Climate Finance Report

2023

Santander

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1. Introduction

The transition to net zero is a journey, not a moment in time. This report sets out the progress we made in 2023 – a year in which the transition was buffeted by war, new geopolitical risks, and the impact of higher interest rates. Despite these pressures, Santander made further progress.

We stepped up activities in green finance. **We've mobilized EUR 115.3 billion in green finance since 2019, taking us towards our 6-year target of EUR 120 billion by 2025**. We strengthened our position as a global leader in renewables: the greenfield renewable energy projects Santander participated as financier or advisor in 2023 will have enough installed capacity to power 10.1 million homes a year. At the end of the year, we had a stock of EUR 22.6 billion in mortgages aligned with the EU Taxonomy. In Europe we financed more than 208,000 new electric vehicles, with volume of EUR 6.5 billion. This equals a market share of EV sales in Europe of over 10%.

Meanwhile, we set 2 new decarbonization targets, both in the auto sector – **bringing to 7 the number of targets we've now set**. We disclosed financed emissions for the sectors on which we have financed emissions targets (power, energy - oil & gas, aviation, steel and auto) and for material portfolios in mortgages and agriculture. We also **set risk appetite limits** on the sectors with decarbonization targets, tiering our customers according to the degree of alignment with our ambition and the quality of their transition plans.

In these sectors, as well as in relevant portfolios within real estate and agriculture, we are analysing, measuring and acting to help our customers cut emissions. However, the climate performance dynamics of real estate and agriculture sectors are heavily dependent on their regulatory landscape.

We have taken further steps to stop illegal deforestation in the Brazilian Amazon. We adopted Brazil's Banking Federation (Febraban) protocol to financing the cattle sector, which includes standards for managing the risk of illegal deforestation. This is a major step forward as it is the first sector-wide environmental protocol for financing beef processing. Since it will apply to every major bank in Brazil, it is considered a highly effective way of sustainable change and addressing deforestation.

We also continue to make progress on our own footprint. We are now close to achieving our 2025 target to get **100% electricity for our own operations from renewable sources.**

These are all critical steps to our ambition of being a net zero carbon organization by 2050. As we progress, and work with our customers and global institutions to support the transition, it is clear that we all need to shape and adjust our approach, learning from experience while remembering some basic points.

First, banks are enablers of transition: we have a major role to play, but **financial institutions are one partner among a number of others – governments, regulators, companies and individuals**. We need to distinguish between the roles and responsibilities of authorities and businesses. There is a danger that, in a number of jurisdictions, politicians are outsourcing their role regarding creating the rules around environmental and social issues, expecting banks to become the police on these issues. At the same time too few governments are providing coherent and stable public policy frameworks aligned with the net zero ambition, which are critical to give individuals, companies and investor the confidence to invest in the transition.

Second, we must "green" what is currently "brown". We cannot simply stop financing "brown" companies: doing so would destabilise economies and the transition. Instead, **we must support "brown" companies, helping them financing their transition plans**. And flowing from this, we need to recognise that companies and countries are at different stages in the transition. This is particularly true for developing economies, many of which rely on fossil fuels to drive growth, which alleviates poverty. If we are to make progress on climate change, we cannot leave these companies behind by demanding they stop using fossil fuels without having reliable sources of affordable energy to fall back on.

And that brings me to my third point: **"green" policy and regulation needs to strike the right balance between cutting emissions, supporting growth and ensuring financial stability**. Growth is critical, both in terms of improving people's lives and in financing the green transition. Growth will underpin the fair, secure, and affordable transition to the low-carbon economy. Growth relies on energy that is both affordable and reliable. According to the Energy Institute, in 2022 more than 80% of total energy consumption globally was powered by fossil fuels, despite record investment in renewables, and energy demand continued to increase by 1.1% that year. Fossil fuel demand is expected to continue growing and peak in 2030. Natural gas demand is expected to peak by 2040. So, while we want to see more renewable energy, if we unplug from existing energy sources too fast, we risk increasing energy insecurity and the cost of energy – hindering growth and risking an unjust, unstable transition. This is even more salient in developing economies. Santander is very active in Latin America, for example, where many people lack access to basic infrastructure and goods. We have to strike the right balance between supporting growth, lifting people out of poverty, and supporting the transition.

These three points all need to be reflected in climate related regulation. Disclosing data that is material and comparable is essential to help investors make informed decisions about where to invest. But banks - especially in the EU - now face a tsunami of ESG-related disclosures.

The data that banks need to provide is not always material or comparable. The EU's green asset ratio (GAR) is based on the EU's taxonomy, which does not capture certain activities that contribute to the transition as environmentally sustainable. This, together with other design flaws (such as not including SMEs) impairs the GAR as a means of reflecting how credit is "greening" the economy. This may end up harming the transition. It incentivises European banks to finance only what is "green" in Europe, and not finance "brown" assets' transition to green; and, furthermore, it incentivises banks not to finance typical mortgages in developing economies, as this does not meet the taxonomy's criteria. The European Union needs to invest in higher growth economies and in these economies' transitions. Currently these disclosures disincentivises us from doing so.

To make these points is not to argue we should somehow slow down the transition. The reverse is the case. We need to do more, but governments and regulators need to remember these three points so companies, individuals and banks can do more.

We need to remember a basic truth: an orderly, just transition depends on concerted action, supporting transition and growth. **Without growth, we cannot afford the investment required.**

Ana Botín, Executive Chair

2023 HIGHLIGHTS

Supporting our customers in the transition

- We raised or facilitated **EUR 20.9 billion** (EUR 115.3 billion since 2019) and took advantage of climate finance opportunities to make progress with our green[1] finance target.
- We developed several **business opportunities** to help customers to **transition to a lower carbon** economy. We also strengthened our green proposition with new solutions for customers.
- We remain as one of the **leaders in renewable energy finance and electric vehicles in Europe** - more highlights from our global business units are described on the next page.

Embedding climate in risk management

- We **continued to embed environmental and climate factors** in policies, risk appetite and risk management**.** We **strengthened our risk management cycle** with initiatives such as "The Climate Race", a target operating model to embed environmental and climate change (E&CC) factors in all stages of credit approval.
- We conducted an **internal assessment of dependencies and impacts** with the available data and methodologies regarding **nature and biodiversity.**
- We have cooperated with Brazil's banking federation, Febraban, in setting **best practices for the financing of the beef sector** so that it does not contribute to **deforestation.**

Aligning our portfolio with the Paris Agreement goals

- Santander has set **decarbonization targets** as part of its **net zero ambition**. It details related **action plans**, which involve **customer engagement** on climate goals, **planning**, and **risk appetite** limits.
- To help fulfil our ambition to be net zero by 2050, in 2023 we have set **two new decarbonization targets for 2030 in the transport sector**: auto lending in Europe and auto manufacturing. This way, we now have seven targets in our highest emitting sectors.
- Additionally, we **continue calculating financed emissions for alignment** for other significant portfolios like agro in Brazil and mortgages in the UK.
- Our **climate customer engagement approach** is designed to help us **achieve our emissions targets** for the power generation, oil and gas, aviation and steel sectors. It is based on **customers' greenhouse gas emissions profiles** and quality assessments of their **transition plans**.
- We **expanded our two-step tiering assessment** to the energy, steel and aviation sectors. We enhanced **quality assessments of transition plans**, based on updated benchmark methodologies and sector research. The tiering assessment helped set risk appetites in relation to these targets.
- We supported the University of Oxford with **funding for the Transition Finance Centre of Excellence**. We also participated in the Banking for Impact on Climate in Agriculture (B4ICA) initiative, contributing through the development of methodologies to help the sector transition to low carbon.

Reducing our environmental impact

- In 2023, **97% of our electricity came from renewable sources**[2]. We have been reducing our carbon footprint since 2011.

1. When referred to 'green' or 'sustainable' products or services without further detail, these comply with SFICS. For more information, see 'Sustainable Finance and Investment Classification System (SFICS)' in section 6.
2. In countries where we can verify electricity from renewable sources at Banco Santander properties. It considers the 10 main countries in which we operate.

2023 GLOBAL BUSINESSES HIGHLIGHTS

Corporate & Investment Banking (CIB)

- We raised and mobilized EUR 115.3 billion in green finance between 2019 and December 2023.
- We advised on several corporate finance transactions in the renewable energy sector and acted as sole financial advisor in one of the largest ever hydrogen transactions globally.
- We financed the construction of green assets and an EV battery gigafactory plant, signed green loans with customers such as Grenergy, structured sustainable transactions in Export and Supply Chain finance, and launched Green Deposits.

Retail & Commercial Bank

- Our main solutions are green mortgages, electric vehicles and financing of solar panel installations (11 partnerships for solar panel solutions across our three regions).
- At the end of the year, we had a stock of EUR 22.6 billion in mortgages aligned with the EU Taxonomy.
- We reached EUR 1.4 billion in new financing agreements with multilateral development banks to finance the investment and liquidity needs of our customers in Europe and Latin America. The EIB granted EUR 300 million to Banco Santander Brasil for small-scale solar energy investments.

Wealth Management & Insurance

- Socially Responsible Investment (SRI) Assets Under Management (AUM) amounted to EUR 67.7 billion, of which EUR 48.1 billion are from Santander Asset Management (SAM) and EUR 19.6 billion from our Private Banking business associated with third party funds.
- 70.8% of financed emissions from SAM's portfolio were either aligned to net zero or under either individual or collective engagement in which SAM is involved.
- SAM Spain was the first asset manager to adhere to and report on the CNMV (Comisión Nacional del Mercado de Valores) stewardship code.

Digital Consumer Bank

- In Digital Consumer Bank in Europe we financed more than 208,000 new electric vehicles, with volume of EUR 6.5 billion. This equals a market share of EV sales in Europe of over 10%.

Payments

- In Cards we acquired 37 million cards, 72% of the year's total, made of sustainable materials (recycled PVC or PLA)[1].

1. PLA cards: Polylactic acid (PLA) is a sustainable plastic substitute made with renewable bio-sourced resources. Recycled PVC cards: manufactured using plastic waste from the packaging and printing industries reducing first-use plastic.

2. Strategy

Our ambition

Santander aims to be net zero in carbon emissions by 2050. This applies to the Group's operations and emissions from our lending, advisory and investment services.

Net Zero Banking Alliance (NZBA)

We are a founding member of the Net Zero Banking Alliance (NZBA, under the United Nations Environment Programme Finance Initiative), committing the Group to:

- Support the transition of operational and attributable greenhouse gas (GHG) emissions from lending and investment portfolios towards pathways to net zero by mid-century;
- Set intermediate targets for priority GHG emitting sectors for 2030 (or sooner); and
- Prioritize customer engagement with products and services that facilitate transition in the real economy

Our progress towards targets we set on NZBA high emitting sectors is detailed in section 4. Metrics & Targets.

Tackling climate change is a key priority at Santander. Our ambition is to achieve net zero carbon emissions by 2050. We intend to do this and support the green transition in four ways:

Supporting our customers in the transition

Help our customers transition to a sustainable economy, with the target to raise or facilitate EUR 120 billion in green finance between 2019 and 2025 and EUR 220 billion by 2030; offer our customers guidance, advice and specific business solutions; and enable them to invest in a wide-range of products according to their sustainability preferences, with the target of reaching EUR 100 billion AUM in Socially Responsible Investment by 2025.

Embedding climate in risk management

Embed climate in risk management; understand and manage the sources of climate change risks in our portfolios.

Aligning our portfolio with the Paris Agreement goals

Align our portfolio with the Paris Agreement goals to help limit warming to a 1.5ºC rise above preindustrial levels; and set sector- portfolio alignment targets in line with the NZBA and with Net Zero Asset Management initiative (NZAMi).

Reducing our environmental impact

Reduce our impact on the environment, implementing efficiency measures, sourcing all our electricity from renewable sources by 2025[1].

Throughout this report, we show how our strategic climate ambition is embedded in our business model and is helping us to build our transition plan. Some specific examples are:

- *Key partnerships with leading public and private organizations*
- *Multi-stakeholders engagement approach*
- *New strategic positions and teams created to better embed ESG into decision-making processes*
- *From senior management internal training to stakeholders external awareness*
- *Target Operating Model - "The Climate Race"- including E&CC risks in all stages of credit granting and monitoring processes*
- *Financed emissions for new sectors*
- *New decarbonization targets*
- *Climate targets and action plans progress*
- *2022-2025 Energy efficiency and sustainability plan*

1. In countries where we can verify electricity from renewable sources at Banco Santander properties. It considers the 10 main countries in which we operate

Our climate and environmental targets

	2018	2019	2020	2021	2022	2023	2025/2030 target
Electricity from renewable sources[1]	43%	50%	57%	75%	88%	97	100% by 2025
Green finance raised and facilitated (EUR bn)[2]		19	33.8	65.7	94.5	115.3	120 bn by 2025 220 bn by 2030
AUM in **Socially Responsible Investments** (EUR bn)				27.1	53.2	67.7	100 bn by 2025
Thermal coal-related power & mining phase out (EUR bn)				7	5.9	4.9	0 by 2030
Emissions intensity of **power generation** portfolio[3,4]		0.21	0.17	0.19			0.11 tCO_2e / MWh in 2030
Absolute emissions of **energy (oil & gas)** portfolio[3]		23.84	22.58	27.43			16.98 $mtCO_2e$ in 2030
Emissions intensity of **aviation** portfolio[3]		92.47	93.05	97.21			61.71 $grCO_2e$ / RPK in 2030
Emissions intensity of **steel** portfolio[3]		1.58	1.40	1.36			1.07 tCO_2e / tCS in 2030
Emissions intensity of **auto-manufacturing** portfolio			149	138			103 gCO_2/vkm in 2030
Emissions intensity of **auto-lending** portfolio[5]					137		75-89 gCO_2e/vkm in 2030

New in 2023

From...To

Cumulative target

In 2023, we also continued to:

→ make progress on aligning key portfolios, including disclosure of emissions for UK Mortgages and Agriculture in Brazil.

→ be carbon neutral in our own operations[6] in our core markets.

→ keep our offices and buildings in our core markets free of single-use plastics in fulfilment of our public target.

1. In countries where we can verify electricity from renewable sources at Banco Santander properties. It considers the 10 main countries in which we operate.
2. Includes Grupo Santander's contribution to green finance: project finance; syndicated loans; green bonds; capital finance; export finance, advisory services, structuring and other products, to help customers transition to a low-carbon economy.
3. The figures displayed are the latest available. Given limited data availability from customers to assess financed emission, we plan to provide target progress update in the upcoming disclosures. Banco Santander's internal calculation methodology has been used, based on the Partnership for Carbon Accounting Financials (PCAF). See more information in section 6.Supporting the green transition.
4. In 2021 Annual report and Climate Finance report, we assessed the 2019 financed emissions of our power generation portfolio, including guarantees and other types of off-balance exposure to our customers that do not entail current funding. Because, according to the PCAF standard, such exposure should not be calculated if its attribution factor is 'outstanding', we were over-attributed with our corporate customers' emissions. Therefore, the 2019 baseline emissions intensity has been restated from 0.23 to 0.21. The target and climate ambition remains for this sector.
5. Consumer lending for acquisition of passenger cars in Europe, covering a significant majority of the exposure.
6. Scope 1 and 2 emissions and scope 3 emissions from employee commuting and business travel. It considers wholly owned companies in Argentina, Brazil, Chile, Germany, Mexico, Poland, Portugal, Spain, the United Kingdom and the United States.

Our net zero journey

In order to be aligned with the Paris Agreement and with the aim of limiting global temperature increase to 1.5°C, we have committed to be net zero in carbon emissions by 2050 also as part of the Net Zero Banking Alliance (NZBA).

2020

- Carbon neutral in our own operations[1]

2021

- Net zero ambition Founding member of the NZBA, joined NZAMi & 1st decarbonization targets (Thermal Coal, Power Generation and SAM)
- Cut unnecessary single-use plastics

2022

- Decarbonization targets disclosed for energy (oil & gas), steel and aviation
- Development of first Sustainable Finance Classification System and transition finance criteria (both updated in 2023)

2024

- Decarbonization targets disclosed for automotive sectors (manufacturing and lending)
- Financed emissions disclosed for Mortgages (UK) and Agriculture (Brazil)

2025

- Use 100% of electricity from renewable sources[2] in all Santander buildings
- Raise or facilitate EUR 120 billion in green finance since 2019
- EUR 100 billion in Socially Responsible Investments AUM

2030

- SAM target to halve net emissions for 50% of in-scope AUM[3]
- Decarbonization targets for power generation, energy (oil & gas), steel, aviation auto manufacturing and auto lending portfolios
- Raise or facilitate EUR 220 billion in green finance since 2019
- Ending financial services to power generation customers if over 10% of their revenues depend on coal
- Cutting our exposure to thermal coal mining to zero

2050

- Net zero

1. Scope 1 and 2 emissions and scope 3 emissions from employee commuting and business travel. It considers wholly owned companies in Argentina, Brazil, Chile, Germany, Mexico, Poland, Portugal, Spain, the United Kingdom and the United States.
2. In countries where we can verify electricity from renewable sources at Banco Santander properties. It considers the 10 main countries in which we operate.
3. Assets in scope are 54% of SAM total assets, which currently have a defined Net Zero methodology. This objective might be reviewed upwards depending on data availability at least every five years.

Our approach

Our approach to supporting the transition is to focus on the most material, high-emitting sector portfolios. The methodologies we have developed inform our plans to decarbonize our credit portfolios, especially the ones directly related to fossil fuels.

To support our alignment the Group's climate **risk management** function performs a climate transition assessment for wholesale corporate customers in the oil and gas, power generation, metals and mining, auto manufacturing, aviation and cement sectors. This goes beyond sectors for which we have targets and covers others that are highly prone to transition risk.

Our key **governance** bodies regularly review progress with our main climate-related projects, which consist of portfolio alignment, sustainable finance classification and climate risk management.

Disclosing our approach is key to helping markets and other stakeholders assess how we embed climate-related initiatives in our processes and policies, and report on our climate-related performance. We use the Taskforce on Climate-related Financial Disclosures (TCFD) and GFANZ[1] - Financial Institutions Net Zero Transition Plans as the frameworks to disclose our approach to integrating climate in our investment strategy and help us draw up our transition plan.

Santander Asset Management's (SAM) strategy and approach:

In March 2021, SAM joined the global Net Zero Asset Managers initiative as part of its commitment to fight climate change, becoming the first asset manager in Spain and Latin America (excluding Brazil) to do so. SAM aims to achieve net zero greenhouse gas emissions with its assets under management by 2050 and has set a 2030 interim target to halve net emissions for 50% of its AUM in scope[2]. Our target represents 27% of SAM´s total AUM.

During 2022, SAM worked on developing our Net Zero Engagement Strategy. This strategy aims to deliver our Net Zero plan in our core markets by fostering company engagement through dialogue and voting policies. That in turn, encourages and supports companies' decarbonization plans and an adequate reporting to create credible track records.

In 2023 SAM joined the Net Zero Engagement Initiative led by the International Investors Group on Climate Change, complementing engagement actions on climate transition from Climate Action 100+, in which SAM is a signatory as well.

1. GFANZ: Glasgow Financial Alliance for Net Zero.
2. Assets in scope are 54% of SAM total assets, which currently have a defined Net Zero methodology. This objective might be reviewed upwards depending on data availability at least every five years.

Engagement approach

We help our 164 million customers transition to a green economy while supporting growth.

Examples of main items contributing to our engagement approach in the following sections:

We engage with customers and investees

We develop products / services adapted to their needs, and we participate in a collaborative network of institutions to create more financing opportunities.

Corporate & investment banking
Retail and commercial banking
Wealth management & insurance

We strengthen our expertise and make it available to them.

ESG training and skills development

We develop assessment tools to better manage performance and monitor progress towards their transition goals.

CIB tiering system
Net zero stewardship
SFICS

We engage with key climate actors

We participate in different organizations, alliances and working groups, international and local, to progress in global and company goals.

Sector working groups

We engage with authorities

We participate in the debates with regulators, policy makers and supervisors on the developments that are most relevant to the bank, its employees, customers and the communities in which we operate.

Engagement with authorities

We support communities

We financially support a number of local initiatives to tackle climate change, protect biodiversity, and generate positive social impact.

Fundación Banco Santander
Community support programmes

Just transition

We want to help achieve sustainable development and pledge to play an active role in supporting the green transition. It is vital that the transition is just and inclusive, taking into account regional and sector specificities to avoid isolating communities and stranding assets.

We aim at incorporating and promoting the just transition through our engagement approach, our policies and risk management processes, and our sustainable and investment products. An example has been the consideration of this topic in the review of our Environmental, Social & Climate Change (ESCC) risk management policy.

We are also regularly reviewing our SFICS (Sustainable Finance and Investment Classification System) which considers activities aimed at addressing or mitigating both environmental and social issues.

Protecting the Amazon rainforest is critical if we are to tackle climate change. We are committed to doing so while helping promote sustainable development and practices in the region, as we disclose in this report.

In 2023, we continued to participate in financing the Just Transition Alliance, Led by the Grantham Research Institute within the London School of Economics. The goal of the Alliance is to stimulate and support system- level innovation that enables investors and the financial sector more broadly to deliver a just transition in the UK. Our focus is on the implications for the mortgage sector in the UK.

Climate risks and opportunities

Climate risks

Climate and environmental risks factors are considered transversal and likely to have an impact on existing risk types such as credit, market, liquidity, operational, reputational and strategic, mainly.

These risk factors include elements derived from the physical effects of climate change and the transition to a low-carbon economy:

- Physical risk (PR): effects of climate change on economic activity, labour supply, communities, markets, assets and investors.
- Transition risk (TR): effects of the transition to a low-carbon economy, including changes in regulation, technology and market trends.

We assess how transition and physical risks impact on the economy, our customers and our business, especially in terms of impaired profitability and property values, revenues that may be affected by rising costs and lower productivity, declining demand, falling asset performance, rising cost of legal and regulatory compliance, declining household wealth and other aspects.

Our risk classification is fundamental for effective risk management and control.

The following drivers are considered when assessing potential environmental and climate-related risks:

PHYSICAL RISKS (PR)

Acute
More intense extreme weather events, such as droughts, hurricanes or floods.

Chronic
Changes in rainfall patterns, extreme weather variability, average temperature rises, severe heatwaves and rising sea levels.

TRANSITION RISKS (TR)

Market sentiment
Changes in the supply and demand of certain commodities, products and services as they consider climate risks and opportunities, which could lead to reputational and other issues.

Policy action
Implementing carbon pricing mechanisms to reduce greenhouse gas emissions; using energy sources with lower emissions; adopting energy efficient solutions; and promoting water efficiency measures and more sustainable land use practices.

Technology
The need to build and innovate to support the transition to an energy efficient financial system with lower CO_2 emissions. This can have a significant impact on companies as new technology displaces obsolete systems and disrupts some components of the financial industry as we know it.

These climate and environmental risk factors can pose risks and opportunities for Santander and our customers. On the one hand, they can impact on customers' financial solvency across different time horizons and on banks' reputations. On the other, the urgent transition to a low-carbon economy presents a considerable business opportunity for banks. In particular, we actively engage and support our customers in transitioning to a low-carbon economy with environmentally and socially responsible products and services, fully exploiting sustainable business opportunities.

On the following pages, we describe some of the aforementioned climate risks and opportunities for Grupo Santander.

We measure the impact of the climate and environmental factors of each risk type across several time horizons. Starting next year, we will evolve this assessment to incorporate the materiality dimension and make it compatible with the CSRD provisions. The following table shows pre-mitigation impact, our progress with climate matters in 2023, and next steps:

Risk type	Main climate drivers[1]	Main time horizon[2]	Potential impacts of climate risk factors	What we are doing to manage climate risk factors	Next steps
Credit Risk		Medium - Long term	→ Extreme weather can lead to higher retail and corporate loan default and lower collateral value. It can also cause income to fall, harm agriculture, and increase insurance coverage and premiums. Moreover, changes in wind patterns that reduce energy production can lead to higher operating costs and hamper productivity. This may increase asset depreciation and early disposal due to property damage in 'high risk' locations. → A failure by borrowers to adapt their business models to a low-carbon economy could heighten credit risk and, therefore, the risk of a reduction in income or activity that may increase default or cause the business to lose value. → Adverse weather conditions can cause significant financial losses, endanger communities, harm the environment and affect the value of guarantees. → Market sentiment that influences demand; obsolete technology; customer preferences. → Higher operating costs for carbon-intensive customers; information requirements (data gathering), especially on emissions (e.g. Scope 3) and green taxonomy disclosures; and new EU financial information directives stemming from government measures.	→ Conducting materiality assessments to spot physical and transition risk in our portfolios. → Analysing short-, medium- and long-term risk concentration by sector and region. → Creating heatmaps that follow orderly, disorderly and Hot House World scenarios up to 2050. → Implementing mitigation measures such as policies, thresholds and insurance to combat risks and their impact. → Conducting scenario analyses and measuring sensitivities to forecast changes in ratings, probability of default (PD) and loss given default (LGD) in view of physical and transition risk. → Drawing up credit risk metrics to monitor and control ESCC[3] risk factors in BAU processes. → Measuring ESCC factors in customer and transaction analysis and ratings. → Setting risk appetite limits and alerts to manage climate-related sectors.	→ Run the second phase of 'The Climate Race', our credit risk target operating model for climate and environmental factors and embedding of ESCC factors in the entire credit cycle to pinpoint and mitigate physical and transition risk. → Include climate related factors in internal models to measure physical and transition risks, and embed scenario analysis techniques in risk management through a forward-looking approach by sector and geography. → Develop tools to monitor ESCC factors that consider physical and transition risk in the activity sectors and collaterals.
Market Risk		Short-Medium term	→ Higher volatility in market factors under stress scenarios. → Changes in market perception leading to wider credit spreads for business in impacted sectors.	→ Regular reviews of climate stress scenarios and subsidiaries that apply them. → Stress testing using physical and transition risk scenarios. → Portfolio analysis of current exposure to climate-sensitive business activities.	→ Enhancing analysis of material climate impact on trading portfolios to help with future sector-based stress testing. → Enriching stress testing and reviewing new scenarios to be included. → Adapting stress testing to best market practices.
Liquidity Risk		Short-Medium term	→ Market impacts on the value of high quality liquid assets in Santander's liquidity buffer. → More frequent extreme weather stifling economic growth in countries susceptible to climate change, causing sovereign debt to rise and limiting access to capital markets. → Cash outflows from companies trying to boost their reputation in the market or solve problems with climate scenarios.	→ Qualitative and quantitative climate scenario analyses of impacts on high quality liquid assets (HQLAs) and financing of exposed companies. → Analysis of higher outflows due to changes in market perception of corporations in climate-sensitive business activities.	→ Enhancing stress testing and reviewing new scenarios to be included. → Adapting stress testing to best market practices, including new liquidity scenarios to measure their impact.

1. Though all climate drivers impact on risk factors, we have only included the key ones in this table.
2. Short-term: up to 1 year; Medium-term: up to 3 years; Long-term: ≥ 5 years.
3. ESCC: Environmental, Social and Climate Change.

Acute **Chronic** **Market sentiment** **Policy action** **Technology**

Risk type	Main climate drivers[1]	Main time horizon[2]	Potential impacts of climate risk factors	What we are doing to manage climate risk factors	Next steps
Operational Risk	Acute, Policy action, Market sentiment	Medium-Long term	→ Severe climate events can cause damage to our assets, including branches, offices and data centres. They can also affect business continuity, processes and staff. → Climate-related factors can also lead to operational risk losses from litigation (e.g. if a bank is considered not to be following sustainability practices).	→ Conducing operational risk self-assessments that include ESG-related risks to measure our exposure. → Conducting mandatory operational risk scenario analysis that covers physical and transition risk. → Adding ESG flag to the operational risk events database to classify incidents and environmental- and climate-related losses. → Including an assessment of climate threats in business continuity scenarios.	→ Enhance operational risk reporting on climate-related factors. → Update documentation and provide training on the embedding of ESG factors in operational risk management.
Reputational Risk	Chronic, Acute, Policy action, Market sentiment	Short - Medium-Long term	→ Customers, investors and other stakeholders who believe banks aren't doing enough to meet low-carbon targets, act against their policies or that their public commitments can pose reputational risk. → Misleading customers, investors and stakeholders with statements, actions, announcements, policies and the sustainability features of products or 'greenwashing' practices.	→ Updating climate and environmental risk policies and procedures. → Addressing reputational risk through corporate credit committees that assess sensitive transactions that involve climate and environmental risk. → Holding formal meetings to review reputational issues (including climate and environmental matters), involving the legal, responsible banking, investor relations, risk and other teams. → Implementing proactive measures to support companies' green transition and decarbonization. → Conducting a materiality assessment to measure climate-related and environmental reputational risk.	→ Continue driving cooperation between the reputational risk area and other teams to address climate-related and environmental reputational impact. → Implement a methodology to quantify the reputational impact of climate and environmental risk. → Establishing control environment processes to prevent and manage greenwashing. → Strengthening control environment in greenwashing and developing specific training.
Strategic Risk	Chronic, Acute, Policy action, Market sentiment, Technology	Short - Medium - Long term	→ A failure to achieve our climate and environmental targets, including those relating to our own and our customers' operations, could affect our strategy.	→ Checking that ESG targets are embedded in the Group's strategic planning. → Monitoring the Group's strategic 'Climate change' project, including net zero KPIs. → Identifying emerging risks, which includes an ESG risk event and analysis of how low-probability stress scenarios might impact on the Group's strategic targets to draw up suitable action plans. → Monitoring ESG initiatives presented at the corporate product governance forum (CPGF) and investments' forum. → Reviewing ESG factors and KPIs in the business model.	→ Continue monitoring climate and environmental threats as part of emerging risk identification. → Revise ESG KPIs regularly so that they remain consistent with the Group's strategy. → Continue reviewing ESG factors in relation to business model performance.

1. All climate drivers have an effect in risk factors, although in this table only the main ones have been considered.
2. Short-term: up to 1 year; Medium-term: up to 3 years; Long-term: ≥ 5 years

Acute **Chronic** **Market sentiment** **Policy action** **Technology**

Climate opportunities

Working with customers to support their transition and to reduce carbon emissions will be key to achieve our ambition to be net zero by 2050. To achieve this, our teams engage with customers, with support from specialist environmental, social and governance (ESG) teams in Santander Corporate & Investment Banking (CIB), Wealth Management & Insurance (Wealth) and Retail and Commercial Banking.

Sector / asset	Opportunities for CIB and Retail and Commercial Banking	Time horizon[C]
Mortgages	Green mortgages	ST
	Lending and advisory offering to help customers identify real estate retrofitting solutions	ST
Energy	Growth in wind and solar renewable energy financing and advisory	ST
	Financing and advisory to facilitate EV[A] charging infrastructure build-out	ST
Automotive	Financing and advisory to enable shift to EVs	ST
	Financing to establish and integrate battery supply chains	ST
	Financing of additional technologies that enable low-carbon mobility solutions	MT
Agriculture	Incentivize and support customers across the value chain to adopt more sustainable practices	MT
	Financing and advisory of on-farm emission reduction technologies	MT
Voluntary Carbon Markets	Provide solutions to enable customers to access carbon market opportunities	MT
Circular Economy - Waste & Water Management	Financing of water, waste and soil treatment, greater energy efficiency, lower emissions and conservation	MT
Cross sector	Growth in green bonds, green loans and sustainability-linked financing instruments	ST
	Financing for scaling of new technologies such as hydrogen, CCUS[B], biofuels as well as energy storage more broadly	MT
	Financing and advisory for early-stage companies focused on energy transition-enabling solutions	ST

A. EV = Electric Vehicles
B. CCUS = Carbon Capture, Utilisation and Storage
C. Short-term: up to 1 year; Medium-term: up to 3 years; Long-term: ≥ 5 years

Climate risks and opportunities identified in Santander Asset Management:

SAM believes that climate-related factors may represent risks and opportunities for businesses, which have an impact on the long-term risk and return profile of investment portfolios. In analysing climate risk, we can have a better understanding of the assets we invest in, recognize issuers that are better positioned to face future challenges, tap into new opportunities, and create value for businesses and society.

The **3 top climate-related risks** considered in our proprietary ESG analysis model are:

- **regulatory risks** involving GHG emissions, such as higher pricing;
- **technology risks** from new, efficient low-carbon alternatives that can turn existing technologies obsolete; and
- **market risks** from higher costs and shifting consumer demands, which could result in stranded assets; higher operating costs; lower demand for products and services; and the higher cost of, and limited access to, capital.

The **3 top climate-related opportunities** embedded in our analysis model are:

- **new climate solutions** involving products and services that boost diversification, competitive advantage and revenue;
- **lower-emission energy sources** that benefit from less exposure to GHG emissions, lower costs, policy incentives; and
- **efficient production and distribution of resources** to lower operational costs and raise both production capacity and the value of fixed assets.

3. Governance

Climate change and green transition oversight bodies

The board of directors, the board risk committee and the executive committee discuss and oversee climate change and the green transition. In 2023, the board discussed those topics at seven meetings, including the Climate-Net Zero ambition plan, the ESCC policy review and disclosure reports. Additionally, business units and global businesses report annually to the board on their main ESG initiatives.

The responsible banking, sustainability and culture committee (RBSCC) assists the board of directors in fulfilling its oversight responsibilities with respect to the responsible business strategy and sustainability issues of the Group.

In 2023, the RBSCC has reviewed and discussed the following items related to climate change at five meetings: Climate-Net Zero ambition plan and new targets; the revised ESG policies, including the ESCC policy review and Group Culture Policy; the ESG long-term incentive plan (2022-2025) and the scorecard; regulatory and supervisory developments in ESG; ESG ratings results for 2022 and the 2023 plan; green finance update; new developments in public disclosures; the CSRD & Materiality assessment; the 2023 environmental footprint plan and offsetting criteria update; and the Brazilian Febraban agreement (revised deforestation expectations) and its next steps.

The RBSCC oversaw other key ESG areas as part of its remit and as the main committee that provides support to the board of directors on ESG related matters.

The RBSCC coordinates its activities with the other board committees, in particular with the risk supervision, regulation, and compliance committee and with the board audit committee. The former assessed the ESG policies and ESG risk appetite and the latter has supervised financial and non-financial reporting and disclosures, as well as related ESG processes and controls.

The board risk committee (BRC) reviews the proposals for the risk appetite statement prior to board approval. The BRC also monitors the RAS every quarter, including climate finance metrics and limits. The BRC works with the RBSCC to review ESG-related conduct risk, data protection risk, customer vulnerability, reputational issues, risk policies and how business units adopted these policies.

The board audit committee oversees the internal control system, processes and methodologies we use to prepare financial and non-financial ESG information.

Board level		Board of directors	
	Responsible banking, sustainability and culture committee	Risk supervision, regulation and compliance committee also known as Board Risk Committee	Executive committee
Executive level		CEO management meeting	
Fora		Responsible Banking Forum	

For more details on the board committees see Corporate Governance chapter in the **2023 Annual Report**

For more details on board skills and diversity matrix see section 4.2 Board composition in the **2023 Annual Report**

The board nomination committee works with the RBSCC to review Santander's corporate behaviours, culture and talent in relation to the ESG agenda.

At Group's executive committees level, other governance bodies such as the risk control committee, the strategy committee and the financial accounting and reporting committee are involved in the review of: ESCC risk policies, risk appetite and risk management; the definition of ESG strategy; and the review of ESG disclosure, reporting, processes and controls.

The responsible banking forum (RBF), is the executive governance body that reviews the implementation of the Group's responsible banking agenda and presents its findings to the RBSCC. The RBF drives decision-making on responsible banking issues. It enforces mandates from the RBSCC, the BRC, the board audit committee, other committees and the board of directors. The RBF discussed climate change and/or green finance at its six meetings in 2023. As this body ensures consistency across the Group on key issues, it reviewed and escalated the mentioned topics, as well as criteria tools to label as sustainable products and services, developments in tagging standards, and decarbonization plan overviews.

The management meeting, chaired by the CEO, reviews the day-to-day implementation of ESG activities related to climate change and green finance. The meeting received three status reports on the responsible banking agenda regarding climate change and green finance. In addition to the aforementioned bodies, other executive governance bodies also discuss climate-related matters that stem from the work carried out by the Group's divisions and businesses.

Climate in incentives schemes

Since 2020, Santander has assessed green finance and progress made on climate targets and other ESG targets for the Group's and units' variable remuneration scheme and since 2022 in the long-term incentives.

In 2024, a board resolution passed at the AGM with ESG metrics that are consistent with our public targets for the long-term incentives for senior executives in 2024-26, weighting 20%. 50% of the ESG scorecard refers to supporting the transition to a low carbon economy, including socially responsible investment, and green finance raised and facilitated metrics. Also, this action line includes the requirement to develop a transition plan in order to allow any score above 100%. Achieving a credible and comprehensive transition plan is dependent on the policy and regulatory landscape.

For more details on ESG in remuneration schemes, see section 6.4 'Directors' remuneration policy' in **2023 Annual Report**

Main areas involved in the implementation of the climate change strategy

In 2023 we continued to embed climate management in business-as-usual across CIB, Risk and Responsible Banking. For instance, CIB set up a dedicated team for portfolio alignment and strengthened its corresponding governance.

Beyond CIB, a number of local units are engaged in a process coordinated by Group Responsible Banking. The objective is to progress the decarbonization agenda, promote knowledge and expertise sharing by local teams and seek synergy in the design of reliable transition plans.

Other corporate-level initiatives and groups that support governance meet regularly to implement our climate change agenda and inform on regulation updates. For example, our public policy sustainability working group updates on upcoming climate and sustainability regulation; a regulatory radar governance working group that meets quarterly to monitor the status of implementation of sustainability regulations and to assign responsibility for the implementation of regulatory initiatives to the Group's areas; an environmental footprint working group that measures our footprint and reviews ways to reduce it; and a sustainable bonds working group that oversees sustainable bonds issues.

Pillar of the climate change strategy	Aligning our portfolio with the Paris Agreement Goals	Supporting our customers in the transition	Reducing our environmental impact	Embedding climate in risk management
Main areas	Responsible banking, global businesses and local units set alignment targets	Green finance, CIB (ESG Solutions), SCF and Wealth management & Insurance	Facilities, General services and Responsible Banking	Global and local teams across all Risk and Compliance areas

ESG Reporting & Internal Control

A new ESG Reporting & Internal Control team, set up in the second quarter of 2023, in the Financial Accounting & Management Control division oversees the disclosure, supervision and control of the ESG information the Group uses to meet regulatory requirements and stakeholder expectations. This year, the team has been enhancing data control and validation capacities. It has also made strides in automating its reporting to boost the quality and traceability of disclosures.

ESG panels

As part of our green transaction assessments, we created global, regional and local panels to provide additional scrutiny and validation, and coordination across the Group.

Internal Audit

Our annual risk assessment and internal audit planning includes climate risk. The 2023 internal audit plan, based on the annual risk assessment, continued to uphold the monitoring of ESG criteria and embedding of climate risk. In 2023, the internal audit function monitored the progress of our key initiatives to meet ESG disclosure requirements and embed climate change in the bank's business processes and risk management.

Policies and guidance

The Group's corporate responsible banking framework was approved by the Group board of directors in December 2021 and then by subsidiaries' boards. The document sets out the Group's highest-level principles, processes, and responsibilities for managing ESG across Grupo Santander. This framework is operationalized through the responsible banking model, which was approved in February 2023, and details the roles and responsibilities for its correct implementation. The model was co-created by all the functions involved in key ESG activities.

The Group sets out ESG policies, procedures and guidelines that adapt to local regulation and apply to all units. We systematically review the scope of policies for adopting ESG standards according to international best practice.

The responsible banking and sustainability policy and the environmental, social & climate change (ESCC) risk management policy, which were both revised and approved by the board of directors in 2023, embed climate change factors in lending standards.

Our responsible banking and sustainability policy sets out the general principles, commitments, objectives and strategy that guide the Group's progress with responsible banking and sustainability matters, including human rights protection.

The environmental, social and climate change (ESCC) risk management policy (which we review on a regular basis) sets out the standards for investing in, and providing financial products and services[1] to, companies and customers in oil and gas, power generation and distribution, mining and metals, and soft commodities (especially retail customers dedicated to farming and ranching in the Amazon).

Our general code of conduct promotes equal opportunity, diversity and non-discrimination, zero tolerance for sexual or work-related harassment, respect for others, work-life balance, human rights, and environmental protection. It is also one of the core elements to prevent criminal risk.

The financial crime compliance corporate framework outlines the principles that all Grupo Santander entities must adhere to in relation to the prevention of financial crime, including environmental crime. It also defines the roles and responsibilities necessary for effective financial crime risk management.

We have developed a first version of internal guidelines involving key cross-functions, to make a preliminary assessment of the main processes and the roles and responsibilities of the main functions involved in preventing, mitigating, managing, and controlling greenwashing.

In 2023, we continued to work on embedding ESG standards in all the Group's operations and procedures. We rolled out our responsible banking model to local units. This model sets out the roles and responsibilities in critical sustainability management and underpinned the development of operating models for Green Finance, risk, ESG reporting and other areas.

Key documents related to the climate change strategy

Corporate Framework & Model	**Responsible banking framework** Establishes responsible banking as a strategic topic for Grupo Santander and all local units.		**Responsible banking model** Sets out the roles and responsibilities of the first, second and third line of defence in all responsible banking-related activity to drive our sustainability agenda, embed ESG standards and achieve our goals.	
Core core internal regulation	Resp. Banking and sustainability policy	ESCC risk management policy	General code of conduct	Financial Crime Compliance Corporate Framework
Documents that support our strategy	Reputational Risk Corporate Model		Third-party certification Policy	
Detailed technical criteria	Sustainable Finance and Investment Classification System (SFICS)	Guidelines financed emissions for portfolio alignment	Greenwashing management and control guidelines	Guide to Environmental, Social & Climate Change related financial risks

1. Defined as transactions giving rise to credit risk, insurance, asset management, equity and advisory services

Santander publishes maintains key internal regulations on our corporate website www.santander.com/en/our-approach/policies

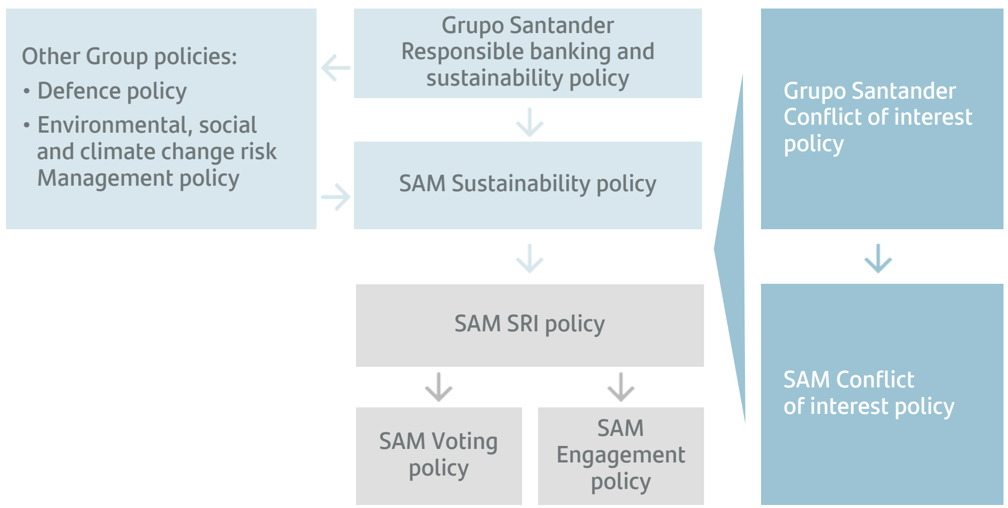
ESG Governance in Santander Asset Management

Santander Asset Management's policy framework and governance support its execution of SRI strategy. It follows environmental (including climate change), social and corporate governance (ESG) criteria and is structured around an SRI strategy and supervision forum, a voting and engagement forum, an investment and sustainability forum, and our global expert SRI team. At the highest level is the Wealth Management & Insurance ESG forum, which is chaired by the Global Head of Wealth Management & Insurance and approves and oversees SAM's global SRI strategy.

Santander Asset Management's SRI policies outline our approach to applying ESG factors to investment. Our engagement policy, updated in 2023, sets out the principles for individual and collaborative ESG initiatives with our investees. It also establishes the framework for prioritization of engagement activities. SAM combines two approaches for these activities: individual engagement with each company and collaborative engagement through initiatives that bring together a group of investors.

In 2023, we reviewed our voting policy to update its scope by significantly increasing the number of AGMs in which SAM actively votes. SAM also reviewed its voting approach to further strengthen alignment with applicable legislation and codes of good practice. The policy is reviewed on a regular basis and is consistent with our ESG principles and net zero ambition.

SAM ESG policies and link to Group's sustainability documents



ESG training and skills development

We have continued working to familiarize all employees with sustainability, the UN Sustainable Development Goals and climate change with training for global businesses and subsidiaries. The Group has designed a 3-level progressive learning journey to adapt to evolving business and employees needs. Each level encompasses a set of activities and modules:

- **Awareness & knowledge:** Common multidisciplinary training for all employees. We launched "Sustainability for all", a global, mandatory course to familiarize all employees with sustainability and its relevance to the Group on sustainability, sustainable development goals and climate change.
- **Specialization:** Training for all functions involved in our sustainability agenda, with an introduction to sustainability and ESG, and special programmes for each business and function. We also created ESG Talks, a series of online recordings available on our learning digital ecosystem, with internal experts from CIB, Risk, Human Resources, Financial Regulation, Wealth Management and Insurance, Consumer Finance and Retail Banking and Responsible Banking for the areas involved in our sustainability agenda.
- **Certification:** Expert ESG "knowledge sharing" aimed at employees who are involved in the Responsible Banking agenda. It can include internal and external certification, such as Chartered Financial Analyst (CFA), European Financial Planning Association (EFPA), Global Association of Risk Professionals (GARP), Certified ESG Analyst (CESGA), International Association for Sustainable Economy (IASE) level 1 and 2. This level has already been completed by more than 2,000 employees in 2023.

Some subsidiaries and global businesses gave further training on climate change, sustainability, sustainable finance, sustainable investment, diversity and inclusion.

In 2024, in collaboration with global and local teams, we will continue to identify and adapt to the evolving business needs by: developing mandatory training and personalized learning itineraries, expanding ESG talks and channel content to new topics, improving ESG website design.

Employee awareness

To raise employees' awareness of ESG issues, CIB, Research & Business Intelligence and other departments send out climate-related newsletters and reports.

Additionally, frequent news and articles are released in our intranet to communicate our employees our environmental and sustainability initiatives.

ESG Talks

In 2022 we launched ESG Talks. They're one-hour seminars delivered by our ESG teams on Santander's commitment and projects. In 2023 the topics have been: Circular Economy in Suppliers Management, ESG Equity Research, Materiality Assessment, Green Washing & Social Washing, Social Environmental Analysis and Corporate Due Diligence Directive, Embedding ESG Factors in Credit Granting Process, ESG in Santander Insurance, Sustainability Preferences and socially responsible investment, HR key role in Sustainability, Santander Asset Management at Net Zero Asset Managers Initiative and Santander ESG Reports.

'Training Pills', embedding ESCC

'Training Pills' is an initiative to share best practice and expert knowledge across risks in Santander. It informs on how we embed key processes such as materiality and climate sector assessment and scenario analyses in ESCC management. This initiative has been well received across our units and will continue in 2024.

Climate training for board members

In 2022 the board of directors completed climate change training programmes with modules on the Paris Agreement, net zero, portfolio alignment, climate risk management, transition plans, regulation and reporting, supervisor expectations, greenwashing and biodiversity. In 2023, subsidiary board members and other "key positions" completed training on responsible banking, green finance, and ESG risks.

ESG training in CIB

We have implemented training for senior staff in CIB specifically designed to educate them on transition topics, in collaboration with external expert providers. Multiple sessions have taken place involving senior bankers on topics including: climate regulations and taxonomies; greenwashing; climate pathways to net zero; and frameworks to enable the assessment of customer transition plans.

ESG training in Commercial Banking

We provide specific ESG training to Commercial Banking teams across the Group. For instance, in Spain, we offer training to Risk teams through the ESCC Competence Center, broken down into economic sectors (seven covered) and adding up to more than 750 hours of training so far.

ESG training in Wealth Management & Insurance

In 2023 we kept increasing the number of employees that received ESG training at Santander Asset Management, Private Banking, and Insurance through two types of certifications: internal (c.16 hours) and CESGA/CFA (c.150 hours).

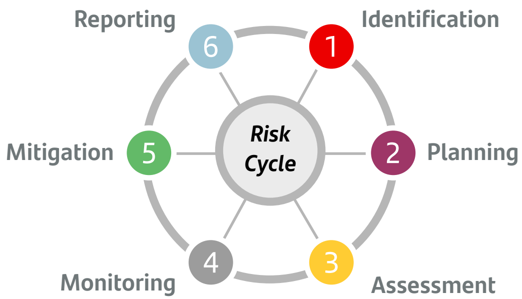
4. Risk management

Managing climate and environmental risk factors is key to implementing our strategy, aiding the transition to a low-carbon economy, and fulfilling our ambition to be net-zero carbon emissions by 2050.

By embedding climate aspects in risk management processes and procedures, we can implement our sustainability strategy to contribute to the transition to a low-carbon economy. For example, this is carried out by integrating climate and environmental risk factors in: (i) the different phases of our risk management cycle (which we will go into detail in the current chapter), and (ii) in our credit granting process, following a risk-based approach to consider climate and environmental factors in our policies, procedures, data, tools, metrics, governance and culture.

During 2023, we gradually introduced new decarbonization targets in sectors considered 'highly polluting'. In addition, we made enhancements in our cross-cutting enterprise risk management processes to consider climate and environmental risk factors in our risk appetite statement and emerging risk identification exercise (detailed along the current chapter), among others, since the management of ESG factors requires a holistic vision that verifies their correct management and control, the alignment with the Group's ESG strategy and the compliance with the extensive regulatory and supervisory requirements.

We are integrating climate and environmental factors into our risk management cycle, which encompasses different phases such as, identification, planning, assessment, monitoring, mitigation and reporting (see chart below). The next pages of this chapter will delve on each of the aforementioned phases.



1 Identification

To pinpoint and manage material risks, we conduct risk identification exercises periodically to assess potential events that could threaten the Group's strategic plan, in which ESG risk factors are considered, with special attention to greenwashing, the environmental risks beyond climate (nature & biodiversity) and social risks, among others.

Risk identification helps us understand the internal and external threats posed by the environment and climate change to our business model, profitability, solvency and strategy.

In addition, risk taxonomy, heatmaps and materiality assessment exercises form the basis for classifying and identifying material environmental and climate related risks of our portfolios.

2 Planning

As part of our public sustainability commitments, we included decarbonization targets in our core strategic planning: short-term for budgeting; medium-term for financial planning; long-term for strategic plan; along with *ad hoc* analysis:

- **Budget** (1 year): it provides inputs for the three-year plan and includes tasks to quantify annual objectives in the Santander's subsidiaries' business plans within the Group's risk appetite and liquidity, capital and efficiency plans.
- **Financial Planning** (3 years): it is a key process for medium-term planning in the Group and subsidiaries. It relies on a bottom-up approach that facilitates a consistent, aggregate view of our processes. It is also the basis for preparing the annual budget, the Internal Capital Adequacy Assessment Process (ICAAP) and the Internal Liquidity Adequacy Assessment Process (ILAAP).
- **Strategic Plan** (≥ 5 years): it sets out long-term objectives for the main subsidiaries and businesses in Grupo Santander. It covers the Group's vision and priorities in terms of capital allocation, organic and inorganic opportunities in each business unit and region.

The aforementioned core strategic plans allow us to identify threats to our targets, according to our policies and risk appetite statement, and provide a prospective vision of risks and their financial impacts.

3 Assessment

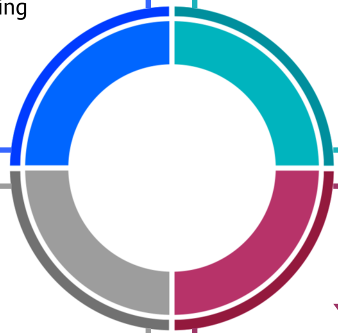
In Grupo Santander, environmental, social and governance aspects are considered factors that may impact existing risk types in different time horizons according to our Risk Corporate Framework. Therefore, such factors are identified and periodically assessed, consistently with the level of development of applicable regulatory framework and practices.

The materiality analysis is the process of identifying and evaluating those environmental, social and governance factors that can be relevant for their potential impact on the bank's risk profile.

Conceptually, the process takes place in the following stages, albeit some of these conceptual phases take place simultaneously and not sequentially:

Identification of ESG drivers: for the identification of physical and transition drivers related to climate and environmental aspects, which can generate impacts on different risk types, several recognized sources are taken as reference, including TCFD[1], UNEP-FI[2], ENCORE[3], SBTN[4] and NGFS[5], among others. Also, we use several tools, including heatmaps, sectoral climate and environmental classification, historical information, idiosyncratic scenarios, forward-looking scenario projection, monitoring of regulatory changes, mainly. The list of factors is dynamic and therefore it is periodically reviewed.

Analysis of the transmission channels: we analyse how the factors identified in the previous stage can materialize and impact the risk types included in our risk management framework. They can be macroeconomic (e.g., socioeconomic, productive) and microeconomic (e.g., affecting household wealth and/or income) in nature.



Assessment of the materiality of the potential impact on the main risk types: in this stage, the potential impacts that could arise from the materialization of the risk factors previously identified through the transmission channels described, are analysed based on the application of qualitative and/or quantitative approaches.

Aggregation of the consolidated view of materiality: for internal and external communication of the materiality of ESG factors analysed in the previous stages, the results of the impacts on each risk type are aggregated in a consolidated report (detailed in the following pages), based on a five-point RAG status (from Low to Very High) in the short, medium, and long-term horizons.

See 2. Strategy (pages 13 and 14) to find a summarized version of the translation of the climate and environmental drivers into the different risk types

1. Task Force on Climate-Related Financial Disclosures.
2. United Nations Environmental Programme Finance Initiative.
3. Exploring Natural Capital Opportunities, Risks and Exposure
4. Science Based Targets Network.
5. Network for Greening the Financial System.

The following matrix depicts the consolidated view of the materiality assessment by risk types:

	Transition Risk			Physical Risk		
	ST	MT	LT	ST	MT	LT
Credit risk						
CIB	Medium	Medium	Medium	Moderately low	Moderately low	Moderately low
Corporate & SME	Moderately low	Moderately low	Moderately low	Moderately low	Moderately low	Moderately low
Individuals	Moderately low	Medium	Medium	Moderately low	Moderately low	Moderately low
Auto Consumer	Moderately low	Moderately low	Moderately low	Low	Moderately low	Moderately low
Operational risk	Low	Moderately low	Low	Low	Moderately low	Moderately low
Market risk	Moderately low	Low	Low	Moderately low	Low	Low
Liquidity risk	Moderately low	Low	Low	Moderately low	Low	Low
Reputational risk	Medium	High	Medium	Medium	Medium	Moderately low

● Low ● Moderately low ● Medium ● High ● Very high

Short term (ST): 2025 | Medium term (MT): >2030 | Long term (LT): >2050

We keep evolving and enhancing our materiality assessment approach by incorporating regulatory developments, industry best practices, further homogenization and synergies among different risk types in terms of sources, thresholds and scenarios.

Integration into risk type frameworks and processes:

Notwithstanding the merits of the aggregate summary just described, each risk type uses different tools and processes to assess the potential impact of climate factors. The outcome of such processes is the main input of the summarized dashboard.

The materiality assessment's rational for each risk type is described as follows:

- **Operational Risk:** potential impacts from physical risk are assessed by combining the results of specific location-based risk scores, with the bank´s own facilities and insurance data, along with internal scenario analysis for specific physical risks. Transition risk potential impacts are assessed based on existing operational risk tools as well as external ESG-related events.

  Physical risk is evaluated as low in the short-term and increasing to moderately low in the medium and long term, mainly due to the exposure to more frequent and/or severe weather events in North and Latin-America.

  On the transition risk exposure, the most affected time horizon would be the medium-term, due to legal and compliance risk arising from the adaptation to new regulations across the different jurisdictions where the bank has presence, and the increase in the volume of green business, as well as a greater awareness of climate change among the external stakeholders.

- **Market Risk**: to assess potential impact of climate factors, Santander has a periodic analysis of their trading portfolios to identify the materiality of positions potentially exposed to market risk climate stresses and then compares the results from climate stress scenarios (both transition and physical risk) to those from internal stresses and budgets. The materiality is low or moderately low depending on the time horizon, due to the low exposure levels to climate sensitive sectors both in the bond and equity portfolios.

- **Liquidity Risk**: to assess potential impact of climate factors, Santander compares the results from climate stress scenarios. We have a suite of transition and physical risk scenarios (disorderly transition scenarios, climate extreme events, historical events…) whose impacts on liquidity are well below current internal and regulatory stresses due to their limited impact on High Quality Liquid Assets (HQLAs) and on retail stable deposits.

- **Reputational Risk:** during 2023, we have developed a specific materiality assessment for the purpose of examining and assessing in depth the potential reputational impact of the climate & environmental (C&E) main risk drivers in the short, medium and long-term under various scenarios. The exercise consists of a complex process that implies considering several information and criteria to be assessed in subsequent phases:

  → the definition of the drivers detailed in chapter "2. Strategy" including physical and transition risks;
  → the assessment of the risk drivers through impact and probability;
  → the country assessment according to the degree of adoption of urgent measures to combat climate change;
  → the portfolio exposure in Santander with potential reputational impact and sensitive sectors relating to material C&E risks; and
  → climate scenarios according to NGFS and different time horizons.

  The reputational risk materiality assessment results show that transition risks would represent more significant reputational impact than physical risks.

  Despite weather events would occur, and based on several recent climate events experience, Grupo Santander is comfortable under the point of view of reputational risk management with its control environment and ability to react in a given event and doesn´t foresee material reputational impact that could be linked to material flaws in event management or lack of reaction.

  Separately, the transition risks perception of potential lack of ambition regarding stated climate commitments, targets or inadequate funding/investment in C&E related sectors and subsequent potentially linked greenwashing are imply higher risk. Transition risks are prone to be more related to the stakeholder´s understanding, international context and different expectations and sensitivities, which are the main grounds for reputational risk exposure. Santander has defined clear commitments regarding C&E risks through policies, procedures and a strong governance.

• **Credit Risk**:

We perform a quarterly materiality assessment that enables the identification, assessment, and monitoring of climate environmentally material credit risk portfolios and business lines.

Risk taxonomy and heatmaps, provide the basis at aggregated level for the analysis in the banking book portfolios, it follows the TCFD and UNEP-FI guidelines. Scenario analysis has been embedded into our management to assess transition and physical risks financial impacts, allowing the review of climate sectors´ trends in different time horizons and climate scenarios, considering business diversification and geographical characteristics.

In addition, the physical risk assessment has been reinforced with a geographical approach, that includes current and future risk assessment of acute and chronic hazards, by location and sectorial activity in all markets where Santander is located.

The materiality assessments help us determine the material credit risk of our portfolios covering the Group's markets over different time horizons. This allows us to address these risks in our risk appetite, risk identification exercise, credit granting process, stress testing and other management processes.

Our taxonomy of industries and sub-industries is affected by climate-related risks based on the EU's NACE codes. We compile exposure data that serve as a starting point, along with a five-tier heatmap for physical and transition-based risks, to measure highly material climate change risks.

Our 2023 credit risk materiality assessment results (available in the next table) follow a similar trend to 2022, albeit macroeconomic conditions affected the mortgage portfolio with a reduction mainly in Europe. Sectors with high and very high transition risk impacts are concentrated in CIB, and regarding to physical risk impacts, we do not have a large exposure.

During 2023, we updated our credit risk climate materiality assessment to reflect the latest industry and regulatory developments:

- The scope of the exercise has been expanded to include the assessment of Consumer Auto US, covering all material businesses of the loan book.
- Enhancement of physical risk assessment based on geographical scores using the location of the customer/collateral information with forward-looking approach based on scenarios and different time horizons. Detailed along this chapter.
- Inclusion of a detailed assessment for the transition risk of the mortgage portfolio, based on the distribution of energy performance certificates (EPCs). Further described along this chapter.

CREDIT RISK MATERIALITY ASSESSMENT - CONCENTRATION & QUALITATIVE HEATMAP OF PORTFOLIOS

December 2023, Credit risk (before mitigants), EUR billion

		TR	PR	CIB	Other segments
Power (Conventional)		High	Medium	30	2
Power (Renewables Project Finance)		Low	Medium	13	0
Oil & Gas		Very high	Moderately low	21	1
Mining & Metals		Very high	Moderately low	15	8
Transport		High	Moderately low	30	12
Auto Consumer		Moderately low	Low	0	159
Real Estate		Moderately low	Medium	8	384
Other Climate-related sectors	Agriculture	Medium	Medium	2	9
	Construction	Moderately low	Low	18	14
	Manufacturing	Medium	Moderately low	47	25
	Water & Waste	Medium	Medium	3	1
Total Climate Sectors				**185**	**615**
Other sectors		Low	Low	64	229
Total				**249**	**845**

- Low
- Moderately low
- Medium
- High
- Very high

TR: Transition Risk.
PR: Physical Risk
CIB : REC (on and off-balance sheet lending + guarantees + derivatives PFE)
Other segments: Individuals, SCF, Auto US, Corporates & Institutions, and SMEs. Measured with drawn amount.
Other sectors= CIB and Corporate NACES outside of risk taxonomy perimeter // Individuals and SCF: Cards and Other Consumer, Wealth others than mortgages. Other sectors considered as Low risks.
0 exposure amounts to exposures below EUR 500 million. Figures are rounded off without decimals.
The Thermal Coal phase-out targets are described in Section 5.

In addition, our credit risk materiality assessment incorporates qualitative and quantitative heatmaps that help us identify the best positioned customers and portfolios.

Heatmap analyses are key for customer/transaction admission processes, their monitoring, as well as for risk management purposes, credit policies and business strategy.

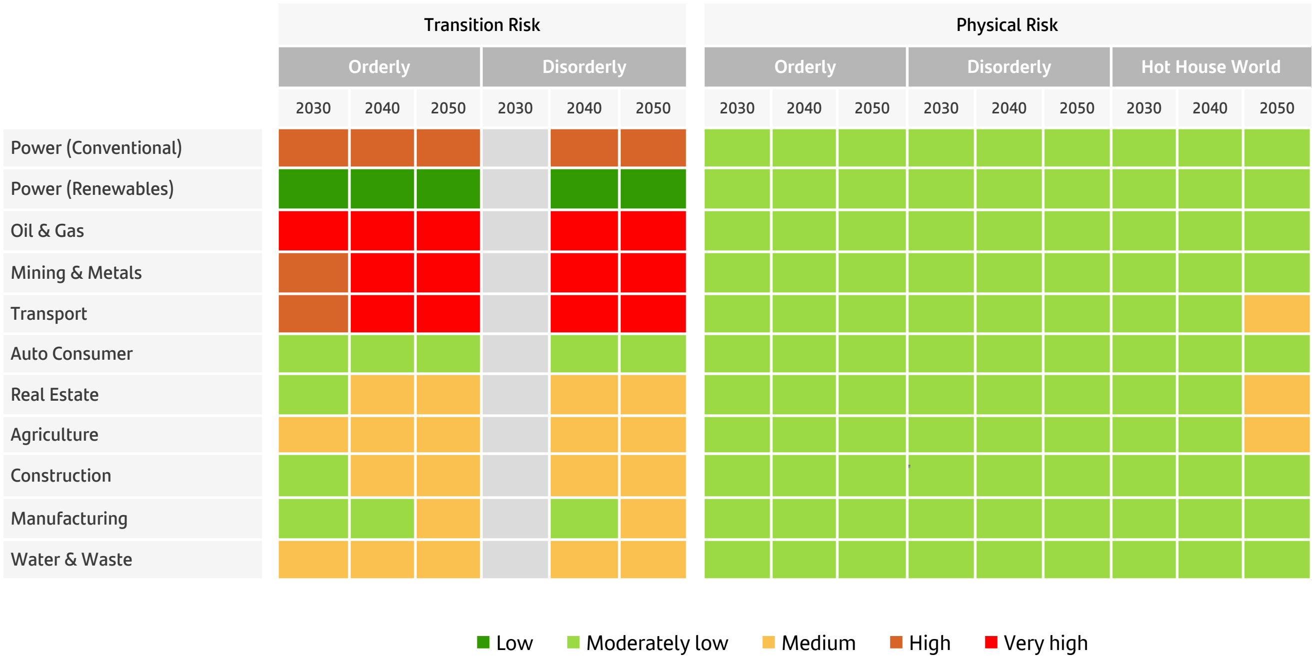
Quantitative heatmaps are based on scenario analysis models that measure the impact of transition and physical risks on core credit metrics.

It complements our qualitative methodology and provides a forward-looking, geography-based analysis of portfolios in the medium-to-long term. Identifying the credit risk performance based on NGFS scenarios applied to our climate models. This is illustrated by the following table under NACE (Statistical Classification of Economic Activities) level 1 drill-down. However, we have adopted NACE level 4 analysis in our risk management to oversee the composition of our risk taxonomy and our value chain.

Furthermore, the use of climate scenario analysis techniques (detailed in the following page) allows to embed stress testing in our risk management in order to provide a forward-looking view of customers and portfolios.

It considers different scenarios and time horizons in the monitoring and risk management of customers, sectors/sub-sectors and geographies.

FORWARD LOOKING HEATMAPS - SCENARIO ANALYSIS APPROACH



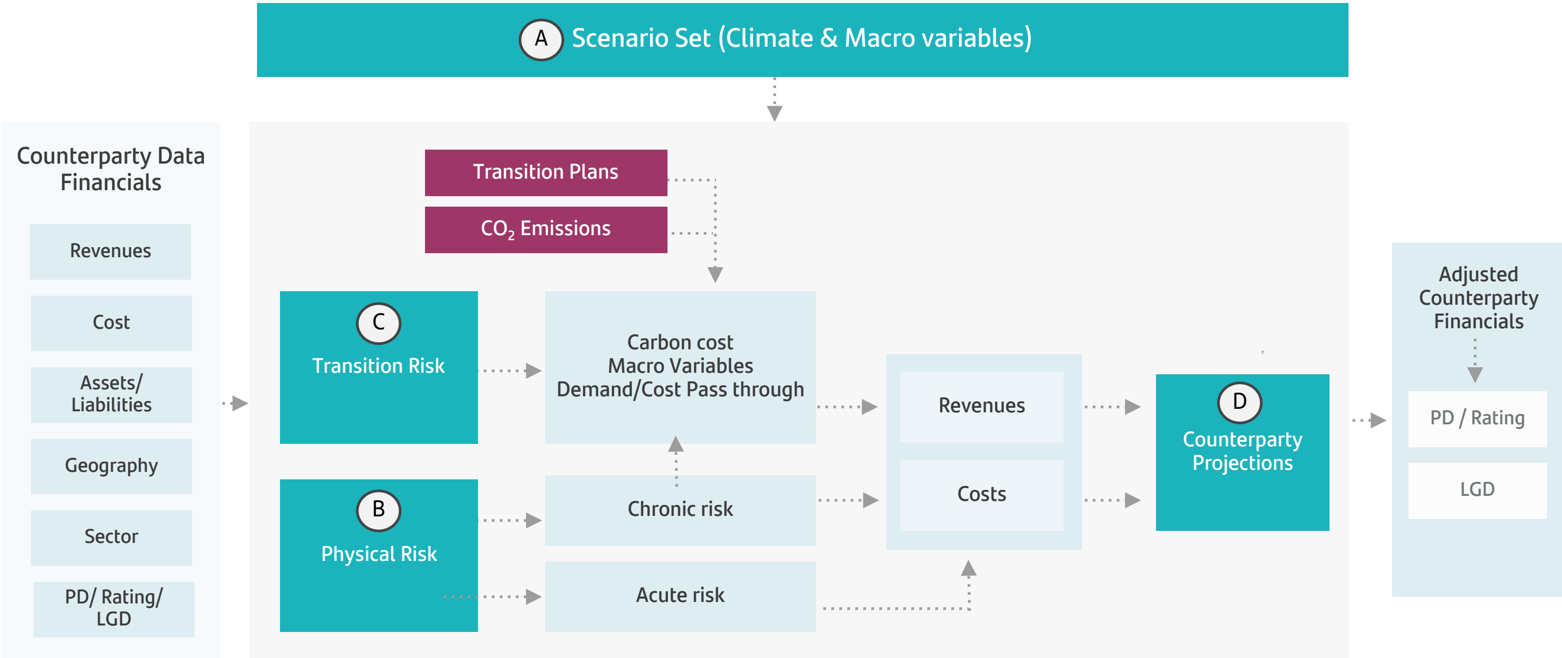
As mentioned before, Santander uses scenario analysis to monitor and measure transition and physical risk of our portfolios taking into account the Group's businesses and geographical diversification.

For commercial banking and corporate portfolios, Santander applies our recently implemented climate internal models to quantify the financial impact of transition and physical risks. Our modelling, based on core credit risk metrics (PD[1], LGD[2]), estimates the direct and indirect impact of macroeconomic and climate variables, market trends and policy actions.

We monitor the effects related to carbon costs, physical risk and change patterns in demand, to assess potential changes in companies´ finances taking into consideration general aspects referred to sector/sub-sector and geography.

This approach follows a bottom-up analysis of each customer's drivers, financial situation, and technology. In addition, when customer information is not available, a top-down approach by sector and geography can be used.

Our climate internal model comprises different processes, which are set out in the following chart:



A. Scenario Set: based on the scenarios published by the Network for Greening the Financial System (NGFS), the IEA-Net Zero scenario for Portfolio Alignment, and other external sources, including the Intergovernmental Panel on Climate Change (IPCC) developed the Representative Concentration Pathways (RCPs) climate scenarios. Our Economic Research department integrate and expand external scenarios to more specific variables by countries and sectors to provide a complete view of the most relevant variables in the regions where we have exposure.

NGFS scenarios	Representative Concentration Pathways (RCPs) climate scenarios
Physical and transition risks	**Physical risk**
Orderly, where climate policies involve early, ambitious action and the impacts are low for both physical and transition.	**RCP 2.6:** stringent mitigation scenario with the aim to keep global warming below 2ºC. This is associated with orderly scenarios.
Disorderly, in which climate policies are not introduced until 2030 and the outcome has a higher impact on transition risk.	**RCP 4.5:** intermediate scenario where emissions reach their peak in 2040 and then decrease. This is associated with disorderly scenarios.
Hot house word (current policies), with limited climate policies and severe physical risks and irreversible changes, including higher sea level.	**RCP 8.5:** very high GHG emissions. It is a "business as usual" scenario where emissions keep increasing throughout the whole century. This is associated with hot house world scenarios.

1. Probability of Default.
2. Loss Given Default.

B. Physical risk impact, which reveals the financial impact of extreme weather and long-term shifts in climate patterns, for a broad set of hazards that are assessed in a granular level by region. For these financial impacts we are using data from an expert insurance company, considering scenarios and different time horizons.

Physical risk impact can be divided between:

- Chronic impact: impact on companies' revenue due to chronic physical effects (e.g. change in productivity).
- Acute impact: increase in cost due to damages to companies' assets from extreme weather events.

C. Transition risk impact, which reveals changes in different drivers such as climate policies, technological changes, along with investor and consumer sentiment affecting the demand (creation or destruction). These drivers will affect customers individually, in a bottom-up approach, depending on their financials also considering their strategical goals, volume of emissions and transition plans, enriched by a sectoral and geographical view. To complete the process, where the financial information is not available, it is used a top-down approach based on sectoral and geographical information.

Transition risk impact can be divided between:

- Climate policies: to encourage the transition to a low GHG economy are leading to higher operating costs for carbon-intensive-customers, increasing the carbon or energy prices increasing costs and affecting revenues.
- Technological changes: relating to energy-saving, low-carbon transportation, and increasing use of non-fossil fuels or other technologies that help reduce GHG emissions will affect the Gross Value Added (GVA) per sector and geography.
- Investor and consumer sentiment: changes in demand that come through consumer preferences for climate-friendly goods and a change in investment trends for environmentally friendly companies and products will affect through the GVA per sector and geography alongside the cost pass through rate.

D. Counterparty projections, which translate the changes in the financial ratios included in the credit risk rating models and are projected based on the forecasted revenues and costs under the different scenarios, including both transition and physical risk impacts. Once the ratings are projected, the associated PD is obtained. Finally, LGD is estimated using Frye Jacobs relationship between PD and LGD

Fit-for-55 climate risk scenario analysis

In 2023, the European Commission requested the European Banking Authority (EBA) in collaboration with the ECB, to conduct a climate stress test exercise to assess the resilience of financial institutions to achieve the climate goals set for 2030. To this end, a regulatory stress test exercise has been defined and focused on information relating to credit risk, market risk, real estate risk, and interest & fees and commissions income.

Santander has participated in this regulatory exercise. The first stage consisted on a data collection, with the EBA performing the projections based on these data. The final submission was made in Q1 2024, expecting final individual results in H1 2024 and aggregate results during Q2 2025.

This exercise helped us to continue working on the improvement of available data and methodologies already defined internally related to climate aspects. The data and methodologies (i.e. in terms of emissions) used, may sometimes be heterogeneous among entities, due to different sources, proxies, etc. conducting to slightly differences in final results.

Physical Risk Assessment

Santander continues to advance in physical risk assessment. We worked with an expert insurance vendor to assess the risk of 13 physical hazards (8 acute and 5 chronic). We analysed every market in which we operate, with a drill down of more than 1,250 regions (NUTS 3[1] or equivalent) and covering every economic activity under our Risk Taxonomy, as well as the main business lines such as mortgages and consumer auto.

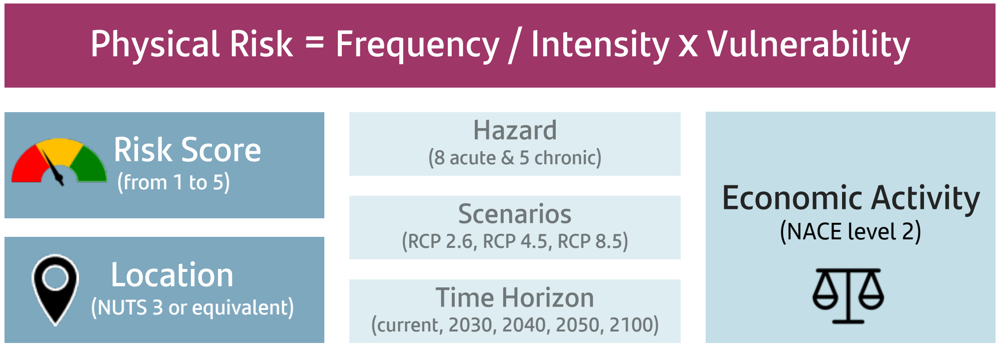
We monitor each region (NUTS 3) to measure the associated physical risks, scoring them from Low to Very High according to our 5-point RAG scale.

To assess the frequency and intensity of natural hazards, we used different atmospheric greenhouse gas scenarios (Representative Concentration Pathways - RCPs) and time horizons (current, 2030, 2040, 2050 and 2100).

The RCPs capture future trends from most severe scenarios (RCP 8.5) leading to global warming of over 4°C by the end of the 21st century; intermediate scenarios (RCP 4.5); and moderate scenarios (RCP 2.6). More details in page 27 (scenario analysis).

The methodology we applied to calculate physical scores follows the basics guidelines drafted by UNEP-FI Working Groups, where frequency and intensity determine hazards' scores and vulnerability factors moderate the physical events' impact to each economic activity or collateral values.

To help assess physical risks with more granular detail, we developed in 2023 a new module within our in-house tool 'Klima' (further details on the next page) to embed physical risk reviews in credit strategy.



1. The NUTS classification (Nomenclature of territorial units for statistics) is a hierarchical system for dividing up the economic territory of the EU and the UK. NUTS 3 classification refers to socio economic analyses of small regions for specific diagnoses.

Transition Risk at collateral level

Santander's Real Estate portfolio accounts for a large portion of our balance sheet. Thus, while we must conduct specific assessments of that portfolio's climate-related risks, our qualitative heatmaps indicate moderate to low transition risk and medium physical risk.

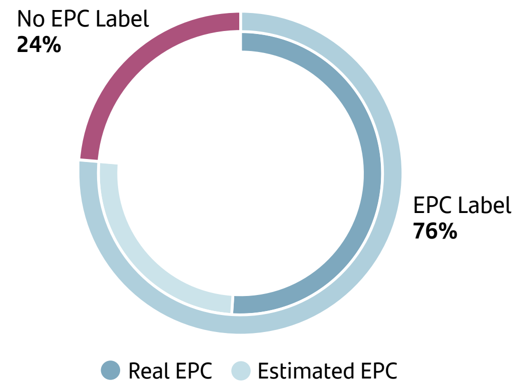
Additionally, to the physical risks developments explained previously, the transition risk improvements have been focused on the Energy Performance Certificate (EPC).

Over the last few years, we have been making strides to obtain EPC information of the stock collateral portfolios in Europe (region where these certificates are compulsory), and defining plans to reinforce onboarding processes to gather the information for new businesses. For those properties where real data was not available, EPC estimations have been used to cover a large percentage of the portfolio.

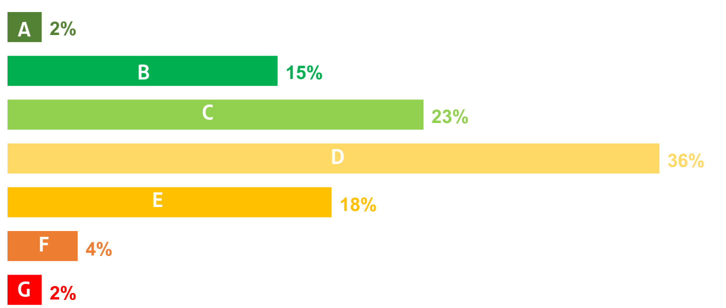
The following chart shows the EPC coverage of our balance sheet and real EPC label distribution considering the standards in each geography:

Santander Retail Mortgage portfolio

Availability of EPC



% OF EXPOSURE DRILLED DOWN BY REAL EPC LABEL



4 Monitoring

To monitor climate and environmental-related factors, we use the Group's risk appetite statement, which is the aggregate level and types of risk we deem prudent for our business strategy, even in unforeseen circumstances.

We constantly monitor the risk profile and our compliance with risk appetite limits through control functions that report to the board.

During 2023 we approved new quantitative metrics in the risk appetite statement — adding to the ones we set for thermal coal and power — for energy (oil & gas), steel, and aviation sectors, which we will implement and monitor in 2024. Also, for the automotive sector, we are making progress in designing a quantitative metric for approval in 2024 and effective implementation in 2025.

Another relevant monitoring lever is our ESG Regulatory Radar, which allows us to monitor regulatory changes related to ESG regulatory framework, among others, as well as the potential efforts and financial impacts the implementation of these changes may entail.

Additionally, the Risk, Compliance & Conduct function monitors ESG initiatives (including acquisitions and divestitures) presented to the investment forum, whose delegated authorities emanate from the Board´s Executive Committee, as well as to the corporate product governance forum (CPGF).

Throughout the year, special attention was made on the monitoring of ESG events in the Group, the financial sector and the market in general, which helped us reinforce risk prevention and mitigation measures from a reputational point of view.

Also, we are in permanent contact with our customers to monitor and support their transition planning.

Specifically, we continue to embed environmental, social and climate change (ESCC) risk factors into the credit granting process through our operating model, 'The Climate Race', which is underpinned by several pillars: strategic planning, risk management, loan granting process (admission and monitoring), models and systems, and governance and culture.

It covers our main business lines (CIB, Retail and Consumer), where our mortgages and auto portfolios are evaluated as the rest of the economic activities in more than 13 Units, with the aim of strengthening the alignment between the credit risk management and the business strategy across the Group.

It also includes the creation of the **Climate Community**, as a key lever for a proper implementation of ESCC risk factors in a collaborative way, providing trainings, sharing best practices and defining guidance to support a homogeneous implementation, a clear governance structure with the allocation of responsibilities. Further details in the following chart:

KLIMA Tool

Klima, our Credit Risk management tool, enables us to monitor, spot, assess and manage climate and environmental risk at local and corporate level. It includes common standards and methodology for all business lines in different time horizons (current, 2030, 2040 and 2050).

Its modules comprise 'Materiality Assessment', 'Scenarios', 'Risk Management', 'Sensitivities' and 'Physical Risk'. Klima produces qualitative and quantitative information, including risk exposures and concentration metrics, with a drill down view by sector and geography.

It also provides a deep dive of physical Risk assessment at region level for economic activities and collaterals.

5 Mitigation

Policies are a key element in mitigating risks. We have updated our environmental, social and climate change (ESCC) risk management policy, which sets out our public commitments and aims to support our strategy for sensitive, special-attention and prohibited activities. Along with the ESCC risk management policy, Grupo Santander has various internal policies, frameworks and procedures in place for integrating climate and environment risks into our core risk management processes.

Apart from our policies, frameworks and/or procedures, we have other mitigating levers:

- **Credit committees**, which embed environmental, social and climate change factors in transaction review.
- CIB customer ratings consider environmental, social and climate change **qualitative assessments** for climate sectors.
- Special **pricing** for green products.
- **Collateral management** considers environmental and climate change factors based on locations and energy performance certificates (EPCs), wherever they are applied.
- **Specific procedures** to analyse environmental, social and climate change risk. The board and its committees verify that decisions are made according to our policy on environmental, social climate change, and reputational risks. The first line of defence runs due diligence with special questionnaires for credit approval. Reputational risk assessment is also included for the decision making to help compliance and prevent the risk of perceived inconsistencies, with special focus on greenwashing. In due diligence, CIB's project finance transactions are evaluated according to the Equator Principles (further detail in the next page).
- **Customer engagement** for the most relevant sectors that emerge from the materiality assessment. It allows us to accompany customers in their transition to a more sustainable economy, offering them tailor-made solutions and generating business opportunities. Interacting with customers gives us access to obtain data related to ESG risks that are useful for internal risk management and/or reporting. Obtaining and cross-checking data directly from our customers is one way to mitigate ESG risks, including greenwashing.
- **ESG panels** for the classification of products, services and transactions under sustainability criteria, which are fully aligned with SFICS (Sustainable Finance and Investment Classification System). Further details below.
- **Multi-disciplinary working group on ESG controversies**, coordinated by the Reputational risk function and where any matter that may have a reputational impact derived from said controversies is escalated. We pay special attention to any controversy about our highly sensitive initiatives and liability implications as an intermediary in several value chains. Any significant threat to the Group is escalated to senior management in accordance with established governance so that proper mitigating measures can be taken.
- Finally, Santander considers **insurance** as another key mitigant in climate risk management. We continue to adapt our use of insurance to changes in the risk environment.

ESG Panels

During 2023 a great effort has been made to broaden and strengthen the process for the identification of sustainable activities.

Several panels of ESG experts were put in place to analyse and challenge the proposed classification under sustainability criteria for Corporate and Commercial Banking customers' transactions, services and products. In particular, the experts identify the different sustainable activities, search for the most adequate evidence and perform analysis of ESG related risks for the transactions. The panels ensure the adequate technical skills to perform the analysis and homogeneous and consistent criteria across the Group and act as a strong lever to mitigate greenwashing.

6 Reporting

Transparent and regular reports to senior managers and stakeholders help us manage climate and environmental factors, and seek to be aligned with regulatory requirements and supervisory expectations. The board is fully apprised according to the established governance.

We are continuously working on the completeness and consistency of the information made available to the various stakeholders. It enables Santander's strategy and management in terms of sustainability to be conveyed, thereby mitigating some of the potential risks.

Our reporting on climate and environmental risk management includes our Annual Report, the Climate Finance Report, the ICAAP exercise, and our Pillar III disclosures report mainly.

Equator Principles

Equator Principles (EP) is a voluntary framework for financial institutions to identify, assess, and manage environmental and social risks when financing projects. We have been applying these principles to project-related transactions (especially project finance) since 2009.

The Group has an internal procedure to manage the environmental and social (E&S) risks of project-related transactions. This procedure guides the application of the EP. The assessment of transactions that potentially require application of EP starts with a Preliminary Assessment conducted by Front Office. The ESCC Risk Global function sits at CIB, reporting directly to Global Head of CIB Risk. ESCC Risk oversees Front Office´s Preliminary Assessment; also providing training and ad-hoc support to Front Office. Based on the conclusions of the Preliminary Assessment, an environmental and social risk review is conducted for applicable transactions, according to the following guidelines:

- For Category C[1] projects, the Preliminary Assessment is considered sufficient.
- For Category B[2] projects in designated countries, Front Office is required to complete a Due Diligence Questionnaire, which includes the results of the E&S risk analysis. ESCC Risk function provides guidance during the process.
- For Category A[3] and Category B projects that include any potentially high-risk factor or are located in non-designated countries, ESCC Risk leads the E&S Due Diligence process and prepares an E&S risk analysis report.

The findings of the E&S assessment form part of the application for financing that is submitted to the risk approval committees before a decision is made.

We also use other E&S policies, procedures and rules when deciding to grant project financing or project-related business loans.

For additional information on the project we analysed in 2023, see table 8.7 'Equator Principles in our Annual report.

1. Category C – Projects with minimal or no adverse environmental and social risks and/or impacts.
2. Category B – Projects with potential limited adverse environmental and social risks and/or impacts that are few in number, generally site-specific, largely reversible and readily addressed through mitigation measures.
3. Category A – Projects with potential significant adverse environmental and social risks and/or impacts that are diverse, irreversible or unprecedented.

Tackling environmental crime

The Financial Crime Compliance Function at Santander understands the importance of recognizing that “behind every environmental crime there is a financial network”, not only because of the large sources of revenue that organized crime draws from these activities, but because crimes like illegal deforestation have a significant impact on climate change. Industries we consider “restricted” due to exposure to environmental crime risk include (but are not limited to) logging, pulp and paper mills, palm plantations, commercial fishing, trapping and transport of live animals and waste management. Given their “restricted” status, Santander entities that provide services to companies in those industries must respond to their elevated financial crime risk by implementing enhanced controls.

Furthermore, our customer screening tools include specific terms on environmental crimes to help us flag issues and conduct assessments, and our global and in-person senior management training includes environmental crime case studies and trends.

We also engage in various public-private partnerships as part of our commitment to detecting, disrupting and deterring environmental crime.

Since late 2021, our Head of Financial Crime Compliance Framework & Policies has chaired the United Nations Office on Drugs and Crime’s (UNODC) private sector dialogue on the disruption of financial crimes related to forestry crimes.

In 2023 this initiative expanded to cover all environmental crime. The Dialogue is an extension of the report published in 2021 by the Financial Action Task Force (FATF) "Money Laundering from Environmental Crime", to which the Santander Financial Crime Compliance Function provided subject-matter expert support and served as the private sector representative in the FATF’s online awareness campaign.

The Dialogue brings together financial institutions, law enforcement, civil society and supranational governmental bodies to discuss intelligence sharing, typologies and policy strategies on disrupting the financial crime networks behind all crimes against nature. Santander has used this platform and role as chair to share typologies with the Dialogue’s members on detecting suspicious activity related to environmental crime, including innovative methods using satellite imagery, as well as demonstrate the synergies within the banking sector on ESG and anti-money laundering controls.

The Dialogue includes comparative approaches to tackling environmental crime across Southeast Asia, Latin America and Africa.

The Santander Financial Crime Compliance Function also continues to provide subject-matter expert input to related studies on the connection between illegal deforestation and financial crime, including for instance the report funded by the European Union, Wildlife Money Trails: Building Financial Investigations from Wildlife and Timber Trafficking Cases in the European Union (published by WWF Belgium and Traffic as part of the UNITE project, which is an EU-funded initiative aimed at disrupting “criminals and organized crime networks trafficking in wildlife, timber, and waste in the EU”).

Santander also continues to participate in United for Wildlife’s Financial Task Force against the illegal wildlife trade, including as a speaker for the launch of the Latin America chapter in July 2023 in Colombia, and as an advisor to the recently created Nature Crime Alliance, supported by US State Department, World Resources Institute, Norway's International Climate and Forest Initiative, and the UNODC.

Our approach to nature and biodiversity

According to the World Economic Forum, more than half of the world's economic output is highly or moderately dependent on nature and biodiversity. Biodiversity underpins the provision of natural assets on which the economy relies, entailing financial risks that the Group understands it must manage. At the same time, biodiversity brings many business opportunities that are consistent with the Group's strategy and values, and the conservation of nature.

Aligned with target 15 of the Global Biodiversity Framework adopted at COP15 in 2023, we conducted a biodiversity and nature impact and dependencies assessment to identify interactions between business and nature forms, enabling us to understand how the drivers of biodiversity loss relate to our customers' business.

The Group leverages on the Task force on Nature-related Financial Disclosures (TNFD) guidance and its LEAP[1] approach to draw an internal methodology to assess nature and biodiversity implications.

The methodology is based on some of the major tools such as Exploring Natural Capital Opportunities, Risks and Exposure[2] (ENCORE) and the Science Based Targets Network's (SBTN) sectoral materiality tool. Both use a scoring methodology to assess impact and dependencies. Additionally, a location component is included through a scoring system based on the ENCORE hotspots of depletion maps, for the main countries where our customer's headquarters are located.

The methodology estimates impact and dependency with a quantitative score at sub-sector level. We have analysed several nature-related pressure categories defined by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) (terrestrial ecosystem use, soil pollutants, solid waste, freshwater ecosystem use, water use, water pollutants, non-GHG air pollutants, biological alterations, disturbances, and resource use) and grouped them into three overarching categories / natural capital assets - Soil and Sediments, Water, and Biodiversity

The score also considers the country rating regarding the risk of depletion of these three natural capital assets. Once these scores have been estimated they are combined to determine the final soil and sediments, water and biodiversity scores for each combination:

- Sectoral country-dependent impact:
  - → On soil and sediments
  - → On water
  - → On biodiversity

- Sectoral country-dependent dependency:
  - → On soil and sediments
  - → On water
  - → On biodiversity

Based on the results, we carried out a prioritization exercise to assess certain sub-sectors (at NACE level-4), through in-depth analysis.

This exercise enabled us to identify possible alternatives to address the impacts and dependencies of the Group's corporate lending portfolio, and it will serve as one of the potential baseline inputs to consider when further shaping the Group's approach towards nature and biodiversity.

Following TNFD technical guidance, we use a 'heatmap' approach to aggregate both the nature-related dependencies (physical risk) and impacts (transition risk) of the portfolio.

We continue to monitor and engage with working groups that draw up future regulatory and market standards in nature and biodiversity disclosure, such as the TNFD Forum, PRB Biodiversity community, and Banking Environmental Initiative (BEI).

Biodiversity and nature aspects embedded in our ESCC Risk management policy

Santander integrates biodiversity conservation measures into financing and investment policies. Our global environmental, social and climate change (ESCC) risk policy dictates prohibited activities that Santander will not directly invest in and/or provide financial products and/or services to regarding biodiversity issues:

- Any projects or activities for oil & gas extraction, power generation or transmission, mining, manufacturing, plantations or other major infrastructure projects which put areas classified as Ramsar Sites[3], World Heritage Sites[4] or by the International Union for Conservation of Nature[5] (IUCN) as categories I, II, III or IV at risk.
- Any projects, or expansion of existing oil and gas facilities, north of the Arctic Circle.
- Extraction of native tropical wood species not certified by the Forest Stewardship Council (FSC).
- Palm oil processors that are not members of the Roundtable on Sustainable Palm Oil (RSPO).
- Developments in forested peatlands in High Risk Geographies.

We also conduct annual reviews of our customers and pay particular attention to potential deforestation risk with agribusiness customers in the Amazon biome as our global ESCC risk management policy sets out, among other activities, we shine the spotlight on environmental, social and climate change risks.

See our Environmental, Social and Climate Change risk management on our corporate website **www.santander.com.**

1. Locate, Evaluate, Assess and Prepare
2. Tool developed by the Natural Capital Finance Alliance in partnership with UNEP-WCMC to help global banks, investors and insurance firms assess the risks that environmental degradation, such as the pollution of oceans or destruction of forests, causes for financial institutions.
3. The Convention on Wetlands, called the Ramsar Convention, is the intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources
4. World Heritage Sites: http://whc.unesco.org/en/list
5. The International Union for Conservation of Nature (IUCN) classifies protected areas according to their environmental management objectives: Category I: Nature Reserve and Wilderness Areas, Category II: National Park, Category III: Natural Monument or Feature, Category IV: Habitat/Species Management Area

Some of our biodiversity protection initiatives

→ Santander joined forces with five other major shareholders to create Biomas, a company that aims to plant two billion native trees to protect and restore four million hectares in Brazil over the next 20 years and to reduce around 900 million tonnes of CO_2e from the atmosphere. In its first full year of operation, Biomas obtained all regulatory authorizations, assembled its team and governance, and selected three pilot regions and partners to begin operations in the field, which will begin in 2024 in the Atlantic Forest and Amazon regions.

→ Santander España will finance three new Santander forests stretching over 300 hectares, offsetting 82,000 tons of CO_2e, through the Motor Verde initiative. In May 2023, we received certification from the OECC (Spain's Climate Change Office, the certifying body of Spain's Ministry for the Ecological Transition and Demographic Challenge) for the first Bosque Santander (Santander forest) in Caminomorisco (Extremadura). At the end of 2023, reforestation work also began at the second Bosque Santander in Torga (Asturias).

→ In the final year of Santander UK's partnership with National Parks UK, we have helped develop the Lake District Nature Financing Platform with Revere. This platform, brought to life in collaboration with local landowners and the National Park Authority, will secure private finance to fund the creation of nature-based solutions that will improve water quality in lakes and rivers, enhance biodiversity, and build natural climate resilience. This builds on a project that Santander UK funded in 2021 to restore over 200 hectares of peatland in the Cairngorms National Park as part of the Net Zero with Nature initiative.

→ In 2019, Banco Santander launched Santander Natura, a volunteer programme to conserve the environment and raise awareness of climate change. In 2023, it ran nine activities in several regions of Spain. They included cleaning beaches and wetlands, planting trees, and collecting waste.

→ Since 2021, Santander México has been issuing "LikeU" cards to help our customers contribute to six social and environmental causes. The bank donates resources per card issued, regardless of the customer's donation. One of these causes supports reforestation in partnership with Reforestamos México, which has been working in the country for 19 years. The other environmental partnership is with WWF Mexico, focusing o the removal of ghost fishing gear in Mexican coasts.

Santander and the Brazilian Amazon

Santander promotes the protection of the Brazilian Amazon rainforest and sustainable development, which is critical to tackling climate change and conserving biodiversity. We need economic growth, but it must be green.

For decades, deforestation has been destroying the Amazon in Brazil. While logging, mining and large infrastructure projects in the region have all played a role, agriculture, cattle ranching, property speculation and a lack of clear land titles are key drivers.

In line with Santander's global ESCC Risk management policy and our commitment to the Equator Principles, we are taking extra care when lending to customers in Brazil with operations in the Amazon.

Santander's approach to the Brazilian Amazon

We've been working with our customers to promote sustainable development in the Amazon for years. In 2002, Santander became the first private-sector bank in Brazil to run credit analysis on environmental and social risk. In 2016, we were the first bank to formally incorporate a sustainability score into our corporate customers' credit rating. We also:

- check all farmers and ranchers (not just those in the Amazon) applying for loans for embargoes issued by the government because of illegal deforestation, not only on the property financed but also on nearby properties.
- make sure their properties do not encroach on government-protected indigenous land.
- conduct annual ESG reviews of more than 2,000 customers in all Brazil, including beef processors, soy traders and logging companies.

In addition to the Plano Amazônia coalition, we have cooperated with Brazil's banking federation, Febraban, in setting best practices for the financing of the beef sector so that it does not contribute to deforestation (see below for details).

Farmers and ranchers

We work with a satellite-imaging firm that monitors some 12,000 properties that we finance or take as collateral. We receive daily information on government embargoes against production on illegally deforested land; modern slavery; and incursions into government-protected indigenous land, parks and conservation areas.

Since Q1 2022, we've been running daily checks for recent deforestation on farms and ranches we have lent to (throughout the entire loan term), even before the government has imposed fines.

If we spot any issues, we request an explanation from the customer. If we uncover a material breach of environmental laws and regulations, our standard contracts dictate that we can demand the early repayment of loans.

Santander also uses Internet-based satellite-imaging tools Global Forest Watch and MapBiomas to see the detailed loss of tree cover on customers' farms and ranches over time.

Working with others to stop deforestation

Santander is working with customers, governments, regulators, and NGOs, to help end illegal deforestation.

In addition to the Plano Amazônia coalition (see next page), we have cooperated with Brazil's banking federation, Febraban, in setting best practices in a protocol for the financing of the beef sector so that it does not contribute to deforestation.

Santander Brasil is a member of Febraban's committee on forestry and agribusiness. In March 2023, Febraban approved a protocol that set the standards for managing the risk of illegal deforestation in the bovine meat chain and defined guidelines to be adopted by its signatories. This is a major step forward as it is the first sector-wide protocol for financing beef processing. Since it will apply to every major bank in Brazil, it is considered a highly effective way of effecting sustainable change and addressing deforestation.

By signing the protocol, Santander has aligned its commitment with that of the Brazilian financial industry to require beef processing customers with slaughterhouses in the Brazilian Legal Amazon region to end illegal deforestation by December 2025 from direct suppliers of cattle and Tier 1[1] indirect suppliers. Under this requirement, suppliers must meet mid-term milestones, which are having a traceability and monitoring system, and continuously disclosing KPIs to demonstrate that they are meeting their commitments.

In 2021, well before the publication of the Febraban protocol, Santander Brasil began engaging with more than a dozen beef processing customers about ending deforestation in their supply chain by 2025. This engagement led to several of them declaring commitments online in 2022 and developing plans to check on Tier 1 indirect suppliers and, under Plano Amazônia (see next page for further detail), drove Santander to work with other banks to come up with the Febraban protocol.

Santander Brasil takes part in two other external initiatives that propose solutions to stop deforestation. We were a founder of the Roundtable on Responsible Soy (RTRS), and chaired it from 2006 to 2009. The bank also founded the Brazilian Roundtable on Sustainable Livestock (GTPS, in Portuguese), a multi-stakeholder initiative to promote better ranching practices in Brazil.

More details on Santander and the Brazilian Amazon.

1. Tier 1 indirect supplier: supplier of the direct supplier.

Environmental and social reviews of companies

Santander analyses ESCC risks for corporate customers across the whole of Brazil (not just in the Amazon) to determine if they comply with the law and employ best practices. In the past decade, Santander Brasil has conducted annual reviews on some 2,000 corporate customer groups. Today, these reviews cover Brazilian corporate customers with activities in almost all of the sectors listed by the TCFD in energy, transportation, materials and buildings, and agriculture, food and forest products. The procedure starts with a standardized public questionnaire sent to the customers that is reviewed by a team of ESCC Risk specialists together with information gathered on the internet, in the form of government permits, fines, embargoes, lawsuits and contaminated land registries, and well as news reports. Analysis may include additional questioning. At the end of the analysis, the ESCC risk specialist compiles a report with a score from 1 to 5 that covers environmental, social and climate factors separately including aspects such as water stress, climate resilience, contaminated land, human rights, environmental fines and checks on suppliers. We have additional procedures for customers in mining, sugar and beef production.

Plano Amazônia

In July 2020, Santander Brasil announced “Plano Amazônia”, an alliance with the two other largest private sector banks in Brazil to promote sustainable development in the Amazon.

Three years on from the creation of the Plano Amazônia, we assessed the progress, challenges and lessons learned, which led us to restructure the 10 measures initially set out under three strategic objectives:

→ Forest Conservation: advance monitoring, traceability, conservation, regeneration and good practices in production chains that reduce deforestation pressure and contribute to low-carbon agriculture;

→ Promotion of the Bioeconomy: foster a business ecosystem favourable to the development of the forest bioeconomy, contributing to entrepreneurial education, emergence and growth of innovative businesses, the development of markets and technical-scientific knowledge;

→ Access to Connectivity: support projects and initiatives to expand internet access for populations in the Amazon, contributing to increased-connectivity and facilitating access to health services, education, territorial protection, and entrepreneurship.

We have projects for each new strategic objective:

In ‘Forest Conservation’, we shared with Febraban the lessons learned from implementing the document of good practices in the meat supply chain sector, which engaged Febraban in the creation of a self-regulatory standard that limits the granting of credit to meat-packing industries that have illegal deforestation in their supply chain. The regulation applies to 22 banks in Brazil, which will now comply with common minimum requirements to combat illegal deforestation in the Legal Amazon and Maranhão.

Regarding ‘Promoting the Bioeconomy’[1], the Jornada Amazônia Platform progressed as planned, with five announcements to launch the training of 529 people, the selection of 71 startups for the pre-acceleration cycle and 22 startups for the acceleration cycle. The first phase of the micro-corporate venture capital program was launched, with 8 startups pre-selected for the acceleration cycle, with the possibility of investment up to BRL 3 million.

In 2023, Santander supported the Instituto Povos da Floresta (Forest People Institute) to provide fast and quality internet service for around 4,000 remote communities in the Amazon by 2025. Our support enabled a pilot project involving 30 communities to test the use of the Starlink service, as well as photovoltaic panels and battery kits.

Connectivity will enable access to several services, such as telemedicine, education, productive inclusion, and environmental control. 300 communities now have access to the Internet, with 7,450 registered users and 23,000 beneficiaries.

1. Figures of this initiative have been updated since information disclosed in 2023 Annual Report due to new available information disclosed by Certi Foundation.

Sustainable Innovation

In 2023, Santander Brasil created the Sustainable Innovation area to carry out scalable innovative operations in emerging technologies and businesses, provide sustainable funding and perform actions that position the bank as a leader in innovative sustainable finance. We identified 12 priority segments in the forest bioeconomy, transport, low-carbon agriculture and renewable energy sectors with high market potential.

To scale innovative businesses and accelerate customer transitions, we signed a EUR 300 million loan with the European Investment Bank (EIB) to support the installation of a series of small-scale self-consumption solar PV plants, predominantly rooftop, in Brazil, for a total capacity of around 600 MWp; and USD 50 M loan with the Latin America Development Bank (CAF) for electric and hybrid vehicles.

Through strategic alliances, such as Alliance for Sustainable Mobility, we signed a deal that entailed one of the largest fleets of electric cars in Brazil. This included the acquisition of 300 BYD electric cars that will make up the fleet of 99 drivers via Dahruj (rental car company). Regarding Innovative Finance for the Amazon, Cerrado and Chaco (IFACC), we issued two financial structures in 2023 that work as revolving credit facilities.

A green CRA (Agribusiness Receivables Certificate) launched with Grupo Gaia, Conexsus, Belterra, Vale Fund and the Good Energies Foundation to worth BRL 17 million which seeks to provide credit aimed at agroforestry and non-timber forest product cooperatives and eco-businesses in five biomes in Brazil, with a strong presence in the Amazon. The certificate will provide working capital for 22 community-led businesses such as cocoa, bananas and cassava and will benefit around 4,500 producers that don't have access to traditional credit lines. It uses a blended finance model which allows credit takers to access cheaper capital to improve their production practices. This is the first structure of this kind that the bank has created focused on the Amazon bioeconomy.

And a second green CRA worth USD 47.24 million, together with Rabobank, the AGRI3 fund and British retailers Tesco, Sainsbury's and Waitrose for the Responsible Commodities Facility (RCF) initiative, with the aim to produce deforestation-free soy in the Cerrado, following IFACC socio-environmental criteria. This financial innovation won the Environment Finance Impact Awards 2023 as the Impact Initiative from the Year - Latin America and Caribbean.

In Retail, we work with Santander Auto Consumer Finance to foster electromobility through our auto ecosystem:

- 50% discount for electrified vehicle ads on Webmotors.
- 15% discount on financing electrified vehicles through our Auto Consumer Finance.
- Service package (maintenance, car repair services, washing, recharging) for 99 drivers through Car10, a Webmotors company.
- Solution4Fleet services and software to manage rental car companies' electric vehicle fleets.
- Launch of the Santander Prize on Sustainable Mobility and Innovation, to recognize store owners and partner dealerships with good ESG practices.

Some of the initiatives we have joined in Brazil

To reinforce the bank's positioning and leverage the potential of initiatives, we joined 3 business alliances, in addition to IFACC (joined in 2022):

Alliance for Sustainable Mobility
Created by Group Didi-99, the objective of the alliance is to strengthen the light vehicle electrification ecosystem in Brazil, covering everything from car production, through the installation of charging infrastructure, to financial solutions for fleet electrification.

Brazil NBS Investment Collaborative
Created by Capital for Climate, the alliance was created to accelerate the large-scale implementation of nature based solutions in Brazil.

Amazon Finance Network
Launched at COP28 by IDB Invest and International Finance Corporation (IFC), an alliance that bring together 18 financial institutions from 9 countries for increasing investment flows, mobilizing capital, sharing knowledge on innovative financial solutions, and generating synergies with the public sector, with the goal of generating sustainable impact across the Amazon region.

5. Metrics and targets

To reach net zero in carbon emissions by 2050, our initial focus has been on the most material sectors and lending, which is our most material financial activity.

We disclose scope 1, 2 and 3 emissions performance data and other climate relevant metrics (e.g., energy consumption). We report on our renewable electricity[1] and carbon neutrality in our own operations[2] targets. We also began to disclose scope 3 financed emissions (category 15) in 2021, in relation to our decarbonization commitments.

Portfolio alignment

We joined the UN Collective Commitment to Climate Action (CCCA) when it launched in September 2019. We announced our ambition to achieve net zero carbon emissions by 2050 in February 2021, which was already stated in the 2020 Annual Report. We're a founding member of the UNEP FI Net Zero Banking Alliance (NZBA) as a key initiative to help us drive progress with our net zero ambition.

We use internal methodologies that take input and recommendations from the NZBA guidelines, the PCAF standard, GFANZ (Glasgow Financial Alliance for Net Zero) publications, SBTi (Science Based Targets initiative) and other standards. We also use external data and models from third parties with recognized market reputation/expertise. We rely on financial information from our customers (e.g., total equity and total debt), as well as non-financial information (e.g., GHG emissions, production data, and physical emissions intensities).

Alignment strategy

- Assess emissions/ baseline
- Analyse portfolio momentum
- Set targets and plans
- Engage with customers and assess landscape
- Activate decarbonization levers

Though the non-financial information required is becoming more available as more companies begin to report GHG emissions, it still falls short in certain sectors and regions. Where available, such metrics may not be timely or fully accurate. If no public emissions data exist, we estimate them based on a proxy (average emissions by industry, country, etc.). Once we can quantify our customers' total emissions, we would be able to apply our attribution factor in line with the PCAF[3] approach to determine Santander's financed emissions.

Decarbonization targets

As part of our ambition to reach net zero carbon emissions by 2050, we prioritize the high-emitting sectors (which also bear high and very high transition risk according to our climate materiality) to which we have a material exposure and must act now to support the transition to a low-carbon economy.

In 2021 and 2022 we set targets for the wholesale segment in the power generation, thermal coal, energy (oil & gas), aviation and steel portfolios. In 2023, we focused on the automotive sector from two perspectives: auto manufacturing (wholesale segment) and auto lending (consumer lending for the acquisition of passenger cars in Europe).

Under our current assessment of NZBA sectors[4], aluminium, cement and shipping are not deemed material. Therefore, we are not setting targets for these sectors.

Within the NZBA sectors, we are also making headway with analysing, measuring and acting to help decarbonize other climate-related sectors such as agriculture, mortgages and commercial real estate, which are key in the retail segments. The climate performance dynamics of these sectors are heavily dependent on their policy and regulatory landscape. There is currently a lack of public policies, actions and specific plans and measures at the level the changes require for a net zero pathway. We continue to work with customers in these sectors on their decarbonization efforts and internal monitoring of their performance; but we refrain from setting public targets until the policy and regulatory landscape is sufficiently clear and coherent, and supportive.

We have been constructively sharing our understanding and experience of these policy gaps with authorities, as well as other sectors, and plan to keep doing so. Given our footprint, we see markedly different policy landscapes in the regions where we operate.

Our aim is to help our customers transition and contribute to their decarbonization, while understanding the constraints and limitations they may face in different jurisdictions and the gaps that make setting targets in certain sectors unfeasible. Weighting the E, the S and the G appropriately across our strategy is key to avoid undermining other ESG goals, while we pursue tackling climate change. The transition must be just and orderly.

In the 2023 annual report, we published two additional decarbonization targets for the automotive sector. These targets focus on the most important sources of emissions in the auto sector value chain: (i) emissions from cars produced by global manufacturers (scope 3 - use of sold products); and (ii) emissions from cars financed in Europe to end-users, plus grid emissions (in line with PCAF guidelines) in Europe. Achieving these targets relies heavily on public policies, build-up of EV-infrastructure (e.g., charging points), and consumer behaviour in key auto markets. In addition, we published the financed emissions of two key Group portfolios, mortgages in the United Kingdom and agriculture in Brazil, and progress on the alignment of these portfolios.

1. In countries where we can verify electricity from renewable sources at Banco Santander properties. It considers the 10 main countries in which we operate.
2. Scope 1 and 2 emissions and scope 3 emissions from employee commuting and business travel. It considers wholly owned companies in Argentina, Brazil, Chile, Germany, Mexico, Poland, Portugal, Spain, the United Kingdom and the United States.
3. PCAF: "Partnership for Carbon Accounting Financials" is a global partnership of financial institutions that work together to develop and implement a harmonized approach to assess and disclose the greenhouse gas (GHG) emissions associated with their loans and investments. Santander joined PCAF in 2021.
4. The NZBA guidelines consider these sectors: agriculture; aluminium; cement; coal; commercial and residential real estate; iron and steel; oil and gas; power generation; and transport.

Emissions accounting and science-based decarbonization target methodologies are still relatively new areas that are improving quickly to meet climate ambitions. Though Santander is using the most up-to-date and widely accepted methodologies to decarbonize our portfolios, more methodologies need to be developed so that all financial institutions have the right tools to effect positive change in the economy.

In setting our sector net zero targets, we aim to follow the NZBA Guidelines for Climate Target Setting. According to the PCAF 's global GHG accounting and reporting standard, we assess the financed emissions based on on-balance credit exposure.
Our decarbonization targets and plans are set for the most relevant part of each sectoral value chain, focusing on the most carbon-intensive parts that are also more "actionable", considering availability of quality data and market practices.

Decarbonization targets

Sector	Scenario	Metric	Baseline	2020	2021	2030 targets	Scope of emissions	Value chain in scope		
Power generation	IEA Net Zero 2050	tCO_2e/MWh	0.21 (2019 baseline year)	0.17	0.19	0.11 (-46%)	1	Upstream / Generation	Midstream / Distribution	Downstream / End product
Energy (oil & gas)		$mtCO_2e$	23.84 (2019 baseline year)	22.58	27.43	16.98 (-29%)	1 + 2 + 3[A]	Integrated / Diversified Upstream / Extraction	Midstream / Distribution	Downstream / Trading
Aviation		gCO_2e/RPK	92.47 (2019 baseline year)	93.05	97.21	61.71 (-33%)	1 + 2	Upstream / Suppliers	Midstream / Manufacturing	Downstream / Airliners
Steel		tCO_2e/tS	1.58 (2019 baseline year)	1.40	1.36	1.07 (-32%)	1 + 2	Upstream / Materials extraction	Manufacturing	Downstream / End product
Auto manufacturing		gCO_2/vkm	149 (2020 baseline year)	149	138	103 (-31%)[B]	3[A]	Upstream / Suppliers-Materials	Midstream / Manufacturing	Midstream / Dealers
Auto lending Europe		gCO_2e/vkm	137 (2022 baseline year)	N/A	N/A	75-89 (-35-45%)	1 + 2			Downstream / End-users
Thermal coal	Phase-out targets to eliminate exposure by 2030 to power generation customers with a revenue dependency on coal of over 10% and thermal coal mining									

Details on targets' scope are available in the following pages.

We have analysed the NZBA sectors and we have set decarbonization targets for the highest emitting sectors. For the sectors heavily dependent on further regulation to decarbonize, and where most of the customers are retail, we work on internal decarbonization plans and engage with policymakers. Some sectors are deemed not material for Santander (Aluminium, Cement and Shipping).

Decarbonization plans

Sector	Absolute emissions (2022)	Scope of emissions	Value chain in scope		
Commercial Real Estate	N/A	1 + 2	Upstream / Suppliers	Midstream / Construction	Downstream / Owners
Mortgages	2.63 $mtCO_2e$ [C]	1 + 2	Upstream / Suppliers	Midstream / Construction	Downstream / Homeowners
Agriculture	6.20 $mtCO_2e$ [D]	1 + 2	Upstream / Suppliers	Midstream / On Farm	Downstream / End product

Details on our progress on decarbonization plans are available in the following pages.

Part of the sector value chain in-scope, due emissions materiality and/or actionability

Part of the sector value chain out of scope

[A] Use of sold products
[B] Target reduction is -25% vs. 2021 reference
[C] Financed emissions of the UK mortgage portfolio as of December 2022
[D] Financed emissions of the Brazil agriculture portfolio as of March 2022

Choice of target types: To help our customers' transition to a low-carbon economy we find physical emissions intensity the most useful metric for setting targets in the power generation, steel, aviation and auto sectors. For the energy (oil & gas) sector we choose the absolute emissions metric as the most credible towards a net zero pathway. See more details about our position on the energy (oil & gas) sector in the following pages. We prioritize engagement over divestment.

Scenario: To set science-based decarbonization targets for our financed sectors, we choose a credible scenario that draws a pathway to reach net zero emissions by 2050 and will limit temperature increase to 1.5º C. The scenario we have chosen for the sectors for which we have released decarbonization targets is the "International Energy Agency - Net Zero Emissions by 2050 Scenario" (IEA-NZE). Our aviation target is aligned with the expected adoption of current technologies.

Target coverage[1]**:** We're including the on-balance exposure of our wholesale business in the power generation, steel, aviation and auto manufacturing targets because it represents the significant majority of the wholesale credit exposure to all concerning sectors, according to our climate materiality. We also include the on-balance exposure of in-scope business of auto lending in Europe, including leasing.

Financed emissions: In line with the methodology and design we chose, based on PCAF[2], the most recent financed emissions metrics are:

Sector	Year	Lending exposure[A] (drawn amount EUR bn)	Absolute emissions ($mtCO_2e$)	Physical emissions intensity		Financial emissions intensity ($mtCO_2e$/EUR bn lent)	Overall PCAF score[B]
Power generation	2021	10.23	4.24	0.19	tCO_2e/MWh	0.41	2.8
Energy (oil & gas)	2021	8.25	27.43	74.36	tCO_2e/TJ	3.33	3.9
Aviation	2021	2.02	0.84	97.21	gCO_2e/RPK	0.42	3.2
Steel	2021	1.42	1.90	1.36	tCO_2e/tS	1.33	3.1
Auto manufacturing	2021	3.90	2.67	138	gCO_2/vkm	0.68	3.0
Auto lending Europe	2022	55.27	5.84	137	gCO_2e/vkm	0.11	3.2

A. Exposures are based on design choice for target setting for each sector (see explanations above). They might differ from exposures cited in previous chapters, which are based on risk management criteria and include guarantees, undrawn lines of credit and derivatives. These amounts exclude any exposure to Corporates or Project Finance with insufficient data or under construction.
B. Obtaining emissions data from our customers is a challenge. As they disclose more non-financial information worldwide, the quality of our reporting on financed emissions will improve. The PCAF scores illustrate the data quality used to calculate the financed emissions (with 1 being the best). Financed emissions information relies on a wide range of sources for emissions, physical intensities and production data. Trucost and CDP are the main sources for fossil fuels emission and production. Asset Resolution and annual reports filings have been used as secondary sources in order to cover information gaps. As a third option, the Transition Pathway Initiative is used for gathering physical emissions intensity for certain sectors,

1. From our total lending on the balance sheet, about 8% of our exposure are from sectors for which Santander published emissions decarbonization targets for high-emitting sectors (power generation, energy (oil and gas), aviation, steel, auto manufacturing and auto lending) and around 17.8% of total SCIB lending. Using baselines exposures with different time horizons as per above table, and balance sheet exposures as of December 2022.
2. PCAF: "Partnership for Carbon Accounting Financials" is a global partnership of financial institutions that work together to develop and implement a harmonized approach to assess and disclose the greenhouse gas (GHG) emissions associated with their loans and investments. Santander joined PCAF in 2021.

Roadmap for delivery on net zero

- Our materiality assessment of physical and transition risks enables us to focus on high GHG emission intensity sectors and begin developing specific decarbonization strategies for sectors defined within NZBA, and material for Santander.
- We monitor and review our targets, as new methodologies and more precise and timely information become available in the market.
- As part of our transition plan, for 2024 we will be incorporating portfolios, additional to those already working on targets and decarbonization plans so as to continue mapping relevant portfolios in terms of financed emissions, as an initial step towards developing future decarbonization plans and/or targets.

Overall and in line with GFANZ approach, we consider the following approaches to be supportive of enabling the real economy's net zero transition: financing or enabling the development and scaling of climate solutions to replace high emitting technologies or services, including the responsibly managed phase-out of high emitting physical assets; financing or supporting companies that are already aligned to a 1.5ºC pathway; and financing or supporting the transition of real economy firms according to transparent and robust net-zero transition plans in line with 1.5ºC aligned sectoral pathways.

CIB implementation strategy

As first set out in our 2020-2021 climate finance report, our implementation strategy involves several levers to help us achieve our sectoral financed emissions targets. These levers include customer engagement; dedicated portfolio steering governance; data collection as part of the risk analysis process; and exclusion policy reviews.

One key element of our implementation strategy is the customer climate tiering approach, which we detail further in this section. The outcome of the customer climate tiering approach is an assessment of our customers' current and expected progress to align with our net zero sector objectives. During the past year we have implemented this approach for additional sectors beyond Power, where targets have been set (Energy – oil & gas, Steel, Aviation), and adapted where necessary to account for sector differences. In 2024, we will do the same for the Automotive sector. We plan to review the climate tiering assessment on an annual basis, to ensure assessments reflect our customers' progress.

Our approach aims to facilitate the achievement of our emissions targets and to develop a strong understanding of our customers' transition strategies towards low-carbon business models. This approach is supported by governance processes, involving various internal stakeholders, such as front office teams, risk reporting functions, and senior management to guide the potential portfolio steering actions (see Portfolio Steering section below for further details). It is structured around four main steps: Collect, Assess, Engage and Review. We have used various internationally recognized references, and the Cambridge Institute for Sustainability Leadership (CISL) "Let's Discuss Climate" guide as inputs and adapted them to our requirements and objectives.

Collect

We collect relevant information as part of regular customer dialogue and engagement. In addition, we source specific climate related information through tailored requests that contain transition-focused elements designed to help us better understand companies' decarbonization strategies. Furthermore, we also seek to source reliable and consistent information from credible third parties to complement our understanding.

This information will be collected and updated both at the customer onboarding stage, and as part of the regular business and risk assessment review with each customer, which is performed at least once a year.

Assess

Our assessment consists of a two-step approach designed to categorize our customers according to their emissions pathway and perceived quality of their transition strategy.

The first step involves assessing how our customers' emissions trajectory aligns with our current sectoral portfolio baseline and future sectoral portfolio targets. The second step assesses the quality of each customer's transition plan. Our transition plan assessment methodology focuses on four pillars: Targets, Action Plan, Disclosure and Governance. We draw on established transition plan assessment methodologies, such as TPI (Transition Pathway Initiative), CDP, ACT (Assessing Low Carbon Transition), Climate Action 100+, TCFD, as well as other related initiatives including the UK's Transition Plan Taskforce (TPT).

The "Targets" assessment pillar focuses on the quality and ambition of the customer's quantitative GHG emissions targets. Where possible, we assess short- and long-term, as well as absolute and intensity reduction targets.

The "Action Plan" assessment pillar considers the credibility of the customer's decarbonization strategy. We assess the business strategy integration of climate change risks and opportunities; the existence of climate scenario planning; as well as time-bound action plans to achieve decarbonization targets.

The "Disclosure" assessment pillar focuses on the transparency of reporting on historical emissions performance across all relevant scopes, the level of assurance, as well as the degree of reporting alignment with the TCFD. Where possible, it also includes assessing whether or not previous GHG emission targets were achieved.

Lastly, the "Governance" assessment pillar considers the level of management oversight and governance of the customer's transition strategy. We assess the level of seniority of executives accountable for climate strategy, board committee oversight of climate change issues, and whether executive remuneration is linked with climate change performance.

Our transition plan assessment methodology includes higher weights for assessment criteria deemed to be critical to credible transition plans, compared to lower weights for those that are considered supporting criteria. The more highly weighted criteria are designed to prioritize focus areas for customer engagement.

Ultimately, our customer climate tiering system leads to four categories (Leader, Strong, Moderate and Weak).

Climate tiering system based on two steps

1 GHG emissions profile alignment	• Current GHG emissions profile • Future targeted GHG emissions trajectory • Assessment of alignment with Santander pathway
2 Transition plan quality assessment	• Internal methodology to assess perceived quality of transition plans • Developed using established transition plan assessment methodologies

Transition plan quality assessment

Transition pillar	Overview
1. Targets	Quality and ambition of quantitative targets to reduce GHG emissions
2. Action plan	Depth of decarbonization strategy to achieve GHG emissions reduction targets
3. Disclosure	Transparency on GHG emissions reporting across relevant scopes
4. Governance	Management oversight and governance of transition strategy

Climate tier categories		Description
Tier 1	Leader	• Emissions profile fully aligned with Santander pathway and strong transition plan
Tier 2	Strong	• Emissions profile fully aligned with Santander pathway but improvement needed in transition plan; or • Strong transition plan but emissions profile partially aligned with Santander pathway
Tier 3	Moderate	• Emissions profile partially aligned with Santander pathway, but improvement needed in transition plan; or • Emissions profile not aligned with Santander pathway, but strong transition plan
Tier 4	Weak	• Emissions profile not aligned with Santander pathway and improvement needed in transition plan

We have implemented training for senior staff in CIB specifically designed to educate them on transition topics, in collaboration with external expert providers. Multiple sessions have taken place involving senior bankers on topics including: climate regulations and taxonomies; greenwashing; climate pathways to net zero; and frameworks to enable the assessment of customer transition plans.

In addition, internally organized sessions were delivered to sector-specific relationship managers and Environmental Social Climate Change Risk (ESCC) analysts. These focused on gathering information to complete the transition plan quality assessment (the second step in our customer climate tiering system). These sessions were delivered by senior experts from our ESCC, Portfolio Alignment and ESG Solutions teams.

Engage

Our customer climate tiering system seeks to facilitate tailored transition dialogue, to help lower-tiered customers move up to higher tiers over time.

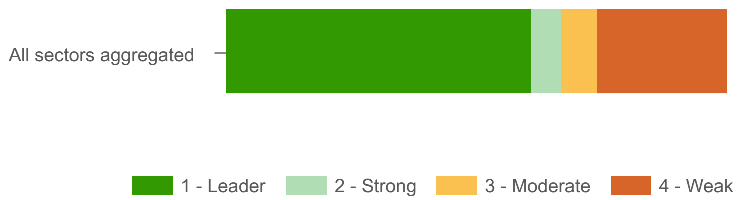
In 2024, we plan to focus our customer engagement efforts on lower tiered customers. We are developing internal transition assessment dashboards for relationship managers. These dashboards are designed to aid the identification of customer-level priority areas, industry benchmarking, and opportunities to support our customers in financing their transition.

Our broad sustainable finance proposition includes leading expertise in renewable energies, as demonstrated by our long-standing global leadership in this field. We also provide a range of sustainability-linked finance solutions that feature climate transition considerations (for further information and examples, please see Section 6. Financing the green transition).

Our sustainable tech advisory proposition, led by our global team of experts in green and transition technologies, enables us to provide bespoke strategic and corporate finance advice on opportunities to accelerate the adoption of low-carbon technologies. The sustainable tech team focuses on the following core areas: hydrogen & e-fuels; battery technology; energy storage; clean mobility; carbon capture and storage; and agriculture & food technology.

In addition, on a wider scope of climate-related topics, we are engaging with various public and private organizations (please refer to section 7. Partnerships for more details).

Climate tiering aggregated for the 4 sectors for which we had set targets by 2022: power, energy (oil & gas), aviation and steel, based on drawn exposure[1]



1. Based on 2023 year-end drawn exposure, according to portfolio alignment methodology, and including Project Finance.

Review

The customer transition plan assessment is performed by relationship managers, in cooperation with ESCC risk analysts, followed by portfolio level reviews by ESG Solutions and Portfolio Alignment teams to determine final tierings. The portfolio level review is important to help identify key trends and challenges in each sector, as well as for future transition plan assessment methodology improvements.

Over the last year, the two-step climate tiering assessment process was expanded to include Energy, Steel and Aviation. Initial assessments were completed for both steps. Subsequently, transition plan quality assessments were reviewed and enhanced, drawing on updated reference methodologies and sector-specific research. This led to the inclusion of additional sector-specific questions for assessing transition plan quality. In 2024, we are planning to expand our customer climate tiering assessment process to include the Automotive sector as well.

The figure to the left shows the breakdown of our climate tiering system output for all entities in scope of our original sector targets, by sum of drawn exposures as of the end of 2023. Please see below Sector Considerations section for further details on each sector's portfolio composition and evolution.

Of our corporate customers with drawn exposure where transition plan assessments were conducted in 2023, overall we find that approximately:

- Two thirds have set quantitative emissions reduction targets
- One quarter have set, or committed to set, science based targets (SBTi)
- One third have explicit board oversight of climate change
- Over a third have management remuneration linked to climate change performance

Portfolio Steering

CIB's portfolio steering governance is designed to identify customer or portfolio related actions to achieve our sectoral targets for financed emissions. A quarterly Portfolio Steering meeting operates at the core of the governance process. Its scope includes monitoring progress towards the achievement of our portfolio targets. The relevant CIB functions are represented in this meeting. In addition, a monthly Portfolio Alignment meeting supports on a technical level by reviewing methodologies and the monthly performance of critical KPIs.

Our risk appetite and lending policies are important tools for monitoring and steering the portfolio towards our financed emissions targets. Our customer climate tiering assessment informs our risk appetite for each sector where targets have been set.

In addition, Santander's Environmental, Social and Climate Change Risk (ESCC) Management Policy sets out criteria for providing financial products to customers involved in several of the sectors within the scope of our financed emissions targets (i.e., Power, Energy, Metals & Mining and Soft Commodities). For all sectors with decarbonization targets, customer climate tiering and engagement considerations are being incorporated into annual credit risk reviews. For one-off transactions (e.g., project finance transactions), we assess a transaction's impact on the relevant sector's portfolio financed emissions targets.

Net Zero for Santander Asset Management

SAM's Net Zero strategy approach is based on achieving net zero targets and securing emissions reductions in the real economy by increasing the alignment of assets to net zero pathways within its portfolios. SAM portfolio analysis evaluates where each security sits on the alignment maturity scale defined by IIGCC Net Zero Investment Framework to assess companies' progress towards aligning their strategies and operations with the goal of achieving net zero emissions by 2050 (or earlier), as well as to identify areas for improvement.

SAM is working under the "Paris Aligned Investment Initiative Net Zero Investment Framework" to structure its estimates of portfolio's emissions intensity, and using EVIC (tCO_2e/USD million invested) to calculate its portfolio's carbon footprint. According to initial calculations, the portfolio's emissions baseline in 2019 is 95.7tCO_2e/USD million invested.

To support the transition of the real economy, SAM has engaged with data providers to develop specific research lines on net zero performance. As new methodologies become available and data granularity is enhanced, financial coverage will improve.

Contributing to integrity in transition finance

Developing in-depth knowledge about transition finance is a key enabler to reach net zero. Santander, as part of its long-standing support to education, employability and entrepreneurship, is collaborating with the University of Oxford in providing funding to develop a new Transition Finance Centre of Excellence. This new Centre aims to play a prominent role in defining aspects of transition finance such as best practice sectoral transition plans and developing new tools and insight for practitioners.

Initial research has focused on four emissions intensive sectors (energy - oil & gas, power generation, steel and aviation), with the purpose of developing a deeper understanding of assessing integrity in companies' transition plans. The research process involved workshops with experts from companies, sector organizations, think tanks, investor coalitions, other research institutions and NGOs among others. Outcomes from this research have already been published by the University of Oxford. Following this initial stage, additional research topics are now being developed, remaining focused on transition planning and transition finance.

Sector considerations

Power generation

Sector boundaries: For the power generation sector, we assess the upstream/generation business in the value chain. Our portfolio includes both corporate customers and project finance transactions.

Industry dynamics: In recent years, renewable energy has grown even faster than expected in the original NZE2050 scenario by the IEA[1]. However, more recently, clean energy initiatives have been facing significant challenges due to cost inflation, supply chain bottlenecks and rising interest rates[2].

Portfolio composition: The exposure to project finance outweighs the exposure to corporate customers. Within the corporate portfolio, a high proportion is with tier 1 and 2 customers, typically leading power companies with existing or strong commitments to renewables. We observe clear regional differences in the climate tiering with Europe being the leader, while many emerging market entities are still developing and disclosing their transition plans.

Power Generation portfolio by Project Finance vs Corporates based on drawn exposure[3]

Sector	Year	Lending exposure[A]	Absolute emissions ($mtCO_2e$)	Physical emission intensity (tCO_2e/MWh)	Financial emission intensity ($mtCO_2e$/ bnEURlent)	Overall PCAF score[A]	2030 target
Power generation	2019	10.66	5.41	0.21	0.51	2.7	0.11 tCO_2e/ MWh
	2020	10.31	4.59	0.17	0.45	2.5	
	2021	10.23	4.24	0.19	0.41	2.8	

Portfolio evolution: In 2021, our physical emission intensity slightly increased from 0.17 in 2020 to 0.19 tCO_2e/MWh. The main causes were (i) reduction of the relative weight of renewable project finance compared to corporates in the overall portfolio, and (ii) temporary adverse climate conditions such as drought in Brazil (which saw hydroelectric power replaced by conventional power generation). While the overall portfolio intensity has increased for these reasons, we also note an overall average decrease in our corporate customers' emission intensities during this period.

Energy (oil & gas)

Sector boundaries: For energy, we assess upstream companies, as well as integrated companies undertaking their own upstream production in oil and gas.

Industry dynamics: The Covid-19 pandemic, followed by war in Ukraine and uncertainty in the Middle East have had a considerable effect on energy markets and prices. The market saw a rebound in the demand for oil & gas in 2021 and global energy-related carbon dioxide emissions rose by 6% in 2021 to 36.3 billion tons according to the IEA, their highest ever level at that time. The IEA revised its Net Zero 2050 Scenario in 2023, in which demand for oil was predicted to be 8% higher at the end of the decade than previously estimated[1]. 2024 is a year of elections globally - USA, EU and India, among others. The outcome of these elections may be crucial in determining whether the current policies supporting the climate transition will be maintained, enhanced or weakened, including the corresponding impact on oil & gas supply and demand.

Portfolio composition: To differentiate between oil & gas entities on a sector specific basis, we apply a physical emissions intensity comparison and a 2050-time horizon for our climate tiering analysis in this sector only.

Sector	Year	Lending exposure[A]	Absolute emissions ($mtCO_2e$)	Physical emission intensity (tCO_2e/TJ)	Financial emission intensity ($mtCO_2e$/ bnEURlent)	Overall PCAF score[A]	2030 target
Energy (oil & gas)	2019	7.68	23.84	73.80	3.10	3.4	16.98 $mtCO_2e$
	2020	6.67	22.58	73.60	3.38	3.6	
	2021	8.25	27.43	74.36	3.33	3.9	

Portfolio evolution: Global industry trends were also visible in our portfolio. The absolute financed emissions of our portfolio increased by 4.85 $mtCO_2e$ from 2020 to 2021. The increase in drawn exposure (used to calculate financed emissions) was driven by the post-COVID economic recovery and the global energy price rises in 2021, causing financed emissions to rise with them.

1. Net Zero 2050 – A Roadmap for the Global Energy Sector, IEA, 2023
2. World Economic Outlook, IEA, 2023
3. Based on 2023 year-end drawn exposure, according to portfolio alignment methodology, and including Project Finance.

A. See notes on page 40

Additional note on the energy sector

The world needs to ramp up renewable energy capacity and act now to decarbonize the economy. But for the global energy sector to decarbonize, all energy-intensive sectors and activities must be transformed. Our role is to support our customers' transition and, as one of the world's top lenders in renewable energy, we're increasing the volume of green finance to support this transformation.

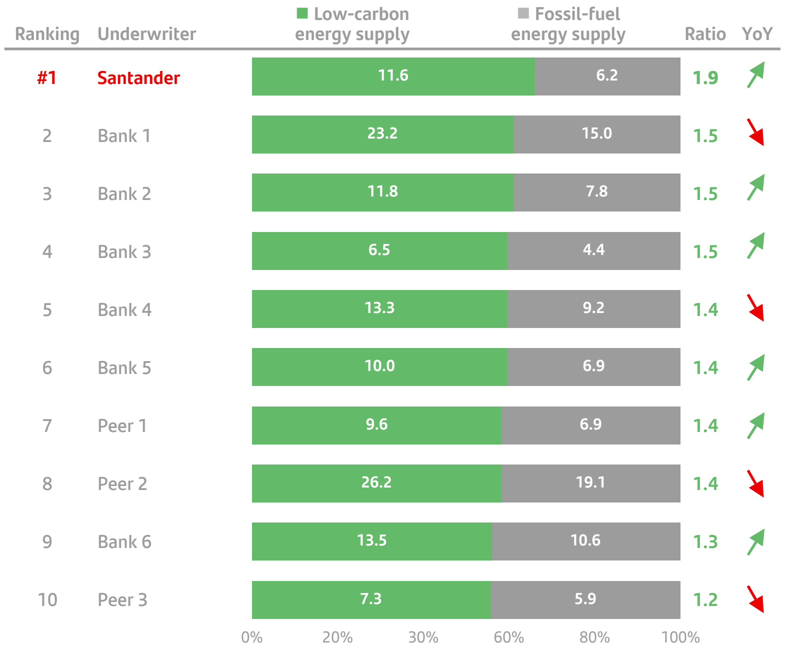
Energy security is key to an orderly transition. While we increase renewable capacity, energy prices must be affordable and reliable. As the IEA states, oil and gas will continue to play a role in powering the world's economy during the transition. Across the Group's footprint, economies are at different stages on the path to net zero. We aim to ensure the transition is fair for all communities.

The Banking on Climate Chaos: The Fossil Fuel Finance Report 2023, endorsed by over 600 organizations from 75 countries, analyses the world´s largest banks' financing of fossil fuels. Santander was one of the banks analysed in the report. The figures below show our relative position to our peers and other banks, measured in terms of our total fossil fuel financing, and its weighting on total lending. We rank significantly below most of our peers and other banks. Santander exhibits low financing of fossil fuels, in both absolute and relative terms. Our ratio of financed fossil fuels to total financing (including lending, underwriting of corporate bonds, government bonds, and equity issuances) is one of the lowest among all reviewed banks. Our financing of fossil fuels is six times smaller than the largest fossil-fuel financing banks.

RANK	BANK	Fossil fuels financed in 2022 (USD billion)	Fossil fuels financed over total financing 2022
1	Bank 1	40,626	13%
2	Bank 2	39,240	5%
3	Bank 3	37,399	7%
4	Bank 4	35,467	4%
5	Peer 1	33,943	5%
6	Bank 5	29,515	18%
7	Peer 2	29,469	15%
12	Peer 3	20,083	5%
19	Peer 4	11,659	5%
22	Peer 5	11,074	2%
34	Santander	6,640	4%

The Energy Supply Banking Ratios 2022 report published by BloombergNEF analyses the ratio between financing to low carbon vs fossil-fuel energy supply. According to this methodology, Santander has the most favourable ratio of all large banks[1].

Top 10 large banks by Energy Supply Banking Ratio (2022)
Bars show proportion of low carbon vs fossil-fuel energy supply facilitated. Numbers show underwritten amount (in USD bn)



Ranking by Fossil fuels financed.

Peers are banks whose size and market capitalization are comparable to Santander, including BBVA, BNP Paribas, Crédit Agricole, Citi, HSBC, ING, Itaú, Scotiabank and UniCredit.

1. Banks which underwrote >$10bn in energy supply financing in 2022

Aviation

Sector boundaries: For the aviation sector, we assess passenger airlines companies.

Industry dynamics: The IEA's updated Net-Zero by 2050 Scenario[1] lowers expectation on emissions reductions in the sector due to the current trends for sustainable aviation fuel (SAF) – high costs and availability issues - as well the slow adoption of efficiency measures such as fleet renewal or use of lighter materials, raising concerns over whether the sector can reach its current 2030 targets.

Portfolio composition: Exposure to the aviation sector reduced significantly from its peak in 2020 until 2023, driven in particular by repayments from better climate tiered customers. Current exposure is significantly below the initial level at the time of target setting, and is very much concentrated in a small number of customers and long-term asset financing.

Sector	Year	Lending exposure[A]	Absolute emissions ($mtCO_2e$)	Physical emission intensity (gCO_2e/RPK)	Financial emission intensity ($mtCO_2e$/ bnEURlent)	Overall PCAF score[A]	2030 target
Aviation	2019	1.55	1.81	92.47	1.17	3.3	61.71 gCO_2e/RPK
	2020	2.44	1.08	93.05	0.44	3.7	
	2021	2.02	0.84	97.21	0.42	3.2	

Portfolio evolution: Emissions intensity increased from 93.05 gCO_2e/RPK in 2020 to 97.21 gCO_2e/RPK in 2021, driven by portfolio composition effects (as described above), while the emission intensities of individual airlines started to normalize in the second COVID19-affected year. The materiality of this sector both in terms of exposure and financed emissions declined and we have observed a similar trend in the following years.

Steel

Sector boundaries: For the steel sector, our analysis covers companies that attribute over 10% of their revenue to steel production.

Industry dynamics: The decline in the global emission intensity of the sector is driven by a reduction in the coal intensity in steel production, as shown by the IEA's latest World Economic Outlook[2]. This decline in coal intensity is explained by some of the main decarbonization levers of the sector: recycling or scrap-based production, the use of green alternatives to blast furnaces and investment in carbon capture technologies.

Portfolio composition: Availability of reliable data is challenging in this sector as a significant amount of our customer base has not yet reported GHG emissions. We employ a conservative approach by assigning all customers with insufficient data to the lowest climate tier.

Sector	Year	Lending exposure[A]	Absolute emissions ($mtCO_2e$)	Physical emission intensity (tCO_2e/tS)	Financial emission intensity ($mtCO_2e$/ bnEURlent)	Overall PCAF score[A]	2030 target
Steel	2019	1.51	2.62	1.58	1.74	3.0	1.07 tCO_2e/tS
	2020	1.31	2.14	1.40	1.63	3.1	
	2021	1.42	1.90	1.36	1.33	3.1	

Portfolio evolution: The reduction in emission intensity from 1.40 to 1.36 tCO_2e/ton steel from 2020 to 2021 was mainly driven by improvements at the individual customer level, such as through shifts in industrial production processes.

1. Net Zero 2050 – A Roadmap for the Global Energy Sector, IEA, 2023
2. World Economic Outlook, IEA, 2023
A. See notes on page 40

Automotive

The automotive sector is one of the key sectors to tackle in the transition to a low-carbon economy.

According to the International Energy Agency (IEA), road transport accounts for over 15% of global energy-related emissions. The switch from internal-combustion engines (ICE) to electric vehicles (EV) and plug-in hybrid electric vehicles (PHEV) is the most important decarbonization lever for this sector.

We are supporting our auto-manufacturer customers in the adaptation of their business models and product offering towards EVs and PHEVs. As a leading auto end-user lender in Europe, we are also helping our retail customers finance purchases of an increasing number of EVs and PHEVs.

As part of our net zero ambition, we are committing to decarbonize our global auto manufacturing and European auto lending loan portfolios, with a 2030 target and a 2030 target-range, respectively.

Sector	Year	Lending exposure*	Absolute emissions ($mtCO_2e$)	Physical emission intensity (gCO_2e/vkm)	Financial emission intensity ($mtCO_2e/$ bnEURlent)	Overall PCAF score*	2030 target
Auto manufacturing	2020	4.45	3.49	149	0.79	3.1	103 gCO_2/vkm
	2021	3.90	2.67	138	0.68	3.0	
Auto lending Europe	2022	55.27	5.84	137	0.11	3.2	75-89 gCO_2e/vkm

Auto manufacturing: In CIB, we set our 2030 target based on the IEA's NZE2050 scenario, in line with the existing decarbonization targets. Emissions intensity improved from 149 gCO_2/vkm in 2020 to 138 gCO_2/vkm in 2021, mostly due to general improvements in emissions levels in the industry, complemented by a slight contribution of the portfolio composition effect.

Auto lending in Europe: In Santander Digital Consumer Bank, we measured the financed emissions of its auto lending portfolio[1] in 16 units (13 countries in Europe) following the PCAF (Partnership for Carbon Accounting Financials) methodology, and used the IEA NZE 2050 as a reference pathway. In 2022, which was taken as the baseline year, Santander Consumer Finance (SCF) Auto emissions were 137 gCO_2e/vkm. SCF set a decarbonization range for 2030 of 75-89 gCO_2e/vkm, which would entail a reduction of 35-45% in its financed emissions.

The fulfillment of both targets for the automotive sector will depend on several external factors such as:

- **Regulation and policy:** Effective government measures and policies are needed to reach the EV sales and decarbonization levels that net zero scenario requires. Countries will need to meet the timelines set to end sales of new ICE. The introduction of low emissions zones would support this change. Further adoption of subsidies on EV purchases will be key to drive up penetration, as we have seen in the Nordic countries.
- **Technology:** A guaranteed supply of the required materials to produce EVs and PHEVs at scale is needed, to match demand. Also, reducing EV and PHEV production costs is required to ensure affordability in comparison with the less clean alternatives (ICE), and thus ensure a just transition.
- **Infrastructure:** Reaching a high penetration of EVs and PHEVs will require a deep transformation of the supply chains and the infrastructure that powers them (increasing the number of charging points and their performance) to shift from a model of predominantly ICE cars to an EV and PHEV majority. The investment needed for this infrastructure will require support from governments and other actors, which could be affected by conflicting interests such as energy security.

Santander UK

Supporting the switch to electric vehicles: In 2023, we continued to support the transition to a low-carbon economy through our auto-finance offering. To support our dealers and their customers, we have added significant new information on sustainability to our corporate website. This includes a carbon footprint calculator and links to supporting information, developed in partnership with Net Zero Group.

In 2023, the Sustainability and Development Services teams jointly launched a pilot Carbon Literacy training using the Carbon Literacy Project automotive toolkit. The training will be rolled out further within the entity during 2024. Internally, the Green Ambassadors have continued to deliver staff-focused initiatives including an extensive survey of staff commuting choices in Q4 2023.

Santander Bank Polska

The Santander Bank Polska Foundation and Santander Leasing are implementing the **'Together for Eco-Change'** programme, in collaboration with GreenWay Polska and the Polish Alternative Fuels Association. In 2023, 17 grants were awarded, and the first charging stations will be put into operation in January 2024.

* See notes on p.40

1.This includes passenger cars financed and leased.

Thermal coal phase-out

Sector boundaries: For the thermal coal target, we assess the power generation customers with more than 10% of the revenues coming from thermal-coal, and customers with any thermal-coal mines.

Industry dynamics: According to the recently updated version of the IEA – Net Zero roadmap[1], the near-term use of coal is higher than was expected in the previous 2021 version of the scenario. Reasons cited include achieving a more equitable pathway for emerging market and developing economies as well as energy security concerns.

Portfolio composition: Most of our customers in this group have already plans in place to comply with our policy in 2030.

Sector	Year	Risk exposure
Thermal coal-related power & mining phase out (EUR bn)	2021	7
	2022	5.9
	2023	4.9

Portfolio evolution: We have been continuously reducing our exposure to thermal coal customers in scope of our target. Many of our customers will need financing to transition away from coal. Transition finance support to these entities may therefore temporarily increase before declining over the longer term as we aim to achieve our targets.

1. Net Zero 2050 – A Roadmap for the Global Energy Sector, IEA, 2023

Decarbonization plans

Further to the five existing decarbonization targets published in 2021 and 2022, and the two new targets in the automotive sector, in 2023 we also worked on internal decarbonization plans: assessments of other climate-relevant portfolios including mortgages (in the UK and Spain), commercial real estate (in the UK, Spain and the US) and agriculture (in Brazil). The selection of sector portfolios for this exercise considered their materiality both at Group and country level within the NZBA list of high emitting sectors. The objective of these sector/portfolio assessments is to understand the level of financed emissions in each case, identify levers to progress on decarbonization and understand the feasibility of a net zero decarbonization pathway. The exercise comprised: baseline-financed emissions calculations, expected trajectory towards 2030, internal and external decarbonization levers analysis (considering supply and demand aspects, the regulatory framework and support for sectors decarbonization), internal governance established to monitor the decarbonization progress of each portfolio, identification of commercial opportunities and initiatives to improve data quality to help decarbonize the customers of these portfolios. Further details are provided below in relation to the UK mortgage and Brazil agriculture exercises.

Agriculture

Agriculture and land-use change account for 75% of gross CO_2e emissions in Brazil. The agribusiness sector makes up more than 20% of Brazil's GDP. Measuring the sector's financed emissions is, however, not trivial. Agriculture comprises a complex and extensive value chain, with varying sources, types, and quantities of GHG emissions. Moreover, agriculture practices and emissions vary depending on the commodity, management techniques and geographic location, among other factors. Given the core role of farms in the agriculture value chain, our initial assessment covered scope 1 and 2 emissions originating from farm-gate activities and the land use change (LUC) associated with farmland. Guidelines for setting net zero targets in the agricultural sector are still under development. To overcome the lack of methodology, Santander Brasil, in collaboration with WayCarbon, estimated its financed emissions based on the PCAF methodology, the GHG Protocol and IPCC accounting guidelines, adapted to the landscape in Brazil and the agricultural sector. Santander Brasil's on-balance credit exposure to farms with primary production was EUR 1.80 billion in March 2022. We estimated financed emissions from that portfolio amount to 6.20mtCO_2e/year: 81.9% estimated for land management, 18% for LUC and less than 1% for energy consumption. The PCAF quality score is 3.3. Land use change is Brazil's main source of emissions, illegal deforestation being a major driver in this category. Santander Brasil monitors all financed properties against illegal deforestation daily (see more details in 'Santander and the Amazon'), so this is not a core source of emissions for us.

Following GHG Protocol guidance, we measure LUC emissions considering a 20-year legacy, including legal deforestation, which is characteristic of some properties in Brazil. In addition to its importance in food production, agriculture can be an agent of transformation to decarbonize a country through nature-based solutions. Our approach to support decarbonization levers towards a low-carbon agriculture portfolio. It includes:

- helping customers build a low-carbon agriculture future through green finance solutions and innovative financial transactions (for more details, see Sustainable Innovation);
- engaging with Government and local and global forums to share methodologies, open the broader debate to improve data and accelerate decarbonization in agriculture; and
- taking part in the Banking for Impact on Climate in Agriculture (B4ICA) initiative, led by the World Business Council for Sustainable Development (WBCSD), contributing with the development of methodologies to guide the sector in the transition to a low-carbon economy.

Mortgages

Santander UK adopted the Partnership for Carbon Accounting Financials (PCAF) framework to calculate financed emissions associated with the Mortgages portfolio. Financed emissions were calculated at property level using the value at origination, the outstanding loan amount as of 31 December 2022, and building emissions taken from the EPC assessment for the property. Where no EPC exists, we used nearby properties with a similar age and type to infer the EPC or, where this wasn't possible, a regression model trained with multiple known property characteristics. This resulted in a PCAF score of 3.3 and portfolio coverage of over 99% over a EUR 211.05 billion portfolio. Our baseline emissions as of 31 December 2022 were 39.72 kgCO2e/m2.

We also undertook an analysis to understand how we could decarbonize our mortgage lending across two scenarios (a low success scenario broadly aligned to current UK policy and a high success scenario reflecting plausible but more ambitious policy action). In both scenarios we assessed the actions within or outside our control. This analysis will be used to inform our ongoing green finance strategy and public policy engagement over the coming years. In both scenarios we believe the 2030 net zero targets will be challenging to achieve and require further market and policy developments outside of our control.

In light of this analysis and while we will continue to advocate for policy change and maintain our existing green proposition, the key is to enhance our knowledge of the barriers people face in taking action; and to develop the partnerships and propositions required so that we're best placed to meet our customers' needs when the policy landscape changes. Santander UK continues to help customers access resources to make their homes more energy efficient through our Greener Homes Hub. From 2021 to 2023, the Hub provided customers with free EnergyFact Reports containing information on the energy efficiency of their home and guidance on how to improve it. In 2023, we provided 3,086 EnergyFact reports to our mortgage holders. This takes the total number of reports we've provided to 14,640 since 2021. This first phase of engaging with customers on home energy efficiency has given some fantastic insight that is being used to design new customer propositions during 2024. Providing EnergyFact reports was an important first step in raising homeowner awareness and interest. This created a natural start point from which we are now evolving the customer journey. This has also enabled us to think smarter about how we use data, develop new partnerships that link customers to verified installers and vendors, and build financial products and offerings that meet real consumer needs and address barriers. The project also assisted us in creating end-to-end customer journeys that measure the effectiveness of making home energy efficiency upgrades. We offer a discounted home improvement loan to customers who are borrowing to make energy efficient home improvements. The loan can be used to make green improvements such as upgrading heating systems, installing solar panels and batteries, and adding insulation to homes.

Santander UK

We launched a new digital financial health check that was utilised by 88,000 customers, a budget planner and an in-app Financial Support Hub. These tools built on existing digital options including My Money Manager and My Home Manager, which supported 300,000 customers.

Some of the features and things our customers can do in My Home Manager are:

- Energy Performance Certificate (EPC):
  - Learn about what an EPC is and when you need one
  - See your property's latest EPC
  - Find out what you can do to improve your home's energy efficiency
- Home energy solutions:
  - Find out about electric vehicle chargers, batteries and solar inverters from myenergi. Get quotes and book an install
  - Get quotes for solar panels (and other solar products) for your property from MakeMyHouseGreen
  - Articles and guides about solar panels, maintenance, installation and more

Santander España

Santander España **partnership with CBRE** contributes to the decarbonization of the real estate sector in Spain, with advice and financing solutions for its corporate and institutional customers, aimed at improving the buildings' energy efficiency.

Our environmental footprint

Santander continually reviews its environmental and carbon footprint. In this section and in Annex 1 we disclose our scopes 1, 2 and scope 3 categories 3.6 Business travel and 3.7 Employee commuting. Scope 3 - Category 3.15 Investments (Financed emissions) is also disclosed in section metrics and targets and in Annex 2.

The priority remains on implementing the efficiency plans which are underway for those emissions that can be managed, regardless of carbon footprint accounting progress.

As part of our ambition to achieve net zero carbon emissions by 2050, our strategy to lessen the environmental impact of our operations involves: reducing and offsetting CO_2e emissions we're unable to reduce by mitigating beyond our value chain; reducing and handling waste responsibly; and raising employees' and other stakeholders' awareness of environmental issues.

We've been measuring our environmental footprint since 2001. Since 2011, our energy efficiency and sustainability initiatives have helped us cut:

2011-2023 Plan Results

2011 → 2023

- Electricity consumption reduced by 38%
- CO_2e emissions reduced by 69%
- Paper consumption reduced by 83%

Our 2022-2025 Energy efficiency and sustainability plan includes more than 100 measures to reduce our electricity consumption by 18% and emissions from our own operations[1] by 68% compared to 2019 (the last comparable year prior to the pandemic). Some of them are:

→ installing 8 MW of solar panels on our buildings across our footprint for self-consumption. We have 8.8 MW installed in Brazil, Chile and Spain, with further projects under way in 2024. Argentina, Germany, Poland and the UK. We aim to reach 15,000 MWh in self-consumption in 2024, which would double 2023 energy production.

→ purchasing renewable electricity in every country where it's possible to certify its origin. The renewable energy we purchase and produce accounts for 97% of our total consumption, which is close to our 100% target by 2025. In Brazil, Chile and Mexico, we reached 100% in 2023, and expect to do so in Argentina, Poland and the US by 2025.

→ using new technology to reduce paper consumption and waste. We have reduced paper consumption to 10% in many markets through awareness campaigns, and almost all our paper is recycled or certified.

→ continuing to obtain environmental and sustainability certifications for our buildings:

- 38% of our employees work in buildings certified to ISO 14001 or ISO 50001 management systems; this is above the 36% ambition considered in our 2022-2025 plan. We aim to continue to reach 40% by 2025.
- Today, almost all of Santander's headquarters in our core markets are LEED, BREEAM or ISO 14001-certified. Our commitment to ISO certifications and their quest for continuous improvement speak to the quality that the facilities areas in all of Santander's markets pursue and help us manage increasing environmental risks.

→ creating more parking spaces at our buildings for electric and plug-in hybrid vehicles – charging these vehicles is free for employees. We have over 1,709 of these spaces in the Group's core markets, well above our target of 1,250 included in the plan. We're aiming to exceed 2,000 electric vehicles spaces by 2025.

→ raising awareness among employees through global and local communications campaigns and surveys on the importance of reducing waste and consumption. Each subsidiary's internal portal also posts news and topics of interest relating to the environment and the Group's ESG initiatives, as well as ISO certification renewals and any sustainability and energy efficiency measures and achievements

2023 Environmental Footprint[2]

805.31 million kWh total electricity	97% renewable electricity	3,444,543 GJ energy consumption
172,711 t CO_2e total emissions (market based)		
Scope 1 25,755 t CO_2e direct emissions	Scope 2 21,516 t CO_2e indirect emissions from electricity and other (market based)	Scope 3 125,441 t CO_2e indirect emissions from employee commuting and business travel

1. Scope 1 and 2 emissions and scope 3 emissions from employee commuting and business travel from the operational control approach of GHG Protocol, where we have full authority to introduce and implement Group's operational policies.
2. A three-year environmental footprint table with additional metrics on water, waste and paper is available in Annex 1. Scope 3 - Category 3.15 Investments (Financed emissions) emissions are disclosed in Annex 2

Our measures are consistent with Santander's aim to obtain all our electricity from renewable sources[1],and pair with actions to reduce emissions and remain carbon neutral in our own operations[2] by mitigating beyond value chain the emissions we're unable to reduce.

We follow a strict carbon credits selection process that includes due diligence on compliance and consistency with our environmental policies. Credits are certified under some of the industry's most well-known standards. Moreover, all of the carbon credits we purchased in 2023 were ratified by an independent rating agency to ensure their integrity. Santander monitors voluntary carbon credit markets to adapt our offsetting strategy to best practice.

Using electricity from renewable sources
97% of the electricity our buildings consume comes from renewable sources; in Brazil, Chile, Germany, Mexico, Portugal, Spain and the UK, that figure is 100%. Our target is to reach 100% for our entire footprint by 2025.[1]

Waste management
Since 2021, our offices and buildings in our core markets have been free of single-use plastics meeting our public target. The Santander Group City and Santander España's central services buildings have 'Zero waste' certification.

Climate awareness
Santander runs local and global employee awareness campaigns on the importance of reducing consumption and waste. Each subsidiary posts news and feature articles on the environment and the Group's ESG initiatives on its internal portal. In 2023, for the 14th consecutive year, we observed Earth Hour by switching off the lights at the Group's most emblematic buildings.

Implementation and certification of environmental management systems
We aim to have or retain ISO 14001 or ISO 50001 for all primary buildings it occupies as well as increase the number of retail offices certified under these certifications.

Some buildings in Brazil, Germany, Poland and Spain are LEED Gold or Platinum-certified. Milton Keynes HQ in the UK is FitWell 3star-rated and in final stages to get Breeam Excellent certification. Additionally, Santander Group Campus and Santander España´s HQ have ´Zero waste' certification which is obtained by achieving more than 90% of waste recovery. Group goal is to have all new construction certified LEED Gold/ BREEAM Excellent as a minimum and seek to meet highest standards in sustainability.

Transforming plastic cards

Santander is looking for ways to give expired or damaged cards a new life. A few years ago, we launched an initiative in Poland, Portugal, Spain and UK integrating circularity and sustainability in the life cycle of our cards.

- Digital first - in some countries we offer our customers the possibility of contracting or renewing cards only virtually, so we do not generate the plastic.
- In all of Europe we offer cards **made of sustainable materials**, either PLA or recycled PVC[3]. **In 2023, we acquired 37 million cards (72% of the year's total) made of sustainable materials.**
- **We have an in-branch card recycling scheme for expired and unused plastic cards,** that facilitates our customers recycling their cards by depositing them in our ATMs (in countries where the service is available) or drop them in the recycling boxes at branches in Poland, Portugal, Spain and the UK.

In Spain, more than 900,000 cards, equivalent to 4,5 tones, have already been collected, and after proper disposal to ensure data protection, we give them a second life by turning them into street furniture that we donate to public institutions.

130 benches have been donated to the city halls of Valencia, Malaga and Santander through a programme backed by Santander España Cards division.

Enabling our individual customers to measure their carbon footprint

Santander website and app has been enabled to support our individual retail customers in Chile, Portugal, Spain and the UK in their transition and calculate the carbon footprint of their direct debits and purchases with Santander cards, and provide with tips to reduce their carbon footprint.

1. In countries where we can verify electricity from renewable sources at Banco Santander properties of wholly owned companies in Argentina, Brazil, Chile, Germany, Mexico, Poland, Portugal, Spain, the United Kingdom and the United States
2. Scope 1 and 2 emissions and scope 3 emissions from employee commuting and business travel. It considers wholly owned companies in Argentina, Brazil, Chile, Germany, Mexico, Poland, Portugal, Spain, the United Kingdom and the United States
3. PLA cards: Polylactic acid (PLA) is a sustainable plastic substitute made with renewable bio-sourced resources. Recycled PVC cards: manufactured using plastic waste from the packaging and printing industries reducing first-use plastic.

Other Santander initiatives to keep on reducing our environmental footprint

Santander Consumer Bank (Germany)

Energy efficiency at branches: Santander Consumer Bank (Germany) is upgrading HVAC and lighting fixtures, reviewing fleet vehicles and adding to the fleet as many electric cars as new electric charging stations under construction.

Certification: Santander Consumer Bank is also working to obtain ISO 14001 at its HQ and ISO 50001 at its offices by 2025.

Santander Chile

Santander Chile will continue to roll out its **remote energy monitoring system** to 21 more offices.
It also remains committed to renewable electricity and solar installations on third-party land to ensure that part of its energy is self-produced.

Santander Argentina

Santander Argentina remains the **leader in obtaining ISO 14001** certification at its offices and branches, with 45% of its surface area already certified. Moreover, Santander Argentina obtained ISO 50001 for the first time at its Garay HQ and two other offices.
This year, Santander Argentina will work tirelessly to obtain all of its electricity from certified renewable sources to achieve its public target one year early.

Santander Portugal

The Group expects to obtain ISO 14001 certification for its Lisbon HQ in 2024.
Moreover, the Santander Portugal branch network is undertaking a major project to **automate and manage installations at its offices remotely.**

Grupo Santander

Energy self-sufficiency and ISO certifications are the main drivers of the Group's sustainability strategy on its own operations.
In 2023, we installed **7.36 MW of solar panels on the roofs** of Group properties in Spain, and plan to add 6 MW more in 2024. Santander Brasil and Chile have opened several facilities as a precursor to what's to come in all the Group's markets (including Mexico, Poland and Portugal).

Santander US

SAN US set and is on track to achieve three-year, public targets to further **reduce consumption of energy, water and paper** as well as production of waste.
SAN US also completed development of new **Sustainable Branch Standards**. All new construction and renovations will adhere to standards which address energy efficiency, operating footprint, healthier workspaces, biodiversity, responsible procurement and education and community.

Santander Polska

Solar panels: Santander Polska is installing solar panels at its branches and offices to reduce demand for energy produced externally. So far, it has installed 50 KW at two offices and is working on installations at eight branches.

Paper: Santander Polska is undertaking an ambitious digital transformation project for customers and branches to cut back on paper.

Diesel: Santander Polska is decommissioning eight diesel power generators at offices where they are no longer required.
Santander Polska continues to work on its plan to achieve 100% renewable electricity as soon as possible, as well as to look for green alternatives to the public district heating that heats its buildings in winter.

Santander UK

Certification: Santander UK opened its new Milton Keynes HQ (Unity Place), which is one of the world's most efficient and modern BREEAM-certified facilities. There, the Group intends to harness its more agile and advanced new ways of working in versatile spaces.
Santander UK holds ISO 14001 and 50001 certifications for the administration of its corporate offices and branches in England.

Corporation and Santander España

Certification: Santander is renewing its ISO 14001 certification for its Corporate buildings — its Boadilla HQ and data centre in Cantabria are torchbearers in energy efficiency and are working to pursue maximum energy self-sufficiency.

Self-consumption and reducing gas are the two key drivers of our plan. Estimated solar power generation in 2024 at HQ and Santander España is at least 12 GWh/year.
The Group is also running an ambitious project at its Boadilla HQ to reduce dependence on natural gas for heating and hot water by combining low and high temperature heat pumps for optimum temperature control. The system will help reduce gas consumption by 60% and produce cold water for air conditioning to meet 100% of the demand for 30% of the total number of hours per year. Gas savings will amount to 9 GWh/year

Santander España has fully implemented a **temperature and light monitoring system at its offices**, which will result in significant efficiencies. Moreover, having renovated two of its buildings in Seville and Valencia in 2023, it is now refurbishing a site in Palma de Mallorca, with energy efficiency the main driver of the project.

Paper: Santander España, from January 2024 will eliminate paper brochures from all its branches, saving more than 71 tons of paper annually.

6. Financing the green transition

As explained in section 5 of this report, Santander has the ambition to be net zero carbon emissions by 2050. In the following pages we provide some examples of how we are delivering against this ambition by helping our customers in their transition towards a green economy.

Tackling climate change is a global challenge at Santander and we want to play our part to address it.

As a large financial institution, we have a responsibility and an opportunity to help our customers in their transition to low carbon business models. Enhancing our sustainable finance and advisory proposition in all our divisions and regions is critical to meeting our climate transition objectives.

Our ambition is to become a world leader in green finance as a high-quality provider of world-class solutions to help our customers tackle the green transition. We have committed to supporting our 164 million customers and the global economy to become net zero by 2050 with advice and business solutions. In CIB, we are also mobilizing EUR 120 billion in green finance by 2025 and EUR 220 billion by 2030.

Our customers' transition represents a unique opportunity for Santander, as we see green finance grow exponentially in our core markets.

Green Finance's main priorities are:

1. building the infrastructure that will support green finance across the Group. This means implementing the sustainable finance and investment classification system (SFICS); strengthening the controls to assess and manage greenwashing risk; and executing the data strategy to measure and monitor green finance results; and

2. growing the green finance business, which entails drawing up a green finance strategy for the Group's businesses; delivering a best-in- class value proposition for our customers; and deploying well-trained commercial teams to capture opportunity.

CIB raised and mobilized EUR 115.3 billion in green finance between 2019 and December 2023.

At the end of the year, Retail & Commercial Bank had a stock of EUR 22.6 billion in mortgages aligned with the EU Taxonomy.

Digital Consumer Bank, in 2023, financed more than 208,000 new electric vehicles, with volume of EUR 6.5 billion.

In 2023, 70.8% of financed emissions from SAM's portfolio were either aligned to net zero or under either individual or collective engagement in which SAM is involved.

* The Green Finance Team will lead on the green transition for CIB and have oversight over Commercial and Retail Banking; in addition, Wealth Management and the Digital Consumer Bank continue to develop their ESG/green strategy.

SUSTAINABLE FINANCE & INVESTMENT CLASSIFICATION SYSTEM

Sustainable finance is key to meeting our ambition to be net zero carbon emissions by 2050. We continue to build on our sustainable finance guidelines, which we first developed in February 2022. In 2023, we updated them based on developments in regulation and market practice. The latest version also includes socially responsible investment standards and is called the Sustainable Finance and Investment Classification System (SFICS).

The SFICS outlines common standards to consider an asset or activity as environmental, social or sustainable in all the Group's units and businesses. It draws on such international market guidelines, standards and principles as the EU Taxonomy (including the four new environmental targets for 2023), ICMA Principles, LMA Principles, UNEP FI Framework and the Climate Bonds Standard.

The SFICS enables us to track our sustainable activity, support product development and mitigate greenwashing risk.

We updated the SFICS based on lessons learned and market trends. It now features:

- A sustainability approach for customers that complements the activity-based approach.
- Additional details on manufacturing, real estate, sustainable agriculture and other activities.
- New activities that come to light on the back of developments in the EU Taxonomy and to cover new environmental goals related to water, waste, the circular economy and biodiversity.

We will continue working to build on the SFICS in line with market developments and business practice and to have comprehensive criteria that enables us to classify green and transition activities to support our customers transition and contribute to our net zero ambition

International industry guidelines, standards and principles that the SFICS draws upon:

EU taxonomy	ICMA Green/ Social Bond Principles	LMA Green Loan Principles	LMA Sustainability Linked Loan Principles	ICMA Sustainability Linked Bond Principles	Febraban taxonomy (Brazil)	UNEP FI framework	Climate Bond Standards

Eligible products:

Dedicated purpose

- Proceeds go towards eligible environmental and social activities and initiatives.
- Eligibility criteria: Activities with a specific environmental and social purpose under accepted standards that follow internationally recognized sector guidelines and principles (ICMA, LMA, Climate Bonds Standard) and the EU Taxonomy.

Sustainability linked financing

- Sustainability-linked transactions designed to help our customers achieve their ESG objectives.
- Transaction structured to achieve pre-determined sustainability performance targets (ESG ratings and metrics).
- Alignment with sector standards (ICMA and LMA).

UPDATE IN 2023 TO THE GREEN, SOCIAL AND SUSTAINABILITY FUNDING GLOBAL FRAMEWORK

Updated in 2023, this framework is the reference for all environmental, social and sustainability-labelled funding instruments traded in sustainable capital markets and enables all Grupo Santander entities to issue based on it. It replaces our previous Global Sustainable Bond and Green Bond Frameworks.

Consistent with best market practice and investor expectations, it covers use of proceeds, project assessment and selection, management of proceeds and reporting in line with the International Capital Market Association's (ICMA) and Loan Market Association's (LMA) guidelines.

Corporate and investment banking

Over 2023, CIB has continued building its ESG platform and embedding ESG in the organization.

We integrated ESG experts within business, risk, portfolio management and compliance teams.

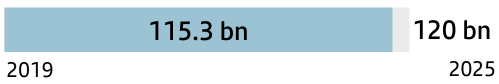
We further embedded our sustainable finance and investment classification system (SFICS) to ensure a consistent approach to our sustainable finance activity.

CIB plays a key role in fulfilling Santander's green finance commitments, having raised and mobilized EUR 115.3 billion in green finance between 2019 and December 2023.

Santander Corporate & Investment Banking (CIB) aims to be a leading bank in sustainable finance and advisory.

GREEN FINANCE VOLUMES FROM 2019 TO 2023

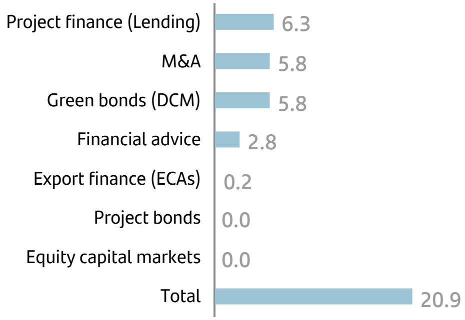
Raised or facilitated. EUR *



Between January and December 2023, CIB contributed EUR 20.9 billion to the green finance target.

2023 GREEN FINANCE VOLUMES SPLIT BY PRODUCT

EUR billion *



* Information obtained from public sources, such as Dealogic, Infralogic, TXF or Mergermarket league tables. All roles undertaken by Banco Santander in the same project are accounted for. Other sustainable finance components, such as financial inclusion and entrepreneurship, are excluded. Green Finance raised and facilitated is not a synonym of EU Taxonomy.

Financing renewable energies

Grupo Santander has been a leader in renewable energy finance for more than 10 years. In 2023, we were among the top banks in number of deals and deal value globally, with 88 transactions closed and a 5.39% market share according to Infralogic (see table below).

The greenfield renewable energy projects that we financed or advised on in 2023 have a total installed capacity of 13.7 GW. We also helped expand, enhance and sustain renewable energy brownfield projects that have a total installed capacity of 9.5 GW (more details in the graphs on next page).

GLOBAL RENEWABLE ENERGY PROJECT FINANCE VOLUME - FY 2023[A]

Rank	Loan Provider	Vol. (EUR million)	No. transactions	Market Share
1	Banco Santander	7,052	88	5.39%
2	Bank 1	6,698	81	5.12 %
3	Bank 2	4,710	69	3.60 %
4	Bank 3	4,281	51	3.27 %
5	Bank 4	3,997	52	3.05 %
6	Peer 1	3,272	41	2.50 %
7	Peer 2	3,269	35	2.50 %
8	Peer 3	3,154	38	2.41 %
9	Bank 5	3,151	37	2.41 %
10	Peer 4	3,036	39	2.32 %

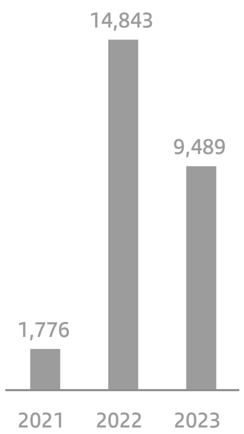
A. Peers are BBVA, BNP Paribas, Citi, Crédit Agricole, HSBC, ING, Itaú, Scotia Bank and UniCredit, which are similar in size to Santander.

The greenfield renewable energy projects Santander participated as financier or advisor in 2023 can power 10.1 million households per year.[1]

1. Based on final electricity consumption data published by the International Energy Agency (updated in 2023 with data from 2021), and the number of homes based on figures reported in 2021 by countries official organisms.

GREENFIELD FINANCE[1]
(MW financed or advised)[3]

BROWNFIELD FINANCE[2]
(MW financed or advised)[3]



BREAKDOWN OF MW FINANCED OR ADVISED BY TYPE OF RENEWABLE ENERGY IN 2023

	Greenfield	Brownfield
Wind energy	43%	49%
Solar energy	56%	13%
Other[4]	1%	38%

BREAKDOWN OF GREENFIELD AND BROWNFIELD FINANCE (MW financed or advised) BY COUNTRY IN 2023

	Spain	Brazil	USA	France	Poland	Australia	Germany	Chile
Greenfield	2,745 MW	4,526 MW	2,466 MW	1,515 MW	1,342 MW	1,026 MW		
Brownfield	556 MW	5,400 MW	2,226 MW		301 MW		729 MW	147 MW

1. Greenfield refers to new projects to be built.
2. Brownfield refers to projects already existing and producing electricity at the financing date.
3. Of the megawatts attributable to Santander's financing in 2023, 72% were from Greenfield finance and 28% were from Brownfield Finance.
4. Includes, among others, hydropower, battery energy storage, mix solar-biomass and energy from waste.
5. Other greenfield financed or advised in 2023: Portugal (48 MW), UK (44 MW) and Italy (22 MW). Other brownfield financed or advised in 2023: Peru (129 MW).

Examples of renewable energy projects financed and advised in 2023

Project Finance (PF)

Santander acted as Sole Underwriter, Bookrunner, Mandated Lead Arranger and Hedge provider in a 5-year EUR 350 million TopCo facility provided to ib vogt GmbH (IBV) to repay its existing corporate facilities and to support further growth plans of a predetermined Eligible Pipeline of solar PV projects located in OECD countries, totalling 21.6GW. This is a landmark deal and an important milestone for CIB as it contains an innovative structure designed to give sufficient comfort to lenders while providing flexibility to the Group to support its transition to a full-service IPP business.

CIB acted as Mandated Lead Arranger, Bookrunner & Underwriter in the financing of the construction of 21 photovoltaic (PV) generation assets with a total capacity of 1.2GW and a total financing of EUR 727 million for Cobra Instalaciones y Servicios in Spain.

CIB also acted as Sole Commercial Underwriter for 50% of the financing for Solaria Energía y Medio Ambiente, S.A, MLA, Sole Hedge Provider and Account Bank in green financing for the construction of 24 PV assets in Spain with a total capacity of 1,085MW and a total financing of EUR 553 million. This is a landmark transaction in Spain and an important milestone for Banco Santander as it is the one of the largest renewable project financings in the Spanish market with a fully merchant revenue stream.

In addition, CIB acted as Mandated Lead Arranger, BPIAE & Sinosure Facility Agent, Green Loan Coordinator and Hedge Provider in financing the first NMC Batteries EV battery gigafactory plant. The plant is being built by Envision in France and will supply batteries to Renault as part of its electrification strategy. A 'first of its kind' for Santander, this transaction represents an important milestone for our Sustainable Tech Platform.

Debt Capital Markets (DCM)

During 2023, CIB continued supporting customers in strengthening their sustainability commitments within debt capital markets. Santander acted as Sustainability Structurer for a number of inaugural bond transactions across various geographies. In Europe, we assisted Electricity North West (ENW), a UK distribution network operator that issued an inaugural £425m green bond, with proceeds used to finance its clean energy and environmentally friendly projects; PSA Banque France, the financing arm of the PSA Group, that issued a EUR 500m green bond with proceeds that will finance the acquisition of zero specific CO_2 emissions vehicles; and Cyfrowy Polsat, the largest media and telecommunications group in Poland, that issued a PLN 2.67 billion sustainability-linked bond to increase its share of energy consumption to 30% from zero-emission sources.

In Latin America, CIB acted as Joint Sustainability Structurers for a number of bond issuers, such as the Federative Republic of Brazil, that issued a USD 2 billion inaugural Sustainable Bond; and Grupo Energía de Bogotá (GEB), an integrated energy and utility company with presence in Colombia, Peru, Guatemala and Brazil, that issued its first USD 400 million sustainable bond. We also acted as Joint Sustainability Structurer for the Republic of Chile, that issued USD 2.25 billion & EUR 750 million dual-tranche Sustainability-linked bonds, the first sovereign instruments to include a social target around the percentage of women in board members at companies that report to the local market regulator. In addition, CIB was named as the "Most impressive bank for ESG Capital Markets in LatAm" at the Global Capital Bond Awards 2023.

Global Transactional Banking (GTB)

In 2023, CIB continued to embed sustainability in our Global Transaction Banking Products. In Export Finance, we provided a Sustainability Linked Export Development Guarantee with the British ECA (UKEF) to Easyjet which was structured with bespoke ESG KPIs. We signed a green loan with Grenergy secured with the coverage of a Cesce Green Investment Policy, aimed at financing projects that contribute to the fight against climate change, and also includes a hybrid derivative as part of the structure. CIB acted as export finance financial advisor for the development of two gigafactories for battery manufacturing in Europe and the US. In addition, we also acted as Green Coordinator for an ECA Buyer Credit with the German ECA, Euler Hermes, for the National Authority of Tunnels in Egypt.

In Supply Chain Finance, we structured a sustainability linked solution with Cellnex, a Spanish telecom company with presence in 11 countries across Europe, to improve the adoption of sustainability practices for its supply chain through CDP's Supply Chain assessment programme. The programme relies on Santander to onboard and actively manage more than 3,000 of Cellnex's suppliers. We also signed a confirming solution with Henkel, a global chemical and consumer goods company, to structure its ESG Confirming programme in Latin America. In addition, we signed a confirming solution with a leading American energy company for the provision of solar and wind turbine equipment to generate renewable energy.

In Cash Management, we launched Green Deposits to help our customers align their liquidity management needs with environmentally sustainable activities. In Trade and Working Capital Solutions, we signed a Sustainability Linked guarantee line with two European aerospace companies. We also provided Structured Secured Inventory Finance to one of our customers whose objective was to invest in renewable PV projects in Spain.

The MacIntyre Wind Farm transaction won the Renewable Energy Deal of the Year at the TXF Export Finance Deals of the Year 2022 awards, for the construction of the largest wind farm in the southern hemisphere where CIB's Export & Agency Finance team acted as lender and facility agent.

Corporate Finance

During 2023, CIB was adviser on a number of corporate finance transactions in the renewable energy sector. In Iberia, Santander supported Bruc Energy in the sale of a 49% stake in a 1.1GW solar PV portfolio to Interogo; and supported Ardian on the sale of a 422 MW portfolio of wind farms and 435MW hybrid PV farms to Naturgy. In Poland, CIB advised EDP on the sale of 300MW operating farms and PV pipeline to Orlen. In the offshore wind sector, we were sell-side advisor to Iberdrola in the sale of a 49% stake in Baltic Eagle offshore wind farm to Masdar, the largest ever M&A deal involving an offshore wind asset in the Baltic Sea.

Our ESG Sustainable Tech team advised PATRIZIA Infrastructure on its equity investment in an EV charging rollout programme in Germany managed by Numbat, a specialist developer and operator of high-power EV charging solutions. PATRIZIA will invest over EUR 70 million to install 400 ultrafast EV charging stations at 200 supermarkets in Germany.

Combining our hydrogen expertise and our French execution capabilities, CIB acted as sole financial advisor to Forvia and Michelin in the sale of a stake in Symbio to Stellantis, one of the largest ever hydrogen transactions globally at the time.

Building on our successful year-and-a-half strategic partnership, in September 2023, CIB acted as joint advisor to EIT InnoEnergy, a leading innovation engine in sustainable energy, in securing over EUR 140 million in a private capital raise. The proceeds will be used to accelerate and de-risk the development of hundreds of EIT InnoEnergy portfolio companies. Since signing a collaboration agreement with EIT InnoEnergy in April 2022, Santander CIB has supported several InnoEnergy startups. This includes advising France's biggest battery manufacturer, Verkor, on its partnership with Renault, and financing to Germany's leading hydrogen power solutions company, HPS.

Retail and commercial banking

The green finance strategy for retail and commercial banking puts our customers at its core to help them address energy transition challenges. Our ambition is to be a world leader in environmental finance that delivers value to our customers.

We have developed a business strategy of end-to-end solutions and trained retail and commercial banking teams to meet customers´ needs. The Global Green Finance unit leverages its synergy with CIB, where the Group serves large corporates, and is being a driver of transition within the value chain of these companies. We offer sustainability-linked loans to our customers to support their transition needs irrespective of the sector.

Throughout 2023, Santander partnered with selected providers of energy transition services, including: CBRE, Powen and Holaluz in Spain; Myenergi in the UK for EV chargers; Powen and Edge-IFC in Mexico; Solarity in Chile; and YPF Solar in Argentina. We have also launched pilot projects in other geographies.

We are currently offering 11 partnerships for solar panel solutions across our three regions (Europe, South America and North America) and supporting our customers decarbonizing their real estate portfolios.

Green solutions for our individual, SME and corporate customers, in line with our Sustainable Finance & Investment Classification System (SFICS)

Sector	What we finance	Value propositions 2023
Renewables	Renewable energy production and transportation. Energy storage.	Financing of solar panels, wind farms and battery and storage battery production.
Real Estate	Purchase, construction and renovation of energy-efficient buildings. Renewable power system installation and refurbishments that use 30% less energy.	Developer loans, private solar panel installation, smart meters, energy efficient lighting, mortgages with an A or B energy rating.
Mobility	Clean transport and infrastructure.	Leasing and financing of electric and hybrid vehicles (<50 g CO_2 per passenger-km), charging stations, bicycle lanes and others.
Agriculture	Sustainable and protected agriculture. Land and forest conservation. Sustainable farming.	Financing of sustainable agriculture practice such as more efficient irrigation systems, machinery and reduced fertilizer use.
Waste & Water Management Circular economy	Activities to adapt to, or mitigate, climate change; preserve biodiversity; boost the circular economy and waste & water management.	Financing of water, waste and soil treatment, greater energy efficiency, lower emissions and conservation.

Working with multilateral institutions

Santander continues to actively cooperate with multilateral development banks (MDBs) to finance the investment and liquidity needs of our customers in Europe and Latin America.

In 2023 the Group partnered with the European Investment Bank Group, the European Bank for Reconstruction and Development, the International Finance Corporation, the Multilateral Investment Guarantee Agency and the Development Bank of Latin America (CAF), signing 25 new agreements, which include senior loans, risk sharing programmes, financial guarantees, and securitizations. Through these facilities, Santander is improving financing conditions for micro, small and medium size enterprises and midcaps, and supporting a variety of investments including innovation and digitalization, education, transport and agribusiness, thus contributing to economic growth in the countries where the Group operates.

In addition, 14 of the agreements contribute to environmentally sustainable projects, ranging from the construction of efficient buildings, renewable energy generation, investment in energy efficiency, green mortgages, the circular economy and clean mobility.

Some notable agreements include:

- A synthetic securitization agreement with the EIB Group in Portugal that enables Santander to provide around EUR 140 million in green mortgages on nearly zero energy buildings.
- A EUR 56 million senior loan with the EIB to support the construction of a battery manufacturing plant in France.
- A USD 300 million guarantee agreement with Multilateral Investment Guarantee Agency to support, among others, renewable energy and sustainable agriculture projects in Argentina.
- A synthetic securitization with the IFC in Brazil to provide up to BRL 3 billion equivalent worth of finance to expand to other segments its financing to renewable energy projects in the country.
- Two portfolio guarantee agreements with the EIF in Spain and Portugal worth c. EUR 270 million to support SME and SMC projects that contribute to climate change mitigation and adaptation and to a more sustainable, circular, and carbon-neutral economy.
- A synthetic securitization agreement with the European Bank for Reconstruction and Development (EBRD) in Poland that enables Santander Bank Leasing to provide around EUR 77 million in new finance to projects aligned with the EBRD's Green Economy Transition (GET) criteria, including renewable energy and energy efficiency financing.

Santander España

Santander España's recent ABS agreements with the EIB Group to support the green transition in the Spanish residential housing market

In July Santander España signed a cash securitization transaction with the EIB and EIF, to redeploy the released capital to support working capital needs and investment in projects carried out by SMEs and mid-caps, including the provision of green leasing finance and green loans to developers to finance the construction of Net Zero Class A buildings.

In December, the EIB Group also participated in a Santander Spain's synthetic RMBS transaction whose released capital its being used to facilitate green mortgages to individuals on new buildings with high energy efficiency standards.

Providing our customers with global and local green solutions in CIB, retail and commercial banking and consumer finance and raising awareness in our local communities

Work to become sustainable finance leaders in our markets is not possible without our units' joint efforts to raise awareness, collaborate and offer our customers timely sustainable solutions.

For more details on our green finance products, services and partnerships performed in 2022, see the **'Supporting the green transition'** section in the 2022 Annual Report.

Santander UK

Throughout 2023, Corporate & Commercial Banking (CCB) continued to **support business customers' sustainability journeys** with our sustainable finance proposition. We raised and facilitated over £659m in 2023, up from £590m of sustainability-linked finance in 2022.

CCB continues to provide **funding to the expanding UK renewables sector.** 2023 examples include funding for a new 49.9MW solar farm to help power the City of London Corporation and supporting the construction and operation of four new battery storage facilities.

Sustainability Linked Lending **supports customers on their transition to net zero** by linking their sustainability commitments to their finances. We provided Lancaster University with a £60m facility in 2023 linked to five sustainability performance targets measured over five years. Their performance targets are aligned to their net -zero ambition.

Santander España

We continue supporting our customers in their green transition, increasing financing volumes for Large Corporates, SMEs and retail customers, including **sustainability linked loans and sustainable finance** that accounted for EUR 2 billion in 2023 in R&C segment. Some examples of these financings are the **syndicated factoring agreement with Cunext Cooper Industries** for EUR 150mn or a syndicated **guarantees facility with Haizea Wind Group** to develop two offshore windfarms in the North Sea.

We promote **green buildings** including a price discount for green mortgages, financing retrofitting works to promote energy efficiency at their individual homes or financing homeowners' communities to undertake retrofitting works affecting the entire building. Additionally, a vast majority of the new real estate developments that we finance have the **higher energy efficiency certificates**. We have reached an **agreement with CBRE** to offer our corporate and institutional clients an advisory service to decarbonize their buildings portfolios.

We support energy transition by financing large **renewable energy projects** but also promoting self-consumption for both corporates and retail customers, thanks to our agreements with **partners such as Powen and Holaluz**. At the same time, we continue supporting green mobility with our comprehensive offer in renting and financing for EV vehicles.

Santander Consumer Finance (SCF) Europe

Electric vehicles: In 2023, we financed over 208,000 electric vehicles in Europe, accounting for some EUR 6.5 billion in green finance (+27% with respect to 2022).

Durables: In the consumer business, real estate accounts for 51.9% of green finance, and mobility 47.2%. Durables products that generate a significant part of new business are solar panels (30.9%) and bicycles (47.2%). In 2023, we issued 124,500 green finance tickets.

Emissions: SCF continues to improve the emissions capture of the new business financed, with a dashboard to monitor emissions metrics on a monthly basis.

Santander Bank Polska

Santander Bank Polska continues to support financing in the **My Electric Car programme**:

New synthetic securitization for the EUR portfolio, signed in September 2023 with EBRD including support for green investments (PLN 77 million for 3 years) and participation in the de minimis Guarantee (Gwarancje de minimis) programme in **cooperation with Bank Gospodarstwa Krajowego** (BGK) supporting green transactions.

Santander US

In 2023, Santander US **BEVs totalled USD 1,436 million** origination across more than 35,000 units. This was a **1792% increase** over 2022 (originations totalling USD 75.9 million).

In September, the Commercial Bank closed a USD 250 million asset-based revolving credit facility on behalf of **Wind Turbine & Energy Cables Corp (WTEC)**. Santander acted as administrative agent, joint lead arranger and joint bookrunner for the credit facility and is one of eight international and US-based banks providing financing to support WTEC's production, logistics, fleet management and day-to-day operations.

In November 2023, USD 65 million in Sustainability Linked Loans were granted to companies that mine lithium and bauxite, and refine aluminium. The main KPIs related to **reducing GHG emissions intensity** and **increasing the amount of GHG avoided** and **renewable energy used**.

Banco Santander Peru

Sustainable financing **agreement with Grupo Patio Perú** for USD 19 million for the purchase of the Patio las Camelias Building which hold the "Gold" the LEED certification.

Participated in the measurement of greenhouse gases carried out by the **Peruvian Ministry of the Environment**, obtaining the second star for its a higher level of transparency on reported GHG emissions (validated by an independent third party).

In November 2023, Banco Santander Peru originated the first green **Receivable Purchase Program** with the objective of show casing Camposol's good agricultural practices, under the Global GAP certification. This transaction was the first program referenced to the Loan Market Association's Green Lending Principles for an amount of USD 30 million.

Santander Brasil

In 2023, Santander Brasil reached BRL **10.1 billion in total portfolio for renewable energies and BRL 2 billion in total portfolio for sustainable agribusiness in 2023.**
Acquisition of FIT Energia: Renewable energy offer for individuals and SMEs through decentralized solar power generation.

Brazil's Inaugural Sustainable Sovereign Bond: The Brazilian National Treasury issued in November 2023 its first sustainable sovereign bond on the international market, totalling USD 2 billion proceeds with 7-year maturity. Proceeds will be allocated to projects and initiatives aimed at climate change mitigation and adaptation, conservation of natural resources and social development. Santander Brasil acted as a Global Coordinator.

Eletrobras: In September 2023, Brazilian integrated utility Eletrobras issued a BRL7 billion dual-tranche local bond, one of the largest public debt offerings in the Brazilian market to date. The 5-year sustainable tranche totalled BRL 3 billion, with proceeds to be deployed in eligible green or social projects as per Eletrobras' Sustainable Financing Framework. Santander Brasil acted as a Joint Bookrunner.

Santander México

In 2023, almost 50% of the local bond transactions led had an ESG label.

Sustainability Linked Bond: Santander México accompanied Bimbo in the placement of its first **sustainability-linked bond**, which was the largest corporate issuance in the history of the local debt market with this label.

Alliance with BYD, the main manufacturer of electric vehicles worldwide, for the **financing of electric and hybrid vehicles** with the Super Auto product. Additionally, we entered into an alliance with VEMO, a leader in comprehensive electromobility solutions in Latin America to promote migration towards electric commercial fleets with its portfolio of business customers and commercial leasing solutions.

Alliance with IFC to **promote sustainable construction practices** among in real estate developer customers, who will get free advice from experts in EDGE certifications. Additionally, the first green mortgage was launched in Mexico, which seeks to reward customers who purchase a home that has a sustainable construction standard (mainly EDGE and LEED certifications).

Santander Chile

In 2023, Banco Santander Chile granted **sustainable loans** for USD 809 billion among green, social and ESG-linked financing facilities. A notable milestone is that we also became the **first banking entity to issue a bond to strengthen the green mortgage financing**, also being the first that is framed in our ESG framework in an operation, that reached JPY 8,000 million (equivalent to USD 53 million). This adds to our participation as advisors in three sustainable bonds and a social one for our clients, for a total of UF 16 million in the local market.

Santander Argentina

In 2023, we ran several **hydrogen-related projects** as part of the EIB's Global Gateway initiative, such as the Hydrogen Summit in June, which had invited over 100 participants, including 40 companies and specialists in the sector, both external and from the bank.

Additionally, Santander participated in a **Hydrogen Forum** organized with the **H2a and Y-TEC** consortium

Wealth management & insurance

In the past few years, environmental, social and corporate governance (ESG) investing has grown from niche to mainstream, particularly in Europe. It has been mostly driven by investors' demand and regulatory developments. Despite the current state of geopolitics, a new investment paradigm has emerged. ESG risk factors (particularly on climate) are gaining importance for risk-adjusted return analysis. Demand is growing considerably for investment opportunities that address climate adaptation and mitigation, biodiversity loss and other challenges. Additionally, active stewardship and decarbonization initiatives, such as "net zero", have been key to improving stakeholders' commitment to sustainability along the investment value chain.

We have a clear goal to embed sustainability in our growth strategy and decision-making (with special focus on climate). We continue to expand and strengthen our sustainable product offering, and integrate ESG into our processes, in line with the Group's standards.

We have strengthened our ESG teams to create a centre of expertise and excellence. This has enabled us to increase our socially responsible products and services offering. Furthermore, we have been able to build internal frameworks and processes, incorporate best practices, create ESG content to increase awareness, earn top-level accreditation for our teams and network, and develop strategic partnerships with other divisions and third parties. In 2022 we announced our first public commitment to increase our SRI (Socially Responsible Investments) AUM from c. EUR 27.1 billion as of 31 December 2021 to EUR 100 billion by 2025. As at 31 December 2023, our SRI AUM[1] amounted to EUR 67.7 billion between SAM and third-party funds in Private Banking.

Santander Asset Management

Net Zero Alignment Methodology

Following PAII[2] Net Zero Investment Framework (NZIF) guidelines, SAM has developed an internal methodology to assess high impact sector companies against current and forward-looking criteria to gauge the alignment of assets with a net zero pathway.

Following NZIF recommendations, the assessment covers the following criteria that together constitute a credible and robust transition plan:

1. Long-term ambition consistent with achieving net zero by 2050
2. Short- and medium-term reduction targets
3. Disclosure of scope 1, 2 and material scope 3 emissions
4. Emissions performance relative to targets
5. Decarbonization strategy
6. Capital allocation alignment

This analysis provides us with a maturity alignment scale and a classification of assets in any of the following categories: achieving net zero, aligned to a net zero pathway, aligning towards a net zero pathway, committed to aligning, not aligned.

Additionally, we are working with our data providers to increase the scope of the analysis in order to systematically cover additional criteria that should be progressively incorporated as data availability increases. Some of those criteria include climate policy engagement and governance, just transition and climate risk and accounts.

SRI products

Our proposition includes a full SRI product line. As at 31 December 2023, we had EUR 48.1 billion SRI AUM in 8 geographies. SAM pioneered these products launching its first SRI fund in 1995. Our thematic proposition includes funds that focus on climate (Santander Innoenergy Climate and Santander Sostenible Bonos), renewable energy (Santander Iberia Renewable Energy), and social objectives (Santander Prosperity). In 2023, we continued to broaden our SRI product and service range, with a focus on the transformation of personalized pension plans under article 8 of the SFDR. We also embedded ESG criteria in our pension plans in Spain.

In 2023, our solidarity funds donated to several NGOs to educate young people at risk of exclusion and help vulnerable women search for jobs, among other causes. Our Santander Responsabilidad Solidario fund won 'Best solidarity fund' at the Expansión-Allfunds Awards.

SAM SRI offering

1. AUM classified as Article 8 and 9 funds (SFDR) from SAM, plus third-party funds from Private Banking. We apply equivalent ESG criteria to SAM's funds in Latin America. Illiquid funds are in terms of committed capital for Private Banking.
2. Paris Aligned Investment Initiative

Products to help fight climate change
Santander Asset Management was a pioneer in Spain in the sustainable bond space. The Santander Sostenible Bonos fund launched in 2019 invests in green bond issuances (corporate debt designed to finance clean energy, emissions reduction and other green initiatives) and in social, climate change, environmental and other sustainable bonds. Moreover, SAM has an advisory mandate for LA Green, a blended finance fund to foster the green bond market for SMEs in Latin America to attract capital at scale and make a positive contribution to society and the environment.

Santander Alternative Investments (SAI) offers two investment solutions in private markets to tackle climate change: Santander Iberia Renewable Energy, a private equity strategy that invests in photovoltaic and wind power projects in the Iberian market and Santander Innoenergy Climate fund, a venture capital strategy that invests in climate tech startups in the renewable energy, smart grids, energy efficiency, storage systems, batteries for green energy, mobility, and circular economy space.

To increase Santander Alternative Investment´s climate solutions and to continue expanding its commitment in the energy transition, SAI plans to launch a new strategy, Santander Renovables. This intends to invest in companies in the renewable energy sector, slightly expanding its exposure to projects in Southern Europe, where the investment team will seek attractive opportunities.

Our standards and stewardship
We are dedicating more resources to engagement and voting. In 2023, we revised our engagement and voting policies and strategies. Our progress in voting shows we climb 49 positions in the *ShareAction* ranking in their latest 'Voting Matters' report.

We published our second stewardship report and SAM Spain was the first fund manager to adhere to the CNMV's Code of Good Practices. We are promoting both collaborative and bilateral actions with companies. In addition to NZAMi, we are also signatories of these initiatives:

→ UN PRI. In July 2020, we adopted the UN-backed Principles for Responsible Investment (PRI), joining a global community committed to building a more sustainable financial system. The Santander employee pension fund in Spain is also a signatory.

PRI Principles for Responsible Investment

→ International Investors Group on Climate Change (IIGCC). In 2020, Santander Asset Management became a signatory to the IIGCC, the European membership body for investor collaboration on climate change and the voice of investors taking action for a prosperous, low-carbon future.

→ Net Zero Engagement Initiative by IIGCC. In February 2023, SAM joined this investors group to align our portfolio with our net zero ambition. This initiative helps investors align more of their portfolio with the goals of the Paris Agreement by engaging with companies beyond the Climate Action 100+ focus list.

IIGCC The Institutional Investors Group on Climate Change

→ Climate Action 100+. In January 2021, Santander Asset Management joined Climate Action 100+ to promote action on climate change. This initiative entails engagement with a company included on its list to ensure necessary action is being taken against climate change. As a Climate Action 100+ member, SAM is helping accelerate the transition to net-zero emissions by 2050.

Climate Action 100+

Private Banking

We focus on incorporating ESG in our private banking advisory services. In 2023, Santander Private Banking was named "Best Private Bank for ESG Investing" in Chile by *Euromoney* and "Best Private Bank for ESG positioning" in Spain by *Citywire*.

Socially Responsible Investment (SRI)
Our SRI products include a wide range of traditional mutual funds and alternative investment vehicles. We continue to add new products in all asset classes, including impact investment. We steered our list of third-party funds under advisory to have a majority of Article 8 and 9 funds under SFDR. We carry out due diligence on investment strategies for Article 8 or 9 products under SFDR to ensure a consistent, comprehensive SRI product offering.

As at 31 December 2023, we had EUR 19.6 billion in SRI AUM from third-party funds. We also offer SRI mandates in six countries and intend to expand to more geographies in the coming years.

Engaging with our customers on ESG
Understanding our customers' sustainability preferences is key. We provide bespoke portfolio reporting to our Private Banking International (PBI) clients, including metrics on CO_2 emissions, water footprint, waste generation and energy savings.

CITYWIRE PRIVATE BANKING AWARDS 2023 WINNER · ESPAÑA
MEJOR POSICIONAMIENTO ESG Santander Private Banking

EUROMONEY PRIVATE BANKING 2023 CHILE BEST FOR ESG INVESTING

ESG expertise

In 2022, we launched a global training plan for our bankers and advisors to credit them with internal and external certifications. We are also working to enhance our ESG communications and learning materials. Our international network of ESG specialists and governance model ensures the quality and transparency of our ESG products and advisory services.

Insurance

By 2023-year end, we had extended our insurance offering to protect sustainable assets, activities and vulnerable individuals based on the Group's sustainable finance and investment classification system (SFICS)[1] to 8 countries. We are also cooperating with our partners to broaden SRI in their investment policies and product ranges to cover risk associated with sustainability factors according to existing regulation[2]. It includes the following categories:

- Insuring risks from assets and activities that the Group classifies as sustainable (electric vehicles, renewable energy infrastructure, etc).
- Insuring risks from people or activities to increase society's well-being. The goal of these products is to increase the eligibility and affordability of insurance products. These include, for instance, micro insurance, health for the elderly, life insurance for low income households, and insurance for new or existing activities that can generate social challenges.
- Promoting socially responsible insurance-based investment products according to existing regulation[2].

Furthermore, the partners of our joint ventures are signatories of the UN's Principles for Sustainable Insurance (PSI).

Insurance Products aligned with SFICS[1]

Core insurance products in our core geographies

Personal accident insurance for Seniors **Auto Insurance** **Dependency Insurance** **Senior Home Insurance**	**Life Insurance** for low income people **Health Insurance** for self employed or low income people
Life Insurance for low income people **Personal accident insurance** for low income people	**Life Insurance** for low income women **Life Insurance** for micro-entrepreneurs
Micro mobility Insurance	**Life Insurance** for low income people
Motor insurance for EV	**Multirisk Insurance for SMEs** (photovoltaic pannels)

1. Sustainable Finance and Investment Classification System (SFICS)
2. AUM classified as Article 8 and 9 funds (SFDR). We apply equivalent ESG criteria to assets in Latin America.

Net Zero stewardship at Santander Asset Management

As part of NZAMi's requirements, SAM has engagement objectives aimed at promoting greater transparency, accountability and collaboration between investors and issuers in the transition to a net zero economy.

According to the initiative, by 2030, signatories must comply with a 90% of financed emissions in High Climate Impact Sectors (HCIS) either achieving net zero, aligned to net zero or under engagement. To achieve this, SAM has integrated all information needed to monitor this metric in its internal management tools.

During 2023, we worked on developing our Net Zero engagement strategy which aims to encourage issuers to commit to decarbonization plans and to transparency. We promote accurate and credible reporting within our issuers to be able to monitor their progress. The engagement strategy also encourages issuers to set ambitious targets that are consistent with the objectives of the Paris Agreement.

The strategy to meet this requirement involves different steps:

- Classification of issuers according to their NZ alignment maturity.
- Identification of most significant issuers in terms of GHG emissions in HCIS.
- Definition of priority companies based on engagement materiality, needs and prospects for change.
- Participation in collaborative climate engagement initiatives (CA100+, IIGCC, etc.).
- Implementation of individual engagement actions for priority issuers not covered by collaborative initiatives.
- Application of a voting policy aligned with Net Zero.
- Regular oversight of engagement actions.
- Annual reporting of our engagement efforts.

For more details on our approach to engagement see our 2022 Stewardship Report

Case study: Collaborative engagement with companies on climate change – Climate Action 100+

As part of this initiative, SAM is leading the dialogue with a European company in the energy and utilities sector. In 2023, SAM had several meetings with the company to discuss the initiative's assessment of the company, as well as to evaluate how the company's climate ambition is aligned with its investments and projects.

7. Partnerships

Sector working groups

Partnerships with others in business and governments is critical if we are to tackle climate change and protect biodiversity. Grupo Santander participates in different organizations, alliances and working groups: we engage with international and local stakeholders (sector associations, think tanks, universities, peers and others) to progress in global and company goals, in line with the SDG 17 (Sustainable Development Goal) on Partnerships for Goals.

These are the main initiatives Grupo Santander participates in with leading organizations to improve how banks manage climate change and biodiversity :

United Nations Environmental Programme Finance Initiative (UNEP FI), NZBA, PRB

Santander was a founder member of the UN Principles for Responsible Banking (PRB). We are also a founding member of the Net Zero Banking Alliance (NZBA) and we are engaged in the different working groups driving the development of further sector alignment and implementation guidelines to support the initiative in its goal.

Santander is part of the Core Group for the 2030 Principles for Responsible Banking review process.

UNEP FI also launched the PRB Biodiversity Community, which we have also joined. As part of this community we joined the PRB Biodiversity Target Setting Working Group, which aims to align the existing industry guidance with the Kunming-Montreal Global Biodiversity Framework.

Glasgow Financial Alliance for Net Zero (GFANZ)

GFANZ is a global coalition of leading financial institutions committed to accelerating the decarbonization of the economy.

GFANZ is also an umbrella organization that covers financial sector net zero initiatives, including two in which we directly participate: NZBA and Net Zero Asset Management initiative (NZAMi), with the latter being led internally by Santander Asset Management.

We are an active member of GFANZ. Our Executive Chair has been co-leading its public policy group, which published a call to action in 2021.

World Business Council for Sustainable Development (WBCSD)

We continue to participate in the Banking for Impact on Climate in Agriculture (B4ICA) initiative, coordinated by WBCSD and in partnership with the United Nations Environment Programme Finance Initiative (UNEP FI), the Partnership for Carbon Accounting Financials (PCAF) and Environmental Defense Fund (EDF) along with member banks. The Partnership continues to work to help agriculture & food lenders and investors progress towards their net-zero emissions commitments and finance a more sustainable agricultural sector.

Banking Environment Initiative (BEI)

Supported by the Cambridge Institute for Sustainability Leadership and its members, the work at BEI has been making progress on several themes, with a strong focus on nature. We engaged in a series of innovation sprints with the BEI, Cambridge Institute for Sustainability Leadership (CISL) and Business for Social Responsibility (BSR). We continue to participate in several programmes with a particular focus on integrating climate and nature, like the development of the Let's Discuss Nature with Climate: Engagement Guide.

World Economic Forum - International Business Council

Santander is participating in the "Transforming Energy Demand" project, which aims to identify ways in which companies can reduce energy demand intensity as a means of contributing to the global energy transition, as well as to the bottom-line. The IBC, currently chaired by Ana Botín brings together 130 CEOs and company chairs across industries, from developed and emerging markets, on all continents. The group is responsible for c.3% of global energy consumption.

World Economic Forum - Alliance of CEO Climate Leaders

Santander continues its engagement within the World Economic Forum Alliance of CEO Climate Leaders as key network to influence stakeholders, including policymakers, and drive change towards meeting net zero targets. We are also following the work at the “Financing the Transition to a Net-Zero Future” initiative.

United Nations Global Investors for Sustainable Development Alliance (GISD)

This working group was created as part of the UN’s strategy for financing the 2030 Agenda for Sustainable Development. CIB collaborates with one of the task forces that aims to develop investment platforms and vehicles to build up finance and investment flows to developing countries in support of the SDGs.

We also joined the workstream on Sovereign SDG bonds established in 2023 by the United Nations Department of Economic and Social Affairs (UNDESA) and the United Nations Development Programme (UNDP), joining top tier investors, agencies and banks, whose purpose is to produce an integrated guidance aimed at investors and developing countries interested in sovereign SDG bonds. The guidance will seek to enhance the integrity and quality of sovereign SDG bonds through an assessment that identifies lessons and best practices from both country and investor experiences.

International Capital Market Association (ICMA) Principles

ICMA Principles champion global green, social and sustainability bond (and related) markets to finance progress towards environmental and social sustainability. The initiative outlines best practices through global guidelines and recommendations that ensure integrity and promote transparency and disclosure when issuing bonds that serve social or environmental purposes. The Principles were established in 2014 and Santander has been a member since then.

In 2023, Santander actively participated in multiple working groups and taskforces organized under the Principles, covering Impact Reporting, Sustainability-Linked Bonds, Green enabling activities and SLL refinancing instruments.

Financing the Just Transition Alliance

Led by the Grantham Research Institute within the London School of Economics, the goal of the Alliance is to stimulate and support system-level innovation that enables investors and the financial sector more broadly to deliver a just transition in the UK. Our focus is on the implications for the mortgage sector in the UK.

Partnership for Carbon Accounting Financials (PCAF)

We have been a member of PCAF since 2021 and thus committed to disclose our financed emissions according to the PCAF standard. We also take part in its regional and sectoral working groups.

United Nations Office on Drugs and Crime (UNODC)

Santander has been collaborating with the UNODC and its network since 2021.

Update on our collaboration with UNODC is described in "Tackling environmental crime" section above.

TNFD Forum

As a member of the TNFD Forum, in 2023 we continued to monitor the publication of the different beta versions of the framework for the management and disclosure of nature-related risks and opportunities. The first version of this framework was published in September 2023, along with an additional guidance for financial institutions.

International Institute of Finance (IIF)

The International Institute of Finance, based in Washington, identifies and promotes capital markets solutions that support the development and growth of sustainable finance, with transition finance and blended finance as key components. Grupo Santander's Executive Chair is currently Chair of the IIF and the bank participates in several sustainability-related working groups – including the Sustainable Finance Policy Expert Group and the Sustainable Finance Data, Disclosure & Classification Expert Group – that contribute to shaping official sector initiatives that address the environmental, social and governance priorities relevant to the finance industry. In addition, the IIF advocates for sustainable finance policies that prioritize prudential risk management, financial stability, and economic growth. In 2024, Santander Brasil partnered with the IIF on a roundtable discussion on improving the investment landscape for transition finance in emerging markets.

European Banking Federation (EBF)

The European Banking Federation endorses and is a promoter of the Principles for Responsible Banking, as an enabler to accelerate the banking industry contribution to the Paris Agreement objectives and UN SDGs.

Sustainable finance is an EBF strategic priority and Santander participates in several working groups – such as the ESG Risk Taskforce, which we chair; the Sustainable Finance SteerCo; and the Chief Sustainability Officers roundtable – that aim to encourage the development of a coherent and enabling sustainable finance framework that fosters the banking sector's ability to support the transition of all actors of the real economy, as well as the resilience of the sector to ESG risk.

Contributing to the policy debate

Santander´s purpose is to help people and businesses prosper. By delivering on this purpose, we can help all our stakeholders address their challenges and build their business for the future.

Engaging with our stakeholders is important to understand their concerns, help us to set our priorities.

This engagement is carried out both globally, by the Group, and locally, in the countries where we have a significant presence. We do this by participating in formal consultations on key regulations locally, in Europe and globally. We also take part in sector forums and workshops on the transition to a low-carbon economy. This is important to ensure we are participating in the debates and developments that are most relevant to the bank, its employees, customers and the communities in which we operate.

Engagement with authorities

Our contribution to the policy debate seeks to facilitate that the regulatory framework under which companies operate, helps to deliver on the sustainable transition of the economy and powers inclusive, sustainable, economic growth. This includes, ensuring that the different players, being banks, large corporates, SMEs and households are able to seize the opportunities brought by the transition.

We believe that the regulatory framework should support growth, which is critical if the transition is to be stable and orderly. Furthermore, regulators and policymakers should encourage investment in the technologies that will be key throughout this journey such as: renewable energy, e-mobility, sustainable agriculture, green buildings.

To achieve this, we believe that international alignment and coordination across jurisdictions is more important than ever, to ensure that the framework designed contributes to business competitiveness and facilitates companies´ role in the transition. Equally, it is essential that, to promote a just transition, the starting point and specific needs of emerging and developing economies is taken into consideration when defining the regulatory and supervisory requirements in jurisdictions that are leading on the sustainability agenda, such as Europe.

Supporting the transition of emerging countries is essential to progress in the transition of the global economy and requires cross collaboration of governments, multilateral development banks and the private sector.

Santander actively engages with the Basel Committee, the Financial Stability Board, the European Banking Authority, the European Central Bank, the European Institutions, as well as the Bank of Spain and the Bank of England among other key players defining the sustainable finance framework to better support the UN Sustainable Development Goals and the Paris Agreement target on climate.

This year, the Brazilian Presidency of the G20 together with the future COP30 that will take place in Belen in 2025, will bring increasing opportunities to engage with the parties involved, to work, especially, on common solutions to progress in the transition of emerging and developing economies.

Working with industry bodies

As described in the previous section, we work very closely with industry bodies – including the Institute of International Finance, the European Financial Services Round Table, the Association for Financial Markets in Europe and the European Banking Federation – to reach common positions on issues such as the implementation and future improvement of the EU framework for identifying sustainable economic activities (the so-called Taxonomy), the framework for ESG disclosures and reporting, the definition of standards and labels for sustainable products, as well as the ongoing work on the identification and management of climate-related risks. We participate in these debates through established channels, such as consultations, workshops, etc, and also by providing the environment for relevant stakeholders to exchange views in fora like Santander´s annual International Banking Conference.

Engagement with NGOs

Santander also maintains an open dialogue and engagement with NGOs on studies, initiatives and topics of their interest.

Our position on some key issues

We want to help achieve sustainable development and pledge to play an active role in supporting the green transition. It is vital that the transition is just and inclusive, taking into account regional and sector specificities to avoid isolating communities and stranding assets. It must provide clarity and certainty for each sector. Governments should set clear pathways on how key sectors will meet the targets of a low-carbon economy, backed by policies and incentives that enable banks to support companies in their transition.

We aim to contribute constructively to the transition debate by supporting policymakers and regulators to achieve a global, common approach to regulation.

Our approach is that we must support so-called "brown" companies go green. A binary approach, which deters support for companies in carbon intensive sectors, will hinder the transition. This thinking should be reflected in the sustainable finance framework.

Taxonomies, are useful tools to help to support the flow of green finance into the economy towards the 1.5ºC scenario. We have learnt, and keep learning, a lot from the implementation of the EU Taxonomy to date. As practitioners aiming to constructively contribute to this debate and ensure that the Taxonomy genuinely supports green financing, we would encourage a simplification of the framework.

This would support banks and non-financial companies alike implementing the requirements in a more straightforward way, and hence contribute to the channelling of funds to green activities.

Transparency to the market is necessary to understand how companies are embedding sustainability into their strategy and business models. Interoperability across the European standards and the international baseline is much welcome on the aspects that are common to both standards i.e. climate reporting and financial materiality, and will contribute to streamlining the requirements on companies and improve compatibility across markets. As the development of the reporting and disclosure framework progresses, especially in Europe, we encourage policymakers to ensure that the requirements are balanced, including in depth and speed of implementation, and do not impair the competitiveness of businesses.

An enabling framework that supports the transition of business should not seek to increase banks´ capital requirements linked to ESG risks drivers, as the prudential (Pillar 1) framework already enables considering their impact. Higher capital requirements on the exposures of carbon intensive sectors would be counterproductive and could jeopardize the transition of the economy, especially of emerging countries, if banks have to withdraw from sectors that are in the midst of their transition journey.

Finally, as tackling climate change is a global challenge, authorities should coordinate as much as possible when defining the regulatory framework. This will allow to maximise the impact of the response and support the transition of the global economy, while avoiding fragmentation across markets.

Community support programmes to tackle climate change and protect the environment

The Group undertakes or financially supports a number of local initiatives to tackle climate change and protect biodiversity.

We channel our investment through partnerships with NGOs and humanitarian organizations. Some partnerships are with the bank's foundations in Argentina, Spain, the US, Portugal, Poland and the UK. In Spain, Fundación Banco Santander works to build a fair, inclusive and sustainable society by financing and running several cultural, educational, social and environmental projects. In 2023, Santander made a donation to Fundación Banco Santander for a total of 6,617,008 Banco Santander shares. The donated shares are meant to help the foundation financially: it can use the dividends to cover some (if not all) of the cost of fulfilling its founding purposes

Fundación Banco Santander

In Spain, Fundación Banco Santander works to build a fair, inclusive and sustainable society by financing and running several cultural, educational, social and environmental projects.

Fundación Banco Santander has been supporting projects aimed at restoring or recovering natural spaces, plant and animal species in Spain every year since 2004.

In 2023, we extended for the third year the scope of the Recovery of Natural Spaces initiative by launching Santander for the Seas, which aims to contribute to the conservation of unique sea and ocean habitats and species. Every year, three innovative, two-year-long initiatives will receive a maximum contribution of EUR 150,000 each. More information can be found on the Fundación website.

Moby Mummy, Sperm whale breeding area delimitation (Balearic Islands, Spain)

Restoration of Posidonia oceanica (Balearic Islands, Spain)

Upcycling the oceans (Spanish Mediterranean coast)

Projects map:

Santander España

Surplus food from our corporate canteens is donated to **Oreka** and sent to **La Hermandad del Refugio soup-kitchen**.

In 2023 more than **21,090 meals** were distributed to people in vulnerable situations and more than **70 employees** participated in volunteer actions in this soup-kitchen.

Santander US

- Santander partnered with several non-profits to launch a new clean energy institute to train underrepresented communities in high demand, well-paying jobs in solar energy. The 450-hour solar training program is a partnership of Power52 Clean Energy Access, Apex Technical School and Community Work Services. Graduates will receive college credits that can be used to secure pathways into other certificate and degree programs and to participate in additional upskilling.
- Santander US' support for Earth day broke records with a thousand volunteers, 70 separate activities, and 3,000 hours of community service—all in one week. Employees provided waterway clean-ups, urban garden maintenance, endangered species conservation, and more in the week leading up to Earth Day.
- 360 Eats (funding in 2022-2023) funding secured a mobile food kitchen for the Sustain-A-Bowl Free meals program. This program rescues food that would otherwise be thrown away and delivers hot, nutritionally-balanced meals at distribution centres for low-income communities. With this funding, 8,500 meals were served to LMI individuals, and 46,270 pounds of food was rescued from the landfill.

Annex 1

ENVIRONMENTAL FOOTPRINT 2021-2023[A]

	2023	2022	2021	Var. 2023-2022 (%)
Consumption				
Water (m^3)[B]	1,858,645	1,887,857	1,808,668	-1.5%
Water (m^3/employee)	9.56	9.75	9.76	-1.9%
Electricity from non-renewable sources (millions of kWh)	25.63	97.42	213.87	-73.7%
Electricity from renewable sources (millions of kWh)	779.68	745.82	675.78	4.5%
Total electricity (millions of kWh)	805.31	843.24	889.66	-4.5%
Total internal energy consumption (GJ)	3,444,543	3,431,272	3,667,872	0.4%
Total internal energy consumption (GJ/employee)	17.72	17.73	19.79	—%
Total paper (t)[C]	4,932	5,849	7,345	-15.7%
Recycled or certified paper (t)[C]	4,417	4,860	6,020	-9.1%
Total paper (t/employee)[C]	0.03	0.03	0.04	-15.9%
Waste				
Paper and cardboard waste (ton)[C]	3,788	4,124	6,324	-8.1%
Paper and cardboard waste (kg/employee)[C]	19.49	21.30	34.11	-8.5%
Greenhouse gas emissions[D]				
Direct emissions (t CO_2e)[E]	25,755	21,967	25,672	17.2%
Indirect electricity emissions (t CO_2e)-market based[F,G]	21,516	30,917	52,904	-30.4%
Indirect electricity emissions (t CO_2e)-location based[F,G]	205,292	217,906	265,095	-5.8%
Indirect emissions from business travel (t CO_2e)[H]	50,061	49,410	19,692	1.3%
Indirect emissions from employee commuting (t CO_2e)[I]	75,380	32,125	15,728	134.6%
Total emissions (t CO_2e)-market based[C,I]	172,711	134,419	113,996	28.5%
Total emissions (t CO_2e / employee)[C]	0.89	0.69	0.61	28.0%

A. For 2023 information is included for more than 96% of the employees in the main countries of operation: Germany, Argentina, Brazil, Chile, Spain, Mexico, Poland, Portugal, United Kingdom and the United States; the data consolidation approach is based on operational control of GHG Protocol, where we have full authority to introduce and implement Group's operational policies.

B. Santander consumes water exclusively from public water supply networks.

C. The reduction in paper consumption and paper waste continues the downward trend of recent years, in line with the digitalization of the Group and society.

D. Group's total emissions increased in 2023, mainly due to the return of employees to branches after the lifting of restrictions and the recovery of business travel and the improvement of the group's operational control procedures in the countries. Emissions derived from the use of courier services are not included, nor those derived from the transport of funds, nor those from any other purchase of products or services, nor those indirectly motivated by the financial services provided.

E. These emissions are from direct energy consumption: natural gas, diesel and fleet fuel consumption where applicable (Mexico, Brazil, Chile and Poland this year), and correspond to Scope 1, as defined by the GHG Protocol standard. To calculate these emissions, emission factors DEFRA 2023 for fiscal year 2023 and DEFRA 2022 for fiscal year 2022 have been applied. The increase in Scope 1 is due to the increase in the vehicle fleet and the higher commercial activity post-pandemic. On the other hand, the consumption of natural gas and diesel continues the downward trend of recent years.

F. These emissions include those derived from electricity consumption and correspond to scope 2 as defined by the GHG Protocol standard. For 2023, they have been calculated with the International Energy Agency (IEA) 2023 emission factors. For 2022, the 2021 IEA emission factors were used.

Indirect electricity emissions - market-based: for the calculation of these emissions, it has been taken into account that the countries of Germany, Spain, Mexico, Brazil, Chile, Portugal and the UK consume 100% electricity from renewable sources, and for Argentina, Poland and USA this percentage is 79.7%. For the remaining non-renewable electricity consumed, the IEA emission factor for each country has been applied.

Indirect electricity - location-based emissions: the IEA emission factor corresponding to each country has been applied for all purchased electricity consumed, regardless of its source of origin (renewable or non-renewable).

These emissions also include district heating consumption of buildings in Poland. The emission factor used is the 2022 factor from the URE - Urząd Regulacji Energetyki (ure.gov.pl).

G. The reduction in indirect electricity emissions is due to the increase in the purchase of electricity from renewable sources, self-production in our own buildings with solar panels (5.8 million of kWh of auto produced in 2023) and energy efficiency measures.

H. These emissions include from employee business travel by plane, train and/or car. The distribution of employees by type of travel is based on surveys, statistics or reasonable estimates. For the conversion of aviation kilometres, the DEFRA 2023 factors that include the direct effects of CO_2, CH_4 and N_2O have been used in 2023, aligned with market practice. In 2022 indirect impacts were included.

I. These emissions include emissions from employee commuting in each country (networks and central services) by individual car, company car and/or public transport. For the calculation of emissions from employee commuting, the conversion factors DEFRA 2023 for fiscal year 2023 and DEFRA 2022 for fiscal year 2022 have been applied.

Annex 2

FINANCED EMISSIONS OF DECARBONIZATION TARGETS [A]

Sector	Year[B]	Exposure (drawn amount EUR bn)	Emissions scope	Absolute emissions ($mtCO_2e$)	Physical emissions intensity	Financial emissions intensity ($mtCO_2e$/ EUR bn lent)	Overall PCAF score[C]
Power generation	2019	10.7	1	5.41	0.21 tCO_2e/MWh	0.51	2.7
	2020	10.31		4.59	0.17 tCO2e/MWh	0.45	2.5
	2021	10.23		4.24	0.19 tCO2e/MWh	0.41	2.8
Energy (Oil & Gas)	2019	7.7	1 + 2 + 3[D]	23.84	73.80 tCO_2e/TJ	3.10	3.4
	2020	6.67		22.58	73.60 tCO2e/TJ	3.38	3.6
	2021	8.25		27.43	74.36 tCO2e/TJ	3.33	3.9
Aviation	2019	1.5	1 + 2	1.81	92.47 $grCO_2e$/RPK	1.17	3.3
	2020	2.44		1.08	93.05 grCO2e/RPK	0.44	3.7
	2021	2.02		0.84	97.21 grCO2e/RPK	0.42	3.2
Steel	2019	1.5	1 + 2	2.62	1.58 tCO_2e/tS	1.74	3.0
	2020	1.31		2.14	1.40 tCO2e/tS	1.63	3.1
	2021	1.42		1.90	1.36 tCO2e/tS	1.33	3.1
Auto - manufacturing	2020	4.45	3[D]	3.49	149 gCO2/vkm	0.79	3.1
	2021	3.90		2.67	138 gCO2/vkm	0.68	3.0
Auto - lending[F]	2022	55.27	1 + 2	5.84	137 gCO2e/vkm	0.11	3.2

FINANCED EMISSIONS OF DECARBONIZATION PLANS

Sector	Year[B]	Exposure (drawn amount EUR bn)	Emissions scope	Absolute emissions ($mtCO_2e$)	Physical emissions intensity	Financial emissions intensity ($mtCO_2e$/ EUR bn lent)	Overall PCAF score[C]
Agriculture[E]	2022	1.80	1 + 2	6.20	7.04 tCO2e/ton	3.52	3.3
Mortgages[G]	2022	211.05	1 + 2	2.63	39.72 $kgCO_2e/m^2$	0.01	3.3

A. In the case of corporate business loans, Banco Santander calculates the Total Value of the Company (used to obtain the emissions attribution factor) by adding the total equity and debt of the company in order to avoid the high volatility in market capitalization.

B. Obtaining emissions data from our customers is a challenge. As they disclose more non-financial information worldwide, the quality of our reporting on finance emissions will improve. In some other retail sectors, we rely on availability of emissions information for the different asset types as well as business information.

C. Scores illustrate the data quality used to calculate the financed emissions (with 1 being the best). Financed emissions information comes from a wide range of sources for emissions, physical intensity, and production data. For CIB portfolios CDP is the main source for GHG emissions and Trucost for production, we also used Asset Impact and Annual Reports as secondary sources to cover information gaps. We rely on Transition Pathway Initiative to measure physical intensity for certain sectors, such as Autos, O&G and Steel. In other retail sectors, we rely on the good quality of business information but also on data suppliers to improve and expand their emission databases.

D. Scope 3 - category 11: use of sold products.

E. Agriculture portfolio in Brazil. Considering different commodities (such as soy, corn, rice, sugarcane, cotton, and coffee, measured in tons) and meat and dairy products (measured per head of cattle), in addition to the land use change (measured in hectares). Since there is no specific methodology for agriculture, PCAF score was adapted considering the data available in primary production portfolio that made possible to measure land management emissions. Data as of March 2022.

F. Consumer lending for the acquisition of passenger cars, covering a significant majority of the exposure in Europe.

G. Mortgages portfolio in the United Kingdom. Assessment includes Scope 1 and 2 emissions based on actual (where available) and modelled EPC's.

From our total lending on the balance sheet, about 8.0% of our exposure are from sectors for which Santander published emissions decarbonization targets for high-emitting sectors (power generation, energy (oil and gas), aviation, steel, auto manufacturing and auto lending) and around 17.8% of total CIB lending. Using baselines exposures with different time horizons as per above table, and balance sheet exposures as of December 2022.

Annex 3

TCFD Recommendation index

	TCFD Recommendations	Chapter Reference	Section Reference	Pages
Governance	a. Describe the board's oversight of climate-related risks and opportunities.	3. Governance		17
	b. Describe management's role in assessing and managing climate-related risks and opportunities.			
Strategy	a. Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	2. Strategy	Climate risks and opportunities	12
	b. Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.			
	c. Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	4. Risk management	Scenario analysis	27
Risk Management	a. Describe the organization's processes for identifying and assessing climate-related risks.	4. Risk management	1. Identification; 3. Assessment	22
	b. Describe the organization's processes for managing climate-related risks.	4. Risk management	2. Planning; 3. Assessment; 4. Monitoring; 5. Mitigation; 6. Reporting	22
	c. Describe how processes for identifying, assessing, and managing climate- related risks are integrated into the organization's overall risk management.			
Metrics and Targets	a. Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	5. Metrics and targets	Decarbonization targets	39
	b. Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	5. Metrics and targets	Decarbonization targets	39
		5. Metrics and targets	Our environmental footprint	52
		Annex	Environmental footprint 2021-2023	73
			Financed emissions of decarbonization targets	74
	c. Describe the targets used by the organization to manage climate- related risks and opportunities and performance against targets.	5. Metrics and targets	Decarbonization targets	39

Annex 4

GFANZ Financial Institution Net-zero Transition Plans - Recommendation index

	GFANZ Recommendations	Chapter Reference	Section Reference	Pages
Foundations	Objectives and priorities	2. Strategy	Our ambition	7
			Our strategy, objectives and priorities	7
			Our objectives and priorities	7
			Our approach	10
Implementation Strategy	Products and services	6. Financing the green transition		55
	Activities and decision-making	3. Governance	Climate change and green transition oversight	17
			Main areas involved in the implementation of the climate change strategy	18
	Policies and conditions	3. Governance	Policies and guidance	19
		4. Risk management	Monitoring	30
Engagement Strategy	Engagement with clients and portfolio companies	4. Risk management	Engagement approach	11
		4. Risk management	Santander and the Brazilian Amazon	36
		5. Metrics and targets	CIB implementation strategy	42
		6. Financing the green transition	Net Zero stewardship at Santander Asset Management	67
	Engagement with industry	7. Partnerships	Sector working groups	68
	Engagement with government and public sector	7. Partnerships	Contributing to the policy debate	70
Metrics and Targets	Metrics and targets	5. Metrics and targets		39
Governance	Roles, responsibilities, and remuneration	3. Governance	Climate change and green transition oversight	17
		3. Governance	ESG governance in Santander Asset Management	20
	Skills and culture	3. Governance	ESG training and skills development	21

Independent verification report

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Independent limited assurance report

To the management of Banco Santander, S.A.

We have undertaken a limited assurance engagement in respect of the the selected ESG indicators, for the specified reporting period for each indicator, contained in the "Annex I: Climate Finance Report 2023" included in the Climate Finance Report 2023 of Banco Santander, S.A. (Parent company) and its subsidiaries (hereinafter, "Grupo Santander"), prepared in accordance with the criteria of Grupo Santander set out in the "Annex II: Climate Finance Report 2023 Reporting Criteria".

Our assurance was with respect to the specified reporting period for each indicator, contained in the "Annex I: Climate Finance Report 2023" and we have not performed any procedures with respect to earlier periods or any other elements included in the Climate Finance Report 2023 and, therefore, do not express any conclusion thereon.

Responsibility of management

The management of Banco Santander, S.A. is responsible for the preparation, content and presentation of the Climate Finance Report 2023 in accordance with the internal procedure defined in the "Annex II: Climate Finance Report 2023 Reporting Criteria". This responsibility includes the design, implementation and maintenance of internal control required to ensure that the selected ESG indicators are free from any material misstatement, whether due to fraud or error.

The management of Banco Santander, S.A. is also responsible for defining, implementing, adapting and maintaining the management systems from which the information required to prepare the selected ESG indicators, is obtained.

Our Independence and quality management

We have complied with the independence and other ethical requirements of the International Code of Ethics for Professional Accountants (including International Independence Standards) issued by the International Ethics Standards Board for Accountants (IESBA Code), which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Our firm applies International Standard on Quality Management 1, which requires the firm to design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Our responsibility

Our responsibility is to issue a limited assurance report based on the procedures that we have carried out and the evidence obtained. Our limited assurance engagement was done in accordance with the International Standard on Assurance Engagements 3000 (Revised) "Assurance Engagements other than Audits or Reviews of Historical Financial Information", issued by the International Auditing and Assurance Standards Board (IAASB) of the International Federation of Accountants (IFAC).

The scope of a limited assurance engagement is substantially less extensive than the scope of a reasonable assurance engagement and thus, less security is provided.

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The procedures that we have carried out are based on our professional judgment and have included consultations, observation of processes, document inspection, analytical procedures and random sampling tests. The general procedures employed are described below:

- Meetings with Banco Santander, S.A.'s personnel from various departments who have been involved in the preparation of the of the Climate Finance Report 2023.
- Analysis of the procedures used for obtaining and validating the data presented in the selected ESG indicators.
- Analysis of the Grupo Santander's selected ESG indicators adaptation to the requirements established by the reporting criteria included in the "Annex II: Climate Finance Report 2023 Reporting Criteria".
- Verification, through random sampling tests revisions, and substantive tests on the information used to determine the Grupo Santander's selected ESG indicators. We have also verified whether they have been appropriately compiled from the data provided by Banco Santander, S.A. sources of information.
- Obtainment of a management representation letter from the Parent company.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement. Accordingly, we do not express a reasonable assurance opinion about whether Grupo Santander's selected ESG indicators have been prepared, in all material respects, in accordance with the criteria of Grupo Santander set out in the "Annex II: Climate Finance Report 2023 Reporting Criteria".

Limited assurance conclusion

Based on the procedures we have performed and the evidence obtained, nothing has come to our attention that causes us to believe that Banco Santander, S.A. and its subsidiaries selected ESG indicators, for the specified reporting period for each indicator, contain significant errors or have not been prepared, in all of their significant matters, in accordance with the criteria of Grupo Santander set out in the "Annex II: Climate Finance Report 2023 Reporting Criteria".

Restriction on distribution and use

This report, including the conclusion, has been prepared solely for the management of Banco Santander, S.A. as a body, to assist them in reporting on Banco Santander, S.A. and its subsidiaries selected ESG indicators. We permit the disclosure of this report within the Climate Finance Report 2023, to enable the management to demonstrate they have discharged their governance responsibilities by commissioning an independent assurance report in connection with Climate Finance Report 2023. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the management as a body and Banco Santander, S.A. for our work or this report save where terms are expressly agreed and with our prior consent in writing.

PricewaterhouseCoopers Auditores S.L.

Pablo Bascones Ilundain

29 April 2024

Independent verification report

Santander

Annex I: *Climate Finance Report 2023*

Performance indicators included in the *Climate Finance Report 2023* for Banco Santander S.A. and subsidiaries.

Climate Finance Report		
Financed emissions*		
Power generation	4.24	[Mt CO_2 e]
Energy – Oil & Gas	27.43	[Mt CO_2 e]
Aviation	0.84	[Mt CO_2 e]
Steel	1.90	[Mt CO_2 e]
Auto manufacturing	2.67	[Mt CO_2 e]
Auto lending	5.84	[Mt CO_2 e]
Agriculture	6.20	[Mt CO_2 e]
Mortgages	2.63	[Mt CO_2 e]
Physical emissions intensity*		
Power generation	0.19	[t CO_2 e/MWh]
Energy – Oil & Gas	74.36	[t CO_2 e/TJ]
Aviation	97.21	[gr CO_2 e/RPK]
Steel	1.36	[t CO2 e/tons steel]
Auto manufacturing	138	[gCO_2/vkm]
Auto lending	137	[gCO_2 e/vkm]
Agriculture	7.04	[tCO_2 e/ton produced]
Mortgages	39.72	kgCO_2 e/m^2]
Financial emissions intensity*		
Power generation	0.41	[Mt CO_2 e/EUR Bn lent]
Energy – Oil & Gas	3.33	[Mt CO_2 e/EUR Bn lent]
Aviation	0.42	[Mt CO_2 e/EUR Bn lent]
Steel	1.33	[Mt CO_2 e/EUR Bn lent]
Auto manufacturing	0.68	[Mt CO_2 e/EUR Bn lent]
Auto lending	0.11	[Mt CO_2 e/EUR Bn lent]
Agriculture	3.52	[Mt CO_2 e/EUR Bn lent]
Mortgages	0.01	[Mt CO_2 e/EUR Bn lent]
Green Finance**		
Green finance volumes raised or facilitated	115.3	[EUR Bn]
Assets under management**		
Socially Responsible Investment Assets under Management	67.7	[EUR Bn]
Net Zero Commitment		
Thermal coal-related power & mining phase out	4.9	[EUR Bn]
Carbon neutral in own operations	✓	[-]
Financing renewable energies		
Greenfield finance	13,734	[MW financed] ***
Brownfield finance	9,489	[MW financed] ***
Number of households supplied with renewable electricity from greenfield projects in which Santander has participated as a financier or advisor***		
Number of households	10.1	million homes a year
Environmental footprint		
Total internal energy consumption	3,444,543	[GJ]
Total electricity consumption	805.31	[million kWh]
Electricity consumption from renewable sources	779.68	[million kWh]
Water consumption	1,858,645	[m^3]
Total paper consumption	4,932	[ton]

Santander

Paper and cardboard waste	3,788	[ton]
Total Greenhouse Gas (GHG) Emissions****	**172,711**	**[t CO_2 e]**
Scope 1 – Direct GHG emissions	**25,755**	**[t CO_2 e]**
Emissions from stationary fuel consumption	8,530	[t CO_2 e]
Emissions from mobile fuel consumption	17,225	[t CO_2 e]
Scope 2 – Indirect GHG emissions****	**21,516**	**[t CO_2 e]**
Indirect emissions from electricity consumption (*market-based*)	21,516	[t CO_2 e]
Indirect emissions from electricity consumption (*location-based*)	205,292	[t CO_2 e]
Scope 3 – Other indirect GHG emissions	**125,441**	**[t CO_2 e]**
Other indirect emissions from business travel	50,061	[t CO_2 e]
Other indirect emissions from employee commuting	75,380	[t CO_2 e]

Notes:
Unless otherwise stated, the performance indicators included in the Climate Finance Report 2023 are reported for the year ending December 31st, 2023.
* Financed emissions, as well as physical and financial emissions intensities, related to each sector are reported for the year ending December 31st, 2021; except auto lending Europe and mortgages which relate to December 31st, 2022, and agriculture (Brazil) which relates to March 31st, 2022.
** Reported value represents closing balances as of December 31st, 2023.
*** Total MW from renewable energy projects Santander participates in as financier or advisor in 2023.
**** Following a market-based approach for consolidating scope 2 emissions.

Independent verification report

Santander

Annex II: *Climate Finance Report 2023* Reporting Criteria

The *Climate Finance Report 2023* for Banco Santander S.A. and subsidiaries, hereafter referred to as Santander, Grupo Santander or the Company, has been prepared in accordance with internal procedures and policies. The present report includes information about Santander's global operations, as well as specific information for the 10 main markets as reported in specific key performance indicators (KPIs). Considering that the procedures and policies on which the indicators are based may, or may not, be publicly available, the *Reporting Criteria* for the indicators subject to assurance are presented in the following table, as per the internal procedures defined by the Company.

Reporting criteria

Financed emissions

1) SCIB portfolios:

In the reporting scope of this indicator, Banco Santander S.A. and subsidiaries include the financed emissions associated with the power generation, energy (oil & gas), aviation, steel and auto manufacturing SCIB portfolios, for the year between January 1st and December 31st, 2021, in accordance with the methodology established by management, as presented below:

Total amount of greenhouse gas (GHG) emissions, expressed in millions of tons of CO_2 equivalent, generated by the companies and/or projects financed by Banco Santander S.A. and subsidiaries that are attributable to Santander following the attribution methodology defined below, based on the Partnership for Carbon Accounting Financials (PCAF) standard for financed emissions. To obtain the data on financed emissions, the following formulas are applied, depending on each portfolio:

Power generation:
Emissions associated with the financing of power generation activities are considered through Corporate and Project Finance mechanisms. In the case of Corporate Finance, financed emissions of the portfolio are calculated using the following equation:

$$Financed\ emissions = \sum_i Attribution\ Factor_i \times Emissions_i$$

Where i represents each company included in the portfolio.

The following equations are used to determine the attribution factor at company level:

$$Attribution\ Factor = \frac{Outstanding\ amount}{Total\ Enterprise\ Value}$$

$$Total\ Enterprise\ Value = Total\ Debt + Total\ Equity$$

The numerator includes the outstanding amount of the loan, that is, the value of the debt that the borrower owes to Santander (that is, the debt disbursed minus any repayments). The denominator considers the total value of the company, which is given by the total debt and total equity. In the case of corporate business loans, Banco Santander calculates the Total Value of the Company (used to obtain the emissions attribution factor) by adding the total equity and debt of the company in order to avoid the high volatility in market capitalization.

Total debt does not consider all the liabilities on the Balance Sheet, but only the part corresponding to the liabilities formalized by virtue of agreed contracts susceptible to being traded on the market, for example, bank debt, bonds, leasing, etc. In cases where the total debt is not perfectly identifiable, the whole liabilities on the Balance Sheet are considered.

For total equity calculation, the book value of the whole equity of the company (own and belonging to other people) is considered. It is important to highlight that, if equity is negative due to losses, it is assigned a zero value, so as not to underestimate the debt.

Santander

Financed emissions (continued)

In the case of Project Finance, the financed emissions for Project "b" are calculated using the following equation:

$$Financed\ Emissions_b = Attribution\ Factor_b \times \sum_{b,j} Production_b^j \times Emission\ Factor_j$$

Where $Production_b^j$ represents Project b's production using technology j, expressed in MWh. $Emission\ Factor_j$ represents the emission factor associated to technology j.

Data are obtained according to the information included in Table 1.

Sector	Emissions	Production	Company Emission intensity	Financial Data
Power	CDP Annual Reports for filling gaps. Sustainability report	S&P-Trucost Annual Reports for filling gaps. Asset Resolution	Calculated by the model dividing emissions by production	Capital IQ Annual Reports
O&G	CDP Annual Reports for filling gaps Except Scope 3 – calculated by the model	S&P-Trucost Annual Reports for filling gaps. Sustainability report Asset Resolution	Transition Pathway Initiative (Scope 1,2,3)	Capital IQ Annual Reports
Steel	CDP Annual Reports for filling gaps	Calculated by the model when emission and intensity are available. Annual Reports Sustainability reports	Transition Pathway Initiative[1]	Capital IQ Annual Reports
Aviation	CDP Annual Reports for filling gaps	Annual Reports. Sustainability reports	Calculated by the model	Capital IQ Annual Reports
Car manufacturing	Scope 3 – calculated by the model	Asset Resolution. Annual Reports Sustainability report	Transition Pathway Initiative (Scope 3)	Capital IQ Annual Reports

Table 1. Data sources. Source: internal consolidation by Santander.

To determine the attribution factor at the project level, the following is considered:

$$Attribution\ factor_v = \frac{Outstanding\ amount_v}{Total\ Project\ Value_v} \approx \frac{Santander\ Outstanding_v}{Global\ Outstanding_v}\ \text{gearing at signing}$$

Gearing at signing is defined as:

$$Gearing\ at\ signing_v = \frac{Total\ Committed\ Debt\ at\ Signing}{Total\ Project\ Value\ at\ signing}$$

The total project value at signing is estimated as:

$$Total\ Project\ Value_v = Equity + Total\ Debt$$

Indicated in the Source & Uses, it represents debt + equity + cash (if available).

For those projects with no guarantee that all debt facilities are monitored and included in the global outstanding, a conservative approach is used:

$$Attribution\ factor = \frac{Santander\ Outstanding_v}{Total\ Project\ Value\ at\ signing}$$

Energy - Oil & gas:
The clients and activities within the scope of this portfolio include Corporate and Project Finance associated with upstream and integrated companies with material income from extraction and production activities; export credit agency (ECA) deals; as well as Project Finance activities in which the owner of the asset is an upstream or integrated company. A second filter is applied to those Project Finance activities in which the relationship with respect to upstream is not so clear, taking ownership/control as a criterion.

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In this sector, Santander's implementation is based on the methodology developed by TPI. This methodology provides an emission intensity that includes scopes 1, 2 and 3 using a homogeneous approach to calculate the emissions from the use of sold products. The emissions content of fossil fuels varies depending on the type of productTPI analysis uses product CO_2 emissions and energy factors from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.

The emissions of a company can be approximated by means of its emission intensity and its production (expressed in TJ).

The total emissions for the portfolio are calculated by means of the following summation:

$$Total\ Financed\ Emissions = \sum_b Financed\ Emissions_b$$

For a specific client "b", financed emissions can be computed as:

$$Financed\ Emissions_b = Attribution\ Factor_b \times Production_b \times Emissions\ Intensity_b$$

To calculate production, the source for most of the companies is *Trucost* (displayed in m^3). When *Trucost* does not provide that data, it must be searched manually in the companies' Annual Reports. The emission intensity obtained from TPI is expressed in terajoules, which requires certain transformation:

$$Production(TJ) = \sum_{\substack{product\\b}} Production(m^3)_{\substack{product\\b}} \times Conversion\ Factor$$

The conversion factors are applied to each fossil fuel type, as described by Transition Pathway Initiative.

To determine the attribution factor at the company level, the following equations are considered, applying the same criteria as for Power generation:

$$Attribution\ Factor = \frac{Outstanding\ amount}{Total\ Enterprise\ Value}$$

$$Total\ Enterprise\ Value = Total\ Debt + Total\ Equity$$

Financed emissions (continued)

Aviation:
Clients and activities included within the scope of this portfolio include passenger airlines, ECA (Export Credit Agency) deals for airlines and leased aircrafts (Project Finance in which the ultimate owner of the asset is an airline).

In this sector, Santander's implementation is based on the methodology developed by TPI which involves scope 1 and scope 2. The data used comes from the companies' Annual Reports.

The total emissions for the portfolio are calculated by means of the following summation:

$$Total\ Financed\ Emissions = \sum_b Financed\ Emissions_b$$

For a specific client "b", financed emissions can be computed as:

$$Financed\ Emissions_b = Attribution\ Factor_b \times Production_b \times Emissions\ Intensity_b$$

To calculate the activity data1 associated with production, the "revenue passenger kilometers" (or RPK) data is used, which is the total number of paying passengers multiplied by the distance flown. As well as for emissions intensity, the data comes from the Annual Reports of the companies, as shown in Table 1.

To determine the attribution factor at the company level, the following equations are considered, applying the same criteria as for the previous portfolios:

$$Attribution\ Factor = \frac{Outstanding\ amount}{Total\ Enterprise\ Value}$$

$$Total\ Enterprise\ Value = Total\ Debt + Total\ Equity$$

Steel:
For this portfolio, Corporates at Last Parent Level are included within scope.

In this sector, Santander's implementation is based on the methodology developed by TPIwhich involves scope 1 and scope 2. The data used comes from the sources described in Table 1.

The total emissions for the portfolio are calculated by means of the following sum, for each company "b":

$$Total\ Financed\ Emissions = \sum_b Attribution\ Factor_b \times Emissions_b$$

To determine the attribution factor at the company level, the following equations are considered, applying the same criteria as for the previous portfolios:

$$Attribution\ Factor = \frac{Outstanding\ amount}{Total\ Enterprise\ Value}$$

Financed emissions (continued)

$$Total\ Enterprise\ Value = Total\ Debt + Total\ Equity$$

Auto - manufacturing

The focus is on the most controllable source of emissions in the supply chain, i.e., car manufacturers which control the type of engine manufactured.

For financed emissions we use the following approach:

$$Financed\ Emissions_b = \sum_b Attribution\ Factor_b \times EI_b \times \text{Production} \times lifecycle\ Distance$$

With:

- Emission Intensity from corporate "b" in gCO_2/vkm.
- $Production_b$: production for corporate "b".
- $Lifecycle\ Distance$ 200.000 km - assumption on the lifecycle emissions of a newly produced car.

To determine the attribution factor at the company level, the following equations are considered, applying the same criteria as for the previous portfolios:

$$Attribution\ Factor = \frac{Outstanding\ amount}{Total\ Enterprise\ Value}$$

$$Total\ Enterprise\ Value = Total\ Debt + Total\ Equity$$

2) Auto – lending Europe (Santander Consumer Finance)
The emissions of the auto lending portfolio for Santander Consumer Finance Europe as of 31st December 2022 are those associated with the passenger cars financed and leased (passenger cars being the most material vehicle type in the Auto portfolio). These are calculated following the PCAF methodology:

$$Financed\ Emissions = \sum_v Attribution\ factor_v \times vehicle\ emissions_v$$

(With v = vehicle or vehicle fleet)

To determine the attribution factor of each of the loans, the following formula is used:

$$Attribution\ factor_b = \frac{outstanding\ amount_b}{vehicle\ value\ at\ oirigination_b}$$

The numerator is the outstanding amount (as per the reporting year) of each vehicle, divided by the total value at origination, which considers the value of the car at the time of purchase. For the leased passenger cars, we assume an attribution factor of "1".

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The vehicle emissions are calculated using the emissions of each specific vehicle, where available, multiplied by the annual distance estimated for each vehicle:

$$vehicle\ emissions_v = emissions\ intensity \times annual\ mileage$$

Where available, the contracted kilometers have been used as a way to estimate the annual distance. For the cases in which contractual kilometers were not available, the distance has been estimated using different external sources.
In the case of the intensity, the calculation has been done as follows:

- Information on vehicle emissions was obtained from SCF databases.
- For BEVs and PHEVs, scope 2 emissions have been taken into consideration for the vehicle intensity.
- For contracts in which the emissions were captured using the NEDC standard, a conversion factor to WLTP has been applied.
- Lastly, a conversion factor from CO_2 to CO_2e has been applied to all vehicles.

The attributed distance was calculated using the following formula:

$$Attributed\ distance_v = \sum attribution\ factor_v \times annual\ mileage_v$$

To calculate the attributed distance of the portfolio, the attributed distance was first calculated for each of the cars, then aggregated.

3) Mortgages (Santander UK Group Holdco):

Mortgages portfolio emissions for Santander UK Group Holdco from lending on residential mortgages in the United Kingdom as of 31st December 2022. Assessment includes Scope 1 and 2 emissions based on actual (where available) and modelled EPC's. We define this asset class as on balance sheet loans for specific consumer purposes – namely the purchase and refinance of residential property, including individual homes and multifamily housing with a small number of units – not for commercial purposes. Under the PCAF guidance we account for scope 1 and scope 2 emissions of the buildings being financed. A small number of mortgages located in the channel islands have been excluded from the mortgage book analysis due to data availability, however these are not deemed material to the overall assessment. The following calculation approach was used by Santander UK to arrive at the financed emissions for each of the properties in the portfolio:

$$Financed\ emissions_b = building\ emissions_b \times LTV_b$$

(with b = building, and LTV = loant-to-value)

The attribution factor is the outstanding amount of the loan as per the reporting year for each mortgage, divided by the total property value at origination for each building (where this is unavailable, latest valuation is used). Building emissions (in tCO_2e) and floor area were provided to Santander UK by Landmark using the following hierarchy: most recent actual EPC where available (PCAF score 3), modelled EPC using a postcode average (PCAF score 4), modelled EPC using a regression model trained on known property variables (PCAF score 4), where an EPC has expired, the postcode average model is used to calculate emissions and the corresponding PCAF score applied. Within the calculation of emissions, attribution is capped at 100%, this is to prevent cases where historic valuations would generate an LTV in excesses of 100% which would lead to greater than the total amount of emissions being applied to the property. In addition, where no valuation is available, we conservatively apply 100% of emissions. Where no floor area is available for a property these emissions are included in the absolute emissions category, however they are excluded from the emissions intensity measure so as not to distort the calculation.

4) Agriculture (Banco Santander Brazil)

Agriculture portfolio emissions for Santander Brazil from lending to farmers associated with primary production activities in Brazil (agriculture and livestock activities), financed through Retail mechanisms as of 31st March 2022. Assessment includes Scope 1 and 2 emissions.

In this sector, Santander's financed emissions estimation is based on PCAF methodology, with adaptations to accommodate data availability in retail agriculture portfolio. Additionally, it was considered the recommendations reported in the 'An Introductory Guide for Net Zero Target Setting for Farm-Based Agricultural Emissions' from 2022, developed by the WBCSD. The measure is focused on farm's scopes 1 emissions (direct emissions from land management and land use change) and scope 2 emissions (indirect emissions from the generation of purchased energy).

Land management emissions:

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The general equations used to calculate financed emissions of an agricultural activity *"b"* are as follows:

1. When quantity of product financed is known:

$$Financed\ Emissions_b = \sum_{b,j} Quantity\ Produced_b \times Emission\ Factor_j$$

Where:
$Quantity\ Produced_b$ represents the quantity of agricultural product b financed by the bank, expressed in tons of product (t).
$Emission\ Factor_j$ represents the physical activity (PCAF score 3) emission factor associated with the production of product b, expressed in tCO2e/t of product.

2. When size of area financed is known:

$$Financed\ Emissions_b = \sum_{b,j} Area\ of\ production_b \times Emission\ Factor_j$$

Where:
$Area\ of\ production_b$ represents the size of the area financed, where agricultural product b is being produced, expressed in hectares (ha)
$Emission\ Factor_j$ represents the physical activity (PCAF score 3) emission factor associated with product b, expressed in tCO2e/ha of area financed.

3. When number of animals financed is known:

$$Financed\ Emissions_b = \sum_{b,j} Number\ of\ animals_b \times Emission\ Factor_j$$

Where:
$Number\ of\ animals_b$ represents the number of animals financed in the operation, expressed in number heads (heads)
$Emission\ Factor_j$ represents the physical activity (PCAF score 3) emission factor associated with animal b, expressed in tCO2e/head.

In the absence of total production costs or other data that could reflect a farm's total production value, an attribution factor was not calculated. Instead, the assumption undertaken was that 100% of the emissions associated with the financed area, quantity or number of animals are attributed to Santander.

Emission factor sources include the GHG Protocol Brazil Tool for the Agricultural Sector, the Reference Report from Brazil's IV National Inventory, among other specialized literature. Additionally, specific emission factors were developed for certain crops in the portfolio, relying on national emission estimates by source (e.g. use of nitrogen fertilizers, use of lime, burning of fossil fuels from the use of machinery and equipment), commodity production, and productivity data.

Land Use Change emissions

The total LUC emissions for the portfolio are calculated by means of the following sum, for each property "*b*":

$$Total\ LUC\ Financed\ Emissions = \sum_b Property\ LUC\ Emissions_b \times Attribution\ Factor_b$$

LUC emissions from the properties were estimated through a five-step process:

Step 1. Collect and combine shapefiles of farms associated with the operations financed in the retail portfolio, using properties' Rural Environmental Registry number.

Step 2. Overlap the collected shapefiles with publicly available satellite database from MapBiomas[1] Collection 7, using a spatial analysis software.

[1] The MapBiomas project is an initiative of the Climate Observatory, co-created and developed by a multi-institutional network involving universities, NGOs, and technology companies with the purpose of annually mapping Brazil's land cover and use and monitoring changes in the territory. More information can be accessed at: https://brasil.mapbiomas.org/

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Step 3. Compute annual tree-cover loss areas (in hectares), for the last 20 years, for each property, and evaluate corresponding carbon stock loss using emission factors based on vegetation type, location and structure (phytophysionomy) sourced from Brazil´s IV National Inventory Carbon Map.

Step 4. Apply the Linear Discounting Methodology following the guidelines provided in the Draft Version of the GHG Protocol Land Sector and Removals Guidance, Chapter 7.

Step 5. Calculate the attribution factor for emissions related to Santander.

To determine the attribution factor at the property level, the following equations are considered:

1. When a single operation is associated with a farm:

$$Attribution\ Factor = \frac{Financed\ Area\ (ha)}{Total\ Property\ Area\ (ha)}$$

2. When multiple operations are associated with a farm (where it is not possible to know if the financed areas overlap within the property):

   If the total financed area is ***smaller*** *than the property's "non-forest[2]" area*

$$Attribution\ Factor = \frac{\sum Financed\ Areas\ of\ property\ (ha)}{Total\ Property\ Area\ (ha)}$$

   If the total financed area is ***larger*** *than the property's "non-forest[2]" area*

$$Attribution\ Factor = \frac{Non-forest\ Area\ of\ property\ (ha)}{Total\ Property\ Area\ (ha)}$$

<u>Scope 2</u>:

A four-step rationale was established to estimate the approximate electricity consumption of financed farms:

(1) Establish the relative contribution of each agricultural activity based on Brazil´s Gross Production Value Report[3] and apply it to the Total Electricity Consumption by the primary production agricultural sector supplied in the National Energy Balance Report (BEN)[4] to have a relative electricity consumption by agricultural activity. **(2)** Establish the relative contribution percentage of Santander´s financed agricultural activity in comparison to total agricultural activity produced in Brazil. **(3)** Multiply Santander´s share of production of agricultural activity (step 2) by Total Electricity Consumption by each Agricultural Activity (step 1); **(4)** Multiply Total Electricity Consumption by Agricultural Activity financed by Santander (step 3) by Brazil´s National Grid Emission Factor

Physical emissions intensity

<u>1) SCIB portfolios</u>:

In the reporting scope of this indicator, Banco Santander S.A. and subsidiaries include the physical emissions intensity associated with the power generation, energy (oil & gas), aviation, steel and auto-manufacturing portfolios, for the year between January 1st and December 31st, 2021, in accordance with the methodology established by management, as presented below:

Considers the physical emissions intensity of the portfolio as the ratio obtained from total portfolio emissions (calculated as the sum of individual company emissions) and the selected total *activity data* indicator for the sector. *Activity data* indicators are as follows:

[2] Non-forest area was used as a proxy to represent the farm's productive area. Thus, forest areas, which constitute the non-productive part of the farm, are not accounted for.
[3] The Gross Agricultural Production Value (VBP) reflects the performance evolution of crops and livestock throughout the year and corresponds to the gross revenue within the establishment.
[4] The National Energy Balance (BEN) is an annual publication in Brazil under the responsibility of EPE (Energy Research Company), which aims to account for and disclose extensive research related to the supply and consumption of energy in Brazil.

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Power generation
Considers total production on electrical energy, expressed in MWh, for the companies included in the portfolio. Typically, production data sourced from external vendors provides the breakdown of the production for each type of technology. So, the total production for company *"b"* is obtained as the sum of the production of its different technologies:

$$Production_{\,b} = \sum_{\substack{Technology \\ i}} Production_{\,\substack{Technology \\ i}}$$

Energy – Oil & Gas
Considers total energy that can be obtained from the production of oil & gas related products, expressed in Terajoules (TJ), for the companies included in the portfolio. Production in TJ is obtained as described for ***Financed emissions*** using conversion factors.

Aviation
Considers total *"revenue passenger kilometers"* (RPK), which is the total number of paying passengers multiplied by the distance flown, for the companies included in the portfolio.

Steel
Considers total production of steel products, expressed in tons of steel, for the companies included in the portfolio. Considering that production in the sector is difficult to collect manually due to the different types of steel products, a proxy for total production is used, derived from emission intensity and emissions for each company.

$$\text{Production}_C = \frac{Emissions_C}{EI_C}$$

Auto - manufacturing
Following Transition Plan Initiative (TPI) approach, the emissions intensity uses Tank-to-Wheel emissions per vehicle-kilometer (gCO_2/vkm), that is the major contributor to lifetime energy use and GHG emissions.

<u>2) Auto – lending Europe (Santander Consumer Finance)</u>

Emissions of the portfolio are aggregated, and divided by the total attributed distance of the portfolio, as shown in the formula below:

$$Financed\ emission\ intensity = \frac{\sum_p attributed\ financed\ emissions}{\sum_p attributed\ distance}$$

(with p = per vehicle)

<u>3) Mortgages (Santander UK Group Holdco)</u>:

The portfolio emissions intensity is calculated with the portfolio-level attributed floor area. The following formula has been used to calculate the attributed floor area across Santander UK's mortgage portfolio:

$Portfolio\ attributed\ floor\ area = \Sigma Attributed\ floor\ area\ per\ entry\ line_b = \Sigma Attribution\ factor_b \times Building\ emissions_b$

$$Portfolio\ attributed\ floor\ area = \sum_b Attribution\ factor_b \times building\ emissions_b$$

That is, the sum of attributed floor area over all buildings b in the portfolio. This equals the sum of the "Attributed Floor Area (m^2)".

GHG emission scopes, calculation methodologies and data sources for each portfolio follow the criteria and methodology described for ***Financed emissions***.

<u>4) Agriculture (Banco Santander Brazil)</u>:

Agriculture portfolio emissions for Santander Brazil from lending to farmers associated with primary production activities in Brazil (agriculture and livestock_activities), financed through Retail mechanisms as of 31st March 2022. Assessment includes Scope 1 and 2 emissions.

Considers the five largest greenhouse gas emitters from primary production retail portfolio (beef, dairy, soy, corn and rice), expressed in tons of products financed. Considering that livestock primary data was in head of cattle, beef and dairy intensity is translated from head to tonne using Brazilian livestock parameters.

Considering that cattle, dairy, soy corn and rice production has different GHG emissions intensity, the total agriculture intensity was weighted according to the product's share in total emissions.

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Financial emissions intensity

In the reporting scope of this indicator, Banco Santander S.A. and subsidiaries include the financial emissions intensity associated with the power generation, energy (oil & gas), aviation, steel and auto manufacturing SCIB portfolios, for the year between January 1st and December 31st, 2021; Santander Consumer Finance Europe includes the financial emissions intensity associated with the auto-lending portfolio for passenger cars as of December 31st, 2022; Santander UK Group Holdco includes the financial emissions intensity associated with the mortgages portfolio as of December 31st, 2022 and Banco Santander Brazil includes the financial emissions intensity associated with the agriculture portfolio as of March 31st, 2022; in accordance with the methodology established by management, as presented below:

Considers the financial emissions intensity of the portfolio as the weighted average of the individual emission intensities of the companies and projects included in it.

The weight depends on the exposure, production and total enterprise value of the company or project.

$$EI = \sum_i Emission\ Intensity_i \times \omega_i$$

where:

$Emission\ Intensity_i$: emission intensity for corporate/project finance "i" expressed in ton CO_2 equivalent/physical units. Physical units depend on the portfolio, namely MWh, TJ, RPK, tons of steel, vehicle kilometre (vkm), m^2 and ton produced for the power generation, energy (oil & gas), aviation, steel, automotive (auto manufacturing and auto lending), mortgages and agriculture sectors, respectively. See **Table 1** for data sources.

ω_i: weight factor for the intensity of the corporate/project finance "i" calculated as:

$$\omega_i = \frac{Attribution\ Factor_i \times P_i}{\sum_j Attribution\ Factor_j \times P_j}$$

with:

P_i: production in physical units for corporate/project finance "*i*".
Subindex "*j*" refers to the totality of projects.

For mortgages, the financial emission intensity was measured dividing the total absolute emissions by the total loan volume of the UK mortgages portfolio in scope.
For agriculture, the financial emission intensity was measured dividing the total absolute emissions by the total loan volume of the Brazil retail portfolio for primary production in scope.

Green Finance volumes raised or facilitated

In the reporting scope of this indicator, Banco Santander S.A. and subsidiaries include the volumes raised or facilitated in *Green Finance*, for the closing balances as of June 30th, 2023, in accordance with the methodology established by management, as presented below:

Total *green finance* volumes raised or facilitated by Santander Corporate & Investment Banking (*SCIB*), expressed in EUR billions, as defined in *SCIB*'s *Green Finance Public Commitment Methodology Description*. The reported value for *Green finance* considers the consolidated sum of products and services that target renewable energy projects, assets or services dating from 2019. Since 2023, only volumes reviewed and approved by the SCFS Panel are taken into consideration. The indicator considers the following range of products and services:

Project Finance (MLA)
Financing mechanism for raising long-term, limited-recourse-to-the-Sponsor funding for the purpose of developing a capital-intensive project, either infrastructure or energy. Projects considered for the public commitment would be renewable energy related. The borrower is always a specific purpose vehicle (SPV), whose only asset is the project itself, and repayment of financing (principal plus interest) will depend on the cash flows generated internally by the project. For this indicator, only *Project Finance* in which Santander's role is *Mandated Lead Arranger* (MLA).

Project Finance (FA)
Includes *Project Finance*, as described above, in which Santander's role is *Financial Advisor* (FA).

Green Bonds
Includes green bonds issued by entities (e.g., corporates, SSAs, FIG) that need financing, where Santander acts as bookrunner (% attributed to Santander).

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Project Bonds
Includes bonds issued to finance a renewable energy project and which will be paid back exclusively by the flows generated by the project, without recourse to other flows generated by the initiator of this project.

Export Finance (ECAs)
Includes assisting exporters or importers via government institutions – Export Credit Agencies, ECA's – that provide finance, credit insurance and guarantees to renewable energy-related transactions or projects.

Mergers & Acquisitions (M&A)
Includes advisory on companies' strategic decisions to achieve growth, recycle capital, diversify business or create synergies by acquiring / divesting / partnering with other companies. The target company activity will be renewable energy related.

Equity Capital Markets (ECM)
Includes advisory on companies that need financing by raising capital through shares (% ownership) via either private or public placements. The company activity will be renewable energy related.

The volume of *SCIB*'s *green* transactions is obtained from public sources, namely league tables from well-known market data providers within the Corporate & Investment Banking space, such as *Infralogic*, *TXF* or *Mergermarket* league tables. These providers either source the information from third parties (e.g., public sources) or from internal reporting (e.g., *SCIB* teams). For project finance, project bonds and export finance, the information is reported by *SCIB* product teams and for green bonds, M&A and ECM the information is obtained from public sources.

All roles undertaken by Banco Santander in the same project are accounted for. In situations where Santander holds multiple roles on the same transaction (e.g., financing and advisory) the split of the relevant roles will be considered according to the methodology in place, namely 100% of the amount of the project to which advisory services have been provided and the relevant % financed.

Other sustainable finance like social or ESG-linked and other green finance products are not included.

Socially Responsible Investment Assets under Management

In the reporting scope of this indicator, Banco Santander S.A. and subsidiaries include the total amount of Socially Responsible Investment Assets under Management (hereinafter SRI AuM), for the closing balances as of December 31st, 2023, in accordance with the methodology established by management, as presented below:

Total amount of Socially Responsible Investment Assets under Management, expressed in EUR billions, obtained from the consolidated data of Santander Wealth Management & Insurance, through the base reports sent by Santander Global Private Banking (PB) and Santander Asset Management (SAM). It represents the total volume of Assets under Management classified as *Article 8* - promoting ESG characteristics - and *Article 9* - with explicit sustainability objectives - of the *SFDR regulation* (EU Reg. 2019/2088) except for illiquid investments in Private Banking which are reported in terms of committed capital. Includes assets managed by Santander Asset Management (SAM) in the EU and with equivalent criteria in geographies where *SFDR* does not apply (mainly Latin America) and *Third-Party Funds* from the Private Banking segment.

Santander Asset Management
It includes liquid and illiquid funds reported by local CFOs and verified by the Global teams (ESG, finance and product).

Global Private Banking
Includes third-party funds data from *Allfunds* (30 to 45 days in arrears) filtered through the *Morningstar Art. 8 & 9 Database*, as of December 31st 2023 and committed capital to illiquid funds (article 8 & 9) at December 31st 2023.

Thermal coal-related power & mining phase out

In the reporting scope of this indicator, Banco Santander S.A. and subsidiaries include the total exposure to thermal coal-related power & mining phase-out, for the year between January 1st and December 31st, 2023, in accordance with the methodology established by management, as presented below:

Global Net REC of clients in sector of thermal coal mining or thermal coal-fired power generation. In this last case, if this activity represents more than 10% of their consolidated revenues. Sum of the Net REC of the customers under the perimeter of the watchlist.

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Carbon neutrality in own operations

In the reporting scope of this indicator, Banco Santander S.A. and subsidiaries state the carbon neutrality of their own operations, for the year between January 1st and December 31st, 2023, in accordance with the methodology established by management, as presented below:

Santander is committed to being carbon neutral in their own operations. The greenhouse gas (GHG) emissions subject to compensation will be estimated based on the operational emissions (see reporting criteria for Scope 1, scope 2 and scope 3 (categories 6: business travelling and category 7: employee commuting) below) associated with its ten main markets (G10): Spain, Portugal, Germany, Poland, UK, USA, Mexico, Brazil, Argentina and Chile. Once GHG emissions have been calculated, Santander must carry out the compensation of the emissions that it has not been able to reduce, purchasing carbon credits from offset projects offered by providers of this service.

The process of calculating the estimated emissions for each year will be carried out as close in time as possible to the bidding process, so that the amount of carbon credits purchased cover the actual emissions that occur in the exercise.

In order to maintain the condition of being carbon neutral, Santander will carry out the compensation of emissions on a recurring basis every year, once it has been calculated how much these have amounted to and how many carbon credits must be acquired.

Financing renewable energies

In the reporting scope of this indicator, Banco Santander S.A. and subsidiaries include the total installed capacity of renewable energy projects Santander participated as financier or advisor for the year between January 1st and December 31st, 2023, in accordance with the methodology established by management and based on information from Infralogic and enriched with internal data, as presented below:

Greenfield finance
Total installed capacity of greenfield renewable energy projects Santander participated as financier or advisor in the reporting period, expressed in MW. Greenfield projects are defined as those new projects yet to be built as of the financing date.

Brownfield finance
Total installed capacity of brownfield renewable energy projects Santander participated as financier or advisor in the reporting period, expressed in MW. Brownfield projects are defined as those projects already existing and producing electricity at the financing date.

Number of households supplied with renewable electricity Santander participated as financier or advisor

The total number of households powered by greenfield renewable energy projects Santander participated as financier or advisor (H_{total}) is calculated as the sum of households powered by country (H^k_{Total}):

$$\mathrm{H}_{total} = \sum_k H^k_{Total}$$

The households powered by country are calculated as:

$$H^k_{Total} = \frac{\mathrm{P}^k_{Total}}{C^k}$$

Where:

- C^k: Average Annual Energy consumption per household in country k in MWh, calculated as:

$$C^k = \frac{Energy\ consumption\ coumtry_k}{number\ of\ households\ country_k}$$

  Based on final electricity consumption data published by the International Energy Agency (updated in 2023 with data from 2021) and on the number of households reported by official statistical institutes for each country in 2021.

- P^k_{Total}: Total Annual production in MWh calculated as:

$$\mathrm{P}_{total} = \sum_{i,j} CAP\ (MW)_{project_{i,j,k}} \times CF_j \times 24 \times 365$$

  Where $CAP_{project_{i,j,k}}$ is the total installed capacity of the project in MW and CF_j is the capacity factor (%) of the project: the ratio of the electrical energy produced by a generating unit for the period of time considered to the electrical energy that could have been produced at continuous full power operation during the same period.
  Capacity factors have been estimated by technology and geography based on historic data of Santander's project finance portfolio. External sources such as the IEA World Energy Outlook 2023 has also been taken into consideration.

Environmental footprint

In the reporting scope of this series of indicators, Banco Santander S.A. and subsidiaries include information for more than 96% of the employees in the main countries of operation (G10): Spain, Portugal, Germany, Poland, UK, USA, Mexico, Brazil, Argentina and Chile, for the year between January 1st and December 31st, 2023, in accordance with the different methodologies established by management, as presented below:

Total internal energy consumption

Total energy consumption in the Company's buildings and office networks, expressed in GJ. Total energy consumption is calculated based on the quarterly data for natural gas, gasoil, electricity, diesel, district heating and all fuels consumed by the company. Conversion factors are obtained from the *UK Government GHG Conversion Factors for Company Reporting* published by DEFRA for 2023.

Total electricity consumption

Total electricity consumed in the Company's buildings and office networks, expressed in million kWh. Total electricity consumption is calculated based on the quarterly data for electricity consumption.

Electricity consumption from renewable resources

Total renewable electricity consumed in the Company's buildings and office networks expressed in million kWh. Total electricity consumption is calculated based on the quarterly data for electricity consumption certified as renewable energy.

Water consumption

Total consumption of public water supply of a certain building or of a network of offices, expressed in cubic meters (m^3). The calculation of the total water consumed in the reporting period is obtained from the quarterly consumption data reported by each individual building or office, based on invoices or receipts from the water supply company. Considering that for some branches and offices it is common for this information not to be available, since many of them pay for water consumption indirectly, an estimate can be made using the average daily consumption of 0.06 m^3/day/employee, calculated from a consumption sample of bank branches in Spain. The water consumption for said office can be obtained multiplying this ratio by the number of employees in the office and by the number of working days in the year.

Total paper consumption

Total paper consumption from all the different areas in the Company, such as reprography, printing, advertising, posters and postal mail, expressed in metric tons. The final value of total paper consumption is obtained from the quarterly consumption data reported by each individual building or office based on information sent by internal purchasing managers or directly from suppliers. It may be the case in which the data on paper consumption is consolidated at the country level and there is no breakdown by building or network of offices. In this case, all consumption will be reported by a single site (preferably the country's main office).

The report of total paper consumption is reported separately following a classification based on the type of paper. The types of paper may be:

- Purchased Certified Paper Consumption: Paper that has been managed in a sustainable way, evidenced via certifications such as FSC and PEFC.
- Purchased Not Certified Paper Consumption: Paper that does not have any certification related to sustainable sourcing/management.
- Purchased Recycled Paper Consumption: Paper that has been manufactured from previously used paper. This type of paper may, or may not, be certified.

Paper and cardboard waste

Total paper and cardboard waste from all buildings and networks of offices, expressed in metric tons. The final value of total paper and cardboard waste is obtained from the quarterly consumption data reported by each individual building or office based on reports of the waste management service suppliers. It may be the case in which the data on paper and cardboard waste is consolidated at the country level and there is no breakdown by building or network of offices. In this case, all consumption will be reported by a single site (preferably the country's main office).

Scope 1 – Direct GHG emissions

Total quantity of greenhouse gas (GHG) emissions, expressed in tons of CO_2 equivalent, generated by combustion processes as a consequence of the consumption of natural gas, diesel and gasoline produced in the buildings, office networks and Company-owned vehicles. The calculation of emissions is obtained, following an operational control approach, from the quarterly fuel consumption data for the sources described above and the use of emission factors from the *UK Government GHG Conversion Factors for Company Reporting* published by DEFRA for 2023. To obtain the data for direct scope 1 emissions, the following equation is applied:

$$kg\ CO_{2eq} = Activity\ Data\ [m^3 or\ liters] \times Emission\ Factor\ [kg\ CO_{2eq}/m^3\ or\ kg\ CO_{2eq}/liter]$$

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Scope 2 – Indirect GHG emissions

Total quantity of greenhouse gas (GHG) emissions, expressed in tons of CO_2 equivalent, generated as a consequence of the production of electricity and district heating consumed in the Company's buildings and office networks. Emissions are calculated following an operational control approach, based on the quarterly data for electricity consumption and the use of emission factors obtained from the *CO_2 emissions from fuel Combustion Highlights* report published by the International Energy Agency in 2021. To obtain the data on indirect scope 2 emissions, associated with the consumption of electricity, the following formula is applied:

$$kg\ CO_{2eq} = Activity\ Data\ [kWh] \times Emission\ Factor\ [kg\ CO_{2eq}/kWh]$$

Market-based emissions
For this approach, the 2023 IEA emission factor for each country was applied to the electricity not certified as being produced from renewable sources. For certified *green energy* electricity, no emissions are considered, i.e., emission factor equals zero.

Location-based emissions
For this approach, the 2023 IEA emission factor for each country was applied to all purchased consumed electricity.

Scope 3 – Other indirect GHG emissions

Total quantity of greenhouse gas (GHG) emissions, expressed in tons of CO_2 equivalent, generated by *Business Travel* and *Employee Commuting*. Emissions are calculated from the quarterly *distance-traveled* data from the two categories previously described and the use of emission factors from the *UK Government GHG Conversion Factors for Company Reporting* published by DEFRA for 2023.

Business travel:
For the *Business Travel* emission source, air, rail and car travel are considered. Air travel is broken down into short, medium, and long-haul trips, resulting in different emission factors for each category. To calculate the data on other scope 3 indirect emissions, associated with Business Travel, the following formula is applied:

$$kg\ CO_{2eq} = Activity\ Data[pkm] \times Emission\ Factor\ [kg\ CO_{2eq}/pkm]$$

The activity data information comes from travel agency reports in the case of air and train travel, as well as from internal information systems in the case of car, as well as train travel in some cases.

Commuting:
For *Commuting*, train, bus and car (depending on the type of car used, i.e., gasoline, diesel, natural gas, LPG, plug-in hybrid and non-plug-in hybrid) travels are considered. The travel distance data is obtained directly from the report of the shuttle and route service provider, who provides the average distance traveled by the vehicles rented by Grupo Santander to mobilize its employees in Germany, Brazil, Spain, Mexico and Portugal. Since 2023, the distribution of employees by type of travel and the calculation of average distance is based on surveys, statistics or reasonable estimates.

For each headquarters or reporting unit, the travel distance data is used in conjunction to the number of working days in the quarter and the number of parking spaces available at the headquarters, if no actual daily access data or direct information obtained from surveys is available, (in order to estimate the number of employees travelling to work in personal vehicles), applying the following formula.

$$Activity\ Data\ [km] = Daily\ traveled\ distance\ [km] \times N \times P$$
$$kg\ CO_{2eq} = Activity\ Data\ [km] \times EmissionFactor\ [kg\ CO_{2eq}/km]$$

Where:

$$N = Number\ of\ working\ days\ in\ the\ quarter$$
$$P = Number\ of\ available\ parking\ spaces\ at\ central\ service\ buildings$$

Notes:
1. *Activity data* is understood to be the parameter that defines the degree or level of the activity that generates GHG emissions. For example, the gasoline consumption [liters] of a vehicle, or the amount of electricity [kWh] used in a building. The *emission factor*, in turn, describes the amount of GHG emitted for each unit of the "activity data" parameter.
Source: *Guía para el cálculo de la huella de carbono y para la elaboración de un plan de mejora de una organización*. MITECO (June, 2023).

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DISCLAIMER

Non-IFRS and alternative performance measures

This document contains financial information prepared according to International Financial Reporting Standards (IFRS) and taken from our consolidated financial statements, as well as alternative performance measures (APMs) as defined in the Guidelines on Alternative Performance Measures issued by the European Securities and Markets Authority (ESMA) on 5 October 2015, and other non-IFRS measures. The APMs and non-IFRS measures were calculated with information from Grupo Santander; however, they are neither defined or detailed in the applicable financial reporting framework nor audited or reviewed by our auditors. We use these APMs and non-IFRS measures when planning, monitoring and evaluating our performance. We consider them to be useful metrics for our management and investors to compare operating performance between periods. Nonetheless, the APMs and non-IFRS measures are supplemental information; their purpose is not to substitute IFRS measures. Furthermore, companies in our industry and others may calculate or use APMs and non-IFRS measures differently, thus making them less useful for comparison purposes. APMs using ESG labels have not been calculated in accordance with the Taxonomy Regulation or with the indicators for principal adverse impact in SFDR. For further details on APMs and Non-IFRS Measures, including their definition or a reconciliation please see "Alternative performance measures" section of Banco Santander, S.A. (Santander) Q2 2023 Financial Report, published on 26 July 2023. This document is available on Santander's website (https://www.santander.com/en/shareholders-and-investors/financial-and-economic-information#quarterly-results).

Non-financial information

This document contains, non-financial information (NFI), including environmental, social and governance-related metrics, statements, goals, commitments and opinions.

NFI is not audited nor reviewed by an external auditor (with the exception of Greenhouse Gas Statement of Santander and subsidiaries for the financial year ended December 31, 2022, which has been third party verified to a limited assurance by "PricewaterhouseCoopers Auditores, S.L." in accordance with the International Standard on Assurance Engagements 3410 (ISAE 3410), "Assurance Engagements on Greenhouse Gas Statements" issued by the International Auditing and Assurance Standards Board (IAASB) of the International Federation of Accountants (IFAC)). NFI is prepared following various external and internal frameworks, reporting guidelines and measurement, collection and verification methods and practices, which are materially different from those applicable to financial information and are in many cases emerging and evolving. NFI is based on various materiality thresholds, estimates, assumptions, judgments and underlying data derived internally and from third parties. NFI is thus subject to significant measurement uncertainties, may not be comparable to NFI of other companies or over time or across periods and its inclusion is not meant to imply that the information is fit for any particular purpose or that it is material to us under mandatory reporting standards. NFI is for informational purposes only and without any liability being accepted in connection with it except where such liability cannot be limited under overriding provisions of applicable law.

Forward-looking statements

Santander hereby warns that this document contains "forward-looking statements" as per the meaning of the U.S. Private Securities Litigation Reform Act of 1995. Such statements can be understood through words and expressions like "expect", "project", "anticipate", "should", "intend", "probability", "risk", "VaR", "RoRAC", "RoRWA", "TNAV", "target", "goal", "objective", "estimate", "future", "commitment", "commit", "focus", "pledge" and similar expressions. They include (but are not limited to) statements on future business development, shareholder remuneration policy and NFI.

However, risks, uncertainties and other important factors may lead to developments and results to differ materially from those anticipated, expected, projected or assumed in forward-looking statements.The following important factors (and others described elsewhere in this document and other risk factors, uncertainties or contingencies detailed in our most recent Form 20-F and subsequent 6-Ks filed with, or furnished to, the SEC), as well as other unknown or unpredictable factors, could affect our future development and results and could lead to outcomes materially different from what our forward-looking statements anticipate, expect, project or assume: (1) general economic or industry conditions (e.g., an economic downturn; higher volatility in the capital markets; inflation; deflation; changes in demographics, consumer spending, investment or saving habits; and the effects of the war in Ukraine or the COVID-19 pandemic in the global economy) in areas where we have significant operations or investments; (2) climate-related conditions, regulations, policies, targets and weather events; (3) exposure to various market risks (e.g., risks from interest rates, foreign exchange rates, equity prices and new benchmark indices); (4) potential losses from early loan repayment, collateral depreciation or counterparty risk; (5) political instability in Spain, the UK, other European countries, Latin America and the US; (6) legislative, regulatory or tax changes (including regulatory capital and liquidity requirements), especially in view of the UK´s exit from the European Union and increased regulation prompted by financial crises; (7) acquisition integration challenges arising from deviating management's resources and attention from other strategic opportunities and operational matters; (8) our own decisions and actions including those affecting or changing our practices, operations, priorities, strategies, policies or procedures; (9) uncertainty over the scope of actions that may be required by us, governments and others to achieve goals relating to climate, environmental and social matters, as well as the evolving nature of underlying science and industry and governmental standards and regulations; and (10) changes affecting our access to liquidity and funding on acceptable terms, especially due to credit spread shifts or credit rating downgrades for the entire group or core subsidiaries.

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External verification

PricewaterhouseCoopers Auditores, S.L., an independent firm charged with auditing the financial statements of Banco Santander S.A., issued a verification report, with limited assurance, on the selected indicators mentioned in PwC verification report (Annex "Independent verification report"), according to the International Standard on Assurance Engagements (ISAE) 3000 (Revised). The report's conclusion can be found in the Annex "Independent verification report" at the end of this Climate Finance Report.

Glossary

ACT	Assessing Low Carbon Transition
AGM	Annual General Meeting
APMs	Alternative Performance Measures
AUM	Assets Under Management
B4ICA	Banking for Impact on Climate in Agriculture
BAU	Business-as-usual
BEI	Banking Environment Initiative
BSR	Business for Social Responsibility
CAF	Development Bank of Latin America
CCB	Corporate Commercial Banking
CCCA	UN Collective Commitment to Climate Action
CCUS	Carbon Capture, Utilisation and Storage
CFA	Chartered Financial Analyst
CGPF	Corporate Product Governance Forum
CIB	Santander Corporate & Investment Banking
CISL	Cambridge Institute for Sustainability Leadership
CNMV	Comisión Nacional del Mercado de Valores (in Spanish)
CRA	Agribusiness Receivables Certificate
CSRD	Corporate Sustainability Reporting Directive
DCM	Debt Capital Markets
E&CC	Environmental and Climate Change
EBA	European Banking Authority
EBF	European Banking Federation
EBRD	European Bank for Reconstruction and Development
ECB	European Central Bank
EDF	Environmental Defense Fund
EFPA	European Financial Planning Association
EIB	European Investment Bank
ENCORE	Exploring Natural Capital Opportunities, Risks and Exposure
EP	Equator Principles
ESCC	Environmental, Social and Climate Change
ESG	Environmental, Social and Governance
ESMA	European Securities and Markets Authority
ETFs	Exchange Traded Funds
EV	Electric Vehicles
FATF	Financial Action Task Force
FSC	Forest Stewardship Council
GARP	Global Association of Risk Professionals
GBF	Global Biodiversity Framework
GFANZ	Glasgow Financial Allianz for Net Zero
GHG	Greenhouse Gas
GISD	Global Investors for Sustainable Development
GTB	Global Transactional Banking
GTPS	Brazilian Roundtable on Sustainable Livestock
GVA	Gross Value Added
HCIS	High Climate Impact Sectors
HQLAs	Highly liquid assets
IASE	International Association for Sustainable Economy
ICAAP	Internal Capital Adequacy Assesment Process
ICE	Internal-combustion engines
ICMA	International Capital Market Association
IEA	International Energy Agency
IFACC	Innovative Finance for the Amazon, Cerrado and Chaco
IFC	International Finance Corporation
IFRS	International Financial Reporting Standards
IIF	International Institute of Finance
IIGCC	International Investors Group on Climate Change
ILAAP	Internal Liquidity Adequacy Assesment Process
IPBES	Intergovernmental Policy Platform on Biodiversity and Ecosystem Services
IPCC	International Panel on Climate Change
IUCN	International Union for Conservation of Nature
KPIs	Key Performance indicators
LGD	Loss Given Default
LMA	Loan Market Association
M&A	Mergers and Acquisitions
NACE	Statistical Classification of Economic Activities
NFI	Non Financial Information
NGFS	Network for Greening the Financial System
NUTS	Nomenclature of Territorial Units for Statistics

NZAMi	Net Zero Asset Management initiative
NZBA	Net Zero Banking Alliance
NZE	Net Zero Emissions
OECC	Spanish Climate Change Office
OR	Operational Risk
PCAF	Partnership for Carbon Accounting Financials
PD	Probability of Default
PFE	Potential Future Exposure
PHEV	Plug-in hybrid electric vehicles
PLA	Polylactic acid
PR	Physical Risk
PRB	Principles for Responsible Banking
PRI	Principles for Responsible Investment
PSI	Principles for Sustainable Inssurance
PVC	Polivinyl chloride
RAG	Red Amber Green
RBF	Responsible Banking Forum
RBSCC	Responsible Banking, Sustainability and Culture Committe
RCP	Representative Concentration Pathway
RCSA	Risk and Control Self-Assessment
RSPO	Sustainable Palm Oil
RTRS	Roundtable on Responsible Soy
SA	Scenario Analysis
SAF	Sustainable aviation fuel
SAI	Santander Alternative Investments
SAM	Santander Asset Management
SBTi	Science Based Targets Initiative
SBTN	Science Based Targets Network
SCF	Santander Consumer Finance
SDG	Sustainable Development Goals
SFDR	Sustainable Finance Disclosure Regulation
SFICS	Sustainable Finance and Investment Classification System
SMEs	Small and medium-sized enterprises
SRI	Socially Responsible Investment
TCFD	Task Force on Climate-Related Financial Disclosures
TNFD	Taskforce on Nature-related Financial Disclosures
TOM	Target operating model
TPI	Transition Pathway Initiative
TR	Transition Risk
UN	United Nations
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNEP-FI	United Nations Environment Program for Finance Institutions
UNODC	United Nations Office on Drugs and Crime
WBCSD	World Business Council for Sustainable Development
WWF	World Wide Fund for Nature