an estimation was made of the fugitive emissions of methane from coal mining during extraction as well as emissions from the transport of the utilised fuels (coal and diesel) for the operation of its plants.

In 2019, Enel expanded the categories used to account for Scope 3 emissions and has recalculated the 2018 and 2017 values for its entire operational perimeter during those two years. As a result, a calculation is provided for the emissions related to the gas and electricity retail market in Europe and the electricity retail market in Latin America generated as a consequence of the use of sold products (electricity and gas) by end customers. The Group has assessed that for the gas in the European market, this value is approximately 23.9 mil t_{eq} , and that the value of emissions produced by the consumption of electricity by its customers is approximately 29.0 mil t_{eq} .

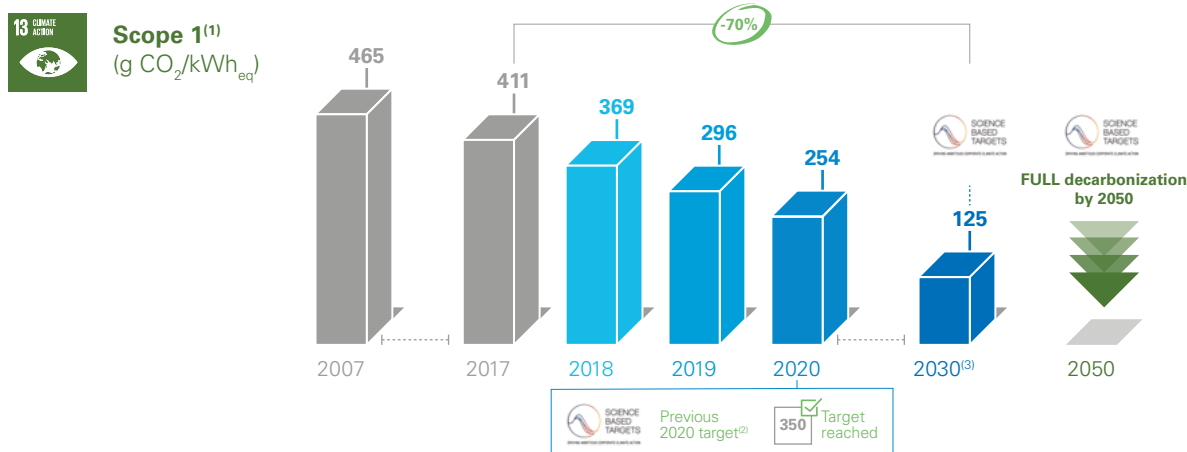
CO_2 reduction targets

The Group's ambition for leadership in the fight against climate change was further strengthened in 2019: the target for the reduction of direct emissions from electricity production by 2020, which was set in 2015 at 350 g/kWh $_{eq}$ of CO_2 , with a 25% reduction compared with 2007, was achieved one year early. In fact, 2019 closed with a reduction of 37%, to 296 g/kWh $_{eq}$ of CO_2 . This target has been certified by the Science Based Target Initiative (SBTi) as consistent with the 2DS scenario (2-Degree Scenario) of the International Energy Agency (IEA), which defines an energy system development path and an emissions trajectory consistent with at least 50% chance of limiting the average global temperature rise to 2 °C in 2100. As a result, the reduction target for 2020 has been upgraded in the new 2020-2022 Strategic Plan to 254 g/kWh $_{eq}$ of CO_2 .

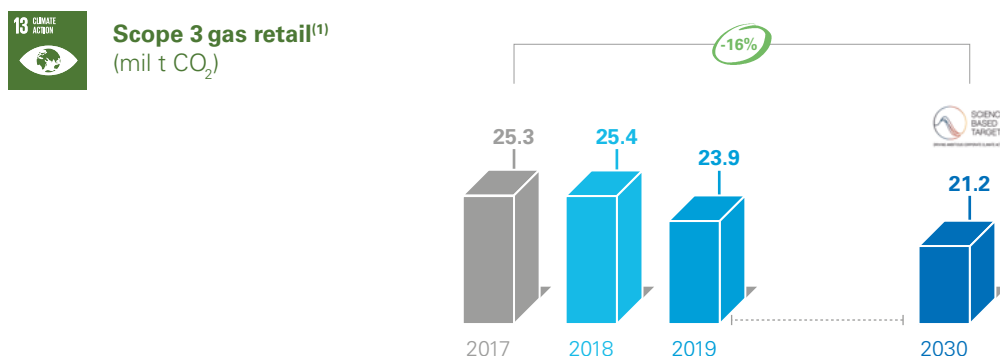
In September 2019, Enel further enhanced its commitment by setting a new target for 2030, with which it undertook to reduce direct CO₂ emissions per kWh_{eq} (Scope 1) by 70% compared with 2017. This target, for direct emissions from electricity production, is nearly three times as ambitious as the previous target for 2020 and is fully aligned with the Paris Agreement. In addition, the objective has been certified by the Science Based Target Initiative, ensuring consistency with the well below 2C pathway and the B2DS IEA's scenario, which is currently the most ambitious certification criterion available for the utility sector. They define an energy system development path and an emissions trajectory with at least 66% chance of limiting peak warming between present and 2100 to below 2 °C.

This acceleration in Enel's decarbonization roadmap is also a response to the appeal of the Intergovernmental Panel on Climate Change (IPCC) as part of its effort to strengthen the global response to the climate change threat. Included in the special report, the appeal warns of the impacts of global warming of 1.5 °C above pre-industrial levels and the related global greenhouse gas emission pathways.

In parallel with direct emissions, Enel has set a new target, also certified by the Science Based Target initiative (SBTi), to also reduce indirect emissions associated with the consumption of gas by Enel's end-user customers (indirect emissions from the use of products sold), which represent a significant source of indirect Scope 3 emissions, by 16% by 2030.



- 1 Includes direct emissions due exclusively to energy generation. Other direct emissions are not considered in the definition of the target as they are considered marginal and satisfy the exclusion criterion according to SBTi methodology that fixes a margin of 5% of the total Scope 1 and Scope 2 emissions.
- 2 Scope 1 as of 2020 in line with the IEA 2DS scenario. As of 2020 the reduction in CO₂ emissions is equal to 25% of the base year 2007.
- 3 Scope 1 by 2030, in line with the Well Below 2C path of the Science Based Targets initiative and with the IEA B2DS scenario. As of 2030 the reduction in CO₂ emissions is equal to 70% of the base year 2017.



- 1 Scope 3 related to the sale of gas in the "retail" market by 2030, in line with the 2C path of the Science Based Targets initiative.

Even if Enel constantly monitors Scope 2 emissions and is actively committed to their reduction, the Group has not set a specific reduction target, as they represent less than 4% of the total Scope 1 and Scope 2 emissions in 2017 (base year of reference for new emission reduction targets announced in 2019). Therefore they are considered marginal and fall within the criteria of exclusion according to the SBTi methodology, which fixes a margin of 5% of total Scope 1 and Scope 2 emissions. Furthermore, the Scope 2 emissions, being connected to specific emissions per country, are estimated as being decreasing progressively, as the generation mix in countries in which Enel is present are changing following the increase in electricity production from renewable sources.

Financial, operational and environmental metrics

Financial metrics

The main metrics and the financial objectives used to measure and manage the risks and opportunities related to climate change are presented below. In 2019, Enel's EBITDA associated with low carbon emissions technolo-

gies, services and solutions was equal to 1.62 billion euros, with a growth of 10.7% in comparison to 2018. This results from greater renewable capacity, the expansion of the grids and the growth of final users. Furthermore, the Capex technologies, services and solutions with low carbon emissions has grown approximately 17.5% as compared to 2018, reaching 9.1 billion euros, equal to 92% of total Capex.

Revenues from coal-fired power plants, following the company's strategic decisions that have inspired a sustainable business model that pursues, among others, the objectives of fighting climate change and decarbonization, are continuing to decrease. In particular, in 2019 revenues related to coal-fired power plants amounted to 2.8 billion euros (a 30.8% decrease as compared to 2018), equal to 3.5% of the Group's total revenues. Furthermore, total revenues from thermal generation (coal, oil & gas and CCGT) represent 12.8% of total revenues, equalling 10.3 billion euros (a 5.5% decrease as compared to 2018).

The "General Purpose SDG-linked bond", which Enel launched on the US and European stock market, included specific targets related to the installed renewable capacity ratio and the reduction of greenhouse gas emissions, while contributed towards reaching 22% of the debt related to the sustainability objectives.

FINANCIAL METRIC	UM	2019	2018 ⁽¹⁾	2019-2018	%
EBITDA from low-carbon products, services and technologies	billion euros	16.2	14.6	1.6	10.7
	%	91	91	-	-
Capex for low-carbon products, services and technologies ⁽²⁾	billion euros	9.1	7.8	1.3	17.5
	%	92	91	1	-
Revenues from coal-fired power plants	billion euros	2.8	4.0	-1.2	-30.0
	%	3.5	5.3	-1.8	-
Revenues from thermal generation	billion euros	10.3	10.9	-0.6	-5.5
	%	12.8	14.4	-1.6	-
Revenues from nuclear power plants	billion euros	1.3	1.1	0.2	20.1
	%	1.6	1.4	0.2	-
Debt ratio with sustainability criteria ⁽³⁾	%	22	15	7	-
CO ₂ reference price	euros	24.8	15.9	8.9	56.4

1 The 2018 data regarding EBITDA and Capex were reclassified due to a change to the calculation methodology for those metrics in comparison to low-carbon products and services.

2 The "low-carbon products, services and technologies" category considers the Enel Green Power, Infrastructure and Networks, Enel X and Market Business Lines (excluding the sale of gas).

3 The value was calculated considering the impact of the financial instruments, which include sustainability criteria for the entire gross debt.

Operational metrics

302-1 EU1 EU2 EU3 EU11 EU30

The following table presents the main operational metrics used for measuring Enel's commitment to the fight against

climate change along the electricity value chain.

ELECTRICITY VALUE CHAIN SEGMENT	OPERATIONAL METRIC	UM	2019	2018	2019-2018	%
GENERATION	Net efficient generation capacity ⁽¹⁾	GW	84.3	85.6	-1.3	-1.5
	- of which renewables	%	50.0	45.8	4.2	-
	- of which thermoelectric	%	46.1	50.4	-4.2	-
	- of which nuclear	%	3.9	3.9	-	-
	Net production ⁽²⁾	TWh	229.1	250.3	-21.2	-8.5
	- of which renewables	%	43.4	39.6	3.8	-
	- of which thermoelectric	%	45.2	50.8	-5.6	-
	- of which nuclear	%	11.5	9.6	1.9	-
	New services					
	Demand response capacity	MW	6,297	6,215	82	1.3
	Storage capacity	MW	110	70	40	57.1
	Additional indicators					
DISTRIBUTION	Average thermoelectric park efficiency (%) ⁽³⁾	%	42.0	40.1	1.9	-
	Total direct fuel consumption	Mtoe	30.1	37.0	-7.0	-18.9
RETAIL	Digitalization					
	End users with active smart meters	no.	44,668,538	43,770,085	898,453	2.0
RETAIL	Electrification					
	charging points for electric mobility (public and private)	no.	79,565	48,967	30,598	62.5

1 Does not include managed capacity, equal to 3.7 GW in 2019 and 4.2 GW in 2018.

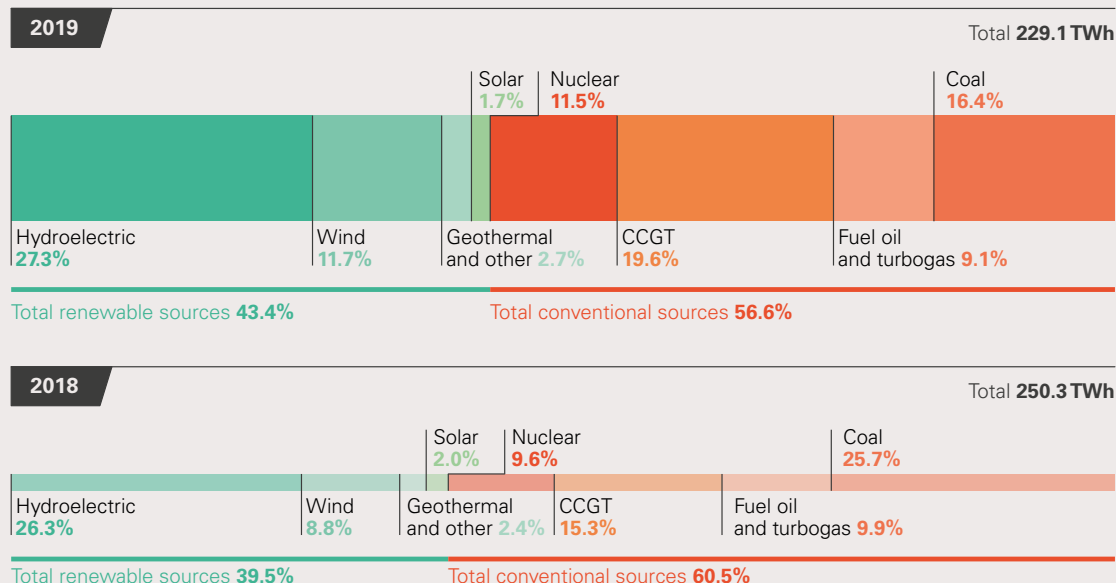
2 Does not include generation from managed capacity, equal to 10.2 TWh in 2019 and 9.7 TWh in 2018.

3 The % was calculated based on new methodology that does not consider the Italian oil & gas plants in the decommissioning phase/considered marginal. The values do not include consumption and generation for the cogeneration related to the Russian thermoelectric park. The average efficiency value is calculated based on the plants in the park and weighed based on generation values.

Net electricity production in 2019 totalled 229.1 TWh, a decrease on 2018 that reflected an 18.7% decline in thermal production compared with the previous year, mainly due to a reduction in coal-fired production (-41.6% compared with 2018). The energy Enel produced in 2019 from zero emis-

sions sources amounts to approximately 55% of total consolidated production (a significant increase in comparison to 2018, equal to 49.2%), whereas it is equal to around 57% including the production from additional capacity managed according to the "Build, Sell and Operate" model.

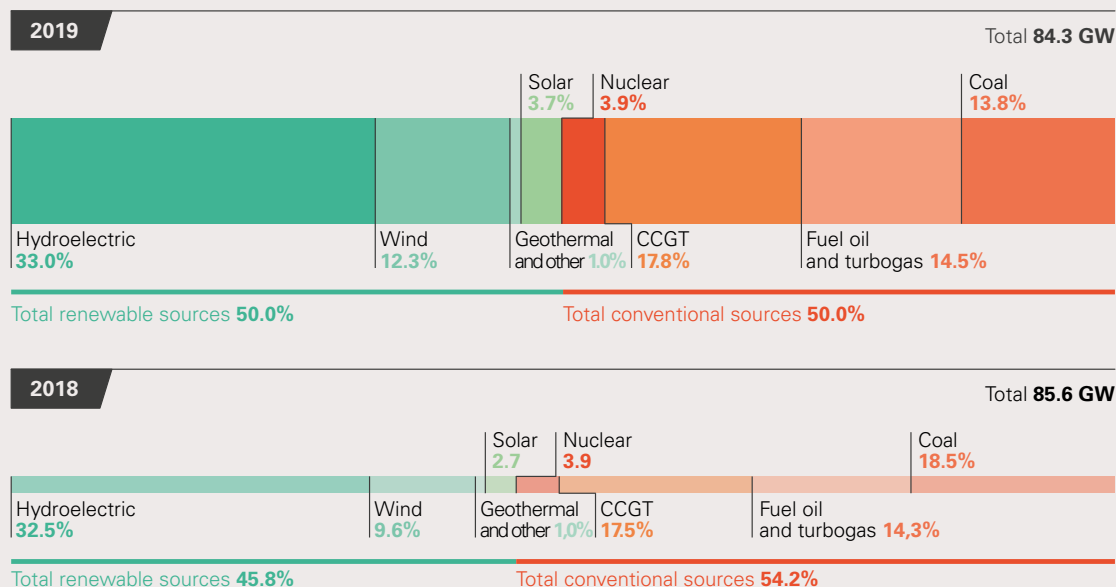
Net electricity production (%)



At the end of December 2019, the Group's total **net efficient installed capacity** was 84.3 GW, down 1.3 GW from 2018, mainly due to the sale of the Reftinskaya coal-fired power plant in Russia. This reduction was partially offset by the entry into operation of new renewable plants, mainly wind and solar in Spain, Mexico and the United States. In order to contribute towards the decarbonization of its energy mix, in 2019 Enel increased its renewable in-

stalled capacity by 3.6 GW, while reducing its coal capacity by 4.1 GW. As a result, installed capacity from zero emissions sources has reached 53.9% (50.0% considering only renewable sources) of Enel's total installed capacity in 2019, whereas it is equal to 55.8% (52.0% considering only renewable sources) when including additional capacity managed according to the "Build, Sell and Operate" model.

Net efficient installed capacity (%)





In 2019, Enel played a fundamental role in developing new solutions to accelerate the process of energy transition through the development of 110 MW of storage capacity, corresponding to a growth of 57.1% in comparison to 2018, and 6.3 GW of demand response, 1.3% higher than 2018. The digitalization of the electricity network, which has been identified as a key enabler able to positively influence climate change through levers such as the integration of more renewable energy or an increase in energy efficiency, continued being a priority for Enel also in 2019. In particular, in 2019 the total number of end users with active smart meters grew 2% as compared to the previous year, reaching 44.7 million in 2019.

Enel has also continued defining solutions for promoting the decarbonization of other sectors, such as transport. The Company is in fact committed to developing electric mobility initiatives and promoting sustainable transport, installing 79,565 charging points in 2019, a 62.5% increase in comparison to 2018.

Environmental metrics related to climate change

303-3

The following table presents the environmental metrics related to climate change, in addition to the greenhouse gas emissions previously described in the dedicated paragraph of this chapter.

ENVIRONMENTAL METRIC	UM	2019	2018	2019-2018	%
Specific water requirements for total generation ⁽¹⁾	l/kWh _{eq}	0.33	0.38	-0.05	-13.2
Withdrawal of water in water stressed areas ⁽²⁾	%	14.1	11.6	2.2	-
Generation with water consumption in water stressed areas ⁽²⁾	%	8	8	-	-

1 Following Enel's adoption of the new GRI 303 in 2018, requirements refer to the total amount of water withdrawn, including reuse of wastewater, necessary for plant operation. The specific requirement for total generation is calculated considering the total water consumption for thermoelectric and nuclear generation, compared to total thermoelectric (including the heat contribution in MWh), renewable and nuclear generation. This value does not include the water used for open-cycle cooling, which is returned to the original body of water. Consumption is calculated as the difference between the water withdrawn and the water returned.

2 The World Resources Institute (WRI) has defined a "Water Stressed Area" as an area where the annual amount of water available *per capita* is less than 1,700 m³.

Targets

The following table shows the main operational targets included in the 2020-2022 Strategic Plan that reflect Enel's role in the fight against climate change along the entire electricity value chain, in addition to the greenhouse gas emissions reduction targets as described in the previous section.



ELECTRICITY VALUE CHAIN SEGMENT	DESCRIPTION OF THE TARGET	UM	2022
GENERATION	Net efficient generation capacity ⁽¹⁾	GW	90.7
	- of which renewables	%	60
	- of which thermoelectric	%	37
	- of which nuclear	%	3
	Net production ⁽²⁾	TWh	249.3
	- of which renewables	%	57.5
	- of which thermoelectric	%	32
	- of which nuclear	%	10.5
	New services		
	Demand response capacity	GW	10.1
DISTRIBUTION	Storage capacity	MW	439
	Digitalization		
RETAIL	Installed smart meters 2.0	mil	28.8
	Electrification		
	Charging points for electric mobility (public and private)	no.	736,000

1 Does not include managed capacity, equal to 5.6 GW in 2022.

2 Does not include generation from managed capacity.

Furthermore, the following assumptions were defined:

- EBITDA incidence for low-carbon products, services and technologies equal to approximately 91% in 2022;
- Capex incidence for low-carbon products, services and technologies on the total more than 90% in 2020 -2022;
- incidence of sustainable financial mechanisms equal to approximately 43% in 2022.

Finally, Enel is committed to improving its performance in other environmental aspects concerning climate change, fixing ambitious targets, such as the 50% reduction in water requirements for the electricity production process by 2030. For more information about Enel's environmental performance, refer to the "Environmental sustainability" chapter of the Sustainability Report 2019.



Every day sees the generation of new energy,
which spreads and grows thanks to a network that connects us all together.
We are the source of that energy,
which drives social development, safeguards the planet
and enables everyone to express their full potential.
Curiosity has opened new horizons for us.
Courage has enabled us to reach those horizons
and create new business models for ourselves, our customers,
our shareholders and the community we operate in.
Because yesterday's ideas are today's realities.

