Parex Resources Colombia Ltd. Sucursal

Independent practitioner's reasonable assurance report on the Greenhouse Gas - GHG – inventory statement developed by Parex Resources Colombia Ltd. Sucursal, for the year 2020.

August, 2021

Free translation from the original in Spanish

Independent practitioner's reasonable assurance report on the Greenhouse Gas – GHG - inventory statement developed by Parex Resources Colombia Ltd. Sucursal, for the year 2020.

To the Board of Directors, and the Management of Parex Resources Inc. and its Subsidiaries

August 12, 2021

We have undertaken a reasonable assurance engagement of the scope 1, 2 and 3 results reported on the accompanying Greenhouse Gas - GHG – inventory statement (hereinafter the 2020 GHG statement), mentioned on page 5, determined by Parex Resources Colombia Ltd. Sucursal (hereinafter Parex) for the year ended December 31, 2020 (hereinafter the 'review period') in accordance with the criteria defined in Appendix I to this report. This engagement was conducted by a multidisciplinary team including assurance practitioners and expert environmental engineers.

Parex Management's Responsibility for the 2020 GHG Inventory statement

The Company's Management is responsible for the preparation and presentation of the 2020 GHG statement[1], in accordance with the Criteria, set forth in Appendix I. This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation and presentation of the 2020 GHG statement that it is free from material misstatement, whether due to fraud or error.

Inherent limitations

Without qualifying our conclusion, we draw attention to the fact that:

i. As mentioned in paragraph p of the GHG statement, GHG quantification is subject to inherent uncertainty because of incomplete scientific knowledge used to determine emissions factors and the values needed to combine emissions of different gases.

ii. There is inherent uncertainty related to the estimation in the measurement and calculation used to quantify emissions.

iii. Our assurance does not include information from previous years included in the 2020 GHG statement, projections, or goals, unless otherwise stated in Appendix I attached. We have not carried out any work outside the agreed scope and, therefore, our conclusion is restricted to the information reported that responds to the assurance criteria described in Appendix I.

[1] The maintenance and integrity of the Parex Resources Inc. website (www.parexresources.com/en/), repository of the pdf version of the GHG statement, is the responsibility of the Company's Administration. The work carried out by PwC does not involve the consideration of these matters and, accordingly, PwC accepts no responsibility for any differences between the information presented on the website and in the 2020 GHG statement issued by the Company on which said assurance was made and the conclusion was issued.

PricewaterhouseCoopers Asesores Gerenciales S.A.S., Calle 100 No. 11A-35, Bogotá, Colombia
Tel: (57-1) 634 0555, Fax: (57-1) 634 0614, www.pwc.com/co

To the Board of Directors, and The Management of Parex Resources Inc. and its Subsidiaries
Independent Reasonable Assurance Report.

August 12, 2021

Our Independence and Quality Control

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

The firm applies International Standard on Quality Control 1 and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

PwC Responsibility

Our responsibility is to express a reasonable assurance conclusion on the 2020 GHG statement based on the evidence we have obtained. We conducted our reasonable assurance engagement in accordance with International Standard on Assurance Engagements 3410, Assurance Engagements on Greenhouse Gas Statements ('ISAE 3410'), issued by the International Auditing and Assurance Standards Board. This standard requires that we plan and perform this engagement to obtain reasonable assurance about whether the GHG statement is free from material misstatement.

A reasonable assurance engagement in accordance with ISAE 3410 involves performing procedures to obtain evidence about the quantification of emissions and related information in the GHG statement. The nature, timing and extent of procedures selected depend on the practitioner's judgment, including the assessment of the risks of material misstatement, whether due to fraud or error, in the GHG statement. In making those risk assessments, we considered internal control relevant to Parex Management's preparation of the GHG statement. A reasonable assurance engagement also includes:

- assessing the suitability in the circumstances of Parex's use of criteria, applied as explained in Appendix I, as the basis for preparing the GHG statement;
- evaluating the appropriateness of quantification methods and reporting policies used, and the reasonableness of estimates made by Parex; and
- evaluating the overall presentation of the results of scopes 1, 2 and 3 reported in the GHG statement, mentioned on page 5, in accordance with the criteria included in Appendix I to this report.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

To the Board of Directors, and The Management of Parex Resources Inc. and its Subsidiaries
Independent Reasonable Assurance Report.

August 12, 2021

Reasonable Assurance Conclusion

In our opinion, the results of scope 1, 2 and 3 reported on the Greenhouse Gas -GHG- statement, determined by Parex, for the year ended December 31, 2020, are prepared, in all material respects, in accordance with the criteria explained in Appendix 1 attached.

Restriction on use and distribution

Our report, including the conclusion, has been prepared solely for the purpose of the Company's Administration presenting it to the Board of Directors, the Management of Parex Resources Inc. and its Subsidiaries, and CDP, within the context of reporting its scope 1, 2 and 3 results on the GHG statement. We authorize the disclosure of this report within the Parex website. To the fullest extent permitted by the law, we do not accept or assume responsibility to third parties other than those mentioned above for our work or for this report, save where terms are expressly agreed with our prior consent in writing.

(Original in Spanish signed by:)

Diego Henao González
Professional License No. 20732-T
Accountant
Partner
PricewaterhouseCoopers AG S. A. S.

Appendix 1

The criteria established and agreed by the parties are the parameters of the independent reasonable assurance carried out by PwC. These criteria were defined in accordance with the methodological level 1 and 2 of the Intergovernmental Panel on Climate Change (IPCC, 2006), the technical standard NTC ISO 14064-1 and based on the formalized procedures that the Management defined in addition to the aforementioned, and they will be published by Parex Resources Colombia Ltd. Sucursal on its website for users of the reasonable assurance report to consult them.

These criteria are an integral part of our Independent practitioner's reasonable assurance report on the Greenhouse Gas - GHG - inventory statement developed by Parex Resources Colombia Ltd. Sucursal, for the year 2020.

Information subject to reasonable assurance	Criteria	Nothing caught our attention (✓)
Direct (Scope 1) GHG emissions	The Company's Management included in its Greenhouse Gas Inventory statement 2020 (hereinafter Inventory), the result of the quantification of its scope 1 GHG emissions generated within the framework of its activities, for the period from January 1 to December 31, 2020 (hereinafter, the year under review), for the Companies Parex Resources Colombia Ltd. Sucursal and Parex Verano Limited Sucursal (hereinafter the reporting companies), according to the IPCC (2006) GHG emissions estimation methodology, the guidelines of the Colombian Technical Standard ISO 14064-1 and complemented with the definitions established by Management, as presented below: Scope 1 of the inventory refers to the direct emissions generated by the operational and administrative activities of the facilities within the boundaries of the companies, reporting information on the operational areas (extraction blocks), in which activities associated with the emission of Greenhouse Gases (GHG) scope 1 of the reporting companies during the year under review are developed, which are detailed below: • Bloque Cabrestero • Bloque Capachos • Bloque Fortuna • Bloque Llanos 16 • Bloque Llanos 26 • Bloque Llanos 30 • Bloque Llanos 32 • Bloque Llanos 40 • Bloque Los Ocarros • Bloque Playón • Bloque Aguas Blancas • Bloque Merecure • Bloque VIM-1	✓

Information subject to reasonable assurance	Criteria	Nothing caught our attention (✓)
	This value is obtained by calculating the total direct GHG emissions, generated by the reporting companies, of the gases Carbon Dioxide (CO_2), Methane (CH_4), Nitrous Oxide (N_2O) and Hydrofluorocarbons (HCF), including R-22, R-410a and R4-22d, as established in the document "Informe GEI Parex_22072021_V1.5.pdf", provided by the Sustainability Area. To calculate the emissions associated with each gas, the method used consists of combining the information on the extent to which a human activity takes place (called activity data or DA) with the coefficients that quantify the emissions or removals per unit activity, called emission factors (EF). Thus, the basic equation is: **Emissions = DA * EF** According to the above, Scope 1 emissions are calculated according to the following formula: ***Direct GHG emissions (Scope 1) in tons of*** CO_2**e =** *tons of* CO_2 *equivalent emissions from fuel combustion activities for power generation + tons of* CO_2 *equivalent emissions from fugitive emissions from cooling systems + tons of* CO_2 *equivalent emissions from fugitive emissions from the operation*. The elements included in the above formula are detailed below: **I. Tons of CO_2 equivalent emissions from fuel combustion activities for power generation:** corresponds to the fuel consumption (mobile and stationary diesel, crude oil, COESGEN, LPG and natural gas) used in the aforementioned operating areas, during the year under review, multiplied by the density, caloric value and emission factors included in the table in item IV, defined by the Intergovernmental Panel on Climate Change (hereinafter IPCC, 2006) and the Colombian Fuel Emission Factors FECOC (2015), for each type of fuel. The emission factors are expressed in kilograms per terajoule (Kg/Tj) and are converted using the International Metric System and the references of the metrology unit of the Superintendence of Industry and Tourism of Colombia, as established in the documents "Informe GEI Parex_22072021_V1.5.pdf" and "CALCULOS GEI_PAREX FINAL 22072021.xlsx", both managed by the Sustainability Area. The following formula is used to consolidate emissions from fuel combustion activities for energy generation in tons of CO_2: **Tons of CO_2 equivalent emissions= Ton CO_2+ (Ton CH_4*PCG) + (Ton N_2O*PCG)** **II. Ton of CO_2 equivalent emissions due to fugitive emissions from refrigeration systems:** corresponds to the values of leaks in refrigeration and air conditioning equipment used in production activities in the blocks granted to the reporting companies, which are mentioned below: • Bloque Cabrestero • Bloque Capachos • Bloque Llanos 26 • Bloque Llanos 30 • Bloque Llanos 32 • Bloque Llanos 40 • Bloque Los Ocarros	✓ ✓ ✓ ✓

Information subject to reasonable assurance	Criteria	Nothing caught our attention (✓)
	For the estimation of emissions associated with refrigeration and air conditioning equipment, the average leakage of refrigerant gas reported by equipment manufacturers is considered, which corresponds to about 3% per year in commercial equipment with capacity between 0.5 and 100 kilograms of refrigerant, according to the IPCC 2016 guidelines. The calculation of emissions includes the number of equipment used in the aforementioned operational areas and corresponds to the leakage of each gas multiplied by the global warming potentials of each gas included in the table in item IV. For the consolidation of emissions in tons of CO_2 equivalent, the following formula is applied: **Tons of CO_2 equivalent emissions= Ton CO_2 + (Ton HFC R-22*PCG) + (Ton HFC R-410a*PCG) + (Ton HFC R-422d*PCG)** **III. Ton of CO_2 equivalent emissions from fugitive emissions from the operation:** corresponds to the values of emissions from: i) natural gas flaring (tea) which refers to the values of gas flaring (in m^3) generated in the extraction of crude oil recorded in the COREX platform in the following operation blocks: • Aguas Blancas • Llanos 16, 26, 30, 30, 32, 40 • Capachos • Boranda • Fortuna • VIM-1 • Los Ocarros The calculation of emissions corresponds to the amount of burned gas multiplied by the emissions factor determined for each gas, included in the table in item IV, provided by the IPCC (2006) for the categories associated with fugitive emissions, as established in the documents "Informe GEI Parex_22072021_V1.5.pdf" and "CALCULOS GEI_PAREX FINAL 22072021.xlsx", both managed by the Sustainability Area. For the consolidation in tons of CO_2 equivalent, the following formula is applied, using the global warming potentials established by IPCC (2007) mentioned in Item IV. **Tons of CO_2 equivalent emissions= Ton CO_2+ (Ton CH_4*PCG) + (Ton N_2O*PCG)** ii) venting which refers to the released gas values (m3) in the following operation blocks: • Adalia • Aguas Blancas • Begonia • Boranda	✓

Information subject to reasonable assurance	Criteria	Nothing caught our attention (✓)
	• Capachos • Las Maracas • Kona • Azogue • Akira/Kitaro • La Belleza • Totumal • Tamariniza • Rumba-Bazar • Kananaskis • Carmentea • PTG Llanos 32 The calculation of emissions corresponds to the annual values of natural gas released in the operating areas mentioned above, during the year under review, multiplied by the average value of gas density according to the chromatographies carried out by the reporting companies included in the table in paragraph e, and by the percentage of CH_4 and CO_2 present in the natural gas produced in each field, as established in the documents "Informe GEI Parex_22072021_V1.5.pdf" and "CALCULOS GEI_PAREX FINAL 22072021.xlsx", both managed by the Sustainability Area. For the consolidation in tons of CO_2 equivalent, the following formula is applied, using the global warming potentials established by IPCC (2007) mentioned in the table in item IV. **Tons of CO_2 equivalent emissions= Ton CO_2+ (Ton CH_4*PCG) + (Ton N2O*PCG)** iii) Leaks, or other fugitive emissions: emissions associated with valves and connection points that refer to leaks that occur in equipment, valves, seals during the production of gas and crude oil. The calculation corresponds to the amount of fugitive gas, multiplied by the emissions factor determined for each gas, included in the table (item IV), as established in the documents "Informe GEI Parex_22072021_V1.5.pdf" and "CALCULOS GEI_PAREX FINAL 22072021.xlsx", both managed by the Sustainability Area. For the consolidation in tons of CO_2 equivalent, the following formula is applied, using the global warming potentials established by IPCC (2007) mentioned in the table in item IV. **Tons of CO_2 equivalent emissions= Ton CO_2 + (Ton CH_4*PCG)** **IV. Calculation factors** Considering the emission sources described above, the gases included in the calculation correspond to:	✓

Information subject to reasonable assurance	Criteria	Nothing caught our attention (✓)
		✓

Emission source	CO_2	CH_4	N_2O	Refrigerant gases
Fuel combustion for power generation	X	X	X	
Fugitive emissions from refrigeration systems				X
Natural gas flaring (tea)	X	X	X	
Venting	X	X		
Leaks related to gas and crude oil production	X	X		

Additionally, the report of biogenic CO_2 emissions corresponds to the tons of CO_2 equivalent from the combustion of biofuels, in Colombia diesel and gasoline are marketed with an approximate content of 10% of biofuels, these emissions are reported separately to the gross value of emissions established in item I of this criteria, as established by the IPCC (2006) and are excluded from the biogenic emissions of other types of GHG (such as CH_4 and N_2O). The calculation corresponds to the total emissions from burning CO_2 in fuels for power generation, multiplied by 10% as established in the documents "Informe GEI Parex_22072021_V1.5.pdf" and "CALCULOS GEI_PAREX FINAL 22072021.xlsx", both managed by the Sustainability Area. ✓

The base year for the calculation is 2017, a decision made by the Company in order to have a reference year for the future. In addition, it is understood that there were no significant changes that imply new calculations of the base year emissions.

Information subject to reasonable assurance	Criteria	Nothing caught our attention (✓)
	Emission factors, global warming potential rates and other relevant conversion factors correspond to those taken by the reporting companies from IPCC (2007) and FECOC (2016). The estimation of GHG emissions is performed following the IPCC (2006) methodology and the GHG inventory report is prepared following the specifications of the Colombian Technical Standard ISO 14064-1. The previously mentioned factors are used according to the sources presented in the table below:	✓

Emission factors, densities and caloric values

Concept	Value	Source
Crude Net caloric value - stationary	0.000041 (TJ/Kg)	FECOC, 2016. Emission factors of Colombian fuels. Bogotá, Colombia.
Diesel net caloric value - stationary (TJ/Kg)	0.000042149 (TJ/Kg)	
Mobile Diesel Net Caloric value (TJ/Kg)	0.000042149 (TJ/Kg)	
COESGEN Net caloric value (TJ/Kg)	4.04E-05 (TJ/Kg)	
GLP Net caloric value (TJ/Kg)	0.000099 (TJ/Kg)	
Natural gas Net caloric value (TJ/Kg)	0.000036 (TJ/Kg)	
Crude density - stationary	0.939 (Kg/l)	
Diesel density - stationary	0.86 (Kg/l)	

Information subject to reasonable assurance	Criteria			Nothing caught our attention (✓)
	B10 Diesel Density / mobile (light vehicle)	0.86 (Kg/l)		
	COESGEN Density	0.849 (Kg/l)		
	GLP density	0.78 (Kg/l)		
	Natural gas density - stationary Colombia	0.78 (Kg/l)		
	CO_2 emission factor Crude oil - stationary	77,956 (Kg/TJ)	FECOC, 2016. Emission factors of Colombian fuels. Bogota, Colombia	
	CH_4 Crude emission factor - stationary	5.5 (Kg/TJ)	IPCC (2006).	
	N_2O Crude emission factor - stationary	1.1 (Kg/TJ)	IPCC (2006).	
	Diesel - stationary CO_2 emission factor	74,831 (Kg/TJ)	FECOC, 2016. Emission factors of Colombian fuels. Bogota, Colombia	
	CH_4 Diesel emission factor - stationary	5.5 (Kg/TJ)	IPCC (2006).	
	Diesel - stationary N_2O emission factor	1.1 (Kg/TJ)	IPCC (2006).	
	CO_2 B10 Diesel emission factor / mobile (light vehicle)	74831 (Kg/TJ)	FECOC, 2016. Emission factors of Colombian fuels. Bogota, Colombia	
	CH_4 B10 Diesel emission factor / mobile (light duty vehicle)	5.6 (Kg/TJ)	IPCC (2006).	
	N_2O B10 Diesel emission factor / mobile (light-duty vehicle)	6.7 (Kg/TJ)	IPCC (2006).	

Information subject to reasonable assurance	Criteria			Nothing caught our attention (✓)
	CO_2 COESGEN emission factor	78,281 (Kg/TJ)	FECOC, 2016. Emission factors of Colombian fuels. Bogota, Colombia	
	CH_4 COESGEN emission factor	5.5 (Kg/TJ)	IPCC (2006).	
	N_2O COESGEN emission factor	1.1 (Kg/TJ)	IPCC (2006).	
	CO_2 GLP emission factor	47,289 (Kg/TJ)	FECOC, 2016. Emission factors of Colombian fuels. Bogota, Colombia	
	CH_4 GLP emission factor	1.7 (Kg/TJ)	IPCC (2006).	
	N_2O GLP emission factor	1.5 (Kg/TJ)	IPCC (2006).	
	CO_2 Natural gas emission factor - stationary Colombia	55,539 (Kg/TJ)	FECOC, 2016. Emission factors of Colombian fuels. Bogota, Colombia	
	CH_4 Natural gas emission factor - stationary Colombia	1.7 (Kg/TJ)	IPCC (2006).	
	N_2O Natural gas emission factor - stationary Colombia	0.2 (Kg/TJ)	IPCC (2006).	
	CH_4 gas production emission factor	0.00038 Gg per 1,000,000 m3 of gas production	IPCC (2006). Guidelines for National Greenhouse Gas Inventories. National Greenhouse Gas Inventories Programme, Eggleston H.S., Buendia L., Miwa K., Ngara T. and Tanabe K. (eds.). (eds). Published: IGES, Japan. Chapters 1, 2, 3 and 5.	
	CO_2 gas production emission factor	0.000014 Gg per 1,000,000 m3 of gas production		
	CH_4 crude oil production emission factor	0.0000015 Gg per 1,000,000 m3 gas production		
	CO_2 crude oil production emission factor	0.00000011 Gg per 1,000,000 m3 of gas production		
	Transported in tractor-trailers CH_4 crude Emission factor	0.000025 Gg per 1,000,000 m3 gas production		

Information subject to reasonable assurance	Criteria	Nothing caught our attention (✓)

Transported by tractor-trailer CO_2 crude Emission factor		0.0000023 Gg per 1,000,000 m3 gas production	
CH_4 Torch burning emission factor		0.012 Gg per 1,000,000 m3 of gas production	
CO_2 Torch burning emission factor		2 Gg per 1,000,000 m3 of gas production	
N_2O emission factor Flare burning		0.000023 Gg per 1,000,000 m3 gas production	
CH_4 density	0.68 (kg/m3)	Chromatography analysis advanced by PAREX Resources	
CO_2 density	1,842 (kg/m3)		

Global warming potential values (Potential Global Warming Values)

Component	Emission factor/ GWP	Source
CO_2	1	IPCC, 2007. Climate Change 2007: The Physical Science Basis. S. Solomon et al., eds. Cambridge University Press, Cambridge UK.
CH_4	25	
N_2O	298	
HFC: R/22	1760	

✓

Information subject to reasonable assurance	Criteria	Nothing caught our attention (✓)

HFC: R/410a	1924	
HFC: R/422d	2479	

The reporting company considers operational control as an approach to consolidate emissions. Such operational limits are defined in the table below, as established in the document " Informe GEI Parex_22072021_V1.5.pdf", managed by the Sustainability Area.

Operational limits (activities) of the GHG inventory (Scope 1)	
Activities carried out in the production fields and administrative offices	**Emission sources associated with activities**
Production of gas and crude oil	Stationary and mobile diesel consumption
	Crude oil consumption
	Gas consumption
	COESGEN consumption
	LPG consumption
	Torch burning
	Venting
	Fugitive emissions gas and crude oil transportation
Administrative activities	Air conditioning operations

✓

Information subject to reasonable assurance	Criteria	Nothing caught our attention (✓)
	In relation to the calculation of the uncertainty associated with the source, the methodology, or good practices, of the IPCC 2006 according to the Conceptual Basis for Uncertainty Analysis and the uncertainties associated with the values reported for each of the default data (data generated in other investigations) that were used. The total uncertainty for the total inventory was estimated according to the following equation (IPIECA 2011): $$t = \frac{\sqrt{(A\ x\ a)^2 + (B\ x\ b)^2 + \ldots + (N\ x\ n)^2}}{T}$$ Where, t: Total uncertainty T: Total greenhouse gas emissions. A=category A emissions, a=uncertainty of category A emissions, B=category B emissions, b=uncertainty of category B emissions, N=category N emissions, n=uncertainty of category N emissions. The scope of the assurance was limited to reconciliation of the information reported in the GHG Inventory, in relation to the sources mentioned in the criteria, provided by the Sustainability Area (which consolidates this information from the records and reports of other areas of the companies); to the validation, based on samples, of the existence of the source data, and to the recalculation of the final values of the established formulas in the criteria based on the information included in those sources, for selected samples. It did not include the evaluation of the reasonableness and suitability of the data included in the reports used for the calculation, emission factors, caloric values, densities and global warming potentials mentioned in the criteria, the integrity of the information sources used for the calculation for the year under review, nor the evaluation of the occurrence of the events that originated the report.	✓
Indirect (Scope 2) GHG emissions	The Company's Management included in its Greenhouse Gas statement 2020 (hereinafter Inventory), the result of the quantification of its scope 2 GHG emissions generated within the framework of its activities, for the period from January 1 to December 31, 2020 (hereinafter, the year under review), for the companies Parex Resources Colombia Ltd. Sucursal, Parex Verano Limited Sucursal and Parex Resources Inc. (hereinafter the reporting companies), according to the IPCC (2006) GHG emissions estimation methodology, the guidelines of the Colombian Technical Standard ISO 14064-1 and complemented with the definitions established by Management, as presented below: Scope 2 of the inventory refers to indirect emissions from the external generation of electricity that is consumed within the organization, as part of the operational and administrative activities of the facilities within the limits of the reporting companies. The following emission sources are identified: ● **National Interconnected System of Colombia:** corresponds to energy consumption in kWh from the electrical grid, which is generated mainly in hydroelectric and thermoelectric plants, for the following locations in the Colombian territory. Emissions due to energy losses in the electric power transmission network are not included. ○ Bogotá Office ○ Yopal Office ○ Tame Office ○ Tauramena Office ○ Barrancabermeja Office	✓

<table>
<tr><th>Information subject to reasonable assurance</th><th>Criteria</th><th>Nothing caught our attention (✓)</th></tr>
<tr><td></td><td>

Pozo Aguas Blancas
Pozo Capachos
Pozo Llanos 16 (Kona Facilities Field)

National Energy System of Canada: corresponds to energy consumption in kWh from the electricity grid, which is generated mainly in thermoelectric plants, for the following locations in the city of Calgary. Emissions from energy losses in the power transmission grid are not included.

Calgary Office

The total value of scope 2 GHG emissions corresponds to the sum of the total indirect GHG emissions calculated for each emission source through the application of the following formula:

Indirect GHG emissions (Scope 2) in tons of CO_2e = tons of CO_2 equivalent emissions from electricity consumption of the National Interconnected System + tons of CO_2 equivalent emissions from electricity consumption of the National Energy System of Canada.

The gases included in the calculation of direct GHG emissions are: Carbon Dioxide (CO_2) and, additionally, for the case of Canada, Methane (CH_4) and Nitrous Oxide (N_2O). In the GHG estimation, the emission factors provided by the entities responsible for such information were used. In the case of Colombia, the emission factor corresponds to that reported by the Mining and Energy Planning Unit (UPME) for the National Interconnected System. In the case of the Calgary office, the emission factors correspond to those reported by the Canadian Government in the National Greenhouse Gas report. This information is presented in the following table:

<table>
<tr><th></th><th>CO_2 emission factor</th><th>Emission factor CH_4</th><th>N_2O emission factor</th></tr>
<tr><td>National Interconnected System (UPME)</td><td>0.166 kg CO_2/kWh</td><td>-</td><td>-</td></tr>
<tr><td>Canadian Energy System (Canadian Government)</td><td>140 gr CO_2/kWh</td><td>0.01 gr CH_4/kWh</td><td>0.003 gr N_2O/kWh</td></tr>
</table>
The calculation of the emissions generated corresponds, then, to the multiplication of the emissions factor determined for each gas by the value of electric energy consumption. For the consolidation in tons of CO_2 equivalent, the emissions generated for each gas are added once each of these is multiplied by the Global Warming Potential (GWP) of the gas. The potentials for each gas are presented below (IPCC, 2007):

<table>
<tr><th>Gas</th><th>CO_2</th><th>CH_4</th><th>N_2O</th></tr>
<tr><td>Global Warming Potential</td><td>1</td><td>25</td><td>298</td></tr>
</table>
</td><td>✓

✓

✓</td></tr>
</table>

Information subject to reasonable assurance	Criteria	Nothing caught our attention (✓)
	The above is presented in accordance with the Greenhouse Gas Inventory 2020 of the reporting companies, which can be found in the document "Informe GEI Parex_22072021_V1.5.pdf", as well as the detail of the calculations presented in the file "CALCULOS GEI_PAREX FINAL 22072021.xlsx", where the Emission Factors (EF), Global Warming Potentials and consumption data, leakage, traveled kilometers, and other data used for the estimation of emissions can be found. Both documents are managed by the Sustainability Area. The scope of the assurance was limited to reconciliation of the information reported in the GHG Inventory, in relation to the sources mentioned in the criteria, provided by the Sustainability Area (which consolidates this information from the records and reports of other areas of the companies); to the validation, based on samples, of the existence of the source data; and to the recalculation of the final values of the established formulas in the criteria based on the information included in those sources, for selected samples. It did not include assessment of the reasonability or suitability of the sources, emission factors, caloric values, densities and global warming potentials mentioned in the criteria, the assessment of the integrity of the information sources used for the calculation for the year under review, nor the evaluation of the occurrence of the events that originated the report.	✓
Other indirect GHG emissions - Scope 3	The Company's Management included in its Greenhouse Gas statement 2020 (hereinafter Inventory), the result of the quantification of its scope 3 GHG emissions generated within the framework of its activities, for the period from January 1 to December 31, 2020 (hereinafter, the year under review), for the Companies Parex Resources Colombia Ltd. Sucursal, Parex Verano Limited Sucursal and Parex Resources Inc. (hereinafter the reporting companies), according to the IPCC (2006) GHG emissions estimation methodology, the guidelines of the Colombian Technical Standard ISO 14064-1 and complemented with the definitions established by Management, as presented below: Scope 3 of the inventory refers to other indirect emissions included based on the needs of the reporting companies and are directly related to their operations in the areas of production, drilling, civil works, facilities, environmental impact studies, workover-completion (WO/CO), marketing, transportation and administrative offices in Colombia and Canada. In line with the above, the following emission sources are identified: • **Third party fuel (diesel and natural gas) combustion:** corresponds to the consumption of fuel (diesel, crude oil, COESGEN, LPG and natural gas) used in Workover/Completion (WO/CO) activities, facilities, drilling and administrative offices belonging to the reporting companies during the year under review. The detail of these facilities is presented below: ○ WO/CO ■ Aguas blancas Block ■ Cabrestero Block ■ Capachos Block ■ Fortuna Block ■ Llanos 26 Block ■ Llanos 30 Block ■ Llanos 32 Block ■ Llanos 40 Block ■ Llanos 94 Block ■ Los Ocarros Block ■ Merecure Block ■ Playón Block	✓

Information subject to reasonable assurance	Criteria	Nothing caught our attention (✓)
	▪ VIM-1 Block ▪ CPO-11 Block ○ Drilling ▪ CPO-11 Block ▪ Aguas Blancas Block ▪ Cabrestero Block ▪ Fortuna Block ▪ Playón Block ○ Facilities ▪ Aguas Blancas Block ▪ Cabrestero Block ▪ Capachos Block ▪ Llanos 32 Block ○ Calgary office (stationary gas consumption)	✓
	The gases included in the calculation of indirect GHG emissions are: Carbon Dioxide (CO_2), Methane (CH_4) and Nitrous Oxide (N_2O). In the estimation of GHG from fuel combustion, CO_2 emission factors, density and caloric values provided by IPCC (2006) and fuel emission factors FECOC (2015) for each type of fuel were used as a basis for the calculation, which are presented in the following tables:	✓

Fuel type	Density (Kg/l)	Net Caloric Value (TJ/Kg)	FE CO_2 (Kg/TJ)	FE CH_4 (Kg/TJ)	FE N_2O (Kg/TJ)
Crude - stationary	0.939	0.000041	77,956	5.5	1.1
Diesel - B9 stationary	0.86	0.000042149	74,831	5.5	1.1
B10 Diesel / mobile (light vehicle)	0.86	0.000042149	74831	5.6	6.7
COESGEN	0.849	4.04E-05	78,281	5.5	1.1
LPG	0.78	0.000099	47,289	1.7	1.5
Gas - stationary Colombia	0.78	0.000036	55,539	1.7	0.2

Information subject to reasonable assurance	Criteria	Nothing caught our attention (✓)

Gas - stationary Canada A3	0.78	0.000036	56,300	1.7	0.2

The calculation of the value of indirect emissions from the combustion of third-party fuels corresponds to the multiplication of the emissions factor determined for each gas by the fuel consumption value. For the consolidation in tons of CO_2 equivalent, the emissions generated for each gas are added once each of these is multiplied by the Global Warming Potential (GWP) of the gas. The potentials for each gas are presented below (IPCC, 2007):

Gas	Global Warming Potential
Carbon dioxide (CO_2)	1 (IPCC, 2007)
Methane (CH_4)	25 (IPCC, 2007)
Nitrous oxide (N_2O)	298 (IPCC, 2007)

✓

- **Fugitive emissions from third party refrigeration and air conditioning systems:** refers to leakage values in refrigeration and air conditioning equipment used in Workover/Completion (WO/CO) activities, drilling and administrative offices belonging to the reporting companies during the year under review, the details of these facilities are presented below:

✓

  - WO/CO
    - Aguas Blancas Block
    - Cabrestero Block
    - Capachos Block
    - Llanos 26 Block
    - Llanos 32 Block
    - Llanos 94 Block
    - Los Ocarros Block
    - VIM-1 Block
  - Drilling
    - CPO-11 Block
    - Aguas Blancas Block
    - Cabrestero Block
    - Fortuna Block
    - Playón Block

Information subject to reasonable assurance	Criteria	Nothing caught our attention (✓)
	The gases included in the calculation of indirect GHG emissions associated with refrigeration and air conditioning equipment are hydrofluorocarbons (HCF) and hydrochlorofluorocarbons (HCFC), including refrigerants R-22, R-410a and R-422d. To estimate emissions, the average leakage of refrigerant gas reported by equipment manufacturers was considered, where it is averaged that about 3% of the gas is lost each year in commercial equipment with capacity between 0.5 and 100 kilograms of refrigerant. The number of equipment used in the aforementioned activities during the year under review was considered and global warming potential data were used (IPCC, 2007). The calculation corresponds to the multiplication of the factor determined for each gas by the amount of leakage of this to obtain the value of CO_{2e}. The potentials used in the calculation of fugitive emissions from cooling and air conditioning systems are presented in the following table:	✓

Refrigerant gas	Global Warming Potential
HCFC: R-22	1810 (IPCC, 2007)
HFC: R-422d	2729 (IPCC, 2007)
HFC: R-410a	2088 (IPCC, 2007)

	• **Fuel transportation (crude and gas):** refers to the fuel consumption for vehicles used for the transportation of crude and gas produced by the reporting companies during the year under review. The facilities included in the calculation are presented below: ○ Production ■ Cabrestero Block ■ Capachos Block ■ Llanos 16 Block ■ Llanos 26 Block ■ Llanos 30 Block ■ Llanos 32 Block ■ Llanos 40 Block ■ Los Ocarros Block ○ Marketing The gases included in the calculation of indirect GHG emissions associated with fuel transportation are: Carbon Dioxide (CO_2), Methane (CH_4) and Nitrous Oxide (N_2O). CO_2 emission factors, density and caloric values from FECOC (2016) for both diesel and natural gas were used to estimate emissions. Methane and nitrous oxide emission factors were taken from IPCC (2006) for diesel fuel, which are presented in the following table:	✓

Information subject to reasonable assurance	Criteria	Nothing caught our attention (✓)

Fuel type	Density (Kg/l)	Net Caloric Value (TJ/Kg)	FE CO_2 (Kg/TJ)	FE CH_4 (Kg/TJ)	FE N_2O (Kg/TJ)
Diesel B10 / mobile	0.86	0.000042149	74831	5.6	6.7
Natural gas vehicles			1.98	3.28	0.107

✓

The calculation of the value of indirect GHG emissions from the transportation of crude and gas corresponds to the consumption of gallons of fuel, whose result is obtained from the performance values according to the type of vehicle and kilometers traveled. For the consolidation in tons of CO_2 equivalent, the emissions generated for each gas are added once each of these is multiplied by the Global Warming Potential (GWP) of the gas. The potentials for Carbon Dioxide (CO_2), Methane (CH_4) and Nitrous Oxide (N_2O) are previously mentioned in the **third-party fuel combustion** source.

✓

- **Air and ground transportation of personnel:** refers to the fuel consumption of vehicles used for ground and air transportation of personnel of the reporting companies during the year under review for all areas.

  The gases included in the calculation of indirect GHG emissions associated with the transportation of personnel by land and air are: Carbon Dioxide (CO_2), Methane (CH_4) and Nitrous Oxide (N_2O). CO_2 emission factors, density and caloric values from FECOC (2016) were used to estimate emissions. Methane and nitrous oxide emission factors were taken from IPCC (2006) for each fuel type (diesel and jet fuel), which are presented in the following table:

✓

Fuel type	Density (Kg/l)	Net Caloric Value (TJ/Kg)	FE CO_2 (Kg/TJ)	FE CH_4 (Kg/TJ)	FE N_2O (Kg/TJ)
B10 Diesel / mobile	0.86	0.000042149	74831	5.6	6.7
Gasoline / mobile	0.74	0.000045329	69323	59.8	6
JET A1 Fuel / mobile	0.83	3.55769E-05	88461.13	0.6	2.8
Natural gas vehicles		0.000048	56100	92	3

The calculation of the value of indirect GHG emissions from the transportation of personnel considered the record of traveled kilometers, flight hours and air tickets purchased (origin and destination) and the associated fuel gallon consumption. For the consolidation in tons of CO_2 equivalent, the emissions generated for each gas are added once each of these is multiplied by the Global Warming Potential (GWP) of the gas. The potentials for Carbon Dioxide (CO_2), Methane (CH_4) and Nitrous Oxide (N_2O) are previously mentioned in the **third-party fuel combustion** source.

✓

✓

Information subject to reasonable assurance	Criteria	Nothing caught our attention (✓)
	• **Machinery transportation:** refers to the fuel consumption of vehicles used in the transportation of machinery by the reporting companies during the year under review, the facilities included in the calculation are presented below: ○ Production, categorized by vehicles and machinery ○ WO/CO ■ Aguas Blancas Block ■ Cabrestero Block ■ Capachos Block ■ Llanos 26 Block ■ Llanos 32 Block ■ Llanos 94 Block ■ Los Ocarros Block ○ Drilling ■ CPO-11 Block ■ Aguas Blancas Block ■ Cabrestero Block ■ Fortuna Block ■ Playón Block ○ Civil works ■ Capachos Block ■ Llanos 10 Block ■ Llanos 16 Block ■ Llanos 26 Block ■ Llanos 32 Block ■ Llanos 94 Block ■ CPO-11 Block ■ Eden Block ■ Ocarros Block ■ Playón Block ■ Aguas Blancas Block ■ Fortuna Block ■ Cabrestero Block ■ Merecure Block ○ Facilities ■ Aguas Blancas Block ■ Cabrestero Block ■ Capachos Block ■ Llanos 32 Block	✓

Information subject to reasonable assurance	Criteria	Nothing caught our attention (✓)

The gases included in the calculation of indirect GHG emissions are: Carbon Dioxide (CO_2), Methane (CH_4) and Nitrous Oxide (N_2O). CO_2 emission factors, density, and caloric values from FECOC (2016) were used to estimate emissions. Methane and nitrous oxide emission factors were taken from IPCC (2006) for diesel fuel, which are presented in the following table:

Fuel type	Density (Kg/l)	Net Caloric Value (TJ/Kg)	FE CO_2 Kg/TJ)	FE CH_4 (Kg/TJ)	FE N_2O (Kg/TJ)
B10 Diesel / mobile	0.86	0.000042149	74831	5.6	6.7

✓

The calculation of the value of indirect GHG emissions from the transportation of machinery corresponds to the consumption of gallons of fuel, the result of which is obtained from the performance values according to the type of vehicle and kilometers traveled. For the consolidation in tons of CO_2 equivalent, the emissions generated for each gas are added once each of these is multiplied by the Global Warming Potential (GWP) of the gas. The potentials for Carbon Dioxide (CO_2), Methane (CH_4) and Nitrous Oxide (N_2O) are previously mentioned in the **third-party fuel combustion** source.

✓

- **Use of paper:** refers to the purchase values of paper (kilograms) used for administrative activities of the reporting companies during the year under review, the facilities included in the calculation are presented below:

  - Bogotá Office
  - Calgary Office

  In this case, the Bogotá office is the one that consolidates the total paper consumption for the different offices located throughout the country. The emission factor used in the calculation of indirect GHG emissions from the use of paper is 1.05 t CO_2 per ton of paper. This value corresponds to the EF reported for a paper production industry that is supplied from forests planted for this purpose (Silva et al, 2015). The calculation of the value of emissions associated with the use of paper corresponds to the multiplication of the indicated emissions factor by the total amount of paper purchased in the administrative offices during the year under review.

✓

- **Wastewater treatment:** refers to the total volume of wastewater generated in the production areas, administrative activities, drilling, WO/CO, facilities and civil works of the reporting companies during the year under review, the detail of these facilities is presented below:

  - Production

    - Cabrestero Block
    - Llanos 16 Block
    - Llanos 26Block
    - Llanos 30 Block
    - Llanos 32 Block
    - Llanos 40 Block
    - Playón Block
    - VIM-1 block
    - Los Ocarros Block

Information subject to reasonable assurance	Criteria	Nothing caught our attention (✓)
	■ Aguas Blancas Block ■ Capachos Block ○ Drilling ■ Cabrestero Block ■ Aguas Blancas Block ■ Playón Block ■ CPO-11 Block ■ Fortuna Block ○ WO/CO ■ Cabrestero Block ■ Capachos Block ■ Los Ocarros Block ■ Llanos 94 Block ■ CPO- 11 Block ○ Civil Works ■ Cabrestero Block ■ Llanos 10 Block ■ Llanos 16 Block ■ Llanos 26 Block ■ Llanos 32 Block ■ Llanos 94 Block ■ Eden Block ■ Fortuna Block ■ CPO-11 Block ■ Aguas Blancas Block ■ Merecure Block ■ Los Ocarros Block ■ Capachos Block ■ Playón Block ○ Facilities ■ Cabrestero Block ■ Aguas Blancas Block ■ Capachos Block ■ Llanos 32 Block	

Information subject to reasonable assurance	Criteria	Nothing caught our attention (✓)
	○ Bogotá Office	✓
	For the calculation of GHG associated with wastewater treatment and discharge to sewers, it was necessary to initially estimate the amount of methane (CH_4) and nitrous oxide (N_2O) produced as a result of the degradation of organic matter present in the wastewater. In the case of water discharged to the sewer, data on the amount of nitrogen in protein (0.16 kg nitrogen/kg protein) and the approximate amount of protein consumed by a Colombian (23.36 kg/person/year; IDEAM, 2015) were used to estimate nitrous oxide emissions. This information was multiplied by the emission factor 0.005 kg N_2O-N/kg N.	
	For methane, averages of degradable organic matter - Biochemical Oxygen Demand (BOD) (38.4 g/person/day) were used (IDEAM, 2015). Considering the receiving body of these waters, a methane correction factor of 0.3 (MFC) was used (IPCC, 2006). The maximum methane production factor 0.6 kg CH_4/ kg BOD (IPCC, 2006) was considered, and an additional factor was included for the discharge of waste with protein from the casino of the different locations (1.25). The following variables and emission factors were used to estimate the emissions associated with wastewater treatment plants: 3 kg COD/m3 (chemical oxygen demand/m3), 0.25 kg CH_4/kg COD (maximum methane production capacity) and a correction factor of 0.05 (MFC) associated with the treatment system (WWTP).	✓
	Once the methane and nitrous oxide emissions were calculated, to estimate the total volume of wastewater (industrial and domestic) produced in the facilities mentioned above, the record of wastewater delivery (barrels) for treatment and final disposal was taken into account and in case those records were not available, the volume of wastewater generated was calculated from the number of workers in each area, the number of days worked and the averages of daily protein consumption and generation of degradable organic matter reported by IDEAM (2015) for the population of Colombia, and in this way the amount of wastewater that was discarded in sewers or that was delivered to third parties for treatment in wastewater treatment plants (WWTP) was calculated.	✓
	The calculation of the value of indirect GHG emissions from wastewater treatment corresponds to the multiplication of the emission factor determined for each gas by the total volume of wastewater generated. For consolidation in tons of CO_2 equivalent, the emissions generated for each gas are added once each of these is multiplied by the Global Warming Potential (GWP) of the gas. The potentials for Methane (CH_4) and Nitrous Oxide (N_2O) are previously mentioned in the **third-party fuel combustion** source.	✓
	• **Solid waste management and treatment:** refers to the total volume of solid waste generated in the production areas, administrative activities, drilling, WO/CO, facilities and civil works of the reporting companies during the year under review, the detail of these facilities is presented below:	
	○ Production	
	■ Cabrestero Block ■ Llanos 16 Block ■ Llanos 26 Block ■ Llanos 30 Block ■ Llanos 32 Block ■ Llanos 40 Block ■ Playón Block, VIM-1 ■ Los Ocarros Block ■ Aguas Blancas Block ■ Capachos Block ■ Fortuna Block	

Information subject to reasonable assurance	Criteria	Nothing caught our attention (✓)
	○ Civil Works ■ Llanos 94 Block ■ Eden Block, Fortuna ■ CPO-11 Block ■ Llanos 10 Block ■ Aguas Blancas Block ■ Merecure Block ■ Los Ocarros Block ■ Llanos 26 Block ■ Llanos 16 Block ■ Capachos Block ■ Playón Block ○ WO/CO ■ Aguas Blancas Block ■ Playón Block ■ Fortuna Block ■ Cabrestero Block ■ Capachos Block ■ Llanos 94 Block 94 ■ CPO-11 Block ○ Drilling ■ Cabrestero Block ■ Aguas Blancas Block ■ Playón Block ■ CPO-11 Block ■ Fortuna Block ○ Civil works ■ Cabrestero Block ■ Llanos 10 Block ■ Llanos 16 Block ■ Llanos 26 Block ■ Llanos 32 Block ■ Llanos 94 Block ■ Eden Block	

<table>
<tr><th>Information subject to reasonable assurance</th><th>Criteria</th><th>Nothing caught our attention (✓)</th></tr>
<tr><td></td><td>

Fortuna Block
CPO-11 Block
Aguas Blancas Block
Merecure Block
Los Ocarros Block
Capachos Block
Playón Block

Facilities

Cabrestero Block
Aguas Blancas Block
Capachos Block
Llanos 32 Block

Bogotá Office

To estimate GHG emissions from solid waste management and disposal, it was necessary to initially estimate the amount of CO_2 emissions associated with solid waste disposal through incineration, using data on the percentage of dry matter content of wet weight, total carbon content of dry weight and fraction of fossil carbon of total carbon for each waste material, as shown in the table below (IPCC, 2006):
<table>
<tr><th>Contaminated material</th><th>Dry matter content as % of wet weight</th><th>Total carbon content in % of dry weight</th><th>Fossil carbon fraction in % of total carbon</th></tr>
<tr><td>Paper/Cardboard</td><td>0.9</td><td>0.46</td><td>0.01</td></tr>
<tr><td>Wood</td><td>0.85</td><td>0.5</td><td>0</td></tr>
<tr><td>Plastic</td><td>1</td><td>0.75</td><td>1</td></tr>
<tr><td>Textiles</td><td>0.8</td><td>0.5</td><td>0.2</td></tr>
<tr><td>Rubber/Leather</td><td>0.84</td><td>0.67</td><td>0.2</td></tr>
</table>
</td><td>✓</td></tr>
</table>

Information subject to reasonable assurance	Criteria	Nothing caught our attention (✓)
	The oxidation factor used for contaminated industrial waste was 1. The methane and nitrous oxide emission factors for incinerated waste were 0.2 kg CH_4/ton waste and 100 g N_2O/ton waste (IPCC, 2006).	✓
	To estimate GHG emissions from solid waste disposed in landfills, a first order decomposition model was used (IPCC, 2006), as well as a decomposition time of 100 years in accordance with the provisions of ISO 14064-1. The physical composition of solid waste with degradation potential was taken from the report of the Superintendencia de Servicios Públicos Domiciliarios de Colombia reported by IDEAM (2015) and corresponds to the following: Cardboard 3.92%, Paper 3.7%, Textiles 3.17%, Organic 56.44%, Leather 0.53% and Rubber 0.32%.	✓
	To estimate the total volume of waste generated in the Bogotá offices, facilities and civil works, it was used the number of workers and days worked at each location. The national statistics on waste generation and its composition given by the Superintendencia de Servicios Públicos Domiciliarios de Colombia (2015) were also applied. As for solid waste from the production areas, the records of kilograms of waste delivered to third parties for treatment and final disposal were used. Emissions associated with the decomposition of paper, cardboard, textiles and organic waste were estimated from records of the weight of each of these wastes that were collected in the work camps.	
	The calculation of the value of indirect GHG emissions from the management and treatment of solid waste corresponds to the multiplication of the emission factor determined for each gas by the total volume of generated waste. For the consolidation in tons of CO_2 equivalent, the emissions generated for each gas are added once each of these is multiplied by the Global Warming Potential (GWP) of the gas. The potentials for Methane (CH_4) and Nitrous Oxide (N_2O) are previously mentioned in the **third-party fuel combustion** source.	✓
	• **Fugitive emissions associated with the transportation of fuel (crude and gas):** refers to the values of leaks that occur in vehicles and the pipeline during the transportation of gas and crude oil in the production activities of the reporting companies.	
	The IPCC (2006) emission factors and IPCC (2007) global warming potentials for gases associated with fugitive emissions were used to estimate fugitive emissions, as shown in the table below:	

Category	FE CH_4	FE CO_2	FE N_2O	Unit
Transportation of crude in tractor-trailers	0.000025	0.0000023	N/A	Gg per 1,000 m3 of oil production transported in tractor-trailers
Transportation of gas in tractor-trailers	0.0011	0.000051	N/A	Gg per 1000000 m3 distributed (sales)
Transportation of pipeline gas	-	-	N/A	Gg per 1000000 m3 of marketable gas

	The calculation of fugitive emissions generated in the transportation of crude oil and gas corresponds to the multiplication of the emissions factor determined by the amount of transported gas (m^3) or crude (barrels). For the consolidation in tons of CO_2 equivalent, the emissions generated for each gas are added once each of these is multiplied by the Global Warming Potential (GWP) of the gas. The potentials for Carbon Dioxide (CO_2), Methane (CH_4) and Nitrous Oxide (N_2O) are previously mentioned in the **fuel combustion** source.	✓

<table>
<tr><th>Information subject to reasonable assurance</th><th>Criteria</th><th>Nothing caught our attention (✓)</th></tr>
<tr><td></td><td>

Refining of crude oil produced: refers to the number of emissions estimated for production activities in the blocks granted to the reporting companies during the year under review, these facilities are mentioned below:

Production

Aguas Blancas Block
Boranda Block
Cabrestero Block
Capachos Block
Fortuna Block
Llanos 16, 26, 30, 30, 32, 40 Block
Los Ocarros Block
Merecure Block
VIM-1 Block

For the basis of the calculation, the emission factors indicated in Ecopetrol's sustainability report for 2019 (Ecopetrol, 2020) were used, as shown in the following table:
<table>
<tr><td>Fuel type</td><td>FE CO_2 (Kg/barrel loaded at refinery)</td><td>FE CO_2 (Kg/barrel loaded at refinery)</td><td>FE CH_4 (Kg/barrel loaded at refinery)</td><td>FE N_2O (Kg/barrel refinery load)</td></tr>
<tr><td>Crude</td><td>42.81</td><td>41.20091213</td><td>0.059059494</td><td>0.000444968</td></tr>
</table>
To estimate the GHG emissions associated with crude oil refining, the number of barrels of crude oil marketed for domestic and international refining was considered. The calculation corresponds to the multiplication of the emissions factor determined by the amount of produced gas. For the consolidation in tons of CO_2 equivalent, the emissions generated for each gas are added once each of these is multiplied by the Global Warming Potential (GWP) of the gas. The potentials for Carbon Dioxide (CO_2), Methane (CH_4) and Nitrous Oxide (N_2O) are previously mentioned in the fuel combustion source.

Use of products sold (crude oil, LPG, Compressed Natural Gas): refers to the number of estimated emissions for the products sold by the reporting companies during the year under review, the areas where the product is generated are mentioned below:

Production

Aguas Blancas Block
Boranda Block
Cabrestero Block
Capachos Block

</td><td>✓</td></tr>
</table>

Information subject to reasonable assurance	Criteria	Nothing caught our attention (✓)

- Fortuna Block
- Llanos 16, 26, 30, 30, 32, 40 Block
- Los Ocarros Block
- Merecure Block
- VIM-1 Block

For the basis of the calculation, emission factors were used as the basis for calculating CO_2, CH_4 and N_2O emission factors indicated in the Ecopetrol company's sustainability report for 2019 (Ecopetrol, 2020), as well as density values and caloric values for each type of fuel as presented in the following table:

Fuel type	Density (Kg/l)	Net Caloric Value (TJ/Kg)	FE CO_2	FE CH_4	FE N_2O
Crude	0.9390	0.000041	41.20091213	0.059059494	0.000444968
CNG	0.78	35.65	55539.12	1.5	0.165
LPG	0.539	0.00009922	47289.338	1.65	0.165

✓

To estimate emissions, the quantities of sold products, such as barrels of crude oil for power generation were used; the amount of MBTU of compressed natural gas for residential consumption (CNG), and the kg of LPG and MBTU of CNG for industrial consumption were also used. ✓

In addition, considering that the barrels of crude that were sold for refining will result in the production of a wide variety of products and be used in multiple ways, the mass balance principle was used to calculate the potential emissions associated with their use. In this way, it is understood that all the carbon that enters the refinery will eventually be released into the atmosphere, and as such, it can be estimated that the resulting emissions correspond to the (stationary) burning of all the crude produced and sent to refining. ✓

The calculation of indirect emissions from the use of sold products corresponds to the multiplication of the determined emissions factor by the amount of transported gas (m3) or crude (barrels). For the consolidation in tons of CO_2equivalent, the emissions generated for each gas are added once each of these is multiplied by the Global Warming Potential (GWP) of the gas. The potentials for Carbon Dioxide (CO_2), Methane (CH_4) and Nitrous Oxide (N_2O) are previously mentioned in the **fuel combustion** source.

The total value of scope 3 GHG emissions corresponds to the sum of the total of other indirect GHG emissions calculated for each emission source through the application of the following formula: ✓

Other indirect GHG emissions (Scope 3) in tons of CO_2e = *Ton of CO_2 equivalent emissions from third party fuel combustion activities + Ton of CO_2 equivalent emissions from fugitive emissions from third party refrigeration and air conditioning systems + Ton of CO_2 equivalent emissions from fuel transportation + Ton of CO_2 equivalent emissions from air and ground transportation of personnel + Ton of CO_2 equivalent emissions from Ton of CO_2 emissions equivalent for the transport of machinery + Ton of CO_2 emissions equivalent for the use of paper + Ton*

Information subject to reasonable assurance	Criteria	Nothing caught our attention (✓)
	of CO_2 *emissions equivalent for the treatment of wastewater + Ton of* CO_2 *emissions equivalent for the handling and treatment of solid waste + Ton of* CO_2 *emissions equivalent for fugitive emissions associated with the transport of fuel + Ton of* CO_2 *emissions equivalent for the Refining of crude oil produced + Ton of* CO_2 *emissions equivalent for the use of products sold* The above is presented in accordance with the in the IPCC, 2006 and the technical standard in the Greenhouse Gas Inventory 2020 of the reporting companies, which can be found in the document "Informe GEI Parex_22072021_V1.5.pdf", as well as the detail of the calculations presented in the file "CALCULOS GEI_PAREX FINAL 22072021.xlsx", where the Emission Factors (EF), Global Warming Potentials and consumption data, leaks, traveled kilometers and other data used for the estimation of emissions can be found. Both documents are managed by the Sustainability Area. The scope of the assurance was limited to reconciliation of the information reported in the GHG Inventory, in relation to the sources mentioned in the criteria, provided by the Sustainability Coordination (which consolidates this information from the records and reports of other areas of the companies); to the validation, based on samples, of the existence of the source data, and to the recalculation of the final values of the established formulas in the criteria based on the information included in those sources, for selected samples. It did not include assessment of the reasonability or suitability of the sources, emission factors, caloric values, densities, and global warming potentials mentioned in the criteria, the assessment of the integrity of the information sources used for the calculation for the year under review, nor the evaluation of the occurrence of the events that originated the report.	✓