

STRATEGIC DECARBONIZATION PLAN

YEAR **2025**

1 Objective

The objective of a decarbonization plan is to lead an effective transition to a low-carbon economy by significantly reducing greenhouse gas (GHG) emissions and mitigating the impacts of climate change within a specific context, whether at a global, national, regional, or business level.

2 Overview

2.1 Paris Agreement and Global Targets

The Paris Agreement, which replaced the Kyoto Protocol and was signed in 2015, resulted from COP 21 under the United Nations Framework Convention on Climate Change. Its primary objective is to limit the increase in the planet's average temperature to below 2°C above pre-industrial levels. With a goal to pursue efforts to keep the temperature increase to 1.5°C, each member country submitted its Nationally Determined Contributions (NDCs) to reduce emissions and meet the specified target. Brazil's 2015 NDC establishes that the country must:

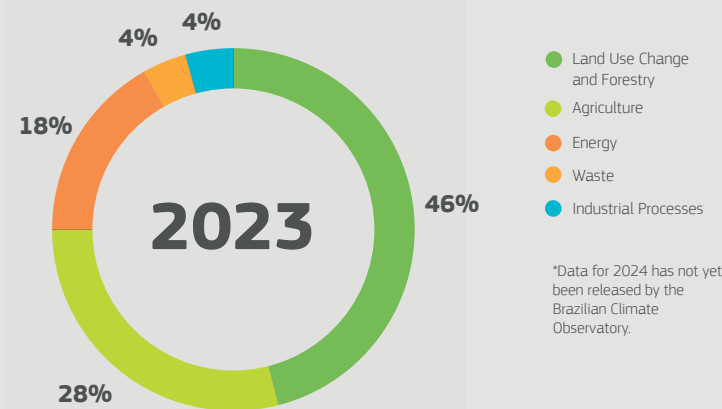
- Reduce its emissions by 37% by 2025 (base year 2005).
- Reduce emissions by 50% by 2030 (base year 2005).
- Achieve indicative climate neutrality (net-zero emissions) by 2050.
- Implement actions for climate change mitigation and adaptation.
- Reduce methane emissions by 50% by 2030.

2.2 Brazilian Sectoral Emissions

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Brazil is one of the largest climate polluters on the planet and, as such, has a major responsibility in combating the climate crisis. According to the most recent global data from Cait/WRI, for the year 2021, the country is the fifth largest emitter of greenhouse gases in the world, with 3.1% of the world total. It is behind only China (26%), the USA (11%), India (7%) and Russia (4%) and slightly ahead of Indonesia (3%). If we consider the 27 countries of the European Union as a whole, Brazil becomes the sixth largest emitter on the planet. In Brazil, most emissions occur due to deforestation of biomes and land use for livestock and agriculture, not from the burning of fossil fuels, as is the case with other major polluters. According to the IPCC's 5th Assessment Report (AR5), in 2023 greenhouse gas emissions in Brazil totaled 2.3 billion tons of CO₂e. Emissions are distributed by the following sources:

Percentage of Emissions by Sector in Brazil.

Brazil Emissions Profile



Source: SEEG – Analytical report 12

2.3 Contribution of the Pulp and Paper Sector to Climate Change

Climate change is caused by the increase in Greenhouse Gases (GHG) as a result of human activities and is one of the main environmental problems of today. Its effects can be mitigated with carbon market mechanisms, integrated and coordinated public policies, and the promotion of innovation and new, more sustainable technologies.

The pulp and paper sector in Brazil has a renewable planted forest base of approximately 10 million hectares, responsible for removing and storing carbon from the atmosphere. Through reforestation with production forests (renewable planting and harvesting cycles), a carbon stock is estimated at around 1.88 billion tons of carbon dioxide equivalent (CO₂e - a metric used to compare emissions of various greenhouse gases, based on the global warming potential of each one) and through the sustainable management of 5.9 million hectares of native forest conservation areas, which are responsible for the stock of approximately 2.6 billion tons of CO₂e.

The scale of removals generated by increases in forest stocks and the capacity for long-term maintenance mean that forests have enormous potential to contribute to combating climate change, especially over the coming decades.

There are therefore several types of climate benefits that characterize the sector's potential:

- Carbon removal by natural and production forests;
- Carbon storage in natural and production forests;
- Carbon storage in the soil;
- Emissions avoided through the use of renewable sources, such as biomass and biofuels;
- Carbon storage in product.

3 Actions of Irani

Issues related to climate change are integral to Irani's policies and objectives, guiding our goals toward increasingly sustainable development. We have deepened our discussions on the topic and its impact on our operations, establishing new commitments in our Sustainability Policy, such as: "Using resources sustainably, preserving the environment, reducing environmental impacts, and promoting a circular and low-carbon economy", and "Adopting measures and strategies for climate change mitigation and adaptation through projects such as Clean Development Mechanisms and the reduction of greenhouse gas emissions."

In 2021, Irani set ESG commitments for the period from 2021 to 2030. Some of these commitments are related to climate issues, including:

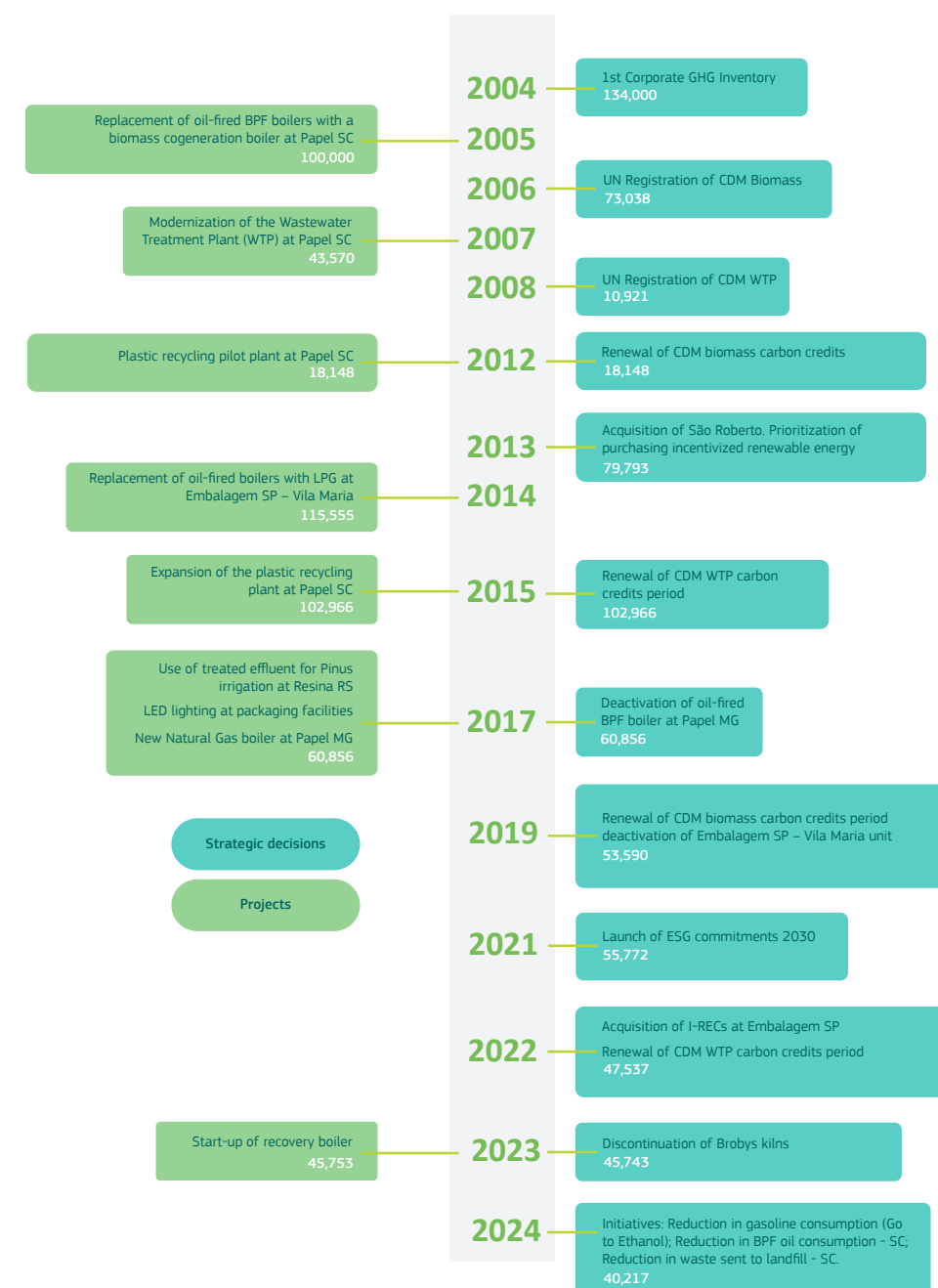
- Zero non-hazardous waste sent to landfills;
- Achieve 100% renewable energy and become self-sufficient in renewable energy generation;
- Increase the positive balance between GHG emissions and removals by 20% (scope 1 and 2);
- Reduce specific water consumption by 30%.

Irani has a history of integrating low-carbon projects and technologies into its industrial operations, allowing the company to account for reductions in greenhouse gas emissions since 2004, when we conducted our first GHG Inventory.

Timeline of Developed Projects

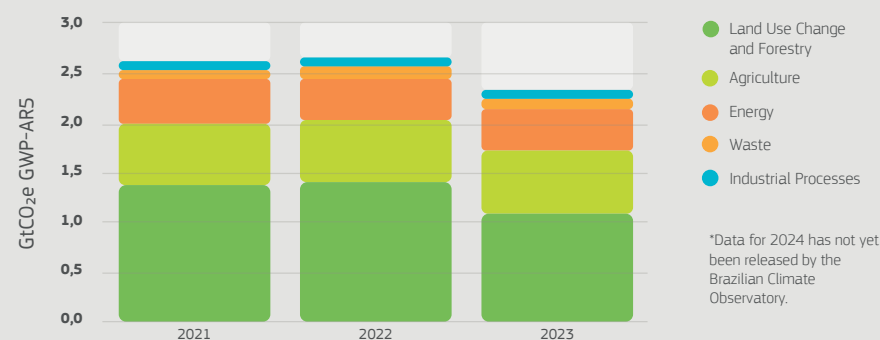
Decarbonization Strategic Plan

By investing in low-carbon projects, we have advanced in reducing our direct and indirect emissions—primarily from energy—over the years. Our Journey (2004-2024):



Note: The values highlighted in white refer to scope 1 and 2 emissions, in tonnes of carbon dioxide equivalent (tCO₂e).
Source: Irani.

Brazilian Emissions*

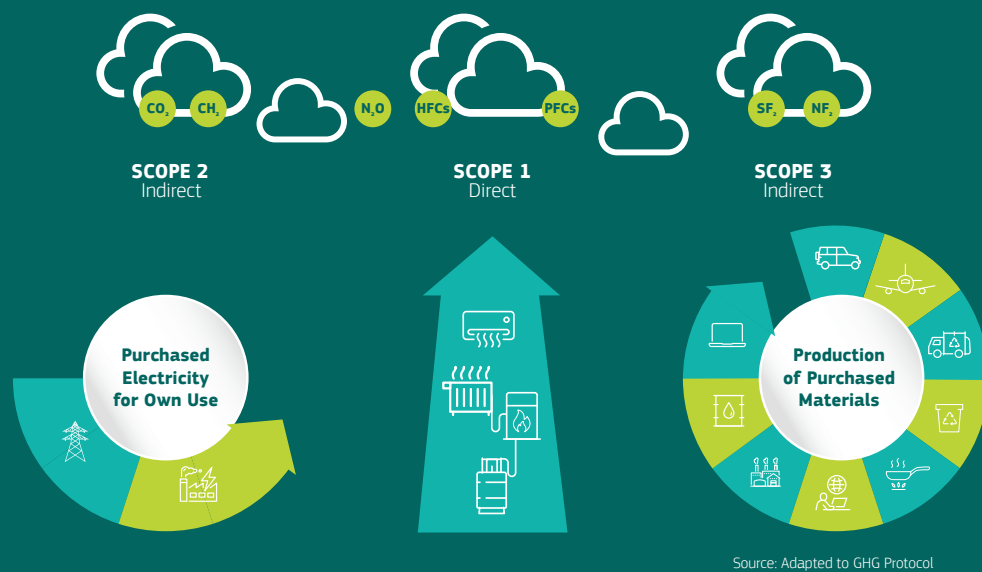


Source: Brazilian Climate Observatory.

Mitigating climate change and transitioning to a low-carbon economy requires substantial investments in short- and medium-term projects that directly impact emission reductions. The suite of projects under the GAIA Platform will be crucial for this transition, contributing to the reduction of Scope 1 and 2 emissions for the company.

Since 2004, we have been conducting our greenhouse gas inventory. Starting in 2006, we began verifying and certifying this inventory according to the international standard ISO 14,064 for industrial process emissions, based on the GHG Protocol Brazil methodology, as well as accounting for the biogenic carbon removal by forests. Irani has always been a Carbon Positive Balance company, meaning it removes more carbon from the atmosphere than it emits.

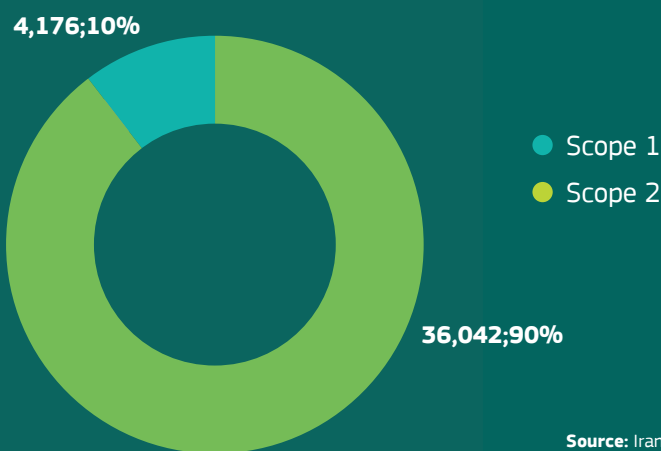
Emission Scopes



- Scope 1 (S1) covers the company's direct emissions, such as those from production processes.
- Scope 2 (S2) includes emissions from the use of energy by the company.
- Scope 3 (S3) pertains to emissions over which the reporting entity has no direct control, such as those emitted by suppliers within a supply chain.

In 2024, the Greenhouse Gas Inventory was improved, quantifying all categories of scope 3 (third party) applicable to our business, in accordance with the GHG Protocol methodology. Scope 3 is quantified and reported, but is not included in the ESG commitment established by the company for 2030.

The company's emissions in Scope 1 and 2 totaled **40,217.6 tCO₂e** in 2024. The distribution of Irani's GHG emissions, by scope in 2024:

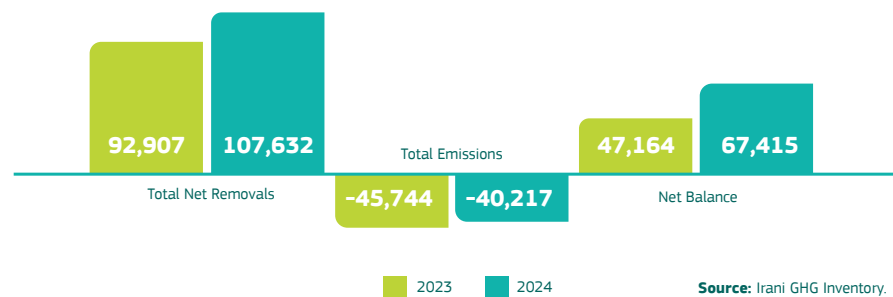


Emission Categories by Scope:

SCOPE 1 CATEGORY	PERCENTAGE
STATIONARY FUEL	84.8%
MOBILE FUEL	7.3%
WASTE GENERATED IN OPERATIONS	6.8%
INDUSTRIAL	>1%
SANITARY EFFLUENT TREATMENT	>1%
SCOPE 2 CATEGORY	INDIRECT EMISSIONS - ENERGY
LOCATION-BASED APPROACH	4,606.51 tCO ₂ e
MARKET-BASED APPROACH TO PURCHASING	4,175.60 tCO ₂ e

The carbon balance is positive, indicating that during the period, we captured more carbon from the atmosphere through forestry activities (planted and native forests) than was emitted by our industrial units.

Balance: Comparative of Emissions and Removals | 2024



4.1 Carbon Stock

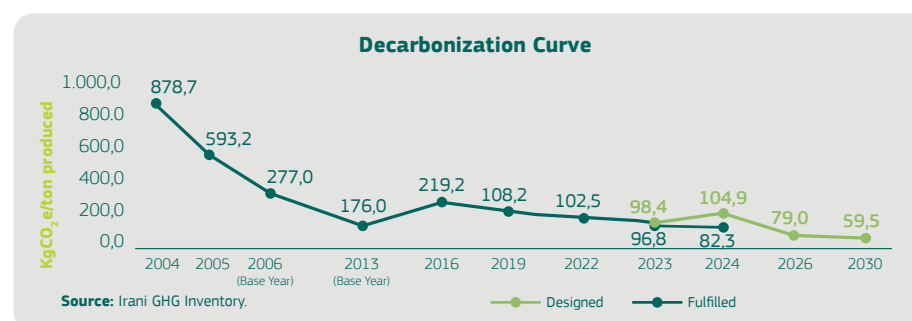
Additionally, we have a total carbon stock (standing timber) of 11,050,710 tCO₂e, due to the 34,319 hectares of planted and native forests in the states of Santa Catarina and Rio Grande do Sul.

Irani's actions, investing in low-carbon projects, have enabled the reduction of its direct emissions (E1) and indirect emissions from purchased energy (E2) over the years.

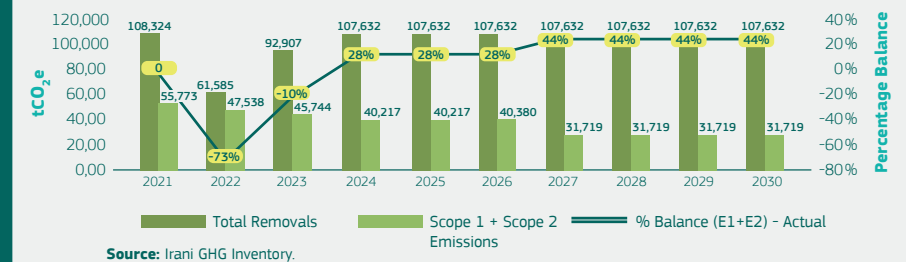
In the decarbonization curve in the graph below, it is possible to identify this reduction in kgCO₂e per ton produced since 2004, considering all of the company's businesses.

From 2004 to 2024, we reduced our emissions per net ton produced by 91 %, with opportunities to reduce them by a further 28 % by 2030 when compared to 2024.

In 2021, through a qualitative analysis of the SDGs, ESG commitments linked to climate change mitigation were publicly signed. Upon completing the GHG Inventory for 2024, we achieved the commitment to increase the positive balance between GHG removals and emissions in scopes 1 and 2 by 20%, accounting for a positive balance of 67,415 tCO₂e, which represented a 28% increase between emissions and removals.



Balance Curve Between Emissions and Removals



The projects already implemented and those under development highlighted in the table below were fundamental to achieving the ESG target by 2024. The future projects mapped will contribute to maintaining the positive balance between emissions and removals until 2030 and an absolute reduction in scope 01 and 02 emissions of approximately 21 % is estimated by 2030.

Mapped opportunities for reducing greenhouse gas emissions – Cycle 2022 to 2030

YEAR	7 AFFORDABLE AND CLEAN ENERGY 100% Renewable Energy and Self-Sufficiency by 2025	12 RESPONSIBLE CONSUMPTION AND PRODUCTION Zero disposal of non-hazardous waste in landfills	13 CLIMATE ACTION Increase the Balance Between Greenhouse Gas Removals and Emissions by 20%
2023	Papel SC: Operation of the chemical recovery boiler*.		Florestal SC: - Study of quantification of carbon in the soil for planted and native forests*. - Definition of the successional stage of surplus areas of planted forests**.
2024	Expansion of the scope of acquisition of renewable energy certificates (IRECs) for the Embalagem SP Unit, Escritório SC and Florestal SC*.	Papel and Embalagem SC: - Discontinuation of Broby kilns operation*. - Reduction in the sending of non-hazardous waste to landfill*.	- Florestal RS: Definition of successional stage and methodology for calculating carbon removal from native forests**. - Florestal SC: Study of carbon quantification in the soil of planted forests*.
2025	- Papel MG: Study for the implementation and production of steam and energy through a biomass boiler*. - Papel MG: Study of solar energy production*.	- Papel and Embalagem SC: Disposal of plastic contaminated with fiber and metallic braid from MP#5 paper*. - Embalagem SP: Composting of ETE sludge.	- Beginning of the study of carbon in the soil of planted and native forests in Rio Grande do Sul*.
2026	Embalagem SP: Study of solar energy production.		- Embalagem SC: Deactivation of BPF oil boiler. - Florestal RS: Study of carbon quantification in the soil of planted forests*. - All units: Study for the use of renewable fuel in forklifts.
2027	Papel and Embalagem SC: Study of solar energy production.		All units: Achieve zero scope 2 emissions.
2028	Papel SC: Repowering of Hydroelectric Power Plant São Luiz*.	All units: Disposal of sporadic waste	Florestal SC: Increase forest base by 20%
2029	Papel SC: Repowering of Hydroelectric Power Plant Cristo Rei*.	Papel MG: Sending boiler ash for composting.	All units: electrify the light vehicle fleet and use renewable fuels for the heavy vehicle fleet.
2030	Papel SC: Repowering of Small Hydroelectric Power Plant Flor do Mato*.		

*approved and/or ongoing projects
** project implemented.