

## **ENVIRONMENTAL PERFORMANCE INDICATORS**

## ENERGY TRANSMISSION COMPANIES

	Performance data	Unit	2019	2020	2021**	2022	GRI indicator
S O	Scope 1	Ton CO2eq	25,232.00	29,924.00	30,562.00	29,438.00	305-1
e ga GHC	SF6 emissions	kg	1,004	1,081	1,153	1,060	305-1
enhous iissions	Indirect GHG emissions (Scope 2)	Ton CO2eq	6,018.71	6098.27	3,644.90	4,902.80	305-2
Gre em	Other indirect GHG emissions (Scope 3)	Ton CO2eq	5,842.20	3,342.11	40946.48	4915.47	305-3
ption	Municipal water supply	Mio.m3	0.098	0.104	0.080	0.084	303-1
er consum	Fresh surface water	Mio.m3	0.004	0.009	0.006	0.005	303-1
	Fresh ground water	Mio.m3	0.098	0.077	0.071	0.081	303-1
Wat	Total net water consumption	Mio.m3	0.201	0.190	0.157	0.170	303-1
	Non-renewable fuels purchased and consumed	MWh	5,749.69	7,137.44	8,409.36	10,154.54	302-1
Energy consumption	Non-renewable electricity purchased	MWh	11,778.33	13,301.86	13,638.50	9,858.63	302-1
	Renewable energy purchased	MWh	36,490.59	34,698.09	33,925.18	48,582.16	302-1
	Renewable fuels purchased and consumed	MWh	4,836.67	4,397.45	0.00	5,032.35	302-1
	Total non-renewable energy consumption	MWh	17,528.02	20,439.30	22,047.86	20,013.17	302-1
	Total renewable energy consumption	MWh	41,327.26	39,095.54	33,925.18	53,614.51	302-1
	Total waste generation	Ton	3,537.19	2,521.68	6,089.57	3,345.90	306-2
	Total used/recycled/sold waste	Ton	3,301.60	2,388.57	5,924.65	3,179.83	306-2
	Total waste taken to final disposal	Ton	235.59	133.11	164.92	166.07	306-2
	Waste landfilled	Ton	235.59	133.11	164.92	156.37	306-2
fe	Waste incinerated with energy recovery	Ton	-	0	0	0	306-2
s was	Waste incinerated without energy recovery	Ton	-	0	0	0	306-2
ardou	Waste otherwise disposed	Ton	-	0	0	9.7	306-2
k Haza	Total hazardous waste generation	Ton	53.7	472.8	1,948.62	228.20	306-2
aste &	Hazardous waste recycled/reused	Ton	-	393.95	1,848.67	186.44	306-2
Ň	Hazardous waste taken to final disposal	Ton	53.7	78.88	99.97	41.76	306-2
	Hazardous waste landfilled	Ton	-	1.35	0.31	0.15	306-2
	Hazardous waste incinerated with energy recovery	Ton	-	0.19	0	0.0	306-2
	Hazardous waste incinerated without energy recovery	Ton	-	36.41	39.99	2.88	306-2
	Hazardous waste otherwise disposed (security cell)	Ton	-	40.9	59.65	38.73	306-2

Information verified by KPMG as an independent third party (See last pages).



Since 2018, the scope of the information has been extended, covering ISA, ISA INTERCOLOMBIA, ISA REP, ISA CTEEP, ISA TRANSELCA, ISA INTERCHILE and ISA BOLIVIA.

\*\* For 2021, ISA INTERCOLOMBIA, ISA CTEEP, and ISA REP made re-expressions of previous years, due to the refinement of information systems and data verification with third parties. And was included information of CTEEP's subsidiaries.

The Environmental Corporate Policy guides ISA and its companies, promoting responsible management of the use of natural resources, their impacts, and risks, to ensure that processes are aligned with the pursuit of sustainable development. ISA carried out the setting of standards, objectives, goals, and environmental requirements, focused on the asset life cycle, which enables it to act in a preventive way and anticipate environmental risk management.

The ISA2030 strategy, inspired by sustainable value, proposes concrete initiatives for the reduction of environmental impacts. Specifically, it has explicitly established in its green pillar the reduction of its operation's environmental impacts. In the new materiality analyses performed by ISA Group in 2019 identified, among others, the management of environmental impacts as an issue that is relevant to the achievement of its strategy, and it is valued as such both internally and externally. For this, the company manages the main environmental impacts generated during the asset's life cycle and develops best practices to mitigate them.

These goals will also be included in the employee variable compensation system as an incentive for continuous improvement around eco-efficiency processes of ISA.

ISA, as a signatory since 2005 to the United Nations initiative, Global Compact, has the compromise of promoting practices to improve and contribute to the sustainable development goals, as well as maintaining a preventive approach that contributes to the environment. To be consistent with these principles, ISA and its companies develop actions to mitigate and adapt to climate change in three areas:

• Climate change management.

- Offsetting of Greenhouse Gases (GHG).
- Eco-efficiency

In general, for 2022 we continue with the coverage achieved in previous years corresponding to all 7 energy transmission companies (ISA, INTERCOLOMBIA, REP, CTEEP, INTERCHILE, ISA BOLIVIA and TRANSELCA).

The emission measurements were made through the inventory of Greenhouse Gases, under the World Resources Institute (WRI) methodology of GHG Protocol and the ISO14061-1 standard, identifying the Company main sources of emissions, direct and indirect. The reported emissions include Scopes 1, 2 and 3.

## **GREENHOUSE GASES – GHG-**

Emisiones GEI 2022	Unidad	ISA	INTERCOLOMBIA	ISA REP	ISA CTEEP	ISA BOLIVIA	INTERCHILE	TRANSELCA	INTERVIAL	ХМ	INTERNEXA	INTEIA	RUTA COSTERA	TOTAL FILIALES TRANSPORTE DE ENERGÍA	TOTAL OTROS NEGOCIOS	TOTAL
Alcance 1	Ton CO2eq	0	2.255	1.073	15.849	0,26	8.021	2.241	803	0	100	24	0	29.438	928	30.366
Alcance 2	Ton CO2eq	73	1.109	1.238	1.535	344	541	61	4.677	0	0	0	0	4.903	4.677	9.580
Alcance 3	Ton CO2eq	251	3.540	184	553	80	82	226	15.219	0	61	34	0	4.915	15.314	20.230





For 2022, a goal of reducing the emission of  $6,041 \text{ tCO}_{2}e$  through eco-efficiency actions was established, considering the consumption of water and energy, the generation of waste, and sustainable mobility. The results are positive since the consolidated goal was exceeded with a total  $6,758 \text{ CO}_{2}e$  avoided.

Thanks to our corporate offsetting program Conexión Jaguar, all subsidiaries are 100% carbon neutral (See IR page 97 https://www.isa.co/en/integrated-management-report-2022//) and are offsetting their carbon footprint through the purchase of 34,722 carbon credits from forestry conservation projects.

# **SCOPE 1**

ISA has a climate strategy aligned with joint priorities and actions of governments, society and companies, based on a consolidated practice of measuring, reducing, and offsetting greenhouse gases (GHG) produced by the operation of ISA's businesses. Likewise, our climate strategy is aligned with the TCFD recommendations.

ISA and its companies identified that, in terms of their direct GHG emissions (scope 1), more than 80% corresponds to leaks of sulfur hexafluoride gas, or SF6, which is installed in encapsulated substations and high-voltage switches. The Global Warming Potential (GWP) of this gas is 24,300 times higher than CO2, which is an important contribution to global warming per unit emitted.

It is recalled that the subsidiary CTEEP is the group's largest energy transmission company and has a high percentage of encapsulated substations with gas Insulated Switchgear (GIS) older than 20 years, which in addition to require a greater amount of SF6, allows a much higher percentage of leaks given the available technology at the time of purchase and installation.

Until 2020 the consolidated value at the business group level achieved the corporate goal of keeping the level of the leaks below the 0.5% of the total Installed SF6 as indicated by the IEC 62272-203, used as a reference: The result for 2020 was 0.428% and in the same year ISA established a goal for 2030 to exceed the requirement of the standard, by reducing the goal by 15% and going from 0.5% to 0.425% of the total SF6 installed. In 2022 a consolidated leakage rate was 0.35%.

In 2021 we continued the improvement in the coverage achieved in previous years corresponding to all 7 energy transmission companies (ISA, INTERCOLOMBIA, REP, CTEEP, INTERCHILE, ISA BOLIVIA, and TRANSELCA), by adding the CTEEP's subsidiaries.

As presented, when analyzing the information available for the last four years within the major scope of companies, the consolidated information for the ISA energy business shows an average result of 28,800 tCO2e emissions per year, besides incidents of SF6 leakage. This indicates we are reaching an asymptote curve for the management of the main direct SF6 source and the inexorable expansion of its use because there is still no substitute for high-voltage systems, and there is a tendency of energy authorities to include Gas Isolated Substations -GIS- (which require much larger amounts of SF6) in the technical specifications for the new power transmission lines.

The 2022 target involves most of ISA's subsidiaries of Energy Transmission. For new operations, mainly in Brazil, we are implementing data gathering and analysis. Regarding our emissions and targets, due to the nature of our business, most of our scope 1 emissions are related to SF6 leaks; therefore, our target is based on this source.



Despite ISA CTEEP, the greatest subsidiary managed to reduce the SF6 leakage level by 29% since 2016. It is worth noting that, as this is the affiliate with the highest proportion and quantity of GIS assets and, consequently, the greater SF6 inventory of the Group, compliance with the reference values is more difficult, especially due to older technology equipment, which permits a greater level of leaks. For this company to be below the standard as of 2023, a leakage level of 0.56% was defined as a target for 2022.

The emissions reported as total Scope 1 include ISA, INTERCOLOMBIA, REP, CTEEP, INTERCHILE, ISA BOLIVIA, and TRANSELCA. The 2022 emissions were 29,438 tCO2e, indicating the target (30,256 tCO2e) was reached.

To reduce direct GHG emissions, ISA continues with the implementation of preventive maintenance of high-voltage circuit breakers, replacement of high-voltage circuit breakers at the end of their useful life, comprehensive training plan and awareness processes addressed at maintenance operators to avoid leaks in manual processes, acquisition of state-of-the-art SF6 gas detectors to detect and monitor leaks in real-time, recovery and reuse of SF6 gas in good physicochemical conditions, improvement plan established in 2020 regarding SF6 inventory, management, and proper final disposal through certified companies.

## **SCOPE 2**

The second individual source of GHG emissions is associated with energy consumption (scope 2). In 2018 we established the goal of reducing energy consumption by 5% to 2019. After achieving it, most of our subsidiaries have reached high levels of efficiency, with a reduced margin for continuous improvement; therefore, since 2020 a reduction goal is established for companies with a baseline, equivalent to 1% of such, based on the average of the years 2015 - 2017. To be more demanding with respect to annual performance, the 2021 goal was calculated as the real consumption of the previous year minus 1% of the baseline; according to these premises, the subsidiaries will not have the margin to decrease their performance and incentives are given to annual continuous improvement.

If we analyze the target of 3,608.38 tCO2e and the 2022 real emissions (4,902 tCO2e), it indicates that the target was not reached.

Even though since 2017 the total purchase of non-renewable energy has been decreasing, the trend of indirect equivalent emissions is increasing. This is due to a greater coverage in the number of subsidiaries since 2018 and to the increase in national emission factors: As hydropower is the main source, and it is affected by climate variability, the performance variation and compliance with the target also depends on it.

It is highlighted that in 2022 no emissions were reported in scope 2 by ISA, because the energy demand of the administrative headquarters in Medellín is totally supplied by photovoltaic generation from solar panels and by the purchase of certified energy with zero emissions from renewable sources I-REC.

## **SCOPE 3**

This year ISA and INTERCOLOMBIA expanded the scope 3 measurements, so other categories were included, such as **Capital** goods purchased or acquired by the company, which includes accessories for transmission lines and electrical material in general for maintenance of substations, other spare parts for maintenance, among others, and **the category of acquired goods** and services was also expanded to include: consultancies, design services, environmental studies, training on various topics, among other services. The measurement will continue to be expanded with other subsidiaries in the coming years in the categories of the capital of Assets and Acquired Assets.

**Business travel - National and international flights:** The service provider reports the kilometers traveled per passenger as well as its equivalence in tonCO2e and no calculations are made by the subsidiaries to report this indicator. This year, national and international flights returned to a normal, thus being incremented compared to the Pandemic in 2020.

**Fuel-and energy-related activities (not included in Scope 1 or Scope 2):** For fuel emissions from transport used. Fuel Consumption for transportation of managers and technical commissions is taken from a detailed report of fuel gallons measured by each of the vehicles that provide the service. 100% of the data is calculated and reported to subsidiaries by the service provider of transportation services for managers and technical. The reported CO2 emissions were calculated based on the fuel consumption lists at the service stations presented by the contractor or the service provider of the contracted vehicle fleet.

**Downstream transportation and distribution**: Transport of waste to final disposal site: in most of the countries where we have a presence, the place where the waste is disposed of is far from the place where it is produced (main headquarters or substations), which means that the CO2 emissions associated with its transport are higher. However, with the purpose of reducing waste generation, different programs are being developed to improve the separation and recycling of solid waste, as well as the use of biodegradable waste in different sites and substations for the composting process.



Waste generated in operations: Ordinary waste and hazardous waste destined for final disposal. The measurement of emissions is made through the inventory of Greenhouse Gases, under the WRI methodology of GHG Protocol and theISO14064 standard.

# **ENERGY CONSUMPTION**

Few activities carried out by ISA Subsidiaries associated with Energy Transportation require the use of energy from non-renewable sources. In internal support processes, the energy generated is rarely used when there are failures in the energy supply system to the administrative headquarters, and for the business continuity it must be generated through Diesel plants.

For 2022 we continue with coverage achieved in previous years corresponding to all 7 energy transmission companies (ISA, INTERCOLOMBIA, REP, CTEEP with their subsidiaries with 100% of control), INTERCHILE, ISA BOLIVIA, and TRANSELCA).

When analyzing the information with the major scope of companies available for each year, the consolidated information for the ISA energy business shows improvements in its eco-efficiency performance trend across the last four years considering the increase in incomes.

TOTAL RENEWABLE ENERGY: In 2022, the 2021 data for renewable energy consumption due to the verification carried out with ICONTEC for carbon neutral certification.

In general, an increase is observed between 2019 and 2022 (approximately 20%). This growing trend of renewable energy consumption is mainly due to the acquisition of certified renewable energy through I-REC from companies, mainly INTERCOLOMBIA, ISA, and CTEEP. Additionally, the different countries where ISA is present have a growing energy matrix in renewable energies. For example, for Colombia in 2021 the percentage of renewable energy was 69.3% and in 2022 it was 85%. Additionally, at ISA's main headquarters in Medellín, a microgrid of solar panels have installed that covers approximately 14% of the total consumption of the headquarters and the other 86% is acquired through I-REC. In addition, ISA CTEEP has been increasing the acquisition of renewable by 5% for the last 4 years. (See climate change carbon neutral declaration bottom, page 7: https://www.isa.co/en/sustainable-value/environmental-management/).

TOTAL NON- RENEWABLE ENERGY: Compared to 2021 the consumption of non-renewable energy decreased in 2022, mainly because ISA CTEEP e ISA INTERCOLOMBIA had a reduction of approximately 4,000 MWH. It is mainly due to changes in the percentages of generation of the energy matrices of each country, changes in renewable fuels, and the acquisition of renewable energies.

In 2018 we established the goal of reducing energy consumption by 5% by 2019. After reducing consumption by 5%, most of our subsidiaries have achieved high levels of efficiency, with a reduced margin for continuous improvement; therefore, since 2020 a reduction goal is established for companies equivalent to the real consumption of the previous year minus 1%; according to these premises the subsidiaries will not have margin to decrease their performance and incentives are given to annual continuous improvement.

In 2022, the energy consumption target was achieved with 1,814 MWH of difference, which represents a 9% minus of consumption compared with 2021.

# WATER CONSUMPTION

ISA is not involved in any way with energy generation. The core business of ISA is the Transmission of energy. ISA is not a company with intense use of water and does not have water as input in its production process. Water is not an element for operating the national grid. Water is not a resource for business performance. ISA carries electricity; water consumption is exclusively for human consumption, cleaning work and irrigation of facilities. However, we recognize the importance of proper management of this natural resource, promoting programs in the headquarters and substations for its responsible and efficient use.

In 2018 we established the goal of reducing water consumption by 5% by 2019. After reducing consumption by 5%, most of our subsidiaries have achieved high levels of efficiency, with a reduced margin for continuous improvement; therefore, since 2020 a reduction goal is established for companies, equivalent to 1% of the previous year. According to these premises, the subsidiaries will not have a margin to decrease their performance, and incentives are given for annual continuous improvement.

For 2022 we continue with the coverage achieved in previous years corresponding to all 7 energy transmission companies: ISA, INTERCOLOMBIA, REP, CTEEP (with their subsidiaries with 100% of control), INTERCHILE, ISA BOLIVIA, and TRANSELCA. As presented this year, when analyzing the information with the major scope of companies available for each year, the consolidated information for ISA energy business shows improvements in its eco-efficiency performance trend across the last four years considering the increase in incomes.



In 2022 target, all power transmission companies were included. The target was established as the reduction of 1% of total net freshwater consumption in 2021. In 2022, the water consumption target (0.155 Mm3) was not achieved, mainly because INTERCOLOMBIA and REP returned maintenance activities to 100% and the people of substations had a greater presence in the facilities for this year compared to the occupation of the year 2020 and 2021, therefore, the consumption of water increased. Additionally, CTEEP had some water leaks at the Cabreúva substation in July, which have already been corrected. In addition, due to maintenance issues at the Cabreúva and Bom Jardim Substations, transformers were washed, which generated an increase in water consumption compared to the previous year.

The subsidiaries continue to develop actions to reduce the environmental impacts caused by water consumption. We highlight as good practices the implementation of Training plans on efficient use of resources and rainwater harvesting systems, storm runoff water in yards, atmospheric water generators, greywater filtration equipment for reuse, low water consumption toilet systems, composters and incinerators, and wastewater treatment through wetlands in some substations.

## WASTE DISPOSAL

Power Transmission is a service activity. The materials used at the end of their life cycle generate waste that is recyclable, mostly industrial surplus, which are again incorporated into the production line for the generation of the same component or other materials. Waste reported during the period is generated in the operation and maintenance of the headquarters, substations and transmission lines. There is a low level of waste generation in the activities of the energy transmission business; however, we are committed to the efficient management of waste.

In 2022 for waste disposal corresponds to the 7 energy transmission companies (ISA, ISA INTERCOLOMBIA, ISA REP, ISA CTEEP and their subsidiaries, ISA INTERCHILE, ISA BOLIVIA and ISA TRANSELCA).

As presented this year, when analyzing the information with the major scope of companies available for each year, the consolidated information for ISA energy business shows improvements in its eco-efficiency performance trend across the last four years considering the increase in incomes. Additionally, it is important to highlight that discrimination of waste disposition method started in 2020 in alignment with the GRI 306 standard update. For this reason, we do not have included in the figures the disposition methods for the year 2019.

It is important to note that we have a re-expression for the 2020 CTEEP information, as the waste disposal data for that year was reconstructed with the provider, managing to report them for that period.

In 2018 we established the goal of reducing waste that was to final disposal by 5% to 2019. After achieving it, most of our subsidiaries have reached high levels of efficiency, with a reduced margin for continuous improvement; therefore, since 2020 a reduction goal is established for companies, equivalent to 1% of the previous year. To be more demanding with respect to annual performance, the 2022 goal was established as the reduction of 1% of the waste taken to final disposal in the year 2021; according to these premises, the subsidiaries will not have a margin to decrease their performance and incentives are given to annual continuous improvement.

In 2022, the waste goal (163.27 tons) was not achieved mainly due to an increase in waste generation at CTEEP, due to maintenance works at some substations such as the Cabreúva, São José dos Campos, Taubaté, and Headquarters Mococa. Additionally, some Substations and headquarters of this subsidiary returned to face-to-face work during the year, such as the Bauru and Cabreúva. Likewise, in Mococa Headquarters some recyclable waste that was stored during 2021, was taken to final disposal in 2022.

The subsidiaries continue to develop actions to reduce the environmental impacts caused by the generation of waste. We highlight the implementation of separation at source in the facilities for delivery to recycler cooperatives, composting systems for the use of organic waste, and the implementation of compost bins in CTEEP, as well as the implementation of reusable cups and thermos for people in some substations. Implementation of a color code for segregation, and agreements with managers for the reuse and recycling of waste.

## HAZARDOUS WASTE

There is a low level of hazardous waste generation in the activities of the energy transmission business; however, we are committed to the efficient management of waste. The main hazardous waste generated in the power transmission business is electrical and electronic equipment, contaminated plastic, oleophilic material contaminated with oils, oil, and/or air filters, Silica or fluorescent tubes.

Due to the criticality of these wastes, given their CRETIB (Corrosive, Reactive, Explosive, Toxic, Flammable, and Biologically Infectious) characteristics, and the applicable environmental regulations, this variable has coverage for all the energy transmission subsidiaries since 2016, except INTERCHILE, which entered operation in 2018 and is currently reporting this variable.

When analyzing the information with the major scope of companies available for each year, the consolidated information for ISA energy business shows improvements in its eco-efficiency performance trend across the last four years considering the increase in incomes. Additionally, it is important to highlight that discrimination of hazardous waste disposition methods started in 2020 in



alignment with the GRI 306 standard update. For this reason, we do not have included in the table the disposition methods for the years 2018 and 2019.

ISA established the goal of reducing disposed of hazardous waste by 5% by 2019 for companies. After achieving it, most of our subsidiaries have reached high levels of efficiency, with a reduced margin for continuous improvement; therefore, since 2020 a reduction goal is established for companies, corresponding to 1% of the previous year. To be more demanding with respect to annual performance.

In the 2022 goal, all power transmission companies were included. The goal was established as the reduction of 1% of the hazardous waste taken to final disposal in the year 2021.

In 2022, the waste goal (98.97 tons) was achieved mainly due to INTERCOLOMBIA 2021 increasing the disposal of hazardous waste, due to in 2020 pandemic the waste had been stored and in 2021 it was disposed of. Additionally, this company has a contract with a management company that collects, separates, and recovers hazardous waste considered electrical and electronic equipment (or industrial surplus), incorporating it back into the life cycle. Additionally, CTEEP reduced the final disposal of hazardous waste in 2022 due to the generation decrease during the year, therefore, the waste was temporarily stored in each region, and in 2023 it will be taken to the final disposal. The decrease in the generation and disposal of this type of waste is also due to the annual maintenance plans, which can determine that there is no equipment for replacement or no have to the major maintenance, because considered them to be in good condition.

A consolidated practice in all the subsidiaries is to deliver used oils to certified companies for final disposal of reuse of them, guaranteeing they got the proper disposal. We also highlight the Environmental Education Programs that include the proper management of solid wastes including hazardous wastes, stand out and standardization of all facilities, hazardous waste storage warehouses.

Considering the cost reductions, the peculiarities, and the representativeness of our subsidiary in Brazil, ISA CTEEP, volumes of disposed of hazardous waste can also vary among the years besides operational conditions due to batch management. Companies are always looking for risk reduction related to hazard waste, as technologies and circular economy advances.

## **ENVIRONMENTAL IMPACTS DURING ASSETS LIFECYCLE**

ISA has 4 business units including Energy Transmission, Road Concessions, Information and Telecommunication Technologies and Management of Real-Time Systems. Among these, ISA's principal business is the Energy Transmission, where ISA take the energy from generation sources to either cities or large consumers. For this purpose, the market plays a key role in fulfilling the countries' energy demand. In most of the countries Colombia, Peru, Chile, Brazil, governments perform bids to award new infrastructure projects. Finally, the regulators define the quality metrics that determine the revenue.

Most of the subsidiaries do not have their own vehicle fleet and therefore there is no significant generation of NOx emissions. Most of the transportation for maintenance activities, business trips and employees commuting are performed by contractors and public transportation.

Energy transmission does not require combustion activities in either operation or maintenance that generate NOx, SOx, PM10, ash, gypsum, mercury, or dust. The main equipment operated to deliver the service are instrument transformers, power transformers, circuit breakers, disconnectors, towers, conductors, insulators, power cables, dielectric oil, and electronic equipment, among others, none of which requires a combustion activity.

These materials are not transformed at any time in the asset's life cycle, ISA make developments and put these pieces of equipment together to provide the service using metal parts (connectors, fittings, etc.) without the need to burn any fuel or the use of a material that can generate emissions.

During the entire life cycle of ISA assets, monitoring, and implementation of plans to reduce and manage environmental impacts is carried out.





# **Environmental incidents:**

An environmental incident is understood as: Case in which a situation arises that could affect a natural resource or third parties but could be controlled before this happened.

#### Environmental accident:

Unwanted events such as leaks, spills, explosions, fires, emissions, dumping, that generate a negative impact on:

The quality of the soil, water, or air

- The biodiversity
- Natural resources and protected areas (priority sites for conservation, wetlands, among others).
- Community or private infrastructure.
- Archaeological, historical, or cultural heritage sites and elements.

#### Environmental emergency:

When a situation arises, it affects the environment or third parties and exceeds the facility's response capacity.

This report reports the cases presented to ISA INTERCOLOMBIA:

	Year	#
	2018	1
	2019	-
Environmental incidents	2020	1
	2021	5
	2022	-

## **ELECTRICITY TRANSMISSION LOSSES:**

Losses in transmission network are barely manageable by the company, as it depends on the original design of the infrastructure. For instance, a larger conductor produces less losses than a thin one, therefore as energy flows through the conductor produces



less or more heat, accordingly. As a matter of fact, less heat means larger conductors as well as bigger investment in a context where companies bid for new infrastructure with optimal specifications at the lowest cost.

ISA develops new infrastructure following specifications defined by the government's entity (regulators/planners), this is the moment where ISA bids according to those technical and economics requirements. In addition, ISA has a long-term view for the infrastructure as it is demanded to provide high quality standards that enable an economic operation of the system.

According to the previous paragraph, the losses depend on existing network, its specific parameter and the amount of energy transmitted as well as its generation dispatch, which defines the path's flows and therefore the losses.

#### Calculation methodology:

The losses percentage is calculated as the difference between the energy put in the network (Generation) and the energy delivered by the network (Demand), divided by the energy put in the network. According to this formula:

%Losses = [(Generation-Demand)/Generation] \*100

## Where:

- % Losses: loss percentage in the transmission system
- Generation: generated energy injected into the electrical transmission system
- Demand: system demand measured at the borders of transmission networks

Generation (MWh): 330.452.827

Demand (MWh): 320.505.024

Losses (MWh): 10.251.473

### Losses (%): 3.10

The generation and demand values for calculating the 2022 consolidated indicator correspond to the sum of the variables of companies in Colombia, Peru, Brazil, Chile, and Bolivia. Brazil is the largest part of ISA group infrastructure with 20,828 km (43%) of 48,766 km in total. The main contribution to the average losses comes from Brazil, not only because the infrastructure is larger but also because approximately 51% of these infrastructure sits below 140 kV. On the other hand, there are initiatives undergoing to better measure ISA's losses. The latter is driving an improvement in calculations for losses and impacted the reduction. The latter shows that this calculation is performed using an approach that uses energy that gets into either national or state networks and then a calculation that is performed using aspects such as property factors to determine the specific value.

In most of countries this data is estimated by each of the companies based on information from the electricity market operators in each country, however in Chile as well as Peru's cases there are metering units installed that allow to quantify the energy in a very accurate manner. These organizations are national in scope and consequently none of the referenced web pages are in English.

- COLOMBIA: https://www.xm.com.co/Paginas/Home.aspx
- PERÚ: http://www.coes.org.pe/portal/
- BRASIL: http://dadosenergeticos.energia.sp.gov.br/portalcev2/intranet/Eletricidade/index.html ONS Operador Nacional do Sistema Elétrico and Brazilian regulator ANEEL - Agência Nacional de Energia Elétrica
- CHILE: Coordinador Eléctrico Nacional https://www.coordinador.cl/
- BOLIVIA: CNDC Comité Nacional de Despacho de Carga https://www.cndc.bo/estadisticas/



## **EVIDENCE OF CERTIFICATION BY KPMG:**



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#### Independent Limited Assurance Report to Directorate of Interconexión Eléctrica S.A. E.S.P.

We were engaged by the Management of Interconexión Eléctrica S.A. E.S.P., from now on ISA, to provide limited assurance on the non-financial information contained in the ISA's Integrated Management Report 2022 for the year ended December 31, 2022 ('the Report'). The information reviewed is circumscribed to the content referenced in the GRI index report and detailed in Annex 1.

#### Management's responsibilities

Management is responsible for the preparation and presentation of the Report in accordance with the Sustainability Reporting Standards of the Global Reporting Initiative (GRI Standards), as described in the GRI Index, which details compliance with requirement 8 of the GRI 1 and describes the declaration of use.

Management is also responsible for the information and the affirmations contained therein; of the determination of **ISA's** objectives, in relation to the performance and presentation of information on sustainable development, including the identification of stakeholders and material topics; and the adequate establishment and maintenance of the control and performance management systems from which the reported information is obtained.

This responsibility also includes designing, implementing, and maintaining the internal control necessary to allow the preparation of sustainability assured parameters and indicators free of material errors due to fraud or error.

The Management is also responsible for preventing and detecting fraud and for identifying and ensuring that Company complies with laws and regulations applicable to its activities.

Management is also responsible for ensuring that staff involved with the preparation and presentation of the Report are properly trained, and the information systems are updated.

### KPMG responsibilities

Our responsibility is to express a limited assurance conclusion about the preparation and presentation of the sustainability parameters included in the Sustainability Report of ISA.

Our work has been done in accordance with International Standard on Assurance Engagements (ISAE) 3000, other than Audits or Reviews of Historical Financial Information, issued by the International Auditing and Assurance Standards Board. And the ISAE 3410 standard, Assurance Engagements on Greenhouse Gas Statements, issued by the International Auditing and Assurance Standard Board. That Standard requires that we plan and perform the engagement to obtain limited assurance about whether the Report is free from material misstatement.





KPMG applies International Standard on Quality Control 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.

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, confidentiality and professional behavior and competence. Based on the above, we confirm that we have carried out this assignment for **ISA** independently and free of conflict of interest.

ISAE 3000 and ISAE 3410 require that we plan and perform our work in such a way that we obtain limited security on whether the parameters and indicators of sustainability are free of material errors.

## Inherent limitations

Due to the inherent limitations of any internal control structure, it is possible that errors or irregularities in the information presented in the Report may occur and not be detected. Our engagement is not designed to detect all weaknesses in the internal controls over the preparation and presentation of the Report, as the engagement has not been performed continuously throughout the period and the procedures performed were undertaken on a test basis.

## Limited assurance of parameters and sustainability indicators

A limited assurance engagement on a Sustainability Report consists of making inquiries, primarily of persons responsible for the preparation of the information presented in the report, and applying analytical and other evidence gathering procedures, as appropriate. These procedures included:

- Inquiries with the management to gain an understanding of the process carried out by ISA, for determining the material topics, as well as the participation of the stakeholders in this process.
- Verification of consistency of the information that responds to the General Disclosures of the GRI 2 standard with the systems or internal documentation.
- Verification of the process for determining GRI 3 material issues.
- Interviews with senior management and relevant staff of the company, on the application of policies and the strategy in terms of sustainability, governance, ethics, and integrity.



# KPMG

- Interviews with relevant staff of ISA at corporate and business unit level responsible for the preparation of parameters and indicators subject to limited assurance.
- Comparison the Limited Assurance Sustainability Parameters to relevant underlying sources on a sample basis to determine whether all the relevant information has been appropriately included in the Sustainability Report.
- Analysis of the processes of collection and internal control of the quantitative data in the report, regarding the reliability of the information, using analytical procedures and review tests based on sampling.
- Reading of the Limited Assurance Sustainability Parameters and Indicators presented in the Report to determine if they are in line with our general knowledge and experience in relation to the sustainability performance of ISA.
- Verification that the financial information reflected in the report has been extracted from the annual accounts of ISA, audited by independent third parties.
- Analysis of the coherence between the principles and elements of the international framework for integrated reports of the International Integrated Reporting Council, and the information included in the Integrated Report.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement, and consequently the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained has a reasonable assurance engagement been performed. Accordingly, we do not express a reasonable assurance conclusion on the Limited Assurance Sustainability Parameters.

## Purpose of our Report

In accordance with the terms of our engagement, this assurance report has been prepared for **ISA** with the purpose of assisting to Management in determining if the sustainability parameters and indicators subject to limited assurance are prepared and presented in accordance with the Sustainability Reporting Standards of the Global Reporting Initiative (GRI Standards).

## Restriction of use of our report

Our report should not be regarded as suitable to be used or relied on by any party wishing to acquire rights against KPMG other than **ISA** for any purpose or in any other context. Any party other than **ISA** who obtains access to our report or a copy thereof and chooses to rely on our report (or any part thereof) will do so at its own risk. To the fullest extent





permitted by law, we accept or assume no responsibility and deny any liability to any party other than **ISA** for our work, for this independent limited assurance report, or for the conclusions we have reached.

Our report is released to ISA on the basis that it shall not be copied, referred to or disclosed, in whole (save for ISA own internal purposes) or in part, without our prior written consent.

## Our Conclusion

Our conclusion has been formed on the basis of, and is subject to, the matters outlined in this report.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusions that we express below:

Based on the procedures performed and the evidence obtained, as described above, nothing has come to our attention that causes us to believe that the Integrated Report of **ISA** for the year ended December 31, 2022 is not presented, in all material respects, in accordance with the Sustainability Reporting Standards of the Global Reporting Initiative (GRI Standards), which includes the reliability of the data, the adequacy of the information presented and the absence of significant deviations and omissions.

A summary of our findings and recommendations have been communicated to the management of **ISA** in a separated document.

Digitally signed by Fabian Echeverria Junco Date: 2023.06.08 12:52:15 -05'00'

Fabián Echeverría Junco T.P 62.943 – T Partner KPMG Advisory, Tax & Legal S.A.S. June 8<sup>th</sup>, 2023





#### Annex 1: reviewed contents of the report

Material topic for ISA Interconexión Eléctrica S.A. E.S.P.	Standard	Assured Standards/ indicators
	GRI 3	Process for determining material topics
Contribution to global environmental challenges	GRI 305	305-1 305-2 305-3
	GRI 302	302-1
Management of environmental	GRI 303	303-1 303-4
operations	GRI 306	306-3 306-4 306-5
Climate change mitigation and adaptation strategy	Own	Emissions SF6

See: <u>https://isaasprods-d87a26cb809c1f43d1f1-endpoint.azureedge.net/blobisaasprods27f2ae9b77/wp-</u> content/uploads/2023/06/Environmental-Assurance-statement.pdf



# ENVIRONMENTAL VARIABLES BY COMPANY

INDICATOR	YEAR	ISA	INTER- COLOMBIA	REP	CTEEP	ISA BOLIVIA	INTERCHILE	TRANSELCA	TOTAL ENERGY TRANSMISSI ON	INTERVIAL	INTERNEXA	INTEIA		
	Emissions													
	2019	20,08	1.135,06	1.260,21	21.143,42	0,26	80,89	1.592,61	25.232,53	1.300,00	-	-		
Saana 1	2020	18,78	1.597,36	2.650,00	19.904,50	2,35	853,00	4.898,54	29.924,53	958,00	98,22	18,65		
Scope 1	2021	-	3.213,14	3.411,79	20.083,33	0,50	843,00	3.010,20	30.561,96	820,00	99,63	24,68		
	2022	-	2.254,75	1.072,94	15.848,67	0,26	8.021,00	2.240,70	29.438,32	803,00	100,49	24,47		
Scope 2	2019	65,77	1.406,32	1.177,08	2.356,92	324,76	594,42	93,44	6.018,71	6.630,00				
	2020	-	1.818,59	1.171,32	1.959,90	325,36	711,00	112,10	6.098,27	6.559,00		2,38		
	2021	-	785,13	1.294,28	429,59	339,86	725,00	71,08	3.644,94	5.771,94	-	0,33		
	2022	72,90	1.109,47	1.238,14	1.535,25	344,39	541,48	61,16	4.902,79	4.677,00	-	0,34		
Scope 3	2019	1.131,47	3.158,37	746,58	100,63	44,00	161,57	499,58	5.842,20	30.177,00				
	2020	177,42	1.380,42	478,83	214,33	28,13	396,91	666,06	3.342,11	24.781,00	114,36	34,57		
	2021	8.983,94	4.407,36	349,01	26.455,87	110,21	97,00	543,09	40.946,48	20.279,00	28,31	31,07		
	2022	250,79	3.540,06	183,73	552,76	127,59	82,14	225,75	4.962,82	15.219,00	60,86	34,28		
					EN	IERGY (MWH)								
	2019	-	-	-	4,790.03	-	-	46.64	4,836.67	-	-	-		
Renewable	2020	-	-	-	4,397.45	-	-	-	4,397.45	-	43.95	-		
and consumed	2021	-	-	-	-	-	-	-	-	-	-	-		
	2022	-	-	-	5,032.35	-	-	-	5,032.35	-	-	-		
Non-renewable	2019	2.01	556.26	253.77	4,887.12	-	9.26	41.27	5,749.69	4,415.13	-	-		
fuels (nuclear fuels, coal, oil,	2020	5.15	522.23	239.66	5,232.94	-	146.93	990.53	7,137.44	3,152.30	-	-		
natural gas, etc.) purchased	2021	-	353.43	291.16	7,015.32	1.91	99.52	648.01	8,409.36	3,107.00	51.59	1.44		
and consumed	2022	59.4	375.03	1,495	7,154.00	0.99	20.67	1,049.41	10,154.54	2,846	102.10	0.58		
Non-renewable electricity	2019	-	-	3,522.24	6,065.15	409.95	1,211.25	569.74	11,778.33	16,336.90	-	-		
purchased	2020	-	1,943.53	3,452.98	5,749.48	632.36	1,001.29	522.22	13,301.86	17,106.55	-	3.27		



INDICATOR	YEAR	ISA	INTER- COLOMBIA	REP	CTEEP	ISA BOLIVIA	INTERCHILE	TRANSELCA	TOTAL ENERGY TRANSMISSI ON	INTERVIAL	INTERNEXA	INTEIA
	2021	-	2,540.01	1,082.16	8,070.06	469.23	1,043.98	433.05	13,638.50	14,553.55	-	0.79
	2022	-	1,439.43	1,899.54	4,504.85	475.48	757.50	781.83	9,858.63	15,648.00	-	-
Renewable	2019	801.37	9,889.55	-	25,360.50	230.60	208.57	-	36,490.59	-	-	-
solar, biomass,	2020	647.08	7,015.02	-	26,015.59	167.57	852.83	-	34,698.09	-	456.76	8.42
hydroelectric, geothermal,	2021	593.71	5,523.51	1,121.84	25,415.67	201.10	769.25	300.10	33,925.18	596.27	415.5	1.79
etc) purchased or generated	2022	648.73	8,438.10	2,449.23	31,533.96	203.76	878.02	4,430.4	48,582.16	15,128	457.93	2.67
Tatal	2019	2.01	556.26	3,776.01	10,952.27	409.95	1,220.51	611.01	17,528.02	20,752.03	-	-
consumption of	2020	5.15	2,465.76	3,692.64	10,982.42	632.36	1,148.22	1,512.75	20,439.30	20,258.85	-	3.27
non-renewable	2021	-	2,893.44	1,373.32	15,085.38	471.14	1,143.51	1,081.06	22,047.86	17,660.55		2.23
energy	2022	59.44	1,814.46	3,394.54	11,658.85	476.47	778.17	1,831.24	20,013.17	18,494.00	102.10	0.58
	2019	801.37	9,889.55	-	30,150.53	230.60	208.57	46.64	41,327.26	-	-	-
Total renewable	2020	647.08	7,015.02	-	30,413.04	167.57	852.83	-	39,095.54	-	500.71	8.42
consumption	2021	593.71	5,523.51	1,121.8	25,415.67	201.10	769.25	300.10	33,925.18	596.27	415.5	1.79
	2022	648.73	8,438.10	2,449.23	36,566.31	203.76	878.02	4,430.36	53,614.51	15,128.00	457.93	2.67
Total sea swells	2019	803.38	10,445.81	3,776.0	41,102.80	640.55	1,429.09	657.65	58,855.28	20,752.03	-	-
+ non-	2020	652.23	9,480.78	3,692.6	41,395.46	799.93	2,001.05	1,512.75	59,534.84	20,258.85	500.71	11.69
renewable energy with	2021	593.71	8,416.95	2,495.2	40,501.05	672.24	1,912.76	1,381.16	55,973.04	18,256.81	415.50	4.02
fuels	2022	708.17	10,252.56	5,843.77	48,225.16	680.23	1,656.19	6,261.60	73,627.68	33,622.00	560.03	3.25
					WATER (	CONSUMPTIO	N (m3)					
	2019	1,994.27	28,202.69	28,000.0	22,176.06	753.47	1,388.19	15,887.00	98,401.68	108,929.00	-	-
municipal water	2020	3,389.80	34,570.00	31,411.3	14,908.01	757.10	499.00	18,587.00	104,122.24	120,066.00	2,798.56	705.70
supply	2021	2,555.44	21,000.94	16,288.0	20,066.09	421.00	503.00	18,675.36	79,509.83	83,961.00	1,803.84	653.79
	2022	1,866	17,323.58	28,007.0	18,117.58	332.03	505.00	18,132.20	84,283.65	106,617	1,317.36	864.43
Surface water	2019	1,029.35	3,209.15		9.83	-	-	-	4,248.33	-	-	-
(rivers, lakes, etc)	2020	573.41	5,330.00	3,153.0	3.00	-	-	-	9,059.41	121,385.10	-	-



INDICATOR	YEAR	ISA	INTER- COLOMBIA	REP	CTEEP	ISA BOLIVIA	INTERCHILE	TRANSELCA	TOTAL ENERGY TRANSMISSI ON	INTERVIAL	INTERNEXA	INTEIA
	2021	336.26	3,890.55	2,052.0	17.00	147.35	-	-	6,443.16	-	237.36	-
	2022	100.78	2,785.71	2,052.0	24.00	-	-	-	4,962.49	-	71.136	
	2019	-	27,104.00	15,000.0	56,113.92	-	-	-	98,217.92	-	-	
Underground	2020	-	15,750.00	13,366.1	47,471.45	-	-	-	76,587.52	-	-	-
water	2021	-	14,080.70	6,339.0	50,605.76	-	-	-	71,025.48	-	-	-
	2022	-	19,364	6,392	54,860.18	-	-	-	80,616.18	-	-	-
	2019	3,023.62	58,515.84	43,000.0	78,299.81	753.5	1,388.2	15,887.0	200,867.93	108,929.00	-	-
Total net water	2020	3,963.21	55,650.00	47,930.4	62,382.5	757.1	499.0	18,587.0	189,769.17	120,066.00	-	705.70
consumption	2021	2,891.70	38,972.19	24,679.0	70,688.85	568.4	503.0	18,675.4	156,978.47	83,961.00	2,041.20	653.79
	2022	1,967.04	39,473.29	36,451.0	73,001.76	332.0	505	18,132.2	169,862.32	106,617	1,388	864.43
WASTE (ton)												
	2019	6.20	195.15	23.00	0.13	1.37	2.87	6.90	235.62	-	-	-
Non-hazardous waste taken to	2020	1.78	19.85	4.50	26.26	1.28	0.54	78.90	133.11	3662.4	1.25	4.05
final disposal	2021	5.33	49.38	8.10	19.40	1.77	0.46	80.48	164.9	42,562.00	3.76	3.14
	2022	5.30	44.00	10.99	31.22	3.36	0.50	70.70	166.1	53,958	3.76	6.76
	2019	0.06	9.10	40.00	2.88	0.26		1.40	53.70	-	-	-
Hazardous	2020	0.11	20.68	5.00	48.18	0.00	1.12	3.78	78.88	-	0.37	-
final disposal	2021	0.92	41.37	12.50	42.48	0.35	1.12	1.23	99.97	-	0.64782	-
	2022	0.060	13.10	24.32	0.15	0.32	-	3.81	41.76		0.04572	-
	2019	26.23	154.29	12.00	-	0.06			192.58	-	-	-
Waste recycled	2020	1.55	1.44	1.50	-	0.07	-	-	4.56	-	-	-
internally	2021	0.74	6.4	3.50	-	0.07	-	-	10.72	28,158	-	-
	2022	344.27	21.20	2.80	88.96	0.12	-	947.98	1,405.3	36,666	-	-
	2019	724.86	23.09	-	2,359.63	1.44			3,109.02	-	-	-



INDICATOR	YEAR	ISA	INTER- COLOMBIA	REP	CTEEP	ISA BOLIVIA	INTERCHILE	TRANSELCA	TOTAL ENERGY TRANSMISSI ON	INTERVIAL	INTERNEXA	INTEIA
Waste by the company that constitutes an income	2020	315.75	315.72	-	1,750.85	1.69	-	-	2,384.01	-	-	-
	2021	1,804.87	19.07	-	3,567.88	-	-	522.11	5,913.93	-	-	-
	2022	-	95.44	-	1,863.46	1.49	-	0.55	1,960.94	-	-	-

Spots represent decimal places and commas represent thousands. This report does not contain the information of the Coastal Route