



Greenhouse Gas Emissions Report 2020

GRUPO
ROTOPLAS

Contact information

Pablo Del Arco Fernández
pablodelarco@valoraconsultores.com

Carlos Alberto Delgado Juárez
carlosdelgado@valoraconsultores.com

Abraham Jacobo Pineda Vera
apineda@rotoplas.com

Rocío Sánchez Ruiz
rsanchezr@rotoplas.com

Content

1. Goal	4
2. Inventory scope	4
2.1 Control approach.....	4
2.2 Period analyzed	5
2.3 Limits	5
3. Calculation methodology	6
4. Inventory results	7
4.1-General summary.....	7
4.2 Emissions breakdown.....	10
4.3 Emissions intensity	23
Appendix 1. Consumption considered	24
1. Direct emissions (Scope 1)	24
2. Indirect emissions (Scope 2).....	28
3. Indirect emissions (Scope 3).....	29
Appendix 2. Emission factors	32
1. Direct emissions (Scope 1)	32
2. Indirect emissions (Scope 2).....	33
3. Other indirect emissions - (Scope 3)	34
Appendix 3. Changes in the scope of information and Exclusions	35
Appendix 4. Other emissions	35

Table Index

Table 1. GHG emissions by scope.....	7
Table 2. GHG emissions by scope - Interannual comparison.....	9
Table 3. Breakdown of direct emissions by emission source.....	11
Table 4. Breakdown of direct emissions from fuel	12
Table 5. Breakdown of Scope 2 emissions by supplier	13
Table 6. Breakdown of Scope 1 and 2 emissions by attributable process.....	15
Table 7. Breakdown of Scope 1 and 2 emissions by attributable process 2018.....	15
Table 8. Breakdown of Scope 1 and 2 emissions by attributable process 2019	15
Table 9. Breakdown of Scope 1 and 2 emissions by attributable process 2020	15
Table 10. Breakdown of Scope 1 and 2 emissions by country	16
Table 11. Breakdown of Scope 1 and 2 emissions by country 2018.....	17
Table 12. Breakdown of Scope 1 and 2 emissions by country 2019	17
Table 13. Breakdown of Scope 1 and 2 emissions by country 2020	17
Table 14. Breakdown of Scope 3 emissions by emission category	18

Table 15. Indirect emissions breakdown from raw materials manufacturing and transportation	20
Table 16. Breakdown of indirect emissions from waste generation and treatment	21
Table 17. Breakdown of emissions from outsourced transportation downstream by fuel type	21
Table 18. Breakdown of indirect emissions from outsourced transportation by country	22
Table 19. Breakdown of indirect emissions from use of products sold	23
Table 20. Emissions intensity indicator	23
Table 21. Direct consumption of natural gas	24
Table 22. Direct consumption of LP gas	25
Table 23. Direct consumption of diesel	26
Table 24. Direct consumption of gasoline	26
Table 25. Estimated refrigerant gas leakage	27
Table 26. Electricity consumption from the national power grid	28
Table 27. Electricity consumption from cogeneration	28
Table 28. Renewable electricity consumption generated by the solar panels	29
Table 29. Indirect consumption of gasoline	29
Table 30. Indirect consumption of diesel	30
Table 31. Indirect consumption of LP gas	30
Table 32. Resins acquired by Rotoplas	30
Table 33. Distance traveled for resin transportation	31
Table 34. Electricity consumption during the stage of use of various Rotoplas products	31
Table 35. Waste generation and treatment	31
Table 36. Emission factors for stationary sources by GHG	32
Table 37. Emission factors for mobile sources by GHG	32
Table 38. Calorific power by fuel type	32
Table 39. GWP of the GHG	32
Table 40. GWP of refrigerants	33
Table 41. Electric emission factors by supplier - 2020	33
Table 42. Emission factors by type of vehicle	34
Table 43. Emission factors by type of resin	34

Figure Index

Figure 1. GHG emissions by scope	8
Figure 2. Breakdown of Scope 1 and 2 GHG emissions	8
Figure 3. Evolution of the Grupo Rotoplas emissions 2018-2020	10
Figure 4. Breakdown of direct emissions by emission source	12
Figure 5. Breakdown of direct emissions from fuel	13
Figure 6. Breakdown of Scope 2 indirect emissions by supplier	14
Figure 7. Breakdown of Scope 1 and 2 emissions by attributable process	16
Figure 8. Breakdown of Scope 1 and 2 emissions by country	18
Figure 9. Breakdown of Scope 3 emissions by category	19
Figure 10. Breakdown of emissions from outsourced transportation due to fuel	21
Figure 9. Breakdown of emissions from outsourced transportation by country	22

1. Goal

Itemize the Greenhouse Gas (GHG) emissions linked to Grupo Rotoplas' activity in 2020, specifying sources and the calculation methodology. Moreover, this inventory acts as a base for the identification of areas of opportunity to foster the development of emissions reduction actions.

2. Inventory scope

The methodology used is based on the "Greenhouse Gas Protocol (GHG Protocol). A Corporate Accounting and Reporting Standard", developed by the World Resources Institute and the World Business Council for Sustainable Development¹. Following this guide, the company's organizational scopes were established and the sources of Greenhouse Gas GHG emission described below were defined.

2.1 Control approach

This report is prepared following an **operational control approach**; that is, considering all activities in which Grupo Rotoplas can introduce and implement operation policies.

Thus, within the operational control, it considers activities pertaining to fuel and electricity consumption at the plants and the fleet of vehicle it manages. The detail by geographic location is shown below.

Country	Facility type	Reference
Mexico	Plant	Anahuac, Guadalajara, Leon Rotomoldeo, Leon Rotopinsa, Lerma, Los Mochis (Pacific), Merida (Southeast), Monterrey Compuestos, Monterrey Rotomoldeo, Tuxtla, Veracruz (Gulf)
	Headquarters	Grupo Rotoplas and Sytesa
Argentina	Plant	Pilar, Olivos, IPS Loma Hermosa and IPS San Martín.
Peru	Plant	Peru
Guatemala	Plant	Guatemala
Costa Rica	Distribution center	Costa Rica
El Salvador	Distribution center	El Salvador
Honduras	Distribution center	Honduras
Nicaragua	Distribution center	Nicaragua
United States	Headquarters	Texas
Brazil	Headquarters	Brazil

We should note that, in 2020, the following were added to the inventory: 1) the Distribution centers (CEDIS in Spanish, or DCs) of Central America, 2) the head offices in Mexico (Grupo Rotoplas and Sytesa), the US, and Brazil; 3) the IPS plants in Argentina.

¹ Greenhouse Gas Protocol (GHG Protocol). A Corporate Accounting and Reporting Standard <http://ghgprotocol.org/corporate-standard>

Also, compared to the previous year, the Brazilian plants were removed. This is because Grupo Rotoplas divested the product unit in Brazil to focus on the development of the service platform through water treatment and recycling plants.

2.2 Period analyzed

This emissions inventory report pertains to the operations performed during 2020, regarding the period between January 1 and December 31.

2.3 Limits

Following the decision to apply the operating control described above, the emission sources were identified. These sources were classified, in turn, by Scope, pursuant to the guidelines of the *GHG Protocol*.

Below, we present a detailed description of each Scope, including the emission sources considered in each case.

A. Scope 1: Direct GHG emissions

Including emissions related to Grupo Rotoplas' direct operations; that is, emissions from sources owned or controlled by the company itself. These are divided into three types of sources:

Source	Activity	Fuels
Stationary	Processes:	
	<ul style="list-style-type: none"> • Roto-molding (burners) • Injection and extrusion • Heater manufacturing • Generators/emergency plants 	Natural gas LP gas Diesel
Mobile	<ul style="list-style-type: none"> • Use of forklifts (at plants) • Commercial activity with utility vehicles 	LP gas Gasoline

Moreover, fugitive emissions resulting from the loss of refrigerant gases in climatization equipment are included, obtained from estimates of the annual leakage.

B. Scope 2: Indirect GHG emissions

Including emissions related to the generation of electricity used in Grupo Rotoplas' processes. These consumptions can be divided into 2 types:

- Consumption of the national power systems in each country.
- Consumption by suppliers who show a more efficient, and therefore, cleaner generation; such is the case of the energy from cogeneration consumed in Mexico (from INFRA).

C. Scope 3: Others Indirect GHG emissions

These are indirect emissions generated in the value chain, beyond operations over which the company has control. Of the existing 15 categories², Grupo Rotoplas has calculated the following segments:

- **Category 1.** Goods and services acquired (procurement of resin for productive activities).
- **Category 4.** Product transportation and distribution upstream (transport of raw materials).
- **Category 5.** Waste generated in operations (solid municipal waste and special handling waste generated at plants).
- **Category 9.** Product transportation and distribution of downstream products (outsourced services).
- **Category 11.** Use of products sold (electricity consumption of drinking fountains, purifiers, dispensers, and treatment plants).

We should note that, in comparison with the 2019 inventory, categories 1, 4, and 5 have been included.

3. Calculation methodology

The calculations made in the inventory comprise a sum of the emissions of the 3 main greenhouse gases: carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O).

To obtain the emissions from the activities performed by the company, we multiply the collected activity data (for instance: fossil fuel or electricity consumption) by an applicable emission factor. That is, the following general formula is used:

$$\text{Emisiones GEI (tCO}_2\text{e)} = \text{Dato de actividad} \times \text{Factor de emisión (FE)}$$

For refrigerant emissions (HCFC and HFC), the calculation includes an estimation of the annual leakage of refrigerants and the capacity of the systems containing the gas; the formula looks as follows:

$$\begin{aligned} \text{GHG emissions (tCO}_2\text{e)} \\ &= \text{Load capacity (kg)} \times \text{Annual rate of refrigerant loss} \\ &\times \text{Global Warming Potential (GWP)} \end{aligned}$$

Emissions are always reported as tons of CO₂e.

The emission factors and global heating potentials used to calculate the GHG emissions inventory of Grupo Rotoplas are specified in Appendix 2.

² For further information on the Scope 3 categories, visit: <https://ghgprotocol.org/scope-3-technical-calculation-guidance>

4. Inventory results

4.1-General summary

In 2020, the Group emitted 75,716 **tons of CO₂ equivalent (tCO₂e)** considering scopes 1, 2, & 3, per the breakdown presented below.

In table 1, we show the breakdown considering the increase in scopes.

Grupo Rotoplas GHG Emissions– Annual Integrated Report 2020					
Scope		2018 (tCO₂e)	2019 (tCO₂e)	2020 (tCO₂e)³	
Scope 1		26,524	26,952 ⁴	27,594	
Scope 2		19,628	18,651	21,398	
Scope 3		17,726	26,566	26,724	
TOTAL	(A1 + A2)	46,152	45,603	48,992	
	(A1 + A2 + A3)	63,878	72,169	75,716	

Table 1. GHG emissions by scope

The proportion of emissions in 2020 remains stable compared to 2019. 37% of the GHG emissions correspond to Scope 1, so they are the most relevant (see figure 1). The scope 3 emissions represent 35% of the total, while Scope 2 emissions represent the remaining 28%.

Table 1 shows the increases in value for each scope compared to past years (table 1), which is conditioned by the changes with regard to the work centers and operations included; in order to perform an analysis of the interannual variation, we present a second table below.

With regard to Scope 3 emissions, the increase is not significant compared to 2019 despite the addition of 3 new categories (resin generation, resin transportation, and waste treatment and disposal) and the consideration of new locations, such as Peru, for the downstream transportation and distribution category. This is mainly due to the scope of the information considered, given the divestment of the productive operations in Brazil in 2020 and therefore, the exclusion from this report of the corresponding emissions, which were considered in the equivalent table for 2019.

³ Excluding the emissions from operating activities in Brazil, given the sale of those assets in April 2020. Only considering the emissions from the administrative centers. For greater detail, view Appendix 3.

⁴ Regarding the value reported in 2019, an adjustment is made considering the available information regarding gasoline and refrigerant consumption.

GRUPO ROTOPLAS GHG EMISSIONS 2020

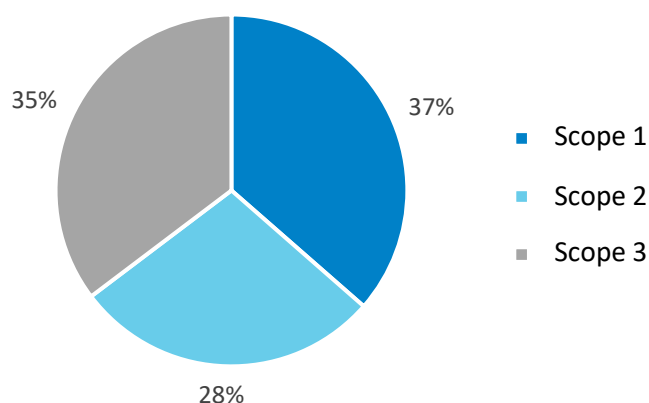


Figure 1. GHG emissions by scope

As the standard requirement is to report Scope 1 and 2 emissions (i.e. those under the company's control) the weight is presented below subtracting Scope 3 emissions (figure 2). This further facilitates the comparison with peer companies in the sector.

GRUPO ROTOPLAS GHG EMISSIONS 2020

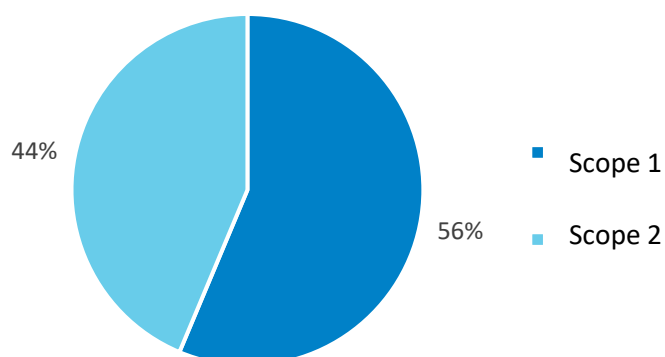


Figure 2. Breakdown of Scope 1 and 2 GHG emissions

Interannual comparison

The values in table 1 reflect the total emissions; that is, aligned with the valid scope of the business for each year, information which is also reported in the [annual integrated report 2020](#).

This information makes it possible to observe the evolution of the impact on carbon related to changes in the company, such as acquisitions, divestments, and diversification of its operations.

In order to make an accurate comparison, it is necessary to adapt the scope of the information for all the years to be analyzed. Table 2 shows a breakdown of the information including this consideration for the emissions between 2018 and 2020 and figure 3 shows the evolution of the emissions for GHG scopes 1 and 2 for the same period.

Grupo Rotoplas GHG Emissions - Interannual comparison ⁵				
Scope		2018 (tCO ₂ e)	2019 (tCO ₂ e)	2020 (tCO ₂ e)
Scope 1		22,634	23,925	27,121
Scope 2		19,362	18,615	17,918
TOTAL	(A1 + A2)	41,997	42,540	45,039

Table 2. GHG emissions by scope - Interannual comparison

Note: To ensure comparability, the following adjustment was made to the reported emissions in table 2:

- For the years 2018 and 2019, emissions attributable to the Brazilian plants were no longer considered.
- For the year 2020, emissions included for the first time in the Grupo Rotoplas inventory were not considered. These are:
 - Plants in Argentina: IPS Loma Hermosa and IPS San Martín.⁶
 - Distribution centers (CEDIS or DCs): Costa Rica, El Salvador, Honduras and Nicaragua.⁷
 - Headquarters: Mexico and Sytesa, United States, and Brazil.

The evolution of the Group's CO₂e emissions in this period (figure 3), including Scopes 1 and 2, show a 6% increase between 2019 and 2020.

When analyzing emissions by GHG scope, we find that emissions attributable to electricity consumption show a 4% decrease (Scope 2), whereas direct emissions, mainly due to fuel burning, increased by 13% (Scope 1). This is directly related to the increase in productive roto-molding activity during 2020, which is the company's main activity, as it requires the consumption of natural and LP gas. Moreover, we must consider the decrease in crushing activity, related to electricity consumption.

We should note that we decided to consider only Scopes 1 and 2 in figure 3 because these are the emissions that the company can control and where it can introduce energy efficiency and GHG reduction initiatives.

⁵ The detail of the Scope 3 emissions is presented in section 4.2d.

⁶ While the acquisition of IPS assets was done during 2018, control of the information was not possible until 2020; thus, it is only in this year that they are considered in the Grupo Rotoplas GHG inventory.

⁷ For these facilities, only Scope 2 emissions are reported because there are no emissions of other types.

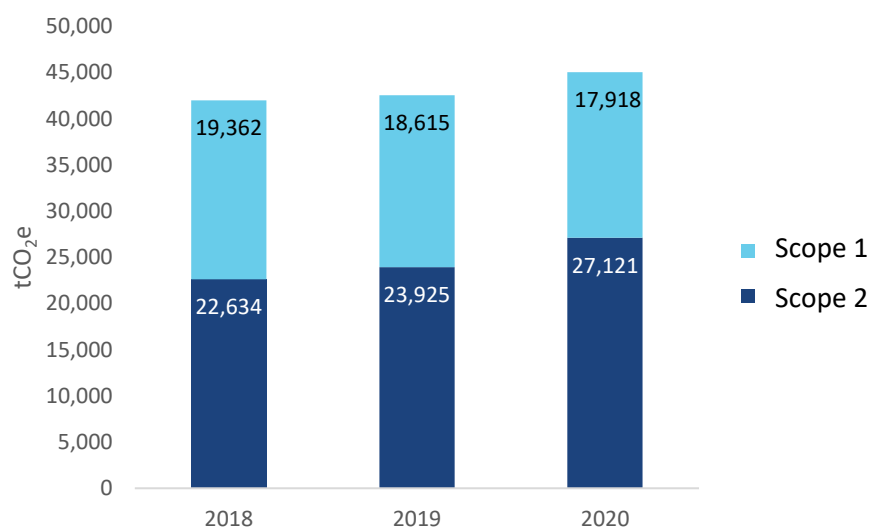


Figure 3. Evolution of the Grupo Rotoplas emissions 2018-2020

4.2 Emissions breakdown

Below, we present a breakdown of the emissions in each scope, for the total operations included in 2020.

Direct or Scope 1 emissions are broken down by emission source (table 3), as well as by fuel type consumption (table 4). Scope 2 emissions are reported divided by electricity supplier (table 5).

In addition, Scope 1 and 2 emissions are presented by process (table 6) and by country (table 10).

Regarding Scope 3 emissions, we present, initially, an overall breakdown of the 5 categories calculated (table 14), and next, a more specific breakdown for each type (tables 15-19).

The emissions from past years consider the totals indicated in table 2 for each scope; that is, they do not include the Brazilian operations.

a) Direct emissions– Scope 1

By emission source

Scope 1				
Segment	Emission source	GHG 2018 (tCO ₂ e)	GHG 2019 (tCO ₂ e)	GHG 2020 (tCO ₂ e)
Stationary sources	1. Machinery for heater manufacturing	880	843	804
	2. Roto-molding machine burners	20,857	21,084	24,724
	3. Generators/emergency plants and other stationary sources	26	30	42
Mobile sources	4. Forklifts ⁸	475	328	487
	5. Commercial activity vehicles	242	1,464 ⁹	1,341
Fugitive emissions	6. Refrigerant refills	155	176 ¹⁰	196
Total		22,634	23,925	27,594

Table 3. Breakdown of direct emissions by emission source

In the breakdown of Grupo Rotoplas' direct emissions by emission source (table 3, figure 4) we can see that fuel consumption in roto-molding machine burners represents the highest GHG emission generation (89%), which is directly linked to their relevance for the company.

On the other hand, the emissions from vehicles destined to commercial activities are equivalent to 5% of all direct emissions, making them the second source of emissions in terms of importance.

After this year's review of the inventory scope, we identified that fuel consumption for commercial activities is the most relevant with regard to the values reported in past years. This is because consumptions at all plants and the head office in Mexico have been included, together with the consumptions in the facilities in Argentina.

⁸ The forklift category also considers a trackmobile equipment, fueled by diesel.

⁹ There is an increase of commercial vehicle emissions in 2019 due to the fact that there has been an adjustment to the activity data considered previously; in 2019, the emissions were estimated, while this year, it has been possible to consider the consumptions reported by the area.

¹⁰ For the fugitive emissions, an adjustment was made to the calculation process; this is why emissions increased compared to 2019.

DIRECT EMISSIONS BY EMISSION SOURCE 2020

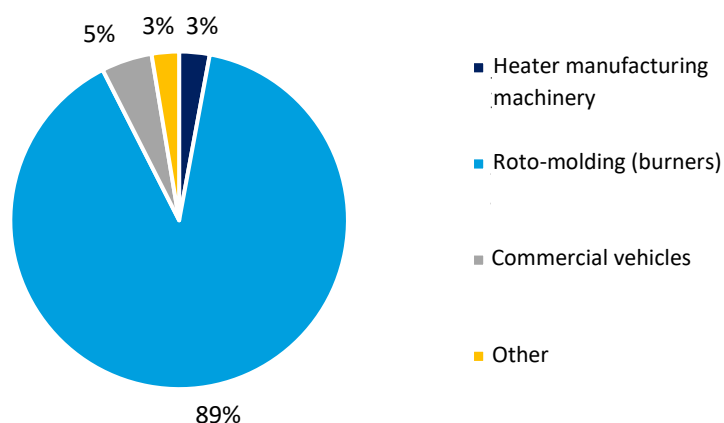


Figure 4. Breakdown of direct emissions by emission source

From fuel

Scope 1			
Fuel	GHG 2018 (tCO ₂ e)	GHG 2019 (tCO ₂ e)	GHG 2020 (tCO ₂ e)
1. Natural gas	16,784	16,627	21,113
2. LP gas	5,425	5,625	4,831
3. Diesel	29	33	114
4. Gasoline	242	1,464	1,341
(Emissions from refrigerant leakages)	155	176	196
TOTAL	22,634	23,925	27,594

Table 4. Breakdown of direct emissions from fuel

When breaking down the figure by fuel type (table 4, figure 5), in 2020, we find that 76% of the direct emissions come from natural gas, used in the roto-molding burners and in the machinery to make heaters; this is followed by LP gas, which is also mainly used in roto-molding burners, although this figure includes the fuel used by forklifts. In the “other consumptions” category, the diesel and gasoline emissions (stationary and mobile sources) are integrated. See figure 4.

With regard to 2019, it is relevant to note the decrease in LP gas consumption, as a result of the initiatives that Rotoplas implemented to increase the efficiency of productive processes. At the Guadalajara plant, during 2020, the productive activity migrated from LP gas to natural gas; in addition to savings, this makes it possible to reduce the emissions generated, as natural gas generates a lower carbon impact than LP gas per unit of energy generated.

There is also a decrease in gasoline consumption, due to the mobility restrictions throughout 2020.

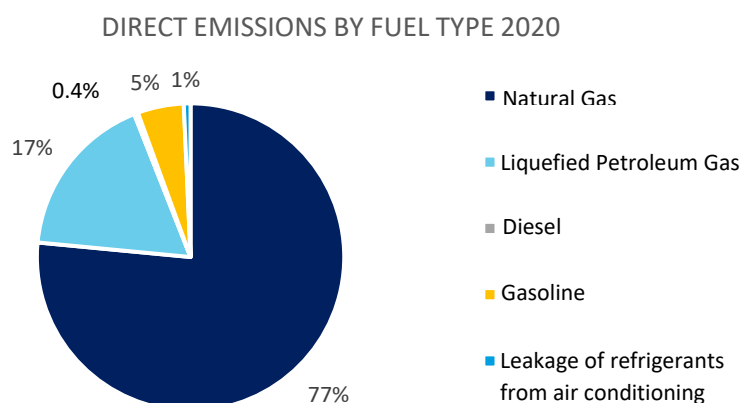


Figure 5. Breakdown of direct emissions from fuel

b) Indirect emissions- Scope 2

Grupo Rotoplas' electricity supply comes from three sources:

- 1) country power grid,
- 2) private contracts for certain types of origin (lower GHG emissions than the national grids)
- 3) renewable self-generation

The latter two cases are only found in the Mexican operations, where the company has cogeneration electricity supply contracts, as well as solar panels for self-generation (at 5 plants¹¹). These measures are part of the company's emissions reduction strategy, together with the operating efficiency projects¹².

The related emissions are presented in table 5 and figure 6.

Electricity source	GHG 2018 (tCO ₂ e)	GHG 2019 (tCO ₂ e)	GHG 2020 (tCO ₂ e)
1. Cogeneration (INFRA)	15,813	15,325	14,595
2. National grids	3,550	3,290	6,804
3. Renewables	-	-	-
Total	19,362	18,615	21,398

Table 5. Breakdown of Scope 2 emissions by supplier

Cogeneration, which is a more efficient, and therefore, cleaner process, remains the main source of electricity for Grupo Rotoplas, and thus, of Scope 2 emissions. In 2020, consumption decreased 5%, which can be attributed mainly to a decrease in crushing activities, and second, in the injection and extrusion at the plants that consume cogeneration electricity. We should note that both processes are the ones with the highest demand for this type of energy source¹³.

¹¹ Plants in Anahuac, Guadalajara, Los Mochis, Merida, and Veracruz.

¹² Further information available in the Annual Integrated Report 2020.

¹³ For more details, go to table 26 of the Appendix 1, Section 2. Indirect emissions (Scope 2).

On the other hand, the 2020 increases of 90% and 105% vs. 2018 and 2019, respectively, in emissions from national grids is due to the increase in the scope of the information, as we have mentioned, since this is the network supplying energy to the CEDIS, head offices outside of Mexico, and the IPS plants in Argentina.

SCOPE 2 EMISSIONS BY ELECTRICITY SUPPLIER - 2020

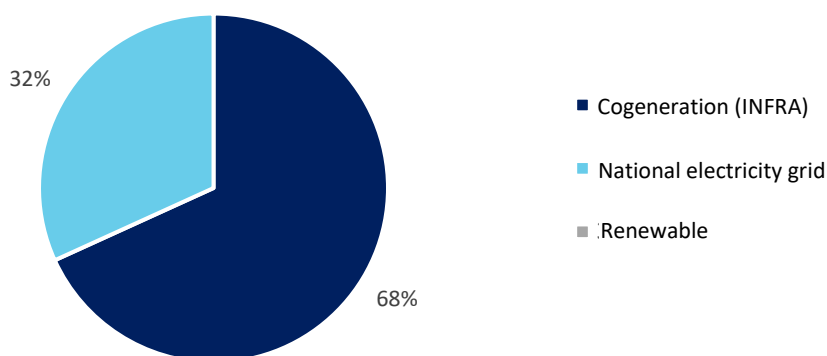


Figure 6. Breakdown of Scope 2 indirect emissions by supplier

c) Scope 1 and 2 emissions

Grupo Rotoplas has operational control of the Scope 1 and 2 emission sources, with regard to the processes and machinery (including vehicles) that consume fuels and electricity, as well as cooling equipment (refrigerant gases).

This is, therefore, the set of indispensable emissions for proposing energy efficiency and clean energy supply initiatives aimed at reducing Grupo Rotoplas' energy consumption and GHG emissions.

To prioritize the activities with the greatest impact, table 6 to 9 show the emissions by attributable process¹⁴.

Furthermore, tables 10 to 13 show the breakdown by country, which makes it possible to establish the contribution of each of the geographic areas where the Group has operations.

¹⁴ The concept of attributable process refers to activities performed in connection with the processes mentioned in table 6, even if the emissions were generated by a different activity. i.e. the roto-molding process includes, in addition to the burners, the consumption from forklifts, generators/emergency plants necessary to perform this process.

By attributable process

Scope 1 + 2 emissions by attributable process			
Process	GHG 2018 (tCO ₂ e)	GHG 2019 (tCO ₂ e)	GHG 2020 (tCO ₂ e)
Roto-molding	23,205	23,136	27,189
Heater manufacturing	1,164	1,146	1,104
Injection and extrusion	7,502	7,494	10,348
Crushing	9,730	9,125	8,849
Commercial activity	242	1,464	1,349
General (refrigerants) ¹⁵	155	176	-
Administrative	NA	NA	153
Total	41,997	42,540	48,992

Table 6. Breakdown of Scope 1 and 2 emissions by attributable process

Scope 1 + 2 emissions by attributable process- 2018			
Process	Scope 1 (tCO ₂ e)	Scope 2 (tCO ₂ e)	GHG 2018 (tCO ₂ e)
Roto-molding	21,150	2,054	23,205
Heater manufacturing	880	284	1,164
Injection and extrusion	51	7,450	7,502
Crushing	156	9,574	9,730
Commercial activity	242	-	242
General (refrigerants)	155	-	155
Total	22,634	19,362	41,997

Table 7. Breakdown of Scope 1 and 2 emissions by attributable process 2018

Scope 1 + 2 emissions by attributable process- 2019			
Process	Scope 1 (tCO ₂ e)	Scope 2 (tCO ₂ e)	GHG 2019 (tCO ₂ e)
Roto-molding	21,312	1,823	23,136
Heater manufacturing	843	302	1,146
Injection and extrusion	50	7,444	7,494
Crushing	80	9,045	9,125
Commercial activity	1,464	-	1,464
General (refrigerants)	176	-	176
Total	23,925	18,615	42,540

Table 8. Breakdown of Scope 1 and 2 emissions by attributable process 2019

Scope 1 + 2 emissions by attributable process- 2020			
Process	Scope 1 (tCO ₂ e)	Scope 2 (tCO ₂ e)	GHG 2020 (tCO ₂ e)
Roto-molding	25,084	2,105	27,189
Heater manufacturing	846	258	1,104
Injection and extrusion	148	10,200	10,348
Crushing	173	8,676	8,849
Commercial activity	1,341	8	1,349
General (refrigerants)	2	151	153
Total	27,594	21,398	48,992

Table 9. Breakdown of Scope 1 and 2 emissions by attributable process 2020

¹⁵ In 2020, it has been possible to integrate refrigerant gas emissions into the other processes, so no value is reported under this category this year.

The Roto-molding process is the one with the highest carbon impact within the company, with 56% of all Scope 1 and 2 emissions (figure 7).

On the other hand, the injection and extrusion, as well as milling processes, generates nearly half of the Scope 2 emissions and represent 39% of the total value of both scopes (A1+ A2). Thus, these are the processes on which Rotoplas is developing emissions reduction strategies.

On the other hand, in 2020, there was a global increase in injection and extrusion activity (table 6), and thus, in the representativity of the emissions in this category: it went from 17% in 2019 to 21% in 2020. This is because the emissions from two of the plants in Argentina performing this operation have been included (IPS Loma Hermosa and IPS San Martín). In the case of the plants in Mexico, Leon Rotopinsa and Lerma, there was a reduction in this activity of 10% and 5%, respectively.

SCOPE 1 AND 2 EMISSIONS BY ATTRIBUTABLE PROCESS-
2020

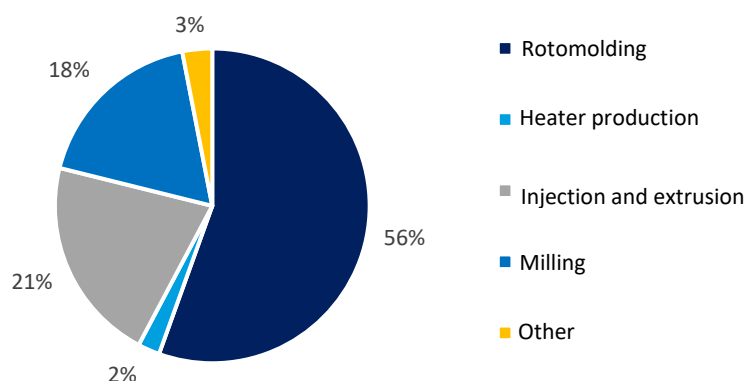


Figure 7. Breakdown of Scope 1 and 2 emissions by attributable process

By country

Scope 1 and 2 emissions by country			
Country	GHG 2018 (tCO ₂ e)	GHG 2019 (tCO ₂ e)	GHG 2020 (tCO ₂ e)
Mexico	35,657	36,027	38,089
Argentina	2,684	2,371	6,329
Brazil	NA	NA	12
Costa Rica			0.1
El Salvador			3.0
United States			57
Guatemala	944	1,216	1,371
Honduras			2.6
Nicaragua			2.1
Peru	2,712	2,926	3,128
Total	41,997	42,540	48,992

Table 10. Breakdown of Scope 1 and 2 emissions by country

Scope 1 and 2 emissions by country- 2018			
Country	Scope 1 (tCO ₂ e)	Scope 2 (tCO ₂ e)	GHG 2018 (tCO ₂ e)
Mexico	16,925	18,732	35,657
Argentina	2,231	453	2,684
Brazil	-	-	-
Guatemala	885	59	944
Peru	2,594	118	2,712
Total	22,634	19,362	41,997

Table 11. Breakdown of Scope 1 and 2 emissions by country 2018

Scope 1 and 2 emissions by country- 2019			
Country	Scope 1 (tCO ₂ e)	Scope 2 (tCO ₂ e)	GHG 2019 (tCO ₂ e)
Mexico	18,016	18,011	36,027
Argentina	1,949	423	2,371
Brazil	-	-	-
Guatemala	1,158	57	1,216
Peru	2,802	124	2,926
Total	23,925	18,615	42,540

Table 12. Breakdown of Scope 1 and 2 emissions by country 2019

Scope 1 and 2 emissions by country- 2020			
Country	Scope 1 (tCO ₂ e)	Scope 2 (tCO ₂ e)	GHG 2020 (tCO ₂ e)
Mexico	20,768	17,320	38,089
Argentina	2,629	3,699	6,329
Brazil	1.4	10	12
Costa Rica	-	0.1	0.1
El Salvador	-	3.0	3.0
United States	0.4	56	57
Guatemala	1,306	65	1,371
Honduras	-	2.6	2.6
Nicaragua	-	2.1	2.1
Peru	2,889	239	3,128
Total	27,594	21,398	48,992

Table 13. Breakdown of Scope 1 and 2 emissions by country 2020

The breakdown by country shows that the main percentage comes from Mexico (78%); this is due to the number of plants in the country. It is followed by the operations in Argentina, which together contribute 13% of all the emissions (figure 8).

Given the divestment of the roto-molding activities in Brazil during 2020, their representation in this inventory is limited to the administrative office in that country. On the other hand, Argentina's representation has increased (going from 5% in 2019 to 13% of the total emissions in 2020) as a result of the incorporation of the IPS Loma Hermosa and IPS San Martín plants into the inventory.

SCOPE 1 AND 2 EMISSIONS BY COUNTRY- 2020

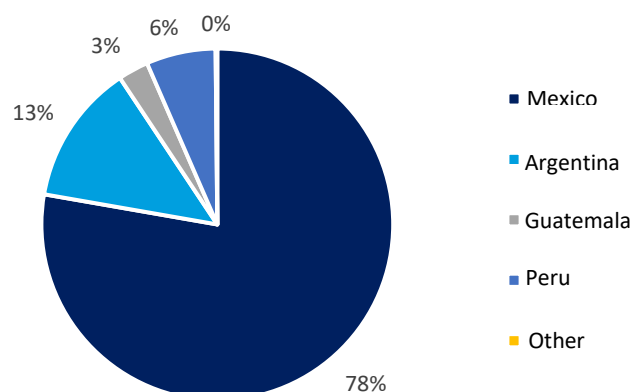


Figure 8. Breakdown of Scope 1 and 2 emissions by country

d) Other indirect emissions - Scope 3

Grupo Rotoplas acknowledges that a company's carbon impact goes beyond the emissions that are within their operational control; that is, it is also necessary to measure the indirect emissions throughout the rest of the value chain. Thus, it is possible to encourage actions in that chain.

Therefore, we have the commitment to progressively incorporate all Scope 3 emissions that are relevant to the operation.

We should note that we observe the methodology established in the *Corporate Value Chain (Scope 3) Accounting and Reporting Standard*¹⁶. Thus, for the 2020 inventory, Grupo Rotoplas has defined the following Scope 3 categories, in line with the GHG Protocol.

Overall consolidation

Scope 3 - Emissions consolidation			
Category	GHG 2018 (tCO ₂ e)	GHG 2019 (tCO ₂ e)	GHG 2020 (tCO ₂ e)
1. Goods and services acquired	NA	85.31	648.60
4. Transportation and distribution upstream	NA	2.41	3.61
5. Waste generated in operations	NA	NA	213.23
9. Transportation and distribution downstream ¹⁷	17,726	19,163	20,688
11. Use of products and services sold	NA	5,186	5,170
Total	17,726.10	24,436.62	26,723.78

Table 14. Breakdown of Scope 3 emissions by emission category

¹⁶ For more information, view: <https://ghgprotocol.org/standards/scope-3-standard>

¹⁷ The difference regarding the values reported in the previous report is because a greater scope of operations is considered. For more detail, view section 3.1.

Compared to 2019, the following categories have been included: Transportation and distribution upstream, Goods and services acquired, and Waste generated in operations.

On the other hand, for the categories that were already being reported in the past, it is possible to see an 8% increase in transportation and distribution downstream, which can be attributed to an increase in this activity, linked to the increase in production.

Consumption values have been obtained from suppliers, managers, or operation datasheets, based on the category of Scope 3 emissions to be calculated. On the other hand, emission factors were obtained from the set of data published by the UK's Department of Environment, Food and Rural Affairs and the US Environmental Protection Agency (DEFRA¹⁸ and EPA¹⁹, respectively). View detail in Appendix 2.

In addition, Grupo Rotoplas will seek to add other Scope 3 emission categories in the short to medium term, after the company has assessed their relevance. Among the categories to be reported in the next periods, Grupo Rotoplas aims to calculate the emissions from employee commutes, business trips, capital goods, and other fuel and energy emissions.

Figure 9 shows the weight of each category considered. Transportation and distribution downstream (77%) and the use of products sold (19%) are currently the most relevant categories.

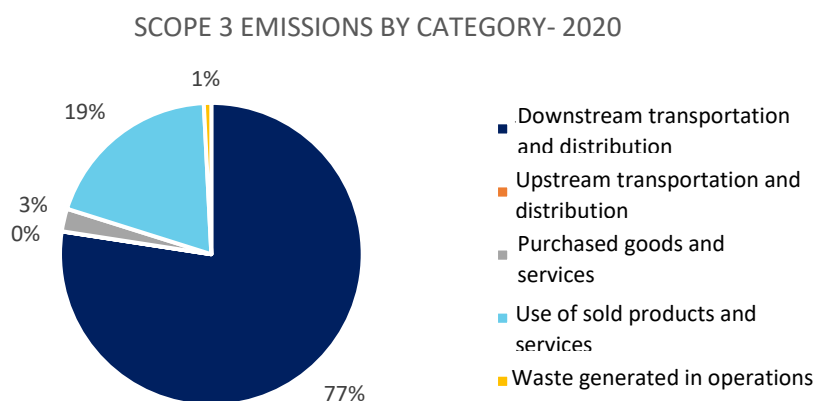


Figure 9. Breakdown of Scope 3 emissions by category

A detailed description of each category in Scope 3 is presented below:

¹⁸ Greenhouse gas reporting: conversion factors 2020.

¹⁹ GHG Emission Factors Hub, 2020.

Purchased goods and services and upstream T&D

These categories include the emissions from manufacturing and transporting resins to the Grupo Rotoplas plants. This is a relevant component within the carbon impact on the company’s value chain, particularly because they are essential to the productive processes, and because they are made from hydrocarbon derivatives.

The values reported in Table 15 consider the emissions corresponding to the supply of raw material from Braskem, one of the company’s resin suppliers, with whom we have started establishing collaboration mechanisms to determine the impact of carbon and trigger possible projects together.

Scope 3– manufacture and transport of raw materials		
Activity	GEI 2019 (tCO₂e)²⁰	GHG 2020 (tCO₂e)
Production of high-density polyethylene (HDPE)	85	649
Resin transportation	2	4
Total	88	652

Table 15. Indirect emissions breakdown from raw materials manufacturing and transportation

While the weight of all these categories in the total Scope 3 emissions is slightly over 2%, we hope that, for the next reports, it will be possible to include the information from other suppliers in order to strengthen and make the values reported so far more representative. Currently, the resin on which we have information represents 1.6% of the total virgin resin acquired by Grupo Rotoplas.

Waste generated in operations

Grupo Rotoplas is not a large waste generator compared to companies in other industrial sectors, given that the processes developed at its plants allow for the recovery of a large part of the “nonconforming product”. Nonetheless, the company has decided to report the emissions as shown in the impact disclosure commitment for the value chain.

To determine the emissions, we have considered: Solid Urban Waste and Special Handling Waste. As can be seen in table 16, domestic waste that cannot be reused in any way generates the highest Co2e emissions.

This includes emissions from the treatment and/or final disposal of waste by third parties.

²⁰ The emissions from 2019 are reported, as they were gathered during the creation of this inventory.

Scope 3 – Waste generated	
Category - Destination	GHG 2020 (tCO ₂ e)
Scrap - utilization	6.89
Industrial - Co-processing	1.07
Industrial - Recyclable	8.78
Paper/cardboard - end of life	41.36
Domestic waste - end of life	155.12
Total	213.23

Table 16. Breakdown of indirect emissions from waste generation and treatment

T&D downstream²¹

Outsourced transportation is a key activity in Grupo Rotoplas' supply chain: it makes it possible to get products to clients and distributors. This is why, since 2017, the emissions derived from this activity are calculated and reported.

To perform this activity, transportation suppliers consume gasoline, diesel, and LP gas, depending on the type of vehicle. Tables 17 and 18, as well as figures 10 and 11 show the consolidated breakdown by type of fuel and by country.

Scope 3– Transportation and distribution downstream			
Fuel	GHG 2018 (tCO ₂ e)	GHG 2019 (tCO ₂ e)	GHG 2020 (tCO ₂ e)
Gasoline	1,558	1,907	1,760
Diesel	15,813	16,984	18,003
LP gas	356	272	925
Total	17,726	19,163	20,688

Table 17. Breakdown of emissions from outsourced transportation downstream by fuel type

EMISSIONS FROM OUTSOURCED TRANSPORTATION DUE TO FUEL - 2020

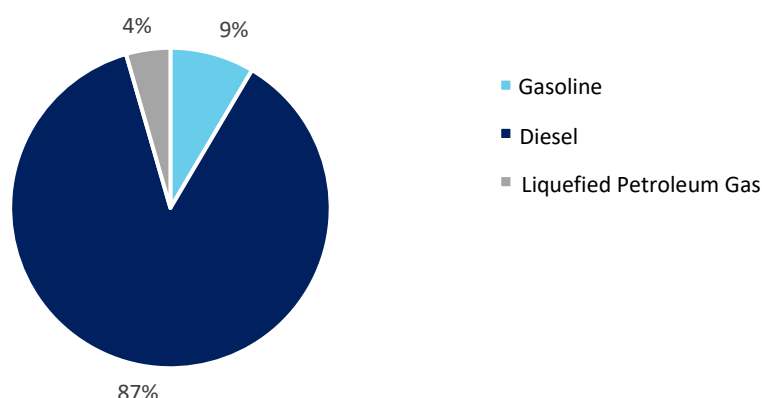


Figure 10. Breakdown of emissions from outsourced transportation due to fuel

²¹ With regard to the 2019 inventory, we should note that it considers all the emissions from transportation and distribution downstream from Mexico, Argentina, and the Distribution Centers (CEDIS or DCs) in Central America. This information had not be included for comparability reasons in 2019.

Diesel is the main fuel consumed during the distribution of Grupo Rotoplas' products; as can be seen in figure 10, it stands for 87% of all the outsourced transportation emissions in 2020.

Scope 3– Transportation and distribution downstream			
Country	GHG 2018 (tCO₂e)	GHG 2019 (tCO₂e)	GHG 2020 (tCO₂e)
Mexico	17,252.91	16,909.88	17,279
Argentina	NA	324.51	1,322.52
Costa Rica	NA	35.99	320.93
El Salvador	55.43	133.40	84.10
Guatemala	282.08	1,619.00	1,015.61
Honduras	75.20	88.16	112.66
Nicaragua	60.47	51.71	52.34
Peru	NA	NA	500.76
Total	17,726.10	19,162.82	20,688.39

Table 18. Breakdown of indirect emissions from outsourced transportation by country

Moreover, Mexico's operations represent 84% of the emissions considered from this activity. In 2020, we have also considered within the information the consumption and emissions from outsourced transportation in Argentina, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Peru, in addition to Mexico and Guatemala, which were already reported in 2019. We already had information in past years, but it had not been considered because there was no comparability in past years.

EMISSIONS FROM OUTSOURCED TRANSPORTATION BY COUNTRY- 2020

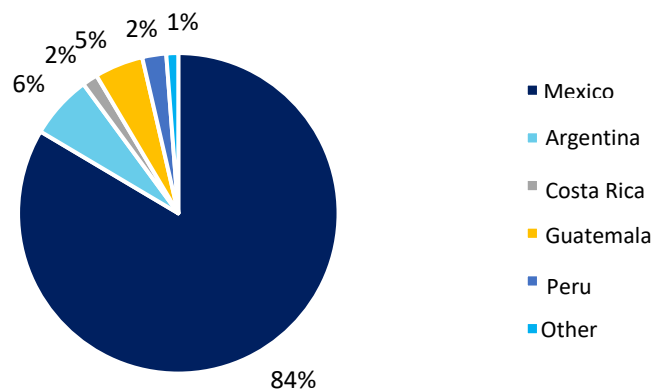


Figure 11. Breakdown of emissions from outsourced transportation by country

Use of sold products and services

Within Grupo Rotoplas' solutions portfolio, the drinking fountains, purifiers, dispensers, and treatment plants require electricity at the usage stage (table 19).

Electricity consumption by unit for purifiers and dispensers was obtained from the technical spec sheets of the products, whereas for drinking fountains and treatment plants, it was obtained from a rate calculated in 2018; moreover, it considers CFE (Mexico) as the electricity supplier.

Drinking fountains, purifiers, and dispensers consider the sales in Mexico, where our water service (bebbia) is in operation. Likewise, the treatment plants include those already installed and operational in Mexico.

Scope 3– Use of products sold		
Product/service	GHG 2019 (tCO ₂ e)	GHG 2020 (tCO ₂ e)
Drinking fountains	320	313
Purifiers	64	120
Dispensers	217	251
Treatment plants	4,585	4,485
Total	5,186	5,170

Table 19. Breakdown of indirect emissions from use of products sold

4.3 Emissions intensity

Table 20 presents the Scope 1 and 2 emissions divided by tons of resin processed, the internal parameter defined to measure the activity. Thus, we can monitor the company's degree of efficiency.

The calculation considers all the Group's emissions from fuel and electricity. Likewise, it is limited to Scope 1 and 2 emissions, as they enable a comparison with other companies within the sector.

Emissions intensity (tCO ₂ e/t resin processed)		
Year	Denominator	Emissions
2018	93,438	0.48
2019	92,583	0.48
2020	95,368	0.51

Table 20. Emissions intensity indicator

Appendix 1. Consumption considered

Below, we present the activity data that is the basis for the referenced emissions.

1. Direct emissions (Scope 1)

1.1 Natural gas

Country	Plant	Process	Consumption on 2018(GJ)	Consumption 2019(GJ)	Consumption 2020(GJ)
Mexico	Anahuac	Roto-molding	70,108	69,463	81,553.90
	Veracruz - Gulf		34,013	38,861	55,889.75
	Guadalajara		-	-	29,348.26
	Leon Rotomoldeo		52,935	49,532	50,058.01
	Monterrey Rotomoldeo		31,716	31,788	45,168.74
	Merida - Southeast		24,134	22,376	24,739.30
Peru	Peru		45,888	49,693	50,729.56
Brazil	Brazil		37,696	46,550	-
Argentina	Pilar		23,860	19,369	24,160.52
	Olivos	Heater manufacturing	15,642	15,018	14,325.56
Overall total			335,991	342,649	375,973.58

Table 21. Direct consumption of natural gas

1.2 LP gas

Country	Plant	Attributable process	Consumption 2018(GJ)	Consumption 2019(GJ)	Consumption 2020(GJ)
Mexico	León Rotoplas	Injection and extrusion	729	705	422
	León Rotoplas		-	-	1,327
	Monterrey Compuestos	Crushing	2,354	1,177	1,183
	Anahuac	Roto-molding	1,170	338	396
	Guadalajara		30,898	31,891	9,448
	Leon Rotomoldeo		927	982	459
	Monterrey Rotomoldeo		727	349	359
	Los Mochis - Pacific		25,500	25,765	28,615
	Merida - Southeast		287	337	-
	Tuxtla		9,027	9,102	12,505
	Gulf – Veracruz		-	-	478
Guatemala	Guatemala		13,935	18,278	20,607
Brazil	Brazil		185	267	-
Peru	Peru	-	-	435	
Argentina	Pilar	Injection and extrusion	-	-	51
	IPS Loma Hermosa		-	-	19
	IPS San Martín		-	-	3
United States	Texas	Headquarters	-	-	7
Overall total			85,740	89,191	76,312

Table 22. Direct consumption of LP gas

1.3 Diesel

Country	Plant	Process	Consumption 2018(GJ)	Consumption 2019(GJ)	Consumption 2020(GJ)
Mexico	Lerma	Injection and extrusion	4	14	1
	León Rotopinsa		49	40	4
	Monterrey Compuestos	Crushing	43	45	43
	Anahuac	Roto-molding	4	-	15
	Veracruz - Gulf		-	-	-
	Guadalajara		16	19	29
	Leon Rotomoldeo		23	15	12
	Monterrey Rotomoldeo		165	102	70
	Los Mochis - Pacific		14	14	-
	Merida - Southeast		4	2	510
	Tuxtla		-	-	-
Argentina	Pilar		67	194	-
Peru	Peru	2	0.3	-	
Argentina	Olivos	Heaters	-	-	555
	IPS Loma Hermosa	Injection and extrusion	-	-	74
	IPS San Martín		-	-	190
Brazil	Brazil	Headquarters	-	-	19
Overall total			390	445	1,522

Table 23. Direct consumption of diesel

1.4 Gasoline

Country	Activity	Process	Consumption 2018(GJ)	Consumption 2019(GJ) ²²	Consumption 2020(GJ)
Mexico	Chain-quality assurance	Revenues	1,635	20,297	14,506
	Quality		1,128		
	Shipments		418		
	Production		292		
Argentina	NA	Revenues	NA	NA	4,086
Overall total			3,473	20,297	18,592

Table 24. Direct consumption of gasoline

1.5 Refrigerants

²² The 2019 consumption value is updated, considering the available information for this report.

Country	Plant	HCFC-22 (kg)			HFC-32 (kg)			HFC-125 (kg)		
		2018	2019	2020	2018	2019	2020	2018	2019	2020
Mexico	Anahuac	1.87	1.87	1.87	0.12	0.12	0.12	0.12	0.12	0.12
	Merida - Southeast	2.18	4.09	4.09	0.06	0.06	0.06	0.06	0.06	0.06
	Tuxtla	0.30	0.35	0.26	0.03	-	0.32	0.03	-	0.32
	Veracruz - Gulf	10.05	10.05	10.05	0.30	0.30	0.30	0.30	0.30	0.30
	Guadalajara	0.60	3.60	3.60	0.60	0.60	0.83	0.60	0.60	0.83
	Leon Rotomoldeo	0.80	5.74	5.74	0.05	0.05	0.05	0.05	0.05	0.05
	Monterrey Rotomoldeo	2.70	0.90	3.29	-	-	1.03	-	-	1.03
	Los Mochis - Pacific	1.92	3.17	3.17	-	-	-	-	-	-
	Monterrey Compuestos	1.28	2.63	2.63	22.95	22.95	22.95	22.95	22.95	22.95
	León Rotopinsa	2.93	3.83	2.48	-	-	0.27	-	-	0.27
	Lerma	0.15	0.30	0.30	0.08	0.08	0.08	0.08	0.08	0.08
Argentina	Pilar	1.05	1.05	1.71	-	0.38	1.21	-	0.38	1.21
	Loma Hermosa	-	-	0.15	-	-	0.37	-	-	0.37
	San Martín	-	-	1.20	-	-	0.71	-	-	0.71
Guatemala	Guatemala	1.30	1.59	1.59	0.24	0.24	0.24	0.24	0.24	0.24
Peru	Peru	4.25	4.25	4.25	1.13	1.13	1.13	1.13	1.13	1.13
Overall total		31.38	43.41	46.37	25.94	25.91	29.66	25.94	25.91	29.66

Table 25. Estimated refrigerant gase leakage

2. Indirect emissions (Scope 2)

Country	Plant	National power grid consumption (kWh)		
		2018	2019	2020
Mexico	Anahuac	437,489	371,628	338,415
	Veracruz - Gulf	681,671	557,305	497,771
	Guadalajara	369,866	304,760	139,275
	Lerma	635,776	721,576	942,387
	Monterrey Rotomoldeo	403,595	340,042	345,832
	Los Mochis - Pacific	289,769	236,920	195,094
	Monterrey Compuestos	896,635	260,211	546,639
	Leon Rotomoldeo	225,538	232,545	352,059
	León Rotopinsa	2,029,844	2,092,904	1,767,100
	Merida - Southeast	325,273	91,634	71,922
	Tuxtla	107,040	110,248	149,120
	Mexico (headquarters)	NA	NA	160,370
	Sytesa (headquarters)	NA	NA	11,638
Argentina	Pilar	316,790	259,570	261,450
	Olivos	530,486	652,296	555,804
	IPS Loma Hermosa	NA	NA	2,729,991
	IPS San Martín	NA	NA	4,434,100
Brazil	Brazil	397,197	477,399	-
	Brazil (headquarters)	NA	NA	135,760
Peru	Peru	412,795	431,830	388,277
Guatemala	Guatemala	160,080	156,560	167,160
United States	Texas (headquarters)	NA	NA	132,604
Costa Rica	Costa Rica	NA	NA	3,123
El Salvador	El Salvador	NA	NA	4,408
Honduras	Honduras	NA	NA	4,098
Nicaragua	Nicaragua	NA	NA	2,945
Overall total		8,219,844	7,297,428	14,337,342

Table 26. Electricity consumption from the national power grid

Country	Plant	Cogeneration consumption (kWh)		
		2018	2019	2020
Mexico	Lerma	6,184,357	6,214,421	6,113,800
	Monterrey Compuestos	22,512,667	21,896,003	21,399,927
	Leon Rotomoldeo	1,014,543	953,311	1,648,414
	León Rotopinsa	9,130,891	8,579,796	7,993,231
Overall total		38,842,458	37,643,531	37,155,372

Table 27. Electricity consumption from cogeneration

Country	Plant	Self-generation consumption (kWh)	
		2019	2020
Mexico	Anahuac (plant)	594,797	155,352
	Gulf – Veracruz		198,968
	Guadalajara (plant)		278,262
	Pacific – Mochis		110,173
	Southeast - Merida		243,179
Overall total		594,797	985,934

Table 28. Renewable electricity consumption generated by the solar panels

3. Indirect emissions (Scope 3)

3.1 Transportation and distribution downstream

Gasoline

Country	Plant	Consumption 2018(GJ)	Consumption 2019(GJ)	Consumption 2020(GJ)
Mexico	Anahuac	15,755	10,132	8,197
	Veracruz - Gulf	254	677	1,161
	Guadalajara	328	168	2,376
	Leon Rotomoldeo	2,086	3,833	3,955
	Lerma	384	-	-
	Southeast - Merida		761	-
	Monterrey Rotomoldeo	-	2,855	1,152
	Los Mochis - Pacific	-	782	862
	Tuxtla	2,788	5,037	5,690
Overall total		21,597	24,246	23,392

Table 29. Indirect consumption of gasoline

Diesel

Country	Plant	Consumption 2018(GJ)	Consumption 2019(GJ)	Consumption 2020(GJ)
Mexico	Anahuac	16,783	14,759	13,646
	Veracruz - Gulf	27,406	23,054	23,494
	Guadalajara	11,616	13,166	9,022
	Leon Rotomoldeo	37,122	39,023	29,676
	León Rotopinsa	NA	NA	15,804
	Lerma	13,480	7,464	3,751
	Monterrey Rotomoldeo	33,219	27,680	27,269
	Los Mochis - Pacific	26,331	28,438	28,516
	Monterrey Compuestos	21,373	23,896	27,077
	Tuxtla	736	3,402	3,948
	Southeast - Merida	15,799	14,892	11,759
Guatemala	Guatemala	3,749	21,519	13,498
Argentina	Olivos	NA	NA	1,003
	Pilar	NA	4,313	4,511
	IPS Loma Hermosa	NA	NA	12,063
Peru	Peru	NA	NA	6,655
Costa Rica	Costa Rica	NA	478	4,265
El Salvador	El Salvador	737	1,773	1,118
Honduras	Honduras	999	1,172	1,497
Nicaragua	Nicaragua	804	687	696
Total		210,155	225,719	239,269

Table 30. Indirect consumption of diesel

LP gas

Country	Plant	Consumption 2018(GJ)	Consumption 2019(GJ)	Consumption 2020 (GJ)
Mexico	Leon Rotomoldeo	1,342	1,342	479
	Monterrey Rotomoldeo	2,846	2,846	12,767
	Guadalajara	-	-	1,011
	Southeast - Merida	1,297	-	-
Total		5,485	4,188	14,257

Table 31. Indirect consumption of LP gas

3.3 Goods and services acquired

Country	Resin type	Consumption 2019 (ton)	Consumption 2020 (ton)
Mexico	High-density polyethylene (HDPE)	60.5	460
Total		60.5	460

Table 32. Resins acquired by Rotoplas

3.2 Transportation and distribution upstream

Country	Destination	2019		2020	
		Travel	Distance traveled (Km)	Travel	Distance traveled (Km)
Mexico	Leon Rotomoldeo	3	957	19	558
Total		3	957	19	558

Table 33. Distance traveled for resin transportation

3.4 Use of products sold

Product/service	Consumption 2019(kWh)	Consumption 2020(kWh)
Drinking fountains	634,333	634,333
Purifiers	125,938	243,601
Dispensers	428,826	507,824
Treatment plants	9,079,740	9,079,740
Total	10,268,837	10,465,498

Table 34. Electricity consumption during the stage of use of various Rotoplas products

3.5 Waste generated in operations

Type of waste	Destination	Generation (kg)
Scrap	Recycling	323
Industrial	Co-processing	50
Industrial	Recycling	412
Paper/cardboard	Landfill	40
Domestic waste	Landfill	355
Total		1,180

Table 35. Waste generation and treatment

Appendix 2. Emission factors

1. Direct emissions (Scope 1)

1.1 Stationary sources²³

For the roto-molding processes, heater manufacturing, generators/emergency plants, consumption data is obtained, broken down by type of fuel (gasoline, diesel, etc.). They are translated into energy units (GJ) in the cases that so require it, to apply the emission factor.

Fuel	kgCO ₂ /GJ	kgCH ₄ /GJ	kgN ₂ O/GJ
Diesel	74.1	0.0030	0.0006
LP gas	63.1	0.001	0.0001
Natural gas	56.10	0.001	0.0001

Table 36. Emission factors for stationary sources by GHG

1.2 Mobile sources

For the use of forklifts and commercial activity with utility cars, the data on consumption per liter is obtained, broken down by type of fuel (gasoline, LP gas, and diesel). They are converted into energy units (GJ) using the calorific value, and the emission factor is then applied.

Fuel	kgCO ₂ /GJ	kgCH ₄ /GJ	kgN ₂ O/GJ
Gasoline	69.3	0.0250	0.0080
Diesel	74.1	0.0039	0.0039
LP gas	63.1	0.062	0.0002

Table 37. Emission factors for mobile sources by GHG

1.3 Calorific power and Global warming potentials (GWP)

Fuel	Calorific power ²⁴	Units
Gasoline	0.0331	GJ/L
Diesel	0.0377	GJ/L
LP gas	0.0261	GJ/L
Natural gas	0.0403	GJ/m ³

Table 38. Calorific power by fuel type

GHG	GWP ²⁵	Units
CO₂	1	tCO ₂ e/tCO ₂
CH₄	28	tCO ₂ e/tCH ₄
N₂O	265	tCO ₂ e/tN ₂ O

Table 39. GWP of the GHG

²³ Adapted from the AGREEMENT, which establishes the technical particulars and formulas to apply methodologies for calculating greenhouse gas or compound emissions. SEMARNAT (2015)

²⁴ Adapted from the 2020 list of fuels that will be considered to identify the users with a high consumption pattern, as well as the factors to determine equivalences in terms of barrels of oil equivalent.

²⁵ Global Warming Potential Values. Green House Gas Protocol. Fifth Assessment Report (AR5) (2016).

1.4 Fugitive emissions

These are related to the leakage of refrigerants from air conditioning systems in the company's various facilities.

Refrigerant mix	Individual refrigerant	Composition (%)	GWP ²⁶
Not applicable	R-22	100	1760
R-401A	R-32	50	677
	R-125	50	3170

Table 40. GWP of refrigerants

2. Indirect emissions (Scope 2)

2.1 Electricity consumption

Electric energy consumed by Grupo Rotoplas is supplied by different national suppliers, depending on the country of operation; in Mexico, it also includes the supply of electricity generated through cogeneration processes by INFRA.

Country	Supplier	FE (tCO ₂ e/kWh)
Mexico	CFE	0.000494 ²⁷
Mexico	INFRA - Co-generation	0.000393 ²⁸
Guatemala	Empresa Eléctrica de Guatemala	0.000391 ²⁹
Argentina	EDENOR	0.000464 ³⁰
Brazil	Energisa	0.000075 ³¹
Peru	Luz del Sur	0.000615 ³²
United States	NA	0.000425 ³³
Costa Rica	NA	0.000040 ³⁴
El Salvador	NA	0.000680 ³⁵
Honduras	NA	0.000633 ³⁶
Nicaragua	NA	0.000710 ³⁷

Table 41. Electric emission factors by supplier - 2020

²⁶ Global Warming Potential Values. Green House Gas Protocol. Fifth Assessment Report (AR5) (2016).

²⁷ CRE. Emission factor of the National Power System (2020).

²⁸ Figure provided by INFRA.

²⁹ Republic of Guatemala. Ministry of Mines and Energy. Energy balance (2019).

³⁰ Government of Argentina. Energy ministry Calculation of the emission factor for the grid from 2013 to 2018 (2018).

³¹ Ministério da Ciência, Tecnologia, Inovações e Comunicações. Average factor for Corporate Inventories

³² Ministry of the Environment, Peru, (2019).

³³ Environmental Protection Agency (EPA), (2020).

³⁴ National Weather Institute (IMN). Greenhouse gas emission factors, (2018).

³⁵ Ministry of the Environment, Emissions, (2011).

³⁶ Evaluation of technological needs for mitigation, (2016).

³⁷ Value estimated by CLASP for cooling the planet based on data from PNUMA, Nicaragua (2012).

3. Other indirect emissions - (Scope 3)

3.1 Downstream transportation and distribution

This category groups the emissions from outsourced transportation used by the company to distribute its products; this transportation uses gasoline, diesel, and LP gas as fuel; the calculation considers the emission factors from table 36 (*Emission factors for stationary sources by GHG*).

3.2 Upstream transportation and distribution

Vehicle type	FE ²⁸ (tCO ₂ e/unit)	Units
Truck (closed box)	1.40E-03	vehicle-mile

Table 42. Emission factors by type of vehicle

3.3 Purchased goods and services

Resin type	FE ³⁸ (tCO ₂ e/unit)	Units
High-density polyethylene (HDPE)	1.41	Tons of resin processed

Table 43. Emission factors by type of resin

3.4 Use of sold products

For the category of use of products sold, which considers drinking fountains, purifiers, dispensers, and treatment plants, the calculation was done with the consumption of electricity, so the emission factor for Mexico, provided by CFE and reported in table 41, was considered.

3.5 Waste generated in operations

Waste - Destination	FE ³⁹ (tCO ₂ e/tons of waste)
Scrap - utilization	0.0213
Industrial - Co-processing	0.0213
Industrial - Recyclable	0.0213
Paper/cardboard - end of life	1.0418
Plastics - end of life	0.0089
Domestic waste - end of life	0.4374

³⁸ Emission factor provided by resin supplier.

³⁹ Department of Environment, food and Rural Affairs (DEFRA), (2020).

Appendix 3. Changes in the scope of information and Exclusions

In 2020, the scope of information to be included in the emissions inventory was reviewed, considering the main areas of opportunity identified in the past report from 2019.

To that effect, the GHG Protocol accounting and reporting principles were followed for the emission sources of all three Scopes.

The changes regarding the information considered in the previous inventory are mentioned below:

- 1) The emissions from electricity consumption related to the Distribution Centers (CEDIS or DCs) and administrative centers (not integrated into plants) are included: Grupo Rotoplas and Sytesa head offices in Mexico City.
- 2) Including Scope 1 and 2 emissions from energy consumption from related stationary and mobile units, and electricity consumption, respectively, from the two IPS plants in Argentina: IPS San Martín and IPS Loma Hermosa, as well as the administrative offices in the US and Brazil.
- 3) Including the fuel consumption by the fleet of the commercial teams in Argentina, in addition to Mexico.

Moreover, there are also aspects that are not included within this year's inventory, due to limitations in the available information.

Given the information available, regarding what we are working on for the following inventories:

- 1) Scope 1 emissions from fuel consumption by the fleet of commercial teams from the rest of operations besides Mexico and Argentina.
- 2) Emissions from the stores of the US retail business.

On the other hand, emissions, and consumption of resin from the Brazilian roto-molding operations (external plant) are not included, as the operations were sold during 2020.

Appendix 4. Other emissions

As part of the emissions that the company's activities generate, the combustion of LP and natural gas in the roto-molding processes generated 25 tons of nitrous oxides (NOx), 0.1 tons of sulfur oxides (SOx) and 1.3 tons of particulate matter (PM).



HQ LATAM

Paseo de la Reforma 222 – Tower 1, 1st floor, Col. Juárez, 06600 Mexico City - Mexico

HQ EMEA

Glorieta de Emilio Castelar 43, level 5 - 28046 Madrid - Spain

19 Calvo Sotelo Ave., ground floor- 15004 A Coruña - Spain

Prinsengracht 530 1017 KJ Amsterdam - Netherlands

45, Moorfields Office 604 London EC2Y 9AE– United Kingdom

22, Rue de la Fédération 75015 Paris - France

Gümüşsuyu Mahallesi, Sağıroğlu Sk. 3/2 - 34437 Beyoğlu/Istanbul - Turkey