

# ENVIRONMENTAL DIMENSION

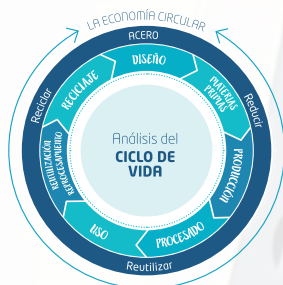
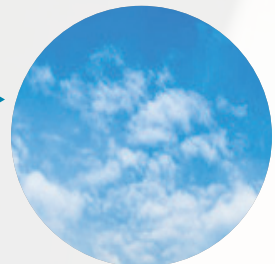
GRI Renewable Industries is continuously tracking the environmental impacts of its activity, measuring performance, minimizing its impact, and identifying opportunities for improvement. Because of our activity, we are aligned with the fight against climate change and the definition of a strategy that will allow it to move towards an emission-free future.

**Environmental Management** ▶  
**87.5%** of factories  
 certification ISO 14001



◀ **Waste**  
**99%** of "non-hazardous" waste  
**97%** corresponds to steel scrap

**CO<sub>2</sub> Emissions** ▶  
**168,599** tons of CO<sub>2</sub> produced  
**782,480** tons of CO<sub>2</sub> avoided indirectly



◀ **Circular Economy**  
**67%** of steel from recycled sources

**Project "One Tower One Tree"** ▶  
**2,000** trees planted versus  
**1,375** towers manufactured





# Environmental performance

## Management approach

103-1, 103-2 AND 103-3

In GRI Renewable Industries we operate in an efficient and responsible way and we show our interest in the preservation of the environment. Our work is done under the umbrella of an Integrated System and a Quality, Environment and Health and Safety Policy.

Through these, consumption, emissions, waste and discharges among other environmental parameters are monitored to contribute to the minimization of its environmental impact without affecting the quality of our products whilst working on the continuous improvement.

Nowadays, the 87.5% of our plants are certificated under the standard ISO 14001, pending of the certification GRI Towers India II, GRI Casting Zestoa and GRI Corte y Biselado (Brazil).

Using and handling hazardous materials is done in accordance with procedures and instructions in place, while complying with the applicable regulations and using the appropriate PPEs.

At GRI Renewable Industries we carry out different actions that contribute to the minimization of our impact; through innovation and increasing the efficiency of our processes and products. Similarly, we support the achievement of the Sustainable Development Objectives, as is summarized throughout the Report.

We conduct awareness-raising activities in all our plants, coinciding with emblematic dates such as Environment Day.

To cover potential environmental risks, at GRI Renewable Industries we make financial provisions and have guarantees to cover for the materialisation of environmental risks in our contracted insurance policies:

- Environmental Liability Insurance
- Liability Coverage for Sudden and Accidental Pollution in the General Liability Policy

During 2019, no activation of the guarantees of The Group's Environmental Responsibility Policy were required.

GRI Renewable Industries monitors the environmental impacts that derive from its activity through different indicators that measure its environmental performance, allowing it to measure its evolution and identify opportunities for improvement.

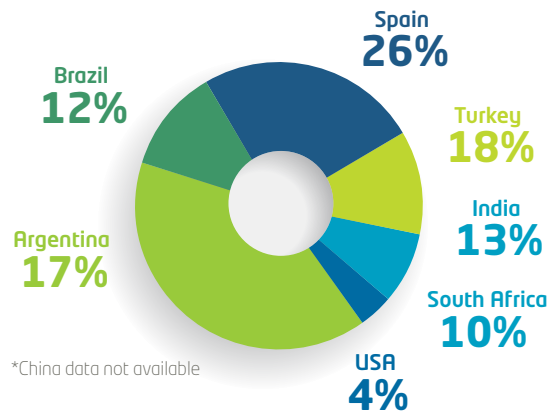
## Water and discharges (303-1 AND 306-1)

Water is a resource little used in our activity, reason why it presents low consumptions. However, as it is an essential and increasingly scarce natural resource, it is monitored with the aim of achieving its sustainable use.

In 2019, the total consumption amounted to 52,608 m<sup>3</sup>. 70% of the water consumed came from the water network 8% came from superficial water and the remaining 22% came from groundwater sources. A total of 7,287 m<sup>3</sup> is also reused, distributed between India (85%) and Brazil (15%).

Consumption was mostly sanitary (86%), followed by industrial use (1.2%) and irrigation of green areas (2%).

### Distribution of water consumption by country



It should be noted that no water source was significantly impacted by the company's water collection (303-2).

With regard to discharges, it is estimated that there was a total of 17,061 m<sup>3</sup> in discharges, of which 90% was discharged in the sewage network, 9% in septic tanks and 1% in watercourses (river, sea, etc.).

Therefore, the plants develop projects that contribute to minimizing or reusing water. For example, GRI Towers Brazil installed a point of reuse water for washing sections, resulting in annual savings of R\$ 26,725.14 (303-3).

## Waste 306-2

Residues produced in our facilities are appropriately segregated, tracked, identified, stored and managed by authorized agents, as is set out in the environmental instructions and procedures.

A total of 120,939 tonnes of waste is produced, 99% of which is non-hazardous.

**Non-hazardous waste** amounts to 120,265 tons, of which 97% consists of steel scrap, followed at great distance by welding flux of 1%. Their distribution is shown below:

	NON-HAZARDOUS WASTE						
	Scrap metal	Wood	Paper and cardboard	Recyclable plastic	Welding Flux	Blasting	Others*
<b>GRI Argentina</b>	538	52	8	3	172	0	128
<b>GRI Brazil</b>	908	187	12	4	145	35	115
<b>GRI China</b>	93,121	0	0	0	0	0	0
<b>GRI Spain</b>	19,232	176	66	54	716	139	80
<b>GRI India</b>	382	19	500	501	30	20	2
<b>GRI South Africa</b>	462	0	5	3	0	0	0
<b>GRI Turkey</b>	530	101	24	0	310	66	29
<b>GRI USA</b>	1,008	0	4	0	213	116	51
	<b>116,182</b>	<b>535</b>	<b>619</b>	<b>564</b>	<b>1,586</b>	<b>375</b>	<b>405</b>

Others\* = 5% construction and demolition, 8% tablex and 87% others (organic, etc.)

**Hazardous waste** amounts to 674 tons and 13m<sup>3</sup> of oil, with sludge (37%) and contaminated packaging (22%) being the most relevant.

More than 99% of non-hazardous waste (except organic waste) is destined for recycling. Hazardous waste is partly managed for treatment and the rest is deposited in a landfill. Of note is the metallic dust which is no longer managed as waste but is sold as a by-product.

	HAZARDOUS WASTE					
	Metallic dust (ton)	Sludge (ton)	Contaminated rags and PPE (ton)	Packaging (ton)	Other (ton)	Oils (m <sup>3</sup> )
<b>GRI Argentina</b>	0	43	1	18	1	1
<b>GRI Brazil</b>	3	36	19	2	43	2
<b>GRI China</b>	0	0	0	0	0	0
<b>GRI Spain</b>	58	69	53	35	68	5
<b>GRI India</b>	0	0	2	0	0	1
<b>GRI South Africa</b>	3	30	2	21	0	0
<b>GRI Turkey</b>	0	0	1	58	0	0
<b>GRI USA</b>	8	73	11	14	1	3
	<b>73</b>	<b>252</b>	<b>89</b>	<b>148</b>	<b>114</b>	<b>13</b>

## Conflict Minerals

Since the year 2010, following the approval of the Dodd-Frank Wall Street Reform, governments, companies and consumers request to know the origin of conflict materials, which has, therefore, become significant within GRI Renewable Industries.

The corresponding homologation of providers, with those previously calibrated in the market, is done within the purchasing process. In this process we have identified steel and the electric and electronic materials as materials that may contain these minerals.

During the homologation process it is requested that the origin of the materials is accredited, thus assuring that these do not originate from foundries that use conflict materials (coltan, cassiterite, wolframite, gold, tantalum, tin, or any other conflict mineral or its derivatives) which contribute to funding of conflicts in the Democratic Republic of the Congo or any neighboring country.

Likewise, the information required by our clients regarding the absence of this type of mineral is completed and presented annually.

## Recovery of solvents

GRI Towers Galicia, South Africa and Brazil have installed a solvent recovery system, which helps to reduce and improve the management of some hazardous materials, such as paint sludge, by extracting the solvent and contaminated metal containers.

The recovered solvent can be reused in the cleaning tasks in the surface treatment area of the plant, giving it a new use.

In addition, a washing machine for contaminated empty containers has been installed in the same facility, so that paint residues from these containers can be removed and recirculated to the solvent recovery system. With this measure, the containers become non-hazardous waste and can be managed as scrap metal.



## GRI Sevilla joins the waste recycling initiative #GreenLeague



During the European Week for Waste Prevention (EWWR) 2019, GRI Sevilla joined the 2<sup>nd</sup> edition of the #GreenLeague for the recycling of waste electrical and electronic equipment (WEEE), promoted by the Ecolec Foundation.

This initiative aims to raise awareness among companies and workers themselves for the importance of proper management of unusable electrical and electronic equipment, both at home and in the workplace, which should be disposed of in the correct places.

In total, 45 waste collection points will be installed in the workplaces of these companies and institutions, which will promote the segregated collection of WEEE among their workers.

Further reinforcing this message, and during the week of the COP25 celebration, GRI Sevilla held 5 training sessions for the entire workforce on waste management, especially on WEEE, which were attended by all the plant's employees.

In addition, WEEE collection points were set up in all areas. At the end of the campaign, the total number of kilos of WEEE collected by each company will be compared and a recycling ranking will be created.



## Life Cycle Approach: Circular Economy

# Part 1: The role of our products in the circular economy

Our activity is the manufacture of components for the wind industry, mainly towers and flanges that contribute to the generation of renewable energy.

In the towers we incorporate all its components, according to the specifications of the final client. A number of agents are involved in this manufacturing process: the suppliers of raw materials and components who supply the various products and equipment, our production and factory assembly processes and delivery to the end customer.

In order to define a global strategy in the circular economy, we must consider all these agents, providing measures that contribute to minimize the global impact on the environment.

The towers, once completed, are mainly made of steel, in addition to electrical and electronic equipment and packaging (very little relevant in this case). The average distribution of materials is approximately:

- 96-98%: Black Steel
- 2-4%: Internals

This distribution clearly makes steel the main objective of the circular economy, while establishing, as far as possible, additional initiatives for the other components.

## Steel

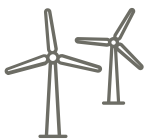
The economic system needs to move from the current linear model, in which products are manufactured from raw materials and discarded after being used, to circular models in which products have the capacity to be repaired, reutilized, returned and recycled.

In this context, steel, besides being a fundamental material in society, is the main component of all the processes of GRI Renewable Industries, contributing to the world's socio-economic growth, to the development of more sustainable production models and, therefore, to the Circular Economy.

Steel has great advantages over other materials:

### STEEL CONSUMPTION BY COUNTRY (301-1)

	TONS
GRI Argentina	15,985
GRI Spain	38,784
GRI Brazil	284,832
GRI Turkey	57,957
GRI India	484
GRI South Africa	6,758
GRI USA	23,810
GRI China	21,501
<b>TOTAL</b>	<b>450,111</b>



### Design and innovation: reducing the weight and quantity of the material used

Through innovation we have achieved notable reductions in the weight of our structures, which results in significant savings in raw materials



### The steel may be reutilized or reconverted in different ways. It's the most recycled material in the world

The reutilization ratios have a great potential for growth due to the eco-design, recycling and the increase in efficiency, as it will not lose its properties

Our steel product is almost 100% recyclable and the scrap metal has a significant value in the market.

For every tonne of steel recycled, the steel industry saves around one and a half tonnes of iron ore, 85% of water, 80% of energy and 95% of coal and all their associated emissions (Source: UNESID).

## Part 2: A transition based on 5 transversal elements

In addition to developing and spreading the circular vision throughout the organization, 5 specific elements have been identified on which GRI Renewable Industries tries to support its progressive transition towards the circular economy.



**Systemic thinking and design:** Design processes need to be based on circular concepts, integrating the whole lifecycle of the materials and products in order to extend their useful life and to facilitate their future reuse.



**Prioritizing the use of renewable energies and resources:** Encourage the efficient use of renewable and non-toxic materials and energies



**Exploit the full potential of the generated waste and extend useful life:** Maximize the useful life of resources and try to take advantage of waste as a source to generate secondary products.



**Rely on digital technology:** Incorporate new technologies that allow the measurement, monitoring and optimization of the use of resources and connectivity between the different parts of the organization and the different actors in the value chain.



**Collaborate:** Identify possible synergies and collaborations with other companies or institutions that allow us to find solutions to foster economic growth while also reducing environmental impacts.

## Part 3: circularity at GRI Renewable Industries

At GRI Renewable Industries, instead of focusing on the Circular Economy as a final goal, we want to use this concept as a tool to guide us towards a continuous improvement of our productive processes and a greater environmental responsibility.

The proposals cover the entire life cycle, from production and consumption to waste management, including the secondary raw materials market.

### 1. Innovation: product and process improvements

The concept of product design and process efficiency is essential to the circular economy. Our innovation teams design towers that are lighter and therefore more versatile, efficient, economical and easier to develop, transport and assemble, without compromising either the final height of the tower nor its strength, allowing for the construction of more modern wind farms with less impact.

In addition, we make significant investments focused on improving existing processes and/or incorporating new technologies, which contribute to more sustainable production. These projects have managed to generate significant savings by reducing the consumption of raw materials, natural resources and the generation of waste, emissions, and spillage, thus contributing to the circular economy.

All this information is further elaborated in the chapter on innovation.



## 2. Our raw material "steel" and the integrated management of scrap

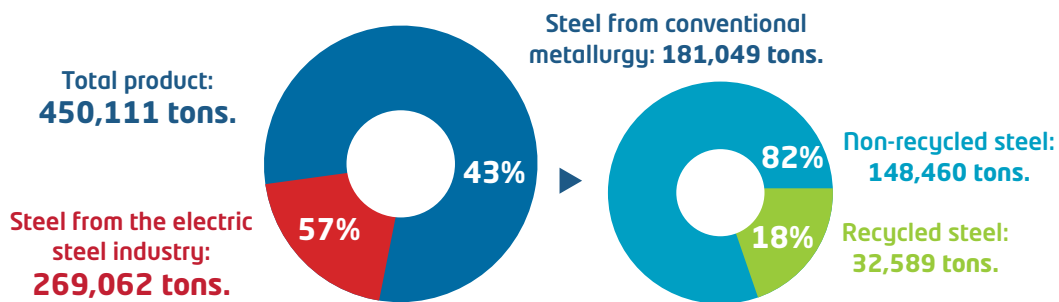
The steel industry is undergoing major changes over the last years. The expected future scarcity of raw material and the growing availability of scrap, among other economic reasons, are encouraging greater use of electric ovens to manufacture steel from old steel.

According to the Steel Manufacturer's Association, electric furnace steel production reduces greenhouse gasses by 65-90% compared with conventional steel production from iron ore.

At GRI Renewable Industries, a significant part of the steel processed is made up of recycled material. Out of the total steel consumption of 450,111 tonnes, 60% comes from electric steel makers (100% recycled origin) and the remaining 40% from the conventional steel industry, where around 18% is recycled steel.

Therefore, we can estimate that 67% of all our steel is of recycled origin, which amounts to 301,651 tons, as shown below:

	RAW MATERIAL (TONNES) (301-2)			
	100% RECYCLED STEEL	CONVENTIONAL STEEL (18% RECYCLED)	TOTAL	%
Recycled steel	269,062	32,589	301,651	67
Non-recycled steel	0	148,460	148,460	33
<b>TOTAL STEEL</b>	<b>269,062</b>	<b>181,049</b>	<b>450,111</b>	<b>100</b>



This, added to the efficient management of our scrap, favours the development of a more circular steel value chain with lower emissions.

In all plants, GRI Renewable Industries has an integrated system for the central collection and recovery of steel waste generated during production.

The quantity of steel discarded in 2019 amounts to 116,182 tonnes, of which 100% is sent for recycling and subsequently reintroduced into the value chain, thus stimulating steel production from recycled material which will lead to significant savings in raw materials and emissions.

	DISTRIBUTION OF SCRAP BY COUNTRY	
	SCRAP (TONS)	
GRI Argentina	538	
GRI Spain	19,232	
GRI Brazil	908	
GRI Turkey	530	
GRI India	382	
GRI South Africa	462	
GRI USA	1,008	
GRI China*	93,121	
<b>TOTAL</b>	<b>116,182</b>	



# Energy

Energy consumption within the company is high due to the industrial processes, and for this reason measures to improve energy efficiency are being incorporated, as well as measures to reduce the environmental impact and the carbon footprint. With our commitment to the Sustainable Development Goals (SDG), in particular to climate change, we are continuously trying to further reduce our environmental impact through different actions such as reforestation, measures to increase energy efficiency and by favoring renewable energy production.

## Energy efficiency

302-4

At GRI Renewable Industries it is key to know, monitor and control the energy consumption in all of our plants in order to set up measures that contribute to its minimization and, therefore, to reduce CO<sub>2</sub> emissions into the atmosphere.

As summarized in the section on innovation, we are involved in numerous projects focused on improving our processes, most of which will optimize energy consumption and reduce raw materials. In addition, we are currently working on the definition of applicable indicators that will allow us to have actual and reliable results in each project.

Furthermore, energy efficiency initiatives and significant investments in the various factories are being made, as summarised below:

- Following the energy audit pursuant to Royal Decree 56/2016, **GRI Towers Galicia** implemented various measures and introduced the PRO-EFFICIENCY measurement system, which will provide us with real reduction data in the coming year.
- **GRI Brazil** designed efficiency measures for the period 2017-2020, which include projects related to changes in lighting systems.

GRI Towers Brazil changed its mercury lamps (440W) for LED lamps (145W). This means a reduction in consumption from 190.5 Kwh to 62.7 Kwh for each lamp.

This project will be implemented in 2020 in GRI Flanges Brasil and GRI Corte y Biselado, where it is estimated that the consumption/lamp will be reduced from 70.84Kwh to 23.345Kwh and from 28.16Kwh to 9.28Kwh, respectively. In addition, GRI Flanges Brazil removed any unused lighting fixtures.



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### SECTION 121 3rd PROGRESS CERTIFICATE 01 January 2018 to 31 December 2018

CLIENT NAME	: GRI Wind Steel, South Africa
PROJECT TITLE	: GRI Wind Steel, Atlantis
PROJECT NUMBER	: SAN_BI_79/2019
PROJECT CONSULTANT	: CFJM Solutions
M&V TEAM, (where applicable)	: N/A

DATE OF PROGRESS REPORT	: 10 September 2019
SHORT PROJECT DESCRIPTION	: The tower manufacturing facility has been built with the objective of supplying wind towers to the South African market, contributing to the strong development of renewable energy markets in the country. The project, which creates more than 200 jobs, will produce 150 towers a year for the Southern African market. GRI Wind Steel South Africa aims to assist in the stimulation of energy efficiency improvement in the manufacturing industry and benefit from the 12i income tax incentive.

#### Performance of Section 121 Project

The attached document *GRI Wind Steel South Africa Performance Assessment Report: 2018-01-01/176, GRI Wind Steel Atlantis and dated 10 September 2019, v1r0*, for the period 01 January 2018 to 31 December 2018 (12i Compliance Period: 1 January 2018 to 31 December 2018), is regarded as a true reflection of the Third Performance Assessment for this project.

#### ACTUAL IMPACT OF PROJECT

The Performance Assessment for the period 01 January 2018 to 31 December 2018 was submitted to SANEDI on 10 September 2019, as defined by Regulation 2.2(a) under section 121 of the Act.

- Concerning energy efficiency measures at **GRI Towers South Africa**, the applicable tax legislation, Section 12i Tax Incentive, requires a certificate from an accredited external entity that verifies energy efficiency measures, which include optimization of production times and processes, and the reductions achieved, in accordance with the SANS 50 010:2018 methodology. The latest available performance assessment is for the 2018 fiscal year and concludes with savings of 15.2% on base energy use.

Below are some projects with new, more efficient technologies.



## GRI Flanges Iraeta: new standardized flange furnace



For the heat treatment of steels, maintained temperatures of approximately 900°C are required, in addition to outdoor cooling at room temperature.

At GRI Flanges Iraeta, the existing standardized flange furnace showed enormous gas consumptions. Therefore, an investment was made in a standardised flange furnace with self-recovery burners, better insulation and shorter heating times, among other advantages, which led to a significant reduction in the plant's total gas consumption.

With regard to its performance, the following savings are expected:

- At 900°C a higher efficiency of 36% (going from 55% to 75% efficiency).
- Due to its better insulation, it is estimated to save 42%.
- With regard to the furnace heating time, a saving in gas consumption per cycle of 855 Nm<sup>3</sup> is estimated, which is equivalent to 9,196 kWh (32%), in addition to an increase in production of 14.8%.

## Removal of Volatile Organic Compounds (VOCs)

Our processes, especially painting, emit volatile organic compounds (VOCs), which are harmful to the environment. Therefore, we implement the latest technology in environmental solutions for emission treatment.

The installation of the new Regenerative Thermal Oxidizer (RTO) with a Zeolite Roto-Concentrator at GRI Towers USA is a clear example of improving the treatment of gaseous emissions and eliminating VOCs.

VOCs are eliminated through oxidation at high temperatures (800-850°C) which eliminates up to 99% of pollutants in the combustion chamber.

It is a highly efficient process as Volatile Organic Compounds supply energy to the system, which reduces the natural gas required by the RTO to maintain oxidation temperatures.

If the inlet concentration of VOCs is above the auto-thermal point, the burner will remain off and, when the VOC concentration is below the auto-thermal point, the burner ignites and modulates its power to maintain the temperature of the combustion chamber.



## GRI Towers USA: Improvement of air conditioning

At the Texas factory, we developed a major energy efficiency project in the factory's compressor area.

Due to its characteristics, the compressor room was too hot due to poor ventilation. Therefore, the position of the ventilation ducts outside the area was redesigned to avoid overheating, which required an investment of around 14,000USD.

Two-way ducts were installed, one outside the plant and one inside the surface finishing area. These allow hot air to be sent out of the plant in the summer when tempera-

tures are very high and reverse the flow of hot air into the plant in the winter when temperatures are very low.

This contributes to significant savings in air conditioning in the production area, where temperature conditions have improved considerably. The average temperature improved by an average of 5°C from 11°C to 16°C and the fluctuation in temperature, which before the installation could vary from 2°C to 21°C, was notably stabilized. Now the average temperature has a variation of only 14-18°C, being much more stable.

## Internal energy consumption <sup>302-1</sup>

This year we consumed a total of 1,611,859 GJ, of which 34% came from electricity consumption and the remaining 66% came from fuels such as LPG, natural gas, propane and diesel.

With regard to the distribution of energy consumption, 65% of the energy consumed is for production, 2% for heating and the remaining 33% for both uses.

As for external energy consumption, no available data is available related to this indicator. Information is expected to be available by the year 2030 (302-2).

	ENERGY CONSUMPTION				
	Energy (Gj)	GLP (Gj)	Natural Gas (Gj)	Propane (Gj)	Diesel (Gj)
GRI Argentina	13,328	3,293	0	0	207
GRI Brazil	18,262	649	7,124	0	477
GRI China	335,508	0	914,580	0	0
GRI Spain	102,747	0	124,443	1,413	477
GRI India	17,686	770	0	0	1,559
GRI South Africa	13,765	510	0	0	420
GRI Turkey	14,509	0	9,184	3,186	0
GRI USA	25,065	0	12	395	2,288
	<b>540,871</b>	<b>5,222</b>	<b>1,055,343</b>	<b>4,994</b>	<b>5,428</b>

## Energy intensity <sup>302-3</sup>

Measuring energy intensity is a good way to measure the efficiency and impact of our processes. The calculation takes electricity and fuel, corresponding to internal use, into consideration.

The resulting annual ratio is calculated by dividing energy consumption by the total weight of products sold in each country.

The energy intensity of GRI Brazil Corte y Biselado is not included, as its product are included in the towers and flanges plants in Brazil, and GRI Castings Zestoa because its activity is related with the foundry (independent of towers and flanges).

ENERGY INTENSITY "TOWERS"	
Gj consumed/ t sold product	
Argentina	0.68
Brazil (Towers)	0.82
Spain (Galicia+Sevilla)	1.14
India	0.92
South Africa	0.58
Turkey	1.19
USA	0.88
	<b>0.94</b>
ENERGY INTENSITY "FLANGES"	
Gj consumed/ t sold product	
Spain (Iraeta)	3.05
Brazil	3.80
China	4.39
	<b>4.21</b>



# Emissions and climate change

201-2

## Risks and opportunities associated with climate change

### Global situation

In spite of the economic downturn and the decline in the use of coal, carbon dioxide emissions have increased to new records, with a growth of 0.6% compared to last year (in 2018 and 2017 this increase was of 2.1% and 1.5% respectively), according to the last Global Carbon Project report. As the World Meteorological Organization has highlighted, 2019 is the final year in the hottest decade ever recorded.

The scientific community warns that, with the present projections and measures, the temperature increase may exceed three degrees by the end of the century, which directly points to the production of polluting gases: If the report's forecasts are indeed met, CO<sub>2</sub> emissions will be 4% higher than in 2015, when the Paris Agreement was signed.

Although the use of coal (the main pollutant, accounting for 40% of total fossil fuel emissions) is declining, this will be offset by increased use of natural gas and oil worldwide.

The scenario envisaged by the four most polluting regions in 2019 is quite diverse. China, which continues at the top, is expected to grow by 2.6%, the United States and European Union (second and third places) are expected to decrease by about 1.7% and India, the fourth most polluting country, is expected to grow by 1.8%.

### Regulatory framework

Following the commitment of the Paris Agreement (COP 21), all countries were required to agree on measures to reduce global greenhouse gas emissions to levels which are consistent with climate security, as outlined in the reports of the Intergovernmental Panel on Climate Change (IPCC).

The objective is to limit the increase of the average global temperature to 1.5°C with respect to pre-industrial levels, which requires an accelerated change in the development model in the coming decades.

Little progress has been made at the annual meetings held from 2015 onwards, mainly on Article 6 which defines the rules for the carbon market. The latest meeting, COP 25 in Madrid, has succeeded in giving visibility to the problem and in disseminating the scientific and expert reports which guarantee a complicated future if no urgent action is taken. Moreover, the demonstrations and demands of civil society have been remarkable.

Within this voluntary framework, the Sustainable Development Goals, mainly those directly related to climate, such as ODS 13 "climate action" and ODS 7 "affordable and clean energy", cannot be overlooked.

The European Union positioned themselves as leaders in the face of the problem, presenting the "New Green Deal", which establishes the main lines of action for the coming years to achieve climate neutrality by 2050, as an opportunity to modernize, promote innovation and improve the competitiveness of the European economy and generate quality jobs. The pact calls for a 100-billion-euro commitment between 2021 and 2027 to achieve this goal.

However, it is the year 2020 in which real and tangible commitments and plans will have to be presented to reduce carbon emissions and respond to this emergency, which is why we must wait for COP 26 in Glasgow, Scotland and hope that countries such as the USA, China and India will form part of this commitment.

In Spain, the Integrated National Energy and Climate Plan 2021-2030 (PNIEC) sets out the guidelines for electricity generation to be 100% renewable by 2050, with intermediate milestones such as in 2030, with a reduction of one third in greenhouse gas emissions, 42% renewable energy in the electricity system and 74% in electricity generation, in line with the commitments made in Agenda 2030.



## Stakeholders' expectations

There has been a significant increase in social mobilization over recent years, prompting governments to take urgent action to curb the rise of global average temperatures, which is documented in numerous rather pessimistic scientific reports.

The position of our main customers with plans and policies focused on the reduction of emissions in the medium/long term stands out. For GRI Renewable Industries, meeting their expectations is a strategic aspect, which is why we work in line with their commitments to reach a common goal.

In this context, the financial sector has also taken a step forward. Many institutions have already committed significant amounts to finance investments related to reducing emissions over the next 10 years, acting as a Climate Bank, with a commitment to reducing the carbon dioxide (CO<sub>2</sub>) footprint of their credit portfolios pursuant to internationally recognized criteria, and to channel savings and financial resources towards sustainable investments in the future.



## Our position

GRI Renewable Industries is aware that it faces various risks arising from climate change, which include:

- **Regulatory risks.** Through the increasingly restrictive emission requirements.
- **Business risks.** To adapt to the requirements and the demands of our customers.
- **Financial risks.** Derived from financing requirements, which increasingly value these issues and consider them in their customer portfolios.
- **Risks in the environment.** Derived from climate change (increase in storms, floods, etc.) at our suppliers' facilities, which would cause supply problems.
- **Reputational and image risks.** Derived from globalization and the social awareness on these issues.

In that regard, in 2015, after the approval of the Sustainable Development Goals, we changed our way of integrating and communicating sustainability, aligned with our main initiatives to the fulfilment of the SDG most directly related to our business.

Therefore, taking the environment, the risks and the expectations of our stakeholders into consideration, 2019 represents a period of analysis and reflection for GRI Renewable Industries in which a new roadmap must be defined in line with the current needs and trends, as well as the demands of our stakeholders, in which the fight against climate change, for the reduction of CO<sub>2</sub> emissions and a carbon-neutral future, play a fundamental role.

We are currently defining a roadmap with the commitment to move towards a long-term carbon-neutral model, based on different lines of action:

- To have a complete measurement of emissions from all three scopes.
- To have KPIs that allow us to objectively measure the reductions achieved in the various projects underway.
- To promote the use of renewable energy in our facilities and the purchase of energy from renewable sources (PPA's).
- Definition of investments for projects that contribute to minimising emissions (ECMs and technology), as well as more precise monitoring and measurement systems.
- Others: continue with our reforestation project "one tower one tree", sustainable mobility, training and awareness, etc.

In the next report we will publish a detailed plan defined with the objective of carbon neutrality.

## Produced emissions

In 2019, 169,988 tons of CO<sub>2</sub> were produced, of which 43% corresponded to scope 1 and the remaining 57% to scope 2.

### Direct Emissions <sup>305-1</sup>

These emissions refer to those emitted by the production process of the company. In 2019, 60,252 tons of CO<sub>2</sub> were produced. The distribution of these emissions is shown below:

	DIRECT EMISSIONS			
	LPG Tons CO <sub>2</sub>	Natural Gas Tons CO <sub>2</sub>	Propane Tons CO <sub>2</sub>	Diesel Tons CO <sub>2</sub>
GRI Argentina	208	0	0	15
GRI Brazil	41	400	0	35
GRI China	0	51,308	0	0
GRI Spain	0	6,981	89	35
GRI India	49	0	0	115
GRI South Africa	32	0	0	31
GRI Turkey	0	515	201	0
GRI USA	0	1	25	170
	<b>330</b>	<b>59,205</b>	<b>315</b>	<b>402</b>

### Indirect Emissions <sup>305-2</sup>

Indirect emissions are those produced by third parties and are consumed in our plants and offices, they amount to 79,932 tons of CO<sub>2</sub>. The emissions by country are given next:

	INDIRECT EMISSIONS (tons CO <sub>2</sub> )
GRI Argentina	1,299
GRI Brazil	594
GRI China	58,062
GRI Spain	8,220
GRI India	3,527
GRI South Africa	3,441
GRI Turkey	1,858
GRI USA	2,931
	<b>79,932</b>

### Other emissions <sup>305-3</sup>

These emissions correspond to corporate trips made by plane, train and rental cars. Additionally, the estimation of emissions deriving from employees' commutes is also included. Scope 3 emissions are outlined next:

	OTHER EMISSIONS (tons CO <sub>2</sub> )
Corporate Trips	2,423
Transportation employees	25,992
<b>Scope 3 total</b>	<b>28,415</b>

#### Corporate Trips

Rental car  
**155**  
tons CO<sub>2</sub>/year



Travel by plane  
**2,262**  
tons CO<sub>2</sub>/year



Travel by train  
**6**  
tons CO<sub>2</sub>/year

### Intensity of Emissions <sup>305-4</sup>

The intensity of the emissions is considered to measure efficiency and the impact of our processes.

The yearly ratio is calculated by dividing the sum of all direct and indirect emissions by the total weight of all products sold in each country. In the following table the obtained results are detailed for each production process:

	EMISSIONS INTENSITY "TOWERS" tCO <sub>2</sub> / t product sold
Argentina	0.06
Brazil (Towers)	0.03
Spain (Galicia+Sevilld)	0.08
India	0.17
South Africa	0.14
Turkey	0.11
USA	0.10
	<b>0.10</b>
	EMISSIONS INTENSITY "FLANGES"
Spain (Iraeta)	0.18
Brasil	0.18
China	0.38
	<b>0.36</b>

CO<sub>2</sub> Produced  
**168,599** tons CO<sub>2</sub>/year

CO<sub>2</sub> Avoided  
**782,480** tons CO<sub>2</sub>/year

SCOPE 1  
**60,252** tons CO<sub>2</sub>/year  
SCOPE 2  
**79,932** tons CO<sub>2</sub>/year  
SCOPE 3  
**28,415** tons CO<sub>2</sub>/year

**BALANCE**  
CO<sub>2</sub> Avoided  
**613,881**  
tons CO<sub>2</sub>/year

TOWERS PRODUCTION  
**782,463** tons CO<sub>2</sub>/year  
REFORESTATION  
**17** tons CO<sub>2</sub>/year

## Avoided emissions

The main activity of GRI Renewable Industries is the manufacture of components for wind turbines (towers and flanges), which are designated to the generation of wind energy. This renewable and sustainable energy does not emit greenhouse gases into the atmosphere, contributing to mitigate climate change.

Moreover, we are committed to the achievement of the Sustainable Development Goals (SDG), and, in particular, to those that contribute to the fight against climate change (SDG 7.3 and SDG 13.2).

Next, we highlight our contribution, through tower production and reforestations, in 2019.

### Tower Production

In 2019, the company manufactured a total of 1,375 wind towers, the final destination of which is shown below:

	TOWERS
South Africa	10.0%
Turky	2.9%
Kazakstán	0.9%
Ucrania	4.1%
Spain	15.5%
Poland	1.6%
USA	18.8%
India	9.5%
Canada	4.2%
Brazil	4.2%
Holland	0.8%
Argentina	9.5%
Germany	1.4%
France	10.6%
Senegal	5.6%
Irland	0.4%
	100%

The proportional weighing represented by the cost of the wind tower manufactured by GRI Renewable Industries out of the total cost of the tower is deemed to be 16.4%. If one estimates the annual net operational hours of the turbines in the countries where they are present, the installed power, the conversion rate applicable to each country and the percentage of the cost of the tower out of the total structure, we estimate that our contribution to combating climate change amounts to 782,463 tons of avoided CO<sub>2</sub> emissions in 2019. Respecting to the reduction of energy requirements for products and services (302-5), the innovation section summarizes the improvements made in products and processes. We are currently working on a plan that will allow us to have the real savings derived from the measures implemented, which will be available in 2030.

## Reduction of the weight of the towers

As summarized in innovation, the design of new models of towers and lighter flanges is key in our business, for the development of more modern, competitive and with less impact.

A clear example are the projects developed in 2019 for two of our main customers, with whose reduction in steel weight it is estimated that 11,015 tons of CO<sub>2</sub> emissions have been avoided.

### Reforestation

Trees and woodlands have a direct relation to climate change, and they contribute to curbing its impact, functioning as a drain by trapping and storing CO<sub>2</sub>.

Therefore, GRI Renewable Industries committed in 2015 to minimize these impacts through reforestation, with the aim of matching, as far as possible, the number of trees planted to the number of towers built.

In 2019, we have done four reforestations, totaling 2,000 trees compared to 1,375 towers manufactured. As a result of these plantings and based on the species that were planted, it is estimated that a total of 670 tons of CO<sub>2</sub> will be absorbed over the next 40 years, which is equal to 17 tons per year. If we include the estimated absorptions of reforestations done in previous years (38 t/year in 2016, 15 t/year in 2017 and 13 tons of CO<sub>2</sub>/year in 2018), we reach a total of 82.7 tons of CO<sub>2</sub> avoided per year because of the reforestation scheme.

### GRI Towers Galicia

The team in Galicia and their families planted, in the town of Oseira, 350 chestnut trees and 150 birches trees. This planting is estimated to allow for the total absorption of 106 tons of CO<sub>2</sub> over 40 years.

### GRI Towers Sevilla

The team in Seville and their families planted a total of 500 trees in Seville of nine species typical to the region. This planting is estimated to allow for the total absorption of 364 tCO<sub>2</sub> over 40 years.

### GRI Flanges Iraeta and GRI Casting Zestoa

The team in the Basque Country planted a total of 500 trees of three species typical to the region (Quercus robur, Fraxinus excelsior and Fagus sylvatica) in Soraluze. This planting is estimated to allow for the total absorption of 115 tCO<sub>2</sub> over 40 years.

### GRI Madrid. Headquarters

The team in Madrid and their families planted a total of 500 trees of the Pinus Sylvestris of the region in San Martín del Pimpollar (Avila). With this plantation a total absorption of 85 tCO<sub>2</sub> is estimated at 40 years.