



MRCO<sub>2</sub>  
MIDO, REDUZCO Y COMPENSO

CARBON  
FOOTPRINT  
REPORT  
2021




HOTELES CITY®



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# COMPANY PROFILE

**Hoteles City** is a chain of hotels focused on the dynamic traveler, offering practical facilities and modern rooms with the best quality/price ratio.

As of the end of 2021, the company had **152 hotels** with a presence in Mexico, Colombia, Costa Rica and Chile.

The objective of the report is to identify and publicize, through **Impacto City** - a sustainability platform, the Carbon Footprint generated by the operations of Hoteles City throughout the year 2021.

# HOTELES CITY®

# CARBON FOOTPRINT



GRI 305-1 g

## METHODOLOGY

### *Greenhouse Gas Protocol*<sup>1</sup>

The carbon footprint is defined as the total amount of Greenhouse Gases (GHG) caused directly or indirectly by an organization, product or service. Therefore, a GHG inventory is measured in tones of CO<sub>2</sub> equivalent (CO<sub>2</sub>eq).

#### **Scope 1 Direct greenhouse gas (GHG) emissions**

GHG emissions from fixed or mobile sources owned or controlled by the organization.<sup>2</sup>

- Diesel (L)
- Gasoline (L)
- Gas (L)

#### **Scope 2 Indirect greenhouse gas (GHG) emissions**

GHG emissions that are generated outside the facilities as a result of the company's electricity consumption.<sup>3</sup>

- Electricity(kWh)

(1) The GHG Protocol is an international methodological framework for the calculation of GHG emissions inventories developed under the supervision of the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD)

(2) Gas: Specific use to provide hot water service and breakfast bar. Diesel: Use in fire system equipment and emergency plant Gasoline: Use in hotel van and sales staff car

(3) Electricity: The electricity consumption of the hotels located in Mexico and LATAM was considered.

Scope 3 emissions are not being considered for this analysis.



For the **calculation of the carbon footprint**, Scopes 1 and 2 were defined based on the GHG Protocol methodology for which the following process was carried out:

- A) **Methodology** establishment  
Electricity and gas consumption were obtained from continuous records for each hotel.
  - B) **Definition of scope** and emission sources
  - C) **Information gathering** with area managers  
The calculation of emissions was based on the combination of information provided by the company with emission factors from various organizations.\*
  - D) Consumption **inventory**
  - E) **Emissions calculation**  
For the total calculation of carbon dioxide equivalent, the following greenhouse gases were considered: carbon dioxide **CO<sub>2</sub>**, methane **CH<sub>4</sub>** and nitrous oxide **N<sub>2</sub>O**.
- Fuel consumption was provided by the company. Diesel and gasoline consumption were estimated from financial receipts considering the entire operation.



GRI 302-1 f, GRI 302-1 g, GRI 305-1 b, GRI 305-1 e, GRI 305-1 g, GRI 305-2 b, GRI 305-2 e, GRI 305-2 g

\*Reference in methodological note

# INVENTORY



GRI 305-2 a, GRI 302-1 a, GRI 302-1 c

The total carbon footprint of Hoteles City in 2021 was **25,449.75-ton CO<sub>2</sub>eq**, which represents a **decrease of 6.56%** compared to total emissions in 2020.



	Emission source	Consumption	U*	Consumption	U*	Emission	U*	Comparison 20/21		U*
SCOPE 1	NATURAL GAS	1,489,776	Liters	60,087.14	GJ*	3.57	ton CO <sub>2</sub> eq	↓ 18.7%	↓ 1,203.41	ton CO <sub>2</sub> eq
SCOPE 1	GAS LP	3,090,018	Liters	80,716.164	GJ*	5,237.22	ton CO <sub>2</sub> eq			
SCOPE 1	DIESEL	5,987	Liters	225.55	GJ*	16.98	ton CO <sub>2</sub> eq	↓ 33.9%	↓ 8.72	ton CO <sub>2</sub> eq
SCOPE 1	GASOLINE	206,982	Liters	6,224.28	GJ*	449.28	ton CO <sub>2</sub> eq	↓ 30.2%	↓ 194.42	ton CO <sub>2</sub> eq
SCOPE 2	ELECTRICITY	47,563,971	kWh	171,230.29	GJ*	19,742.70	ton CO <sub>2</sub> eq	↓ 1.9%	↓ 380.00	ton CO <sub>2</sub> eq

\*U: Units GJ: Gigajoules MWh: Megawatt-hour kWh: kilowatt-hour



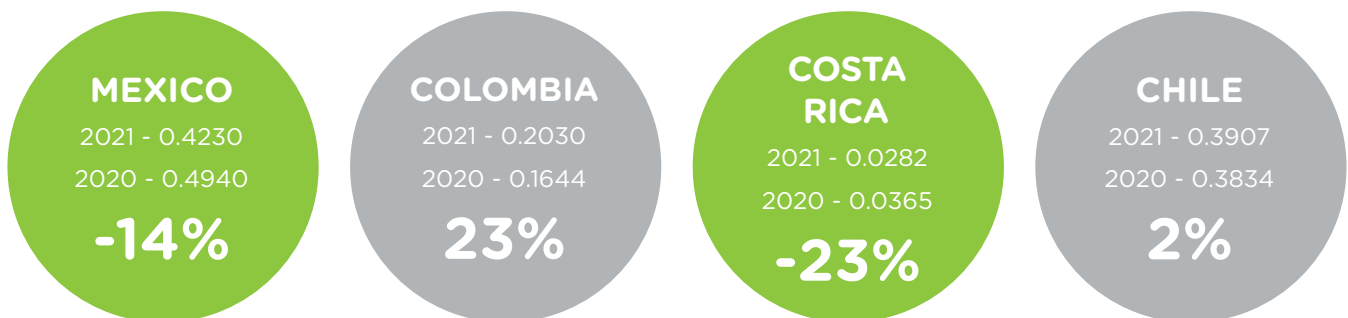
The largest reduction in proportion was diesel, with a drop of 33.9% compared to 2020. On the other hand, gas had a greater total decrease in emissions with 1,203.41 tons of CO<sub>2</sub> eq less, compared to the previous year, this due to efficiency in hotel operations and differentiation and measurement method by type of gas, since currently, 22 hotels of the chain operate with the use of natural gas.

It is important to note that, despite the fact that in 2021 electricity consumption increased by 16% compared to 2020, CO<sub>2</sub> eq emissions fell by 1.9%.

This is due to the fact that the emission factors (ton CO<sub>2</sub> eq/MWh\*) of the electricity system were reduced, that is, fewer gases were emitted per MWh\*, produced by the country. In addition to having a higher occupancy, the electricity consumed in public areas is distributed among a greater number of Occupied Room Nights.

The emission factor for electricity in Mexico had the greatest impact on the decrease in emissions, representing 95.76% of total energy consumption chainwide.

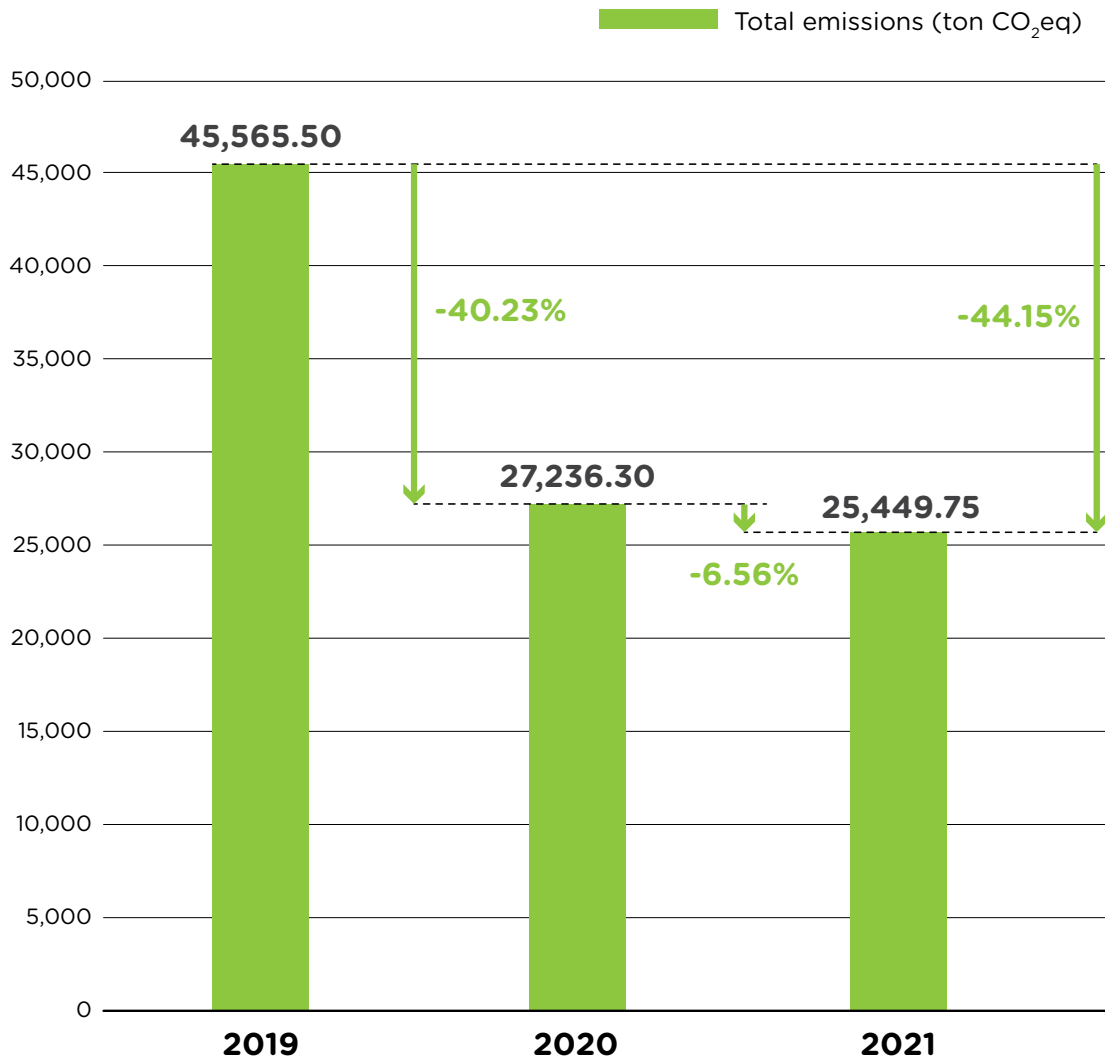
### Comparison of emission factors for electrical systems by country



\*U: Units GJ: Gigajoules MWh: Megawatt-hour kWh: kilowatt-hour



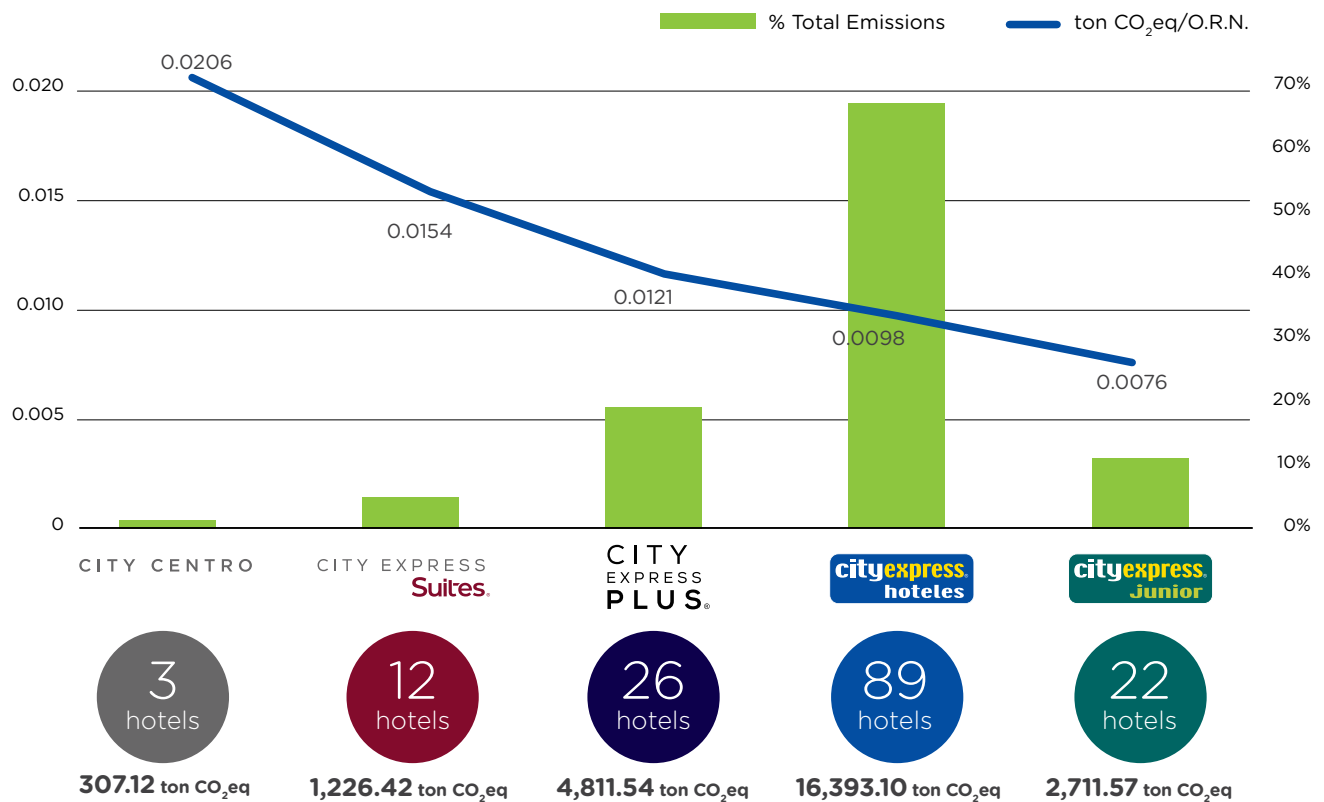
# TOTAL EMISSIONS



The emissions of Hoteles City in 2021 were reduced by 6.56% compared to 2020, which is equivalent to 1,786.55 tons of CO<sub>2</sub>eq; and 44.15% compared to 2019 equivalent to 20,115.75 tons of CO<sub>2</sub>eq. There was also a reduction in 40.23% from 2019 to 2020 equivalent to 18,329.20 tons of CO<sub>2</sub>eq.



# EMISSIONS PER BRAND



In this graph we can see the comparison of the contribution per brand in emissions considering: gas, electricity, diesel and gasoline.

The blue curve allows us to visualize the ratio of emissions per occupied room night for each brand. The ratio can be understood as eco-efficiency per brand. Therefore, **City Express Junior** is the most eco-efficient brand, emitting the least emissions per occupied room night with 0.0076-ton CO<sub>2</sub>eq/O.R.N.

(7.63 kg CO<sub>2</sub>eq/O.R.N.) On the other hand, **City Centro** would be the least eco-efficient brand, emitting more emissions per occupied room night with 0.0206 ton CO<sub>2</sub>eq/O.R.N. (20.63 kg CO<sub>2</sub>eq/O.R.N.).

The **City Express** brand provided the highest amount of emissions represented by 64% and the **City Centro** brand provided the lowest with just 1%. These ratios per brand in 2021 are similar to those of 2020.

\*<https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>



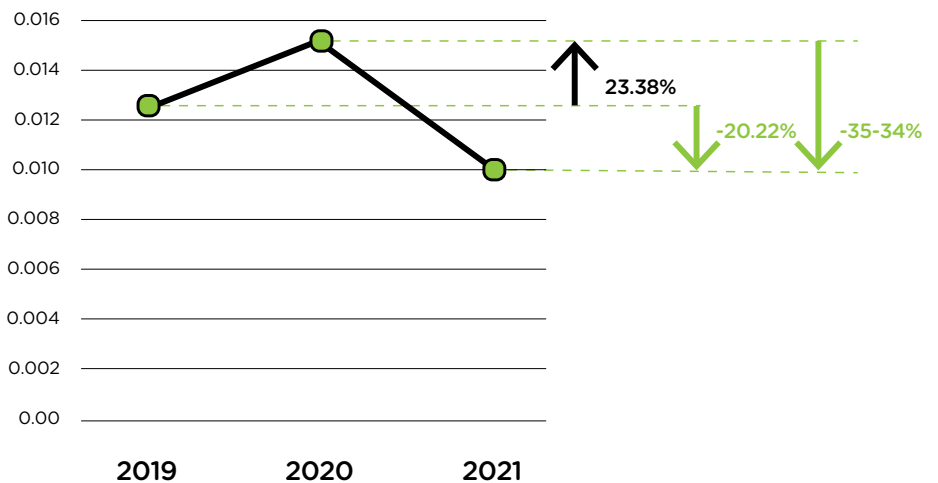
# COMPARATIVE RATIO OCCUPIED ROOM NIGHT (O.R.N.) GAS and ELECTRICITY

GRI 305-1 a

Comparative Analysis of the Carbon Footprint Generated by Gas and Electricity Consumption by O.R.N. since 2019: The Carbon Footprint ratio per occupied room

night in 2021 is 0.0099 CO<sub>2</sub>eq/O.R.N. (9.92 kg CO<sub>2</sub>eq/O.R.N.), equivalent to the emissions of 40.07 km traveled in an average car.\*

YEAR	Ton CO <sub>2</sub> eq/O.R.N.
2019	0.0124
2020	0.0153
2021	0.0099



The Carbon Footprint per occupied room night was reduced by 35.34% compared to 2020 and by 20.22% compared to 2019. This is due to the fact that in 2021 the number of room nights increased by 42.93% compared to 2020 and the identification by type of consumption in liters between Natural Gas

(1,489,776) and LP (3,090,018)\*. Compared to 2019, emissions per Occupied Room Night were reduced by 20.22%, which implies that there was also a decrease compared to the normal operations of Hoteles City before the pandemic.

\*<https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

\*\*LP gas generates approximately 700 times more GHG emissions than natural gas.



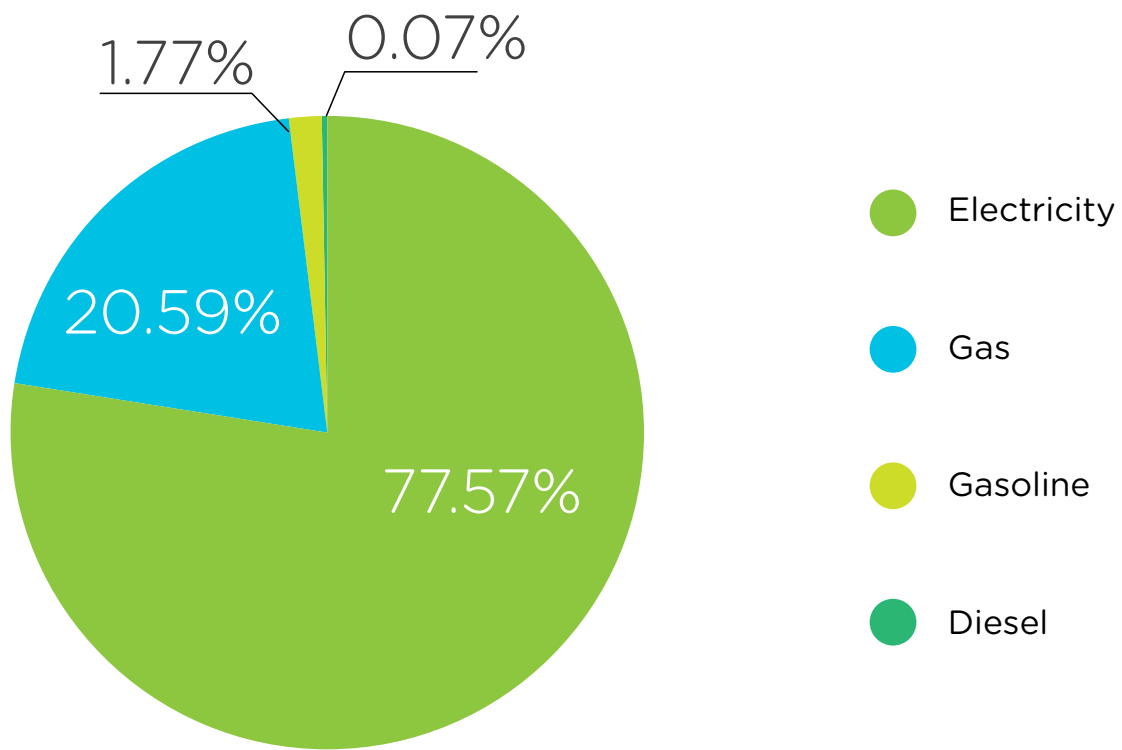
# DISTRIBUTION BY TYPE OF ENERGY



The percentages of the emitting sources of CO<sub>2</sub>eq correspond to the most significant inputs used in the daily operation of the chain.

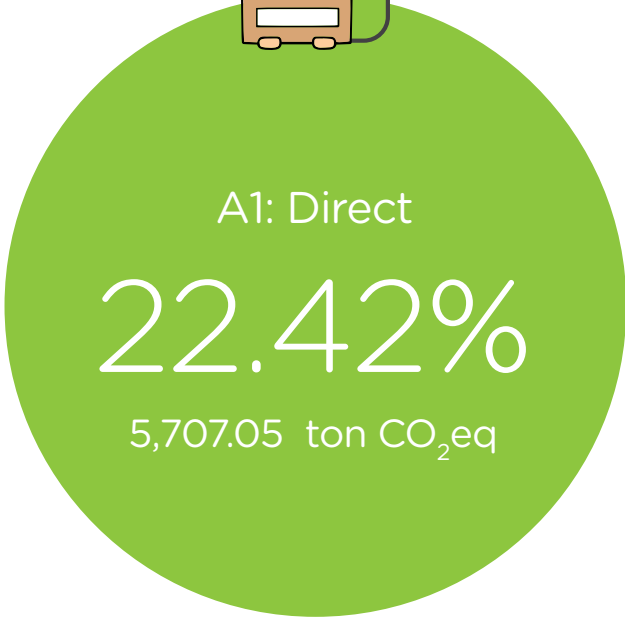
Electricity contributes the most, followed by gas, and finally fuel for fleets.

## Tons of CO<sub>2</sub>eq

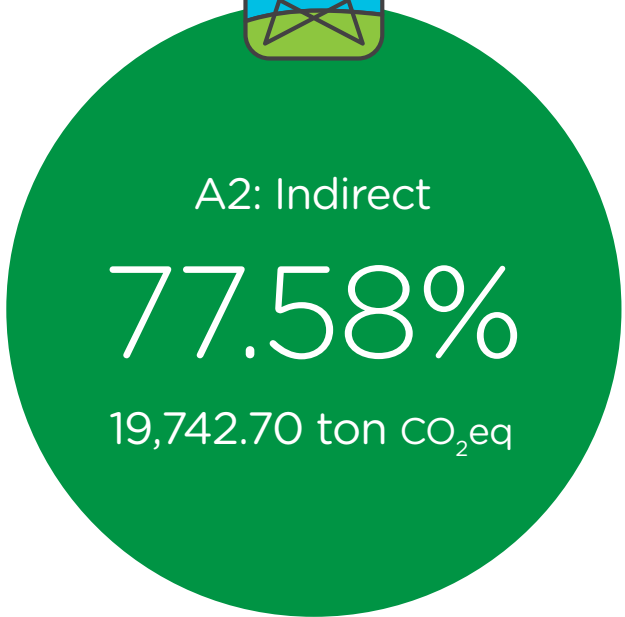




# DISTRIBUTION BY SCOPE TYPE



Scope 1: Gas LP, Gas Natural, Diesel and Gasoline



Scope 2: Electricity



# TOTAL EMISSIONS RATIO

GRI 305-4 a,b,c,d

The total emission intensity with respect to the business operation is based on O.R.N. considering this as the denominator. The ratio includes the total emissions generated by **Scope 1 (Natural Gas, LP Gas, Diesel and Gasoline) and Scope 2 (Electricity)** by the previously identified gases. The ratio of total

emissions per Occupied Room Night fell by 34.14% compared to 2020. This is due to the increase in the number of Occupied Room Nights and the identification of the type of consumption in liters between Natural Gas and LP Gas.



<b>TOTAL EMISSIONS</b>	25,449.75 ton CO <sub>2</sub> ,eq
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<b>PRODUCTIVITY UNIT</b>	2,517,450.00 O.R.N.
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# EQUIVALENCES

The emissions of Hoteles City at the chain level in 2021 were **25,449.75 tonCO<sub>2</sub>eq** which is equal to:



Travel in an average car  
**93,380,201.28** kilometers.<sup>1</sup>



Supply energy to **2,780**  
average homes for a year.<sup>1</sup>

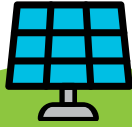


CO<sub>2</sub> capture from  
**339.32** hectares of pine tree.<sup>2</sup>

1. <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

2. <http://www2.inecc.gob.mx/publicaciones2/libros/296/cap3.html>

# RECOMMENDATIONS



In hotels with higher energy demand, implement clean technologies.



To the extent possible, generate the migration from LP Gas to Natural Gas.



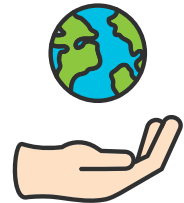
Implementation of initiatives that help the company to capture carbon emissions and its mitigation.



Updating of equipment for eco-efficient technologies and constant revisions to avoid energy leaks.

# ANNEXES

## METHODOLOGICAL NOTE CARBON FOOTPRINT



### Scope 1

Scope 1 emissions are derived from direct energy consumption, as defined by the GHG Protocol, available at:

<https://ghgprotocol.org/>

In order to obtain the most realistic impact, the emission factors used for fuels are obtained from the Official Journal of the Federation (DOF) 2015, available at: [http://dof.gob.mx/nota\\_detalle\\_popup.php?codigo=5406149](http://dof.gob.mx/nota_detalle_popup.php?codigo=5406149)

The information on heating values for the calculation is obtained from the National Commission for the Efficient Use of Energy (CONUEE) 2021, available at:

[https://www.gob.mx/cms/uploads/attachment/file/706809/aviso\\_fesen\\_2021.pdf](https://www.gob.mx/cms/uploads/attachment/file/706809/aviso_fesen_2021.pdf)

### Scope 2

Scope 2 emissions are derived from electricity consumption as defined by the GHG Protocol, available at: <https://ghgprotocol.org/>

Electricity emission factors were used for each country included in the analysis. Mexico: 0.423

tCO<sub>2</sub>e / MWh based on the Energy Regulatory Commission (CRE) (2021), is available at:

[https://www.gob.mx/cms/uploads/attachment/file/706809/aviso\\_fesen\\_2021.pdf](https://www.gob.mx/cms/uploads/attachment/file/706809/aviso_fesen_2021.pdf)

**Costa Rica:** 0.0282 tCO<sub>2</sub>e / MWh based on the National Meteorological Institute (2021), available at: <http://cglobal.imn.ac.cr/documentos/publicaciones/factoresemission/factoresemission2021/offline/FactoresEmision-GEI-2021.pdf>

**Colombia:** 0.203 tCO<sub>2</sub>e / MWh based on XM (2020), available at: [https://www1.upme.gov.co/Normatividad/Res\\_382\\_doc\\_tecnico.pdf#search=factor%20emisi%C3%B3n](https://www1.upme.gov.co/Normatividad/Res_382_doc_tecnico.pdf#search=factor%20emisi%C3%B3n)

**Chile:** 0.3907 tCO<sub>2</sub>e / MWh based on the National Energy Commission (2021), available at: <http://datos.energiabierta.cl/dataviews/255509/factor-de-emision-promedio-anual/>

Global Warming Potentials (GWP) are available at: [https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC\\_AR6\\_WGI\\_Chapter\\_07\\_Supplementary\\_Material.pdf](https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter_07_Supplementary_Material.pdf)



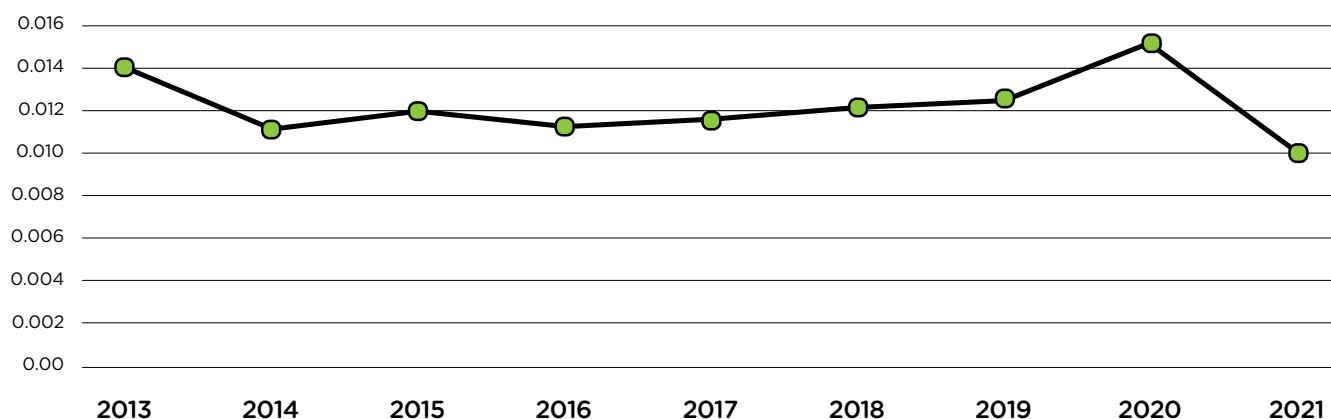
# EMISSION FACTORS USED

DATA	FACTOR	UNIT
Electricity Mexico	0.423	tCO <sub>2</sub> e / MWh
Electricity Costa Rica	0.0282	tCO <sub>2</sub> e / MWh
Electricity Colombia	0.203	tCO <sub>2</sub> e / MWh
Electricity Chile	0.3907	tCO <sub>2</sub> e / MWh
Gasoline (CO <sub>2</sub> )	0.0000693	ton / MJ
Gasoline (CH <sub>4</sub> )	0.000025	kg / MJ
Gasoline (NO <sub>2</sub> )	0.000008	kg / MJ
Diesel (CO <sub>2</sub> )	0.0000741	ton / MJ
Diesel (CH <sub>4</sub> )	0.0000039	kg / MJ
Diesel (NO <sub>2</sub> )	0.0000039	kg / MJ
Natural Gas (CO <sub>2</sub> )	0.0000561	ton / MJ
Natural Gas (CH <sub>4</sub> )	0.000092	kg / MJ
Natural Gas (NO <sub>2</sub> )	0.000003	kg / MJ
LP Gas (CO <sub>2</sub> )	0.0000631	kg / MJ
LP Gas (CH <sub>4</sub> )	0.000062	kg / MJ
LP Gas (NO <sub>2</sub> )	0.0000002	kg / MJ
Gasoline PC	30.0715853	MJ / l
Diesel PC	37.6759665	MJ / l
Natural Gas PC	0.040333	MJ / l
LP Gas PC	26.1215841	MJ / l
PCG CH <sub>4</sub>	27.9	CO <sub>2</sub> /CH <sub>4</sub>
PCG NO <sub>2</sub>	273	CO <sub>2</sub> /N <sub>2</sub> O

# COMPARATIVE RATIO PER OCCUPIED ROOM NIGHT

Comparative analysis of the Carbon Footprint generated by the consumption of gas and electricity since 2013 per O.R.N. The Carbon Footprint ratio per occupied room night in 2021 is

0.00992 CO<sub>2</sub>eq/O.R.N. (9.92 kg CO<sub>2</sub>eq/O.R.N.) equivalent to the emissions of 40.07 km traveled in an average car\*.



YEAR	Ton CO <sub>2</sub> eq/ C.N.O
2013	0.01400
2014	0.01157
2015	0.01203
2016	0.01169
2017	0.01174
2018	0.01220
2019	0.01244
2020	0.01534
2021	0.00992



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