

**ENVIRONMENTAL PERFORMANCE INDICATORS**

**ENERGY TRANSMISSION COMPANY INDICATORS**

	Performance data	Unit	2021**	2022	2023	2024	GRI indicator
<b>Greenhouse gas emissions</b>	<b>Scope 1 Emissions</b>	<b>Ton CO2eq</b>	31,505.00	29,407.00	18,752.00	18,796.00	305-1
	<b>SF6 emissions</b>	<b>kg</b>	1,153	1,060	534	540	305-1
	<b>Scope 2 Emissions (Location Based)</b>	<b>Ton CO2eq</b>	9,417.00	8,744.00	10,691.00	11,320.64	305-2
	<b>Scope 2 Emissions (Market Based)</b>	<b>Ton CO2eq</b>	9,417.00	8,744.00	5,935.00	5,396.00	305-2
	<b>Scope 3 Emissions</b>	<b>Ton CO2eq</b>	1034183.12	434048.28	348806	325395	305-3
<b>Water consumption</b>	<b>Municipal water supply</b>	<b>Mio.m3</b>	0.080	0.084	0.0750	0.0670	303-3
	<b>Fresh surface water</b>	<b>Mio.m3</b>	0.006	0.005	0.015	0.039	303-3
	<b>Fresh ground water</b>	<b>Mio.m3</b>	0.071	0.081	0.056	0,047	303-3
	<b>Total net water consumption</b>	<b>Mio.m3</b>	0.157	0.170	0.146	0,153	303-5
	<b>Water consumption in areas with water stress</b>	<b>Mio.m3</b>	0.046	0.094	0.049	0.038	GRI 303-1, 303-2, 303-3, 303-5
<b>Energy consumption</b>	<b>Non-renewable fuels purchased and consumed</b>	<b>MWh</b>	8,409.36	10,154.54	7,132.99	9,015.92	302-1
	<b>Non-renewable electricity purchased</b>	<b>MWh</b>	13,638.50	9,858.63	8,199.05	8,236.83	302-1
	<b>Renewable energy purchased</b>	<b>MWh</b>	33,925.18	48,582.16	55,193.67	58,012.65	302-1
	<b>Renewable fuels purchased and consumed</b>	<b>MWh</b>	0.00	5,032.35	5,414.15	5,065.26	302-1
	<b>Total non-renewable energy consumption</b>	<b>MWh</b>	22,047.86	20,013.17	15,332.04	17,252.75	302-1
	<b>Total renewable energy consumption</b>	<b>MWh</b>	33,925.18	53,614.51	60,607.82	63,077.91	302-1

<b>Waste &amp; Hazardous waste</b>	<b>Total waste generation</b>	<b>Ton</b>	70.908,03	104.250,63	84.682,36	87.093,30	306-3
	<b>Total used/recycled/sold waste</b>	<b>Ton</b>	28.168,57	38.112,77	35.189,49	66.796,33	306-4
	<b>Total waste taken to final disposal</b>	<b>Ton</b>	42.739,46	66.137,86	49.492,87	20.296,96	306-5
	<b>Waste landfilled</b>	<b>Ton</b>	42.739,44	66.128,16	49.492,87	20.296,96	306-5
	<b>Waste incinerated with energy recovery</b>	<b>Ton</b>	0,00	0,00	0,00	0,00	306-6
	<b>Waste incinerated without energy recovery</b>	<b>Ton</b>	0,00	0,00	0,00	0,00	306-6
	<b>Waste otherwise disposed (security cell)</b>	<b>Ton</b>	0,02	9,70	0,00	0,00	306-6
	<b>Total hazardous waste generation</b>	<b>Ton.</b>	1,948.62	228.20	145.49	859.11	306-3
	<b>Hazardous waste recycled/reused</b>	<b>Ton.</b>	1,848.67	186.44	103.01	463.41	306-4
	<b>Hazardous waste taken to final disposal</b>	<b>Ton.</b>	99.97	41.76	42.48	395.71	306-5
	<b>Hazardous waste landfilled</b>	<b>Ton.</b>	0.31	0.15	0.46	73.49	306-5
	<b>Hazardous waste incinerated with energy recovery</b>	<b>Ton.</b>	0	0.0	0.0	0.0	306-6
	<b>Hazardous waste incinerated without energy recovery</b>	<b>Ton.</b>	39.99	2.88	8.85	213.06	306-6
	<b>Hazardous waste otherwise disposed (security cell)</b>	<b>Ton.</b>	59.65	38.73	33.17	109.16	306-6

Information verified by KPMG as an independent third party: [Thrid-Party-verification\\_IN.pdf](#)

Since 2018, the scope of information has been extended, covering ISA, ISA INTERCOLOMBIA, ISA Energía Peru, ISA Energía Brasil, ISA TRANSELCA, ISA Energía Chile, and ISA BOLIVIA.

For the reporting of these emissions, the methodologies proposed by WRI and WBCSD in the GHG protocol (Corporate Accounting and Reporting Standard) were adopted for the calculation and reporting of ISA's greenhouse gas emissions. In addition, NTC-IS014064-1 was used.

ISA and its companies are guided by their Corporate Environmental Policy, promoting responsible management of the use of natural resources, their circularity, impacts and risks, to ensure that processes are aligned with the pursuit of sustainable development. ISA established environmental standards, objectives, targets, and requirements, focused on the life cycle of the asset, allowing it to act preventively and anticipate environmental risk management.

The ISA2040 strategy proposes concrete initiatives to reduce environmental impacts, inspired by the energy transition. The new materiality analyses conducted by the ISA Group in 2024 identified, among others, the management of environmental impacts associated with activities, energy transition and climate change as relevant for the achievement of its strategy and, therefore, this is assessed both internally and externally. To this end, the company manages the main environmental impacts generated during the life cycle of the asset and develops programs that implement best practices to mitigate them.

These targets were also included in the variable compensation system for employees as an incentive for continuous improvement around ISA's eco-efficiency and circularity processes.

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

- Climate change management: mitigation and adaptation.
- Eco-efficiency and circular economy: energy, water, waste.

In general, in 2024 we continue with the coverage achieved in previous years, corresponding to the 7 energy transmission companies (ISA, INTERCOLOMBIA, REP, CTEEP, INTERCHILE, ISA BOLIVIA and TRANSELCA).

Omissions from the report:

Water storage: this GRI indicator is omitted since ISA's activities do not represent a significant impact on water resources and the volume of water stored is not significant for ISA's operations.

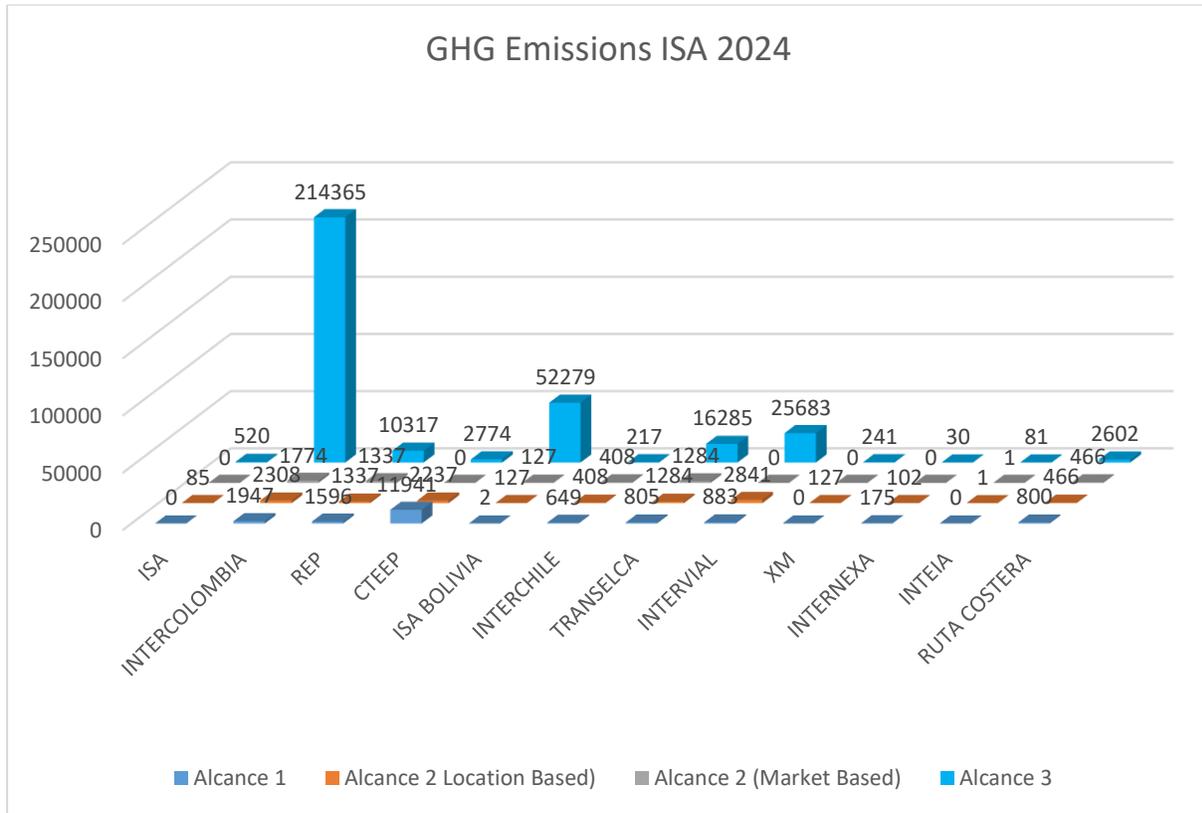
## **MITIGATION - EMISSIONS:**

Emissions measurements were made through the Greenhouse Gas Inventory, according to the methodology of the World Resources Institute (WRI) of the GHG Protocol and the

ISO14061-1 standard, identifying the Company's main sources of emissions, both direct and indirect. Reported emissions include Scope 1, 2 and 3.

### GREENHOUSE GAS -GHG

GHG Emissions ISA 2024 (tCO <sub>2</sub> eq)	Scope 1	Scope 2 Location Based)	Scope 2 (Market Based)	Scope 3
ISA	0	85	0	520
INTERCOLOMBIA	1947	2308	1774	214365
REP	1596	1337	1337	10317
CTEEP	11941	2237	0	2774
ISA BOLIVIA	2	127	127	52279
INTERCHILE	649	408	408	217
TRANSELCA	805	1284	1284	16285
INTERVIAL	883	2841	0	25683
XM	0	127	0	241
INTERNEXA	175	102	0	30
INTEIA	0	1	1	81
RUTA COSTERA	800	466	466	2602
<b>TOTAL</b>	<b>18796</b>	<b>11321</b>	<b>5396</b>	<b>325395</b>
<b>2024 TARGET</b>	<b>27517</b>	<b>8182</b>	<b>8182</b>	<b>338342</b>



ISA's climate roadmap considers both mitigation (emissions reduction) and adaptation of its businesses through the modernization of electricity infrastructure, technological innovation, and development of new capabilities for a resilient and reliable "Grid of the Future".

This commitment is in addition to the **carbon neutral certification** that the company has held since 2021, renewed in 2023.

Through its **Conexión Jaguar Program**, the company will be able to offset residual emissions and **mobilize efforts beyond the value chain**, contributing to climate adaptation in the countries where ISA has operations.

The strategy sets staged targets: **reduce 60% of emissions by 2040 as part of its Strategy 2040 "Energy that brings the transition to life"**, and **achieve 90% reduction by 2050 against the 2022 base year**, neutralizing remaining emissions, which aligns ISA's pathway with the global commitments of the Paris Agreement and the goal of limiting global warming to 1.5°C.

## 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.

ISA and its companies identified that in terms of their direct GHG emissions (Scope 1), more than 80% corresponds to leaks of sulfur hexafluoride, or SF<sub>6</sub>, which is installed in encapsulated substations and high voltage switchgear. The Global Warming Potential (GWP) of this gas is 24,300 times higher than that of CO<sub>2</sub>, which constitutes a significant contribution to global warming per unit emitted.

The CTEEP subsidiary is the group's largest power transmission company and has a high percentage of high-voltage gas insulated electrical substations (GIS) that are more than 20 years old, in addition to requiring a larger amount of SF<sub>6</sub>, they also allow a much higher percentage of leakage, given the technology available at the time of acquisition and installation.

Until 2020, the Group's consolidated value achieved the corporate target of keeping the leakage level below 0.5% of the total SF<sub>6</sub> installed, as indicated by the IEC 62272-203 standard, which serves as a reference: The result for 2020 was 0.428% and, that same year, ISA set a goal for 2030 to exceed the requirements of the standard, reducing the target by 15% and moving from 0.5% to 0.425% of the total SF<sub>6</sub> installed. In 2024, the consolidated leakage rate was 0.16%.

Emissions reported as Scope 1 total include ISA, INTERCOLOMBIA, ISA REP, CTEEP, INTERCHILE, ISA BOLIVIA, TRANSELCA, INTERVIAL, XM, INTERNEXA, INTEIA and RUTA COSTERA. Emissions in 2024 were 18,796 tCO<sub>2</sub>e, which indicates compliance with the target according to the Net Zero pathway for the year (27,517 tCO<sub>2</sub>e).

To reduce direct GHG emissions, ISA continues with 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 programs aimed at maintenance operators to prevent leaks in manual processes, the acquisition of SF<sub>6</sub> gas detectors with state-of-the-art technology to detect and monitor leaks in real time, the recovery and reuse of SF<sub>6</sub> gas in good physical-chemical condition, the improvement plan established in 2020 with respect to SF<sub>6</sub> inventory, and the management and correct final disposal through certified companies.

## SCOPE 2

The second individual source of GHG emissions is associated with energy consumption (Scope 2).

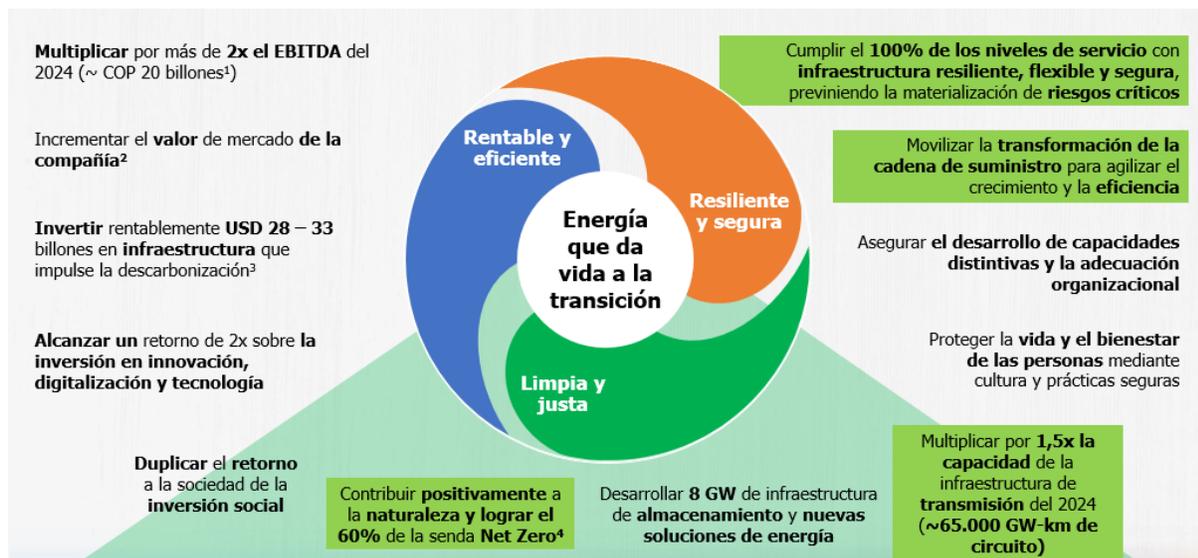


## CIRCULAR ECONOMY AND ECO-EFFICIENCY:

ISA adopted a circular economy model to meet current environmental and social expectations, in addition to ensuring corporate sustainability.

The purpose of the model is to support the corporate strategy, promoting innovation and collaboration for an energy transition that allows us to keep assets in use, reduce waste and emissions, and regenerate nature, taking advantage of business opportunities and contributing positively to the environment and society.

The model supports the fulfillment of the following strategic objectives (in green):



The circular economy model of ISA and its companies encompasses the life cycle of ISA's business units:

**Aspiración:** en apoyo a la estrategia corporativa de ISA, impulsar la innovación y la colaboración para crear valor sostenible que permita mantener los activos en uso, reducir los residuos y regenerar la naturaleza, aprovechando oportunidades de negocio y contribuyendo positivamente al ambiente y a la sociedad.

**Ejes**

**Circularidad en los negocios:** implica maximizar los ingresos actuales o generar nuevos ingresos a través de la creación o adaptación de productos y servicios bajo un enfoque circular.

**Circularidad en el aprovisionamiento:** implica integrar principios de economía circular en la adquisición de recursos y servicios, que viabilicen la circularidad en los negocios y aseguren la circularidad en las operaciones.

**Circularidad en las operaciones:** implica implementar acciones circulares en todas las etapas del ciclo de vida de los activos de ISA, optimizando los procesos internos para mejorar la eficiencia y reducir el consumo de recursos.

**Habilitadores**

**Gobernanza:** establecimiento de políticas y prácticas internas que garanticen la transparencia, responsabilidad y eficiencia en la toma de decisiones, impulsando la circularidad en toda la organización.

**Ciencia tecnología e innovación (CT+I):** desarrollo y adopción de tecnologías y procesos innovadores que mejoran la eficiencia y las operaciones de ISA.

**Grupos de interés:** consiste en colaborar y participar activamente con todos los actores relevantes, internos y externos, para promover prácticas circulares y fortalecer la implementación de la economía circular en ISA.

**Financiación:** acceso a recursos financieros para invertir en proyectos y tecnologías que impulsen la economía circular.

**Cultura circular:** promoción de una cultura organizacional que valore y practique los principios de la economía circular en todos los niveles de la empresa.

**Capital natural:** reconocimiento y valoración de los recursos naturales como activos esenciales, promoviendo su conservación, regeneración y uso sostenible en todas las actividades de ISA, y asegurando su disponibilidad para las generaciones futuras.

The model has goals established by axis for different time periods:

## Modelo de economía circular de ISA y sus empresas

### Metas circularidad en las operaciones

**Ejes**

Circularidad en las operaciones: implica implementar acciones circulares en todas las etapas del ciclo de vida de los activos de ISA, optimizando los procesos internos para mejorar la eficiencia y reducir el consumo de recursos.

**METAS**

**Corto plazo (2025-2027)**  
Transmisión de energía:

- Operación: Definición meta reutilización y regeneración de SF6 (2026)

**Largo plazo 2040:**  
Transmisión:

- Ingeniería: Medición de reducción de uso de recursos y emisiones evitadas por ecodiseño en los proyectos.

**Transmisión y vías:**

- Reducción de 60% de consumo de agua, energía (no renovable) y residuos llevados a disposición final

## Modelo de economía circular de ISA y sus empresas

### Metas circularidad los negocios

**Ejes**  
**Circularidad en los negocios:** implica maximizar los ingresos actuales o generar nuevos ingresos a través de la creación o adaptación de productos y servicios bajo un enfoque circular.

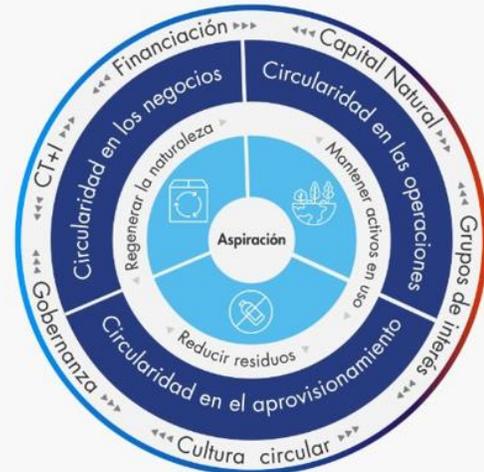
**METAS**  
Reducción de materiales y cierre de ciclo:  
Corto plazo (2025-2027)

Vías:

- ISA: 68% materiales secundarios para mantenimientos en vías en Colombia (2026)

Transmisión de energía:

- Ejercicio piloto de medición de emisiones evitadas y reducción de materiales (2025)

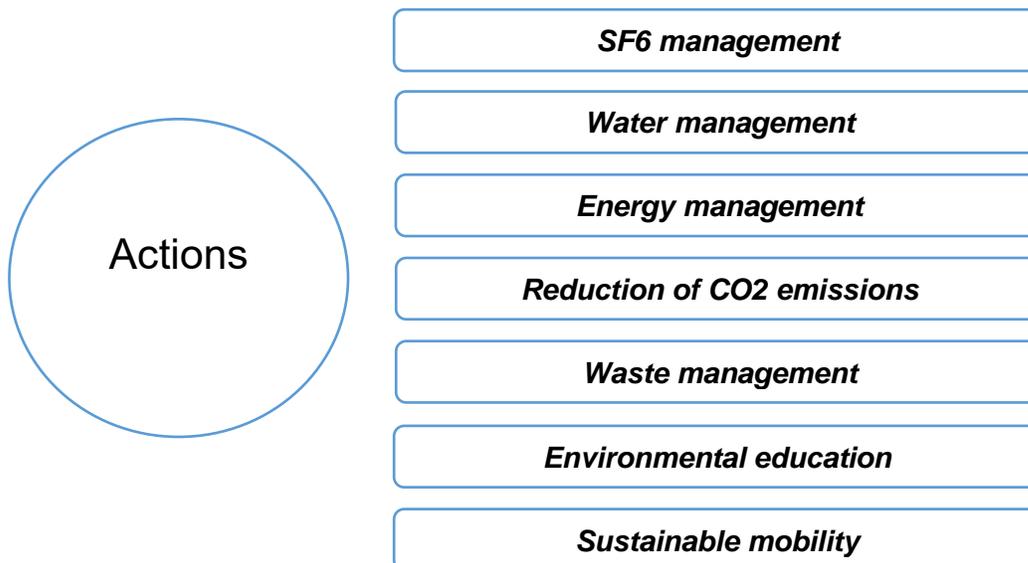


Sourcing circularity targets are under construction

To achieve the goals outlined in the model, ISA companies develop actions focused on the following variables: water, energy (both consumption and use of renewable sources), waste, sustainable mobility (including teleworking actions), and reduction of fugitive emissions of SF6.

To achieve knowledge management and the exchange of best practices in this field, ISA is developing a bank of initiatives to document and share them among companies.

To date, more than 37 practices have been developed, including the following:



The actions implemented are detailed below:

*Table 1. Actions implemented in ecoefficiency and circular economy*

Category	Action	Detailed description
Water management	Use of rainwater	Catchment systems for irrigation and general services in headquarters and substations, with storage for non-potable use.
	Artificial wetlands	Tertiary wastewater treatment by evapotranspiration and recirculation. In Bacatá and La Mesa, a closed-loop system was implemented without dumping.
	Dry toilets and urinals / incinerators	They eliminate the use of water and generate waste treated by composting or incineration.
	Atmospheric water generators / fog catchers	Drinking water catchment from the air. A pilot was carried out but was not successful; an alliance with a specialized Peruvian company is being evaluated.
	Reuse of water from air conditioners	Condensed water catchment for irrigation of green areas.
	Yard runoff	Storage systems for water self-supply in substations.
	Flow regulators	Devices to reduce water consumption in substations.
	Connection to public network	Access to water and sewage services to reduce direct catchments.
	Monitoring of water consumption	Periodic evaluation and correction of deviations through monitoring platforms.
	Indicators in Power BI	Visualization of water consumption and efficiency data.
	Recirculation for toilets	This system makes it possible to reuse treated wastewater (mainly gray water) for toilets, reducing the consumption of potable water in substations. The process includes: Separation of gray and black water. Primary treatment (such as grease traps) and secondary treatment (septic tanks, subsurface wetlands). Storage in tanks for later use in sanitary discharges. Independent piping network to the drinking water network

	Energy-saving faucets	Substitution of efficient systems in headquarters and substations.
Energy management	Switching to LED luminaires	Total replacement in headquarters, substations, and perimeter areas.
	Microgrid of solar panels	Clean, efficient, and resilient self-generation solution. These facilities reduce emissions, improve energy reliability, and serve as training and technology testing spaces.
	Renewable Energy Certificates (REC)	Purchase of clean energy to offset emissions.
	Pilot lab	Pilot laboratory implemented by ISA TRANSELCA at the Nueva Barranquilla substation to test energy solutions such as solar microgrids, advanced metering and efficient equipment. Seeks to validate technologies in real conditions, measure impacts and overcome technical barriers before scaling up. It has been in operation since 2023, although it faced initial regulatory challenges.
	Measurement in auxiliary services	Internal consumption control for operational efficiency.
	High efficiency equipment	Acquisition and installation of equipment with technical specifications that guarantee lower energy consumption without compromising performance. Includes air conditioning, lighting, rectifiers, and auxiliary power systems, selected for their efficiency, durability, and compatibility with demanding operational conditions
	Follow-up and correction of installations	It consists of monitoring the condition of equipment and installations through inspections, tests, and condition analysis. It allows detecting deviations, scheduling preventive, or corrective maintenance, and ensuring operational efficiency. It is supported by tools such as thermography, vibration analysis and management platforms such as Power BI.
	Energy diagnosis	Technical and operational evaluation of energy consumption in assets and processes, identifying opportunities for improvement, efficiency, and transition to clean sources. Includes analysis of equipment, usage habits, losses, and decarbonization scenarios to guide strategic decisions
Mobility and work	Telework	Reduction of emissions from mobility through institutional policies.
	Sustainable mobility	Incentives for the use of alternative means of transportation, app tracking and employee incentives.

Waste Management	Silica gel regeneration	Reuse of material in electrical switches.
	Promoting recycling	Promotes the separation, collection, and use of recyclable waste such as paper, cardboard, plastics, metals and WEEE at headquarters and substations. It includes awareness campaigns, agreements with authorized managers and the use of collaborative platforms.
	Indicators and systematization	Waste management in Power BI.
	Composting	Treatment of organic waste at headquarters.
	Reuse for beautification	Use of waste for substation decoration.
	Agreements with managers	Recovery and proper disposal.
	Reduction of plastics	Aluminum bottles and filtered water dispensers.
Education and culture	Awareness campaigns	Promoting the efficient use of resources and waste management.
	5 Eco-challenges (ecorretos) for sustainability	Dissemination of best practices to communities in areas of influence.

Photos of some initiatives:



Rainwater harvesting



Solar panels



Artificial wetlands - water recycling



Environmental education campaigns

[For further evidence, please refer to the social networks and websites of ISA companies:](#)

**Example of ISA INTERCOLOMBIA's environmental education campaigns:**  
<https://5ecorretos.com/>

### **Investment in projects in 2024:**

COP 3.94 trillion approximately, within this investment value are all the innovation, development and research programs related to the reduction of energy and water consumption and waste generation during the year.

### **ENERGY CONSUMPTION GRI 302-3, 302-1, 302-2**

Few activities performed by ISA subsidiaries associated with Energy Transmission require the use of energy from non-renewable sources. In internal support processes, when there are failures in the power supply at the headquarters and assets, diesel backup power plants are used, although these failures occur on rare occasions.

For 2024 we continue with the coverage achieved in previous years corresponding to the 7 energy transmission companies (ISA, INTERCOLOMBIA, REP, CTEEP with its subsidiaries with 100% control), INTERCHILE, ISA BOLIVIA and TRANSELCA).

Energy consumption information is audited in two independent third-party verifications:

1. Carbon neutral certification process with ICONTEC (see climate change, carbon neutral declaration: <https://isa.co/en/sustainable-value/environmental-management/>)
2. Environmental variables verification process with KPMG <https://www.isa.co/en/third-party-assurance/>.

Internally: In the quarterly committees carried out by ISA's projects and operations departments, energy consumption and company programs or projects to reduce or make efficient use of this resource are followed up and verified. In addition, some companies, such

as ISA INTERCOLOMBIA, conduct internal audits of environmental management systems, including monitoring of consumption data and projects implemented.

The companies' information is compiled by asset (substation, headquarters, office, etc.) and by equipment that is part of the companies' own fleet; each company consolidates the information and reports it to ISA. In most companies the information is calculated directly from the invoices; in the case of auxiliary services, consumption is estimated or taken directly from meters installed in the assets.

### **TOTAL RENEWABLE ENERGY:**

In general, consumption is expected to increase between 2021 and 2024 (approximately 86%). This growing trend in renewable energy consumption is mainly due to the purchase of certified renewable energy through I-REC by companies. In addition, the different countries where ISA is present have an energy matrix with an increase in renewable energies. For example, in Colombia, the percentage of renewable energy remains above 70%. In addition, a micro-grid of solar panels has been installed at ISA's main headquarters in Medellín, covering approximately 15% of the total consumption of the headquarters, and the other 86% is acquired through I-REC.

### **TOTAL NON-RENEWABLE ENERGY:**

Compared to 2021, non-renewable energy consumption decreased by 22% in 2024, mainly because ISA BRASIL and ISA INTERCOLOMBIA acquired I-REC renewable energy certificates and due to changes in the generation percentages of each country's energy matrices, changes in renewable fuels and the acquisition of renewable energies.

The 2024 target was set as a 1% reduction in total non-renewable energy consumption by 2023. According to this, companies would have no margin to decrease their performance, and incentives are granted for annual continuous improvement.

In 2024, the non-renewable energy consumption target was not met, with a difference of 2,074 MWh, representing 13% more consumption compared to 2023. The main causes were:

1. Non-renewable energy consumption in 2023 was the lowest recorded in the last four years. This impacted the target, as the 1% reduction was estimated based on that level of consumption, which makes the increase in 2024 appear steeper when compared to an atypically low base year.
2. ISA Brasil increased diesel consumption, driven by increased use of the machinery fleet to support the expansion of reinforcement works and improvements in operational projects. The main factors behind this growth were the progress in the modernization of the transmission infrastructure and the energization of the Minuano project. This alone represented an increase of 1,675 MWh compared to the previous year.

## **WATER CONSUMPTION**

GRI 303-5:

As evidenced in the materiality analysis and in the life cycle of the assets, ISA and its companies do not make intensive use of water resources, since the businesses do not require large amounts of water for their operation. For ISA's main business unit, energy transmission, water consumption is for human consumption, cleaning, and irrigation of the facilities.

Likewise, no changes were made to water storage by ISA companies, and this storage does not generate a significant impact for the organization. However, we recognize the importance of the proper management of this resource, which is why we promote programs at our headquarters and substations for its responsible and efficient use and implement reuse and recycling actions.

Company information is collected by asset (substation, headquarters, office, etc.) each company consolidates the information and reports it to ISA, in most companies the information is calculated directly from the invoices when the water comes from a third party.

The information and projects implemented for water consumption are audited in the process of verification of environmental variables, KPMG in recent years.

In addition, internally, in the quarterly committees carried out by ISA's projects and operations departments, water consumption and company programs or projects to reduce or make efficient use of this resource are monitored and verified. In addition, some companies, such as ISA INTERCOLOMBIA, conduct internal audits of environmental management systems, including monitoring of consumption data and projects implemented.

The analysis of the data presented in the indicator corresponds to 100% of the operations of the companies in the energy transmission business unit. By 2024 we continue with the coverage corresponding to the 7 energy transmission companies (ISA, INTERCOLOMBIA, ISA Energía Perú, ISA Energía Brasil (with its affiliates with 100% control), ISA Energía Chile, ISA BOLIVIA, and ISA TRANSELCA).

When analyzing the information with the widest scope of companies available for each year, the consolidated information of ISA's energy business shows improvements in its performance trend over the last four years considering the increase in revenues (approximately 46%).

Regarding the established goal, since 2018 it was proposed to reduce water consumption by 5% by 2019. After achieving this reduction, most companies achieved high levels of efficiency, leaving limited room for further improvement. Therefore, starting in 2020, a new reduction target of 1% per year was set compared to previous years. In this way, companies have maintained their good performance, and, at the same time, incentives have been implemented to promote continuous improvement year after year.

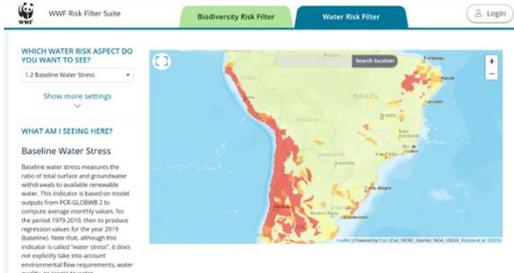
In 2024, the target was set as a 1% reduction in total net water consumption by 2023. In 2024, the water consumption target was not achieved, due to ISA INTERCOLOMBIA had a noticeable variation in the indicator related to the water compared to previous years, due to the cleaning of the tank in Block 1, which caused an increase in consumption as recorded by the meter, Additionally, the Los Balsos site in Medellín is shared with other companies; therefore, utility consumption calculations are based on occupancy percentages. In 2024, INTERCOLOMBIA increased its reported water consumption from 53% to 63%.

Companies continue to develop actions to reduce the environmental impacts caused by water consumption. We highlight as best practices the implementation of training plans on the efficient use of resources and rainwater harvesting systems, rainwater runoff in yards, atmospheric water generators, filtration equipment for reuse of gray water, low water consumption toilet systems, composters and incinerators, and wastewater treatment through wetlands in some substations, and the recycling of all this water in substations.

### Water consumption in water-stressed areas:

Although water consumption in ISA and its companies is low compared to other industries, ISA monitors this consumption in the water stress zones where it has a presence, in order to evaluate the existence of any impact on the social and environmental conditions of the territory and in turn a risk to the company's operation.

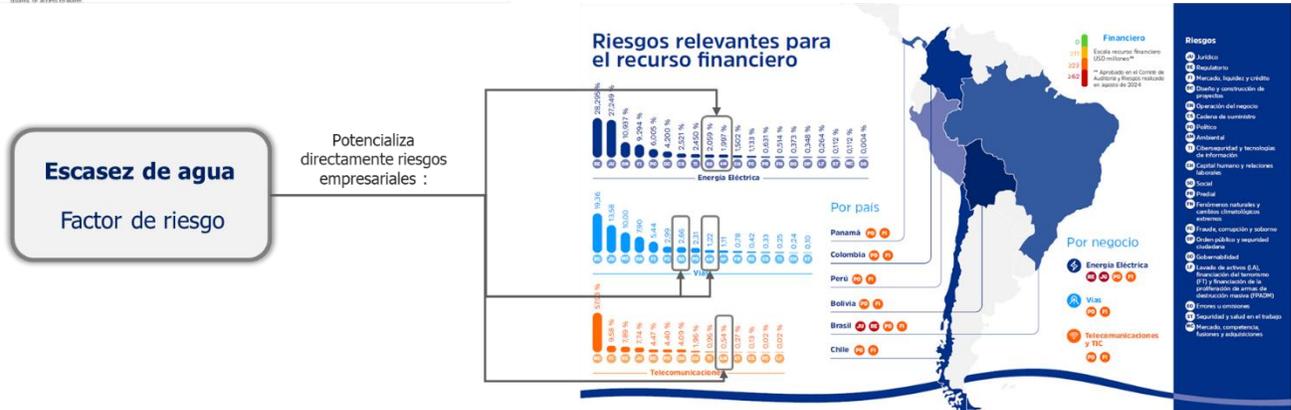
### Riesgo estrés hídrico



Las operaciones de ISA y sus empresas **no tienen un uso intensivo del agua**, sin embargo los **activos en Perú, Bolivia y Chile se encuentran en zonas de alto riesgo de estrés hídrico**.

Lo anterior implica desafíos sociales y ambientales, considerando que existe una **correlación directa de la escasez de agua** con el incremento del nivel de riesgos (probabilidad o impacto) de otros riesgos que podrían afectar la operación y/o construcción de los activos, por lo anterior, se debe monitorear para establecer mecanismo que permita disminuir su impacto.

### Correlación con riesgos de ISA y sus empresas



The following tools are used for this analysis:

<https://riskfilter.org/water/explore/map>  
[Aqueduct Water Risk Atlas](#)

According to these references, the countries where ISA has operations and have high and extremely high-water stress are Chile, Peru and some parts of Brazil and Bolivia, and in Colombia the companies cross-check water stress with maps of local authorities.

The data reported corresponds to ISA's energy transmission companies.

For ISA BRASIL, CHILE, and TRANSELCA, the 2021 data were reconstructed based on the average water consumption in water stressed areas from 2022 to 2024, as no information was available.

ISA INTERCOLOMBIA and ISA BOLIVIA: they estimated in 2021 their water consumption in water stressed areas, therefore, the information of these two companies is in accordance with their reports from 2021 to 2024.

For ISA Energía Perú, the information from 2021 to 2023 was reconstructed according to the information from 2024. The calculation developed was the total water consumption in water stressed areas for 2024 divided by the total water consumption, this represented 82%, this percentage was taken for the total consumption of the previous years.

The goal corresponds to the same objective of reducing water consumption, since the actions to reduce consumption involve all ISA companies. It is estimated as a 1% reduction from the previous year's consumption. By 2024 the goal was achieved.

## WASTE DISPOSAL

Energy Transmission is a service activity. Materials used at the end of their life cycle generate waste that can be recycled, mostly industrial leftovers, which are incorporated back into the production line to generate the same component or other materials. The 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 unit; however, we are committed to efficient waste management.

In the case of ISA's other business units, such as road concessions, waste generated includes construction and demolition waste (CDW), organic and garden waste, household and office waste, uncontaminated scrap metal, and end-of-life tires (ELT). Meanwhile, in the telecommunications business, waste includes unused copper and fiber optic cables, plastics and metals from dismantled equipment, packaging materials, and obsolete electronic equipment that does not contain hazardous components. These are properly managed, in addition to implementing significant circularity actions.

Audits and follow-up on the proper management of waste at ISA and its companies are carried out in 4 actions:

- Audits are performed for GRI indicators, for 2024 audits were developed with KPMG, see third party verification: ISA circular economy model, third party verification: <https://isa.co/en/investors/esg/>
- Audits of the environmental management systems of ISA's operations.
- Audits carried out to achieve carbon neutrality of ISA and its companies, auditing the actions implemented to reduce emissions, including waste reduction. See: climate change, carbon neutral declaration: <https://isa.co/en/investors/esg/>
- Internal follow-up and monitoring of waste management and reduction actions is carried out in the quarterly committees held by ISA's project and operations departments.

For proper waste management, ISA companies develop agreements with waste managers that certify the final disposal of waste, as well as the detour of waste from the landfill, certified by an independent accredited body.

Examples:

- INTERCOLOMBIA has an agreement with a company for waste management, recovery, recycling, and valorization. See INTERCOLOMBIA's IR pages: 44, 69, 148, 152: <https://www.isaintercolombia.com/informes-empresariales/>
- ISA Energía Perú establishes partnerships with various organizations, such as NGOs, municipalities, and the private sector, to implement its efforts to recover and valorize waste and discarded materials. See: <https://www.isarep.com.pe/SitePages/Pagina.aspx?mp=3&ms=18&ip=29&lang=en>
- ISA Brasil: IR 2024, pages 60-61: <https://www.isaenergiabrasil.com.br/en/sustainability/sustainability-reports/>

The amount of waste is obtained from the sum of the quantities collected by the municipal waste collection service provider, as defined in the invoices and in some companies with direct measurement.

The coverage achieved in 2024 for the final disposal of waste corresponds to the 11 companies (ISA, ISA INTERCOLOMBIA, ISA Energia Peru, ISA Energia Brasil and its subsidiaries, ISA Energia Chile, ISA BOLIVIA and ISA TRANSELCA, ISA Vías Chile, XM, INTERNEXA and Ruta Costera).

Since 2018, we established the goal of reducing waste for final disposal by 5% by 2019. Once achieved, most of our subsidiaries have reached high levels of efficiency, with little room for continuous improvement, so as of 2020 a reduction target is set for companies equivalent to 1% of the previous year. For more demanding annual performance.

All energy transmission companies were included in the 2024 target. The goal was established as a 1% reduction of waste taken to final disposal by 2023. According to this, affiliates will have no margin to decrease their performance, and continuous annual improvement is encouraged.

In 2024, the waste target was achieved mainly due to an increase in the reuse of waste from the road business, such as the recycling of asphalt removed during the maintenance of tertiary roads in towns or communities within the areas of influence.

For the transmission companies, waste disposal increased in ISA Brasil due to maintenance work at some substations and progress on reinforcement and improvement projects in the transmission infrastructure, as well as the energization of the Minuano project. This represented an increase of approximately 72 tons compared to 2023.

Additionally, in the case of ISA TRANSELCA, there was an increase of approximately 18 tons compared to 2023. This increase is mainly due to a general adjustment in the municipal waste collection service that affected all subscribers. TRANSELCA's substations do not have a specific waste collection system, as the volume of waste generated is low. Therefore, TRANSELCA is included in the collection routes defined by the municipal waste management company, which sets the rates based on estimated volume and generation percentages. In this context, the increase in ordinary waste cannot be directly attributed to the company's operations.

The subsidiaries continue to develop actions to reduce the environmental impacts caused by waste generation. We highlight the implementation of separation at source in the facilities for delivery to recycling cooperatives, composting systems for the use of organic waste, as well as the implementation of reusable cups and thermos flasks for people in some substations. Implementation of a color code for segregation and agreements with waste managers for the reuse and recycling of waste, thanks to these actions in 2024 the companies managed to recycle, recover, reuse, and valorize approximately 77% of the total waste generated.

## HAZARDOUS WASTE

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

Given the criticality of these wastes due to their characteristics (Corrosive, Reactive, Explosive, Toxic, Flammable and Biological-Infectious), and to the applicable environmental regulations, this variable covers all energy transmission subsidiaries since 2016, except ISA Energía Chile, which became operational in 2018 and currently reports this variable.

The coverage achieved by 2024 for waste disposal corresponds to the 7 energy transmission companies (ISA, ISA INTERCOLOMBIA, ISA REP, ISA CTEEP and its subsidiaries, ISA INTERCHILE, ISA BOLIVIA, and ISA TRANSELCA).

The amount of waste managed in the period is obtained from the sum of the amounts delivered to the hazardous waste manager, as evidenced in the transport manifests and certificates of recovery and/or final disposal.

Audits and follow-up on the proper management of waste at ISA and its companies are carried out in 4 actions:

- Audits are performed for GRI indicators, for 2024 audits were developed with KPMG, see third party verification: ISA circular economy model, third party verification: [Thrid-Party-verification\\_IN.pdf](#)
- Audits of the environmental management systems of ISA's operations.
- Audits carried out to achieve carbon neutrality of ISA and its companies, auditing the actions implemented to reduce emissions, including waste reduction. See: climate change, carbon neutral declaration: [Interconexion-Elctrica-GHG-Third-Party-Verification-Statement-2024\\_IN-.pdf](#)
- Internal follow-up and monitoring of waste management and reduction actions is carried out in the quarterly committees held by ISA's project and operations departments.

All energy transmission companies were included in the 2024 target. The goal was established as a 1% reduction of waste taken to final disposal by 2023. Under these assumptions, subsidiaries would have no margin to decrease their performance, and incentives for annual continuous improvement are promoted.

In 2024, the waste target was not achieved mainly due to:

- INTERCOLOMBIA: During 2023, there was no disposal contract in place, so various types of waste were stored. Once the contract was formalized in 2024, the accumulated waste was properly disposed of.
- ISA Brasil: In 2023 there was a delay in contracting the waste manager, and the contract was only formalized in 2024. The stored waste was accumulated and taken to final disposal in 2024.
- Waste taken to final disposal in 2023 was very low due to the absence of waste management contracts in Brazil and INTERCOLOMBIA. Therefore, the baseline used to establish the target was very low.
- Transelca: In 2024 it was necessary to remove oily water from the NBQ substation, with an estimated weight of 5 tons. This was a contingent situation.

Companies continue to develop actions to reduce the environmental impacts caused by waste generation. Some consolidated practices are:

- Hazardous waste is identified at source and classified in accordance with local and international regulations.
- Hazardous waste is temporarily stored in authorized warehouses or salvage yards, complying with technical and environmental requirements. Containers labeled by type of waste are used and proper segregation is ensured.
- ISA hires specialized management companies with current environmental permits. ISA's responsibility for the waste does not end until it receives the final disposal certificate from the waste manager.
- Contractors must comply with ISA guidelines, including hazardous waste management plans, training records, contingency plans, and delivery of environmental authorizations of the managers used.
- ISA monitors indicators such as tons of hazardous waste recycled, incinerated, or disposed of in safety cells.
- The company promotes internal environmental awareness campaigns and participates in courses such as the one offered by the Ministry of Environment on comprehensive hazardous waste management.
- Standards by companies that establish requirements for RESPEL warehouses, sanitary permits, labeling and maximum storage times.
- The companies keep records and monitoring of managed hazardous waste, manifests and containment requirements to avoid contamination by dielectric oils.
- HSE manuals that define requirements for contractors, such as final disposal certificates, regulatory classification and control of exported waste.

**It is important to highlight that, although the goal was not achieved, there was a waste recovery rate of 54% of the total waste generated.**

## **ENVIRONMENTAL IMPACTS DURING THE LIFE CYCLE OF THE ASSET**

ISA has four business units including Energy Transmission, Road Concessions, Information and Communication Technologies, and Real-Time Systems Management. Among them, ISA's core business is Energy Transmission, which consists of the transmission of energy generated

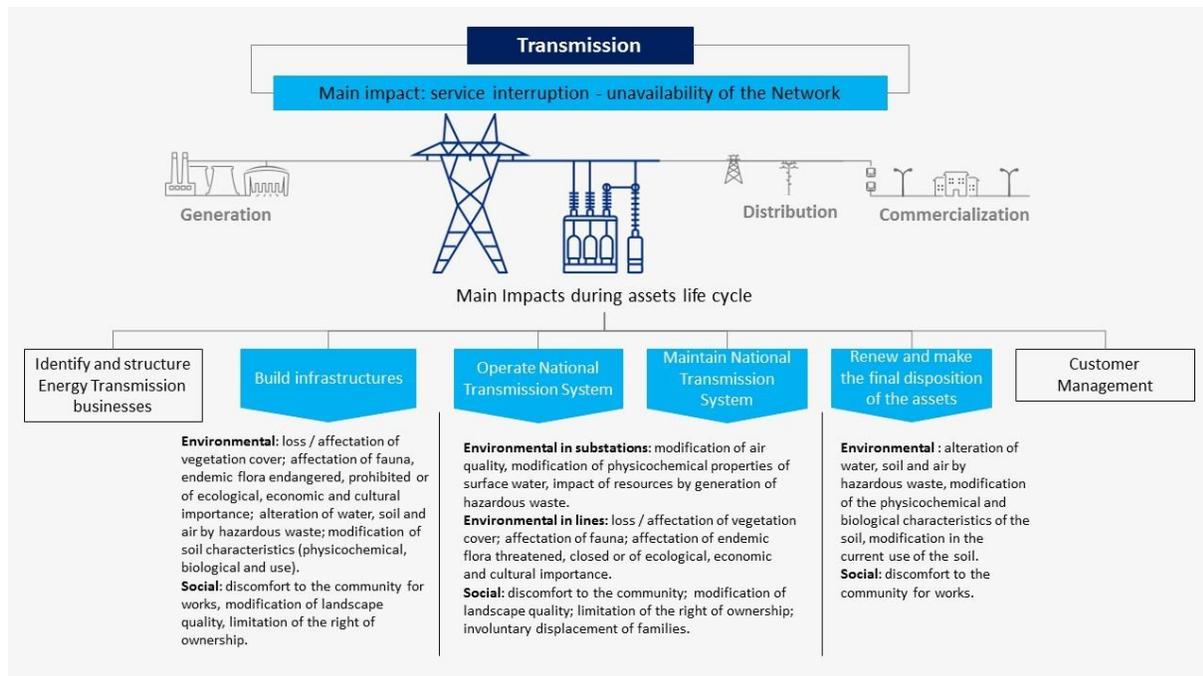
to distributors. Transmission is fundamental to an energy market as it is the meeting point between generation and demand and is the means of executing electric power exchanges.

Most of the ISA companies do not own or operate their own fleet of vehicles, therefore, there is no significant generation of NOx emissions. Most transportation for maintenance activities, business travel, and employee commuting is provided by contractors and public transportation.

In addition, we do not perform combustion in our processes that generate NOx, SOx, PM10, ash and gypsum, mercury or dust during the operation and maintenance of the Energy Transmission business. The main materials and equipment operated to provide this service are current, voltage and power transformers, as well as reactors, circuit breakers, disconnectors, tower profiles, insulators, power cables, dielectric oil and electronic equipment, among others, none of which require a combustion process in the production cycle that generates emissions of NOx, SOx, ash and gypsum, mercury or dust.

These materials are not transformed at any point in the life cycle of the asset of ISA or its companies, which consist mainly of assemblies of different metal parts without the need to burn any fuel or use a material that can generate emissions.

Throughout the life cycle of ISA's assets, plans are monitored and implemented to reduce and manage environmental impacts.



## ENERGY TRANSMISSION LOSSES:

Transmission losses (%)	2022	2023	2024
	3.1	2.4	2.5

Losses in the energy transmission network are difficult for transmission companies to manage, as they depend mainly on three external elements:

The technical characteristics of the electrical equipment used corresponding to the most cost-effective design.

The load connected to the infrastructure and its topology.

The infrastructure that goes in or out of operation and that supports or overloads the system.

Calculation Methodology

Losses are calculated as the energy entering the infrastructure minus the energy leaving it.

Dividing this by the incoming power expresses the percentage of losses that occur during the transmission process, following the formula:

$$\%Loss = \left[ \frac{\text{Generation} - \text{Demand}}{\text{Generation}} \right] * 100$$

% Losses: Percentage of losses in the transmission system.

Generation: Energy entering or injected into the energy transmission system, measured at the limits.

Demand: Energy consumed or leaving the transmission system, measured at the limits.

Calculation Data

Generation (MWh): 388,489,733

Demand (MWh): 378,740,662

Losses (MWh): 9,749,071

Losses (%): 2.509%

With a 6.8% increase in energy demand compared to 2023, we have achieved a loss value in the range of 2 to 3%, which we define as corresponding to technical losses.

## TRANSMISSION RELIABILITY:

ISA uses a robust set of metrics for continuous reliability monitoring within its energy transmission infrastructure. Key performance indicators include:

- **Energy Not Supplied (ENS):** Quantifies the cumulative ENS resulting from all disconnections, both scheduled and unscheduled, occurring in the transmission system.
- **Estimated Duration of Interruption (DEI):** This index provides an overall comparison of Energy Not Supplied (ENS) versus maximum system demand.
- **Reliability Index:** It is calculated by contrasting the Energy Not Supplied (ENS) with the total energy demanded by the system.
- **Availability:** Represents the percentage of time, within a 12-month rolling window, during which our transmission infrastructure is operational.

In addition, energy transmission companies do not normally keep a direct record of the end users affected by each disconnection in their systems -this activity is the responsibility of the power distribution sector-, so we estimate the System Average Interruption Duration Index (SAIDI) based on reliability.

Year	Reliability [%]	DEI [h]	SAIDI [h]*
2022	99.9975%	0.17	0.22
2023	99.9979%	0.13	0.18
2024	99.9984%	0.12	0.14

\* Estimated with the reliability index.

The energy not supplied (ENS) and the maximum system demand are calculated by the public agencies responsible for the operation in each of the countries where ISA has a presence:

- **COLOMBIA:** <https://www.xm.com.co/Paginas/Home.aspx>
- **PERU:** <http://www.coes.org.pe/portal/>
- **BRAZIL:** <https://www.ons.org.br/paginas/noticias/details.aspx?i=10128>
- **CHILE:** National Electric Coordinator <https://www.coordinador.cl/>
- **BOLIVIA:** CNDC – National Freight Forwarding Committee <https://www.cndc.bo/estadisticas/>

**KPMG CERTIFIED AUDIT EVIDENCE, SEE:** eco-efficiency and circular economy,  
Download, third part verification: [Thrid-Party-verification\\_IN.pdf](#)

### Annex: clarification of aggregated figures from other ISA businesses for non-hazardous waste by company 2023-2024

	INDICATOR	UNITS	YEAR	ISA	INTERCOLOMBIA	REP	BRASIL	ISABOLIVIA	CHILE	TRANSELCA	TOTAL ENERGY TRANSMISSION	VIAS CHILE	XM	INTERNEXA	Ruta Costera	TOTAL ALL COMPANIES
non-hazardous waste	Total used/recycled/sold waste	ton	2024	128,6	137,6	24,71	3.645,20	0,18	0,25	195,56	4.132,084	51.418	2,41	8,87	11.235	66.796,334
	Total waste taken to final disposal	ton	2024	6,69	32,0	19,97	175,61	2,31	1,4	105,59	343,532	16.125	1,35	1,08	3.826	20.296,962
	Waste landfilled	ton	2024	6,69	32,0	19,97	175,61	2,31	1,4	105,59	343,532	16.125	1,35	1,08	3.826	20.296,962
	Waste incinerated with energy recovery	ton	2024								-					
	Waste incinerated without energy recovery	ton	2024								-					
	Waste otherwise disposed (security cell)	ton	2024								-					
non-hazardous waste	Total used/recycled/sold waste	ton	2023	544,54	135,86	10,53	2.307,3	1,1	0,65	317,75	3.317,737	31.854	2,45	0	15	35.189,19
	Total waste taken to final disposal	ton	2023	1,56	57,02	10,66	103,5	2,38	2,04	87,11	264,270	44.783	11,14	3,76	4430,7	49.492,87
	Waste landfilled	ton	2023	1,56	57,02	10,66	103,5	2,38	2,04	87,11	264,270	44.783	11,14	3,76	4430,7	49.492,87
	Waste incinerated with energy recovery	ton	2023	-	-	-	-	-	-	-	-					
	Waste incinerated without energy recovery	ton	2023	-	-	-	-	-	-	-	-					
	Waste otherwise disposed (security cell)	ton	2023	-	-	-	-	-	-	-	-					