

Itaipu Hydroelectric Dam (Brazil – Paraguay)



Source: Ramboll

Location	Paraná River on the border between Brazil and Paraguay
Sector	Energy
Procuring Authorities	Government of Brazil, Government of Paraguay
Project Company	Itaipu Binacional
Contract Obligations	Design, Build, Operate
Financial Closure Year	-
Capital Value	USD 17.6 billion
Start of Operations	Completion of the Dam works: 1982 Start of electricity generation: 1984
Contract Period (years)	50 (Treaty of Itaipu: 1973-2023)
Key Facts	Co-owned project between Brazil and Paraguay

Project highlights

The Itaipu Hydroelectric Dam (the Dam) is located on the Paraná River on the border between Brazil and Paraguay. The structure which serves to generate power is about 7.9 kilometres long, with a maximum height of 196 metres¹.

The Dam was developed during a period of conflict over land at the border between Brazil and Paraguay in the 1960s, as both countries perceived the untapped energy potential of the Paraná river. The joint signature of the Act of Iguacu in 1966 and of the Treaty of Itaipu in 1973 enabled the project to emerge as a binational and coordinated effort to build and manage the Dam while sharing its costs and benefits². Itaipu Binacional, a company jointly owned by Brazil and Paraguay, was created by the Treaty of Itaipu to build and operate the Dam.



1. The Dam (source: Itaipu Binacional)

The construction of the Dam began in February 1971 and cost USD 17.6 billion (2018 prices) by the time the facility started operating in 1984. The procurement of the project was widely exposed to corruption at the construction stage, as the politicians in power encouraged the selection of private companies which had ties with political figures. Since that period, the fight against corruption and fraud has been of major importance for Itaipu Binacional and has been managed by the establishment of the Ombudsman's office, internal audits, and the Ethics Committee, as well as the Compliance Advisory.

Today, the Itaipu Hydroelectric Dam, with its 20 generating units of 700 MW capacity each, is the largest operational hydroelectric energy producing asset in the world. In 2018³, the energy generated was used to supply nearly 90% of the electricity consumed in Paraguay and about 15% in Brazil⁴. About 85% of the energy generated by the plant is used by Brazil⁵. The two countries have an equal right to the Dam's production, but because Paraguay only consumes 15% of its share, it is obliged to sell the rest to Brazil, with 70% of the price covering the financing of construction. The treaty, when originally signed, required Paraguay to sell its unused electricity to Brazil for USD 124 million a year until 2023. In July 2009, the two countries signed a deal, under which Brazil agreed to triple its payments to Paraguay.

Since its completion, the Itaipu Hydroelectric Dam has risen as a project of the highest significance in the economic and diplomatic history of the two countries.

¹ Itaipu Binacional, Dam, <https://www.itaipu.gov.br/en/energy/dam>.

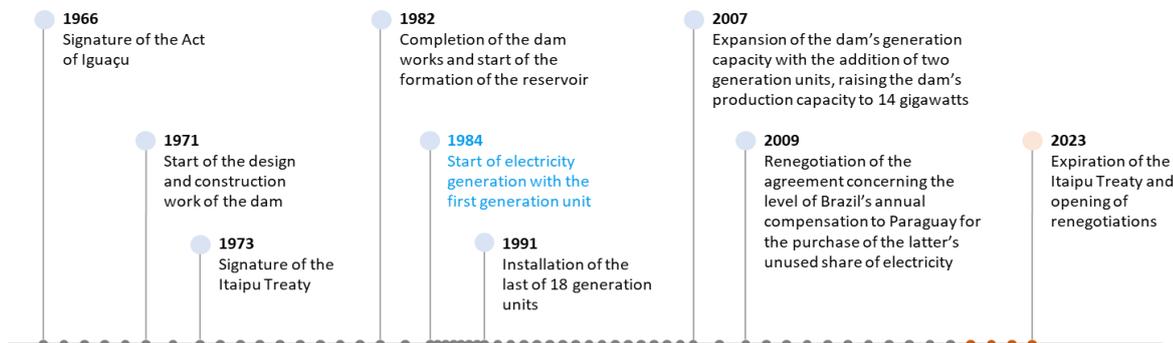
² More information about The Act of Iguacu and Treaty of Itaipu are available at <https://www.itaipu.gov.br/en/company/official-documents>

³ Latest data available.

⁴ Itaipu Binacional (2018). *Sustainability report 2018*. Available at: <https://www.itaipu.gov.br/en/social-responsibility/sustainability-reports>.

⁵ Ibid.

Project timeline



Development

National contexts

The Itaipu Hydroelectric Dam was signed and built at a time when both Brazil and Paraguay were under military rule. The two countries had a long history of conflict, and in the 1960s, Brazil and Paraguay were in dispute over borderlands and the available potential to produce hydroelectric power along water bodies on their shared border⁶. Territorial sovereignty was at the heart of a conflict from March 1965 to June 1966. The Act of Iguacu, signed on 22nd June 1966, ended the conflict and “marked the first official step toward what became the Itaipu Hydroelectric Dam” and laid the groundwork for the Treaty of Itaipu signed in 1973⁷.

The signature of the Treaty of Itaipu in 1973 led to conflicts with Argentina, as the construction of the dam directly affects water flows received downstream on the Paraná river. This threatened Argentina’s various plans for hydropower production, such as at the then planned Corpus hydroelectric power plant. The conflict was resolved in the 1979 Tripartite Itaipu-Corpus Agreement, signed between Paraguay, Argentina and Brazil, which sets out downstream flow requirements with which Itaipu Binacional must comply⁸.

Policy and planning setting

The 1966 Act of Iguacu proclaimed that Brazil and Paraguay would commonly explore the hydroelectric potential of the resources common to the two countries, and stated the agreement that the electricity generated would be evenly shared but could be sold from one of the two parties to the other at a fixed price decided by the countries, and not at ‘cost price’ as requested by Paraguay⁹.

The Treaty of Itaipu of 1973 further reinforced the joint agreement of both governments in “effecting the hydroelectric development of the hydraulic resources of the Paraná River.”¹⁰ To that effect, the Treaty of Itaipu created a binational entity called Itaipu Binacional, founded in 1974 and co-owned by Brazil and Paraguay. The national administrations in charge of electricity in the two countries, Centrais Elébricas

⁶ Blanc, J. (2017). Itaipu's Forgotten History: The 1965 Brazil–Paraguay Border Crisis and the New Geopolitics of the Southern Cone. *Journal of Latin American Studies*. 50. 1-27. 10.1017/S0022216X17000049.

⁷ Ibid.

⁸ Kramer, A.; Hensengerth, O., Mertens, A. & Carius A. (adelpi, Berlin) (2012). *Assessment of RBO-Level Mechanisms for Sustainable Hydropower Development and Management*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

⁹ Blanc, J. (2017). Itaipu's Forgotten History: The 1965 Brazil–Paraguay Border Crisis and the New Geopolitics of the Southern Cone. *Journal of Latin American Studies*. 50. 1-27. 10.1017/S0022216X17000049.

¹⁰ TREATY OF ITAIPU SIGNED BY BRAZIL AND PARAGUAY - LAW NO. 5,899 OF JULY 5, 1973. Retrieved from: <https://www.sec.gov/Archives/edgar/data/1439124/000119312508153744/dex41.htm>

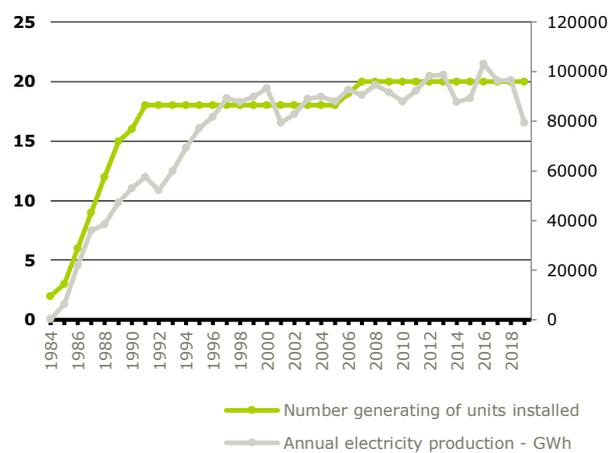
Brasileiras (Eletrobras, Brazil) and the Administración Nacional de Electricidad (Ande, Paraguay), each share 50% of the entity's equity¹¹.

In 2023, Annex C of the Treaty of Itaipu, which sets out the financial bases and provision of electricity services, will be reviewed by the two governments. This could lead to a revision of the rules of payment of royalties (see also the *Financing* section). This crucial date is highly anticipated by the two governments as it could lead to a shift in the approach to sharing the benefits of the project. No employees of Itaipu Binacional will be involved in the discussions¹².

The Treaty of Itaipu also defines the conditions for the exploitation of the Paraná River by both countries for hydroelectric power, with the defined maximum number of generating units.

Challenges and opportunities addressed by the project

The purpose of the Dam was the production of electricity to supply Brazil and Paraguay with the power needed to contribute to modern industrial development. Although the development of the Dam was progressive with the generation capacity incrementally increased, the Dam was able to reach and plateau at the current level of energy production capacity within about 10 years of commencing electricity production operations (see **Error! Reference source not found.2**).



As Itaipu Binacional reports, "In 2018, the net energy generated was 95,883 GWh. Of the total, 80,839 GWh were provided for Eletrobras, which corresponds to 15% of the demand of the Brazilian market. For Ande, 15,044 GWh were supplied, serving almost 91% of the demand of the Paraguayan market"¹³.

2. Yearly electricity production in relation to the number of generating units installed (Source: Authors, based on data from Itaipu Binacional¹⁴)

Environmental and social issues

At the time the Itaipu Hydroelectric Dam was built, hydroelectric power was already a common source of energy in Brazil. Indeed, water is an abundant resource of which the country wanted to take advantage. The decision in 1973 to develop the Dam was comforted by the context of the oil crisis at the time, which made hydroelectric power appear a more stable choice than fossil fuel-based energy sources¹⁵. The electricity produced in 2018 (95,883 GWh) corresponds to the equivalent energy contained in about 55 million barrels of oil.¹⁶ While Brazil's electricity production is dominated by hydroelectric powerplants, a large proportion of Brazil's energy consumption still originates from fossil energy sources¹⁷.

The construction of the Itaipu Hydroelectric Dam incurred significant environmental and social impacts. At the time, Brazil and Paraguay did not have legislation supporting biodiversity protection. The Guaira

¹¹ Itaipu Binacional (2018). *Sustainability report 2018*. Available at: <https://www.itaipu.gov.br/en/social-responsibility/sustainability-reports>

¹² Itaipu Binacional (2020, April 8th). Video-conference interview.

¹³ Itaipu Binacional (2018). *Sustainability report 2018* (pp.33). Available at: <https://www.itaipu.gov.br/en/social-responsibility/sustainability-reports>

¹⁴ Itaipu Binacional (2020). Production from year to year. Retrieved from: <https://www.itaipu.gov.br/en/energy/production-year-year>

¹⁵ MacDonald P. (2016). *Itaipu Dam – the world's largest generator of renewable, clean energy*.

¹⁶ Own calculation based on the conversion factor that 1 gigawatt-hour is equivalent to 588.44 barrels of oil equivalent.

¹⁷ IEA, Country profile Brazil, available at <https://www.iea.org/countries/brazil>

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Falls, which most likely represented the greatest volume of falling water in the world until 1983, were submerged under the artificial lake created by the Dam and dynamited to facilitate navigation. 65,000 people were displaced, 40,000 people on the Brazilian and 25,000 people on the Paraguayan side. Resettlement occurred in coordination between governments and Itaipu Binacional, which paid compensation of USD 190 million to the displaced populations¹⁸.

Perceived long-term benefits

The Itaipu Hydroelectric Dam is a major source of electricity for both countries, particularly Paraguay, for which the Dam is a structural element of the country's economy¹⁹. Around 10% of the public revenues of the country are derived from 'royalties' (compensation payments) related to binational hydroelectric facilities – the Itaipu and Yacyretá Hydroelectric Dams²⁰. For Brazil, it is a source of energy obtained at stable prices. In both countries, it has contributed to the development of a whole region around the reservoir.

The Government of Brazil uses parts of the proceeds from the sales of generated hydroelectric power in social and environmental protection measures for local communities and habitats within and surrounding the Dam reservoir, as prescribed by the Brazilian Constitution of 1988 and related legislation²¹. The allocation key provides that the areas most impacted by the Dam receive the largest share of the revenues²².

Since 2003, Itaipu Binacional has been conducting social and environmental protection activities, which in 2005 was mandated by the Brazilian and Paraguayan Governments²³. These activities are diverse and mostly aimed at educating the local population to live with the Dam, benefiting both the local populations and the company in a win-win situation. Activities include:

- agricultural productivity and fishery protection
- water quality control
- creation of protected areas for biodiversity around the reservoir
- development of aquaculture
- rehabilitation and development support for indigenous communities, and
- health services to local communities.

Itaipu Binacional also helped to develop infrastructure in the region, such as bridges or hospitals. In Brazil, where development has tended to be concentrated towards the coastal region, these initiatives have contributed to the development of inland regions²⁴.

¹⁸ Kramer, A.; Hensengerth, O., Mertens, A. & Carius A. (adelphi, Berlin) (2012). *Assessment of RBO-Level Mechanisms for Sustainable Hydropower Development and Management*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

¹⁹ Konc L. (2015). *Les impacts sur le développement économique du Paraguay de la construction et de l'exploitation d'Itaipu Binacional*. Sciences Po & HEC Paris

²⁰ World Bank (2018). *Paraguay - Systematic Country Diagnostic (English)*. Washington, D.C. : World Bank Group. Available at: <http://documents.worldbank.org/curated/en/827731530819395899/Paraguay-Systematic-Country-Diagnostic>

²¹ In Brazil, according to the Law 8001, passed in 1990, electric utilities have to pay financial compensation from the exploitation of water resources.

²² Kramer, A.; Hensengerth, O., Mertens, A. & Carius A. (adelphi, Berlin) (2012). *Assessment of RBO-Level Mechanisms for Sustainable Hydropower Development and Management*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

²³ Itaipu Binacional (2018). *Sustainability report 2018*. Available at: <https://www.itaipu.gov.br/en/social-responsibility/sustainability-reports>.

²⁴ Itaipu Binacional (2020, April 8th). Video-conference interview.

Procuring and Financing

Procurement model

The design and construction of the Itaipu Hydroelectric Dam was led by two consortia: Unicon (Brazilian) and Conempa (Paraguayan), while the electrical-mechanical assembly work was performed by Itamon (Brazilian) and CIE (Paraguayan)²⁵.

All contracts undertaken by Itaipu Binacional must comply with the criteria and modalities defined by its general bidding standard, which determines the selection of the most advantageous proposals for the entity, considering price, quality and impacts on sustainability²⁶.

Infrastructure financing

The costs of building the Itaipu Hydroelectric Dam were assumed by loans guaranteed by the Brazilian Government. Indeed, Paraguay, which did not have the financial resources to build the plant, arranged a loan from Brazil to meet the initial capital demand plus other future investment needs. Itaipu Binacional states “the Fixed Assets in the 2018 Balance Sheet, in the amount of USD 17.6 billion, may represent the price of the Dam’s construction”²⁷. That amount includes the financial charges incurred during the construction until each generator unit went online. The direct investment – without financial charges – averaged USD 12 billion (2018 prices). The funds raised for the construction, including financial rollovers, totalled USD 27 billion, in addition to the USD 100 million in paid-in capital²⁸.

The repayment of the debt is assured by sales of the energy to Eletrobras and Ande, which hire the installed power available²⁹. Itaipu Binacional permanently puts at the disposal of the two companies a given quantity of power, fixed before production: the contracted power. As such, the Treaty of Itaipu “contributes to the predictability of revenues and cash flow and reduces the risks posed by hydrological crises [such as floods and droughts] that interfere with energy generation”. Eletrobras and Ande only pay for the contracted power. If the actual production exceeds the defined quantity, the two companies are not charged additional costs³⁰.

Itaipu Binacional has not been set up to commercially operate and deliver profits. As per the Treaty of Itaipu the fare charged for the contracted power (defined as the unit cost of the electricity service) should be sufficient to cover all service costs³¹. The service costs include:

- Royalties: Financial compensation payment due to the Brazilian and Paraguayan Governments for the use of the hydraulic potential of the Paraná River. Their amount is defined in Annex C of the Treaty of Itaipu, as the equivalent of USD 650 per GWh generated by the Dam. This amount cannot be inferior, annually, to USD 18 million, shared equally between the two parties.
- Capital investment income: payable to Ande and Eletrobras in the amount of 12% per year of participation in the paid-up capital, adjusted for inflation.
- Operating expenses: expenses on personnel, materials, goods and services.
- Financial charges and amortisation of loans and financing.

²⁵ Itaipu Binacional. FAQ. Available at: <https://www.itaipu.gov.br/en/press-office/faq>

²⁶ Itaipu Binacional (2018). *Sustainability report 2018*. Available at: <https://www.itaipu.gov.br/en/social-responsibility/sustainability-reports>

²⁷ Itaipu Binacional. FAQ. Available at: <https://www.itaipu.gov.br/en/press-office/faq>

²⁹ Kramer, A.; Hensengerth, O., Mertens, A. & Carius A. (adelphi, Berlin) (2012). *Assessment of RBO-Level Mechanisms for Sustainable Hydropower Development and Management*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

³⁰ Itaipu Binacional (2020, April 8th). Video-conference interview.

³¹ Itaipu Binacional (2015). *Sustainability report 2015*. Available at: <https://www.itaipu.gov.br/en/social-responsibility/sustainability-reports>

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- Reimbursement of management and supervision charges: payable to Ande and Eletrobras to financially compensate the management and supervision efforts. Calculated as the equivalent to USD 50 per GWh generated by the Dam.
- Operating account income for the year: Annual balance between revenue and the cost of electricity service.

The rate applied throughout the year 2018, and since 2009, was USD 22.60 per kW of contracted monthly power³². The debt is expected to be repaid by 2023³³.

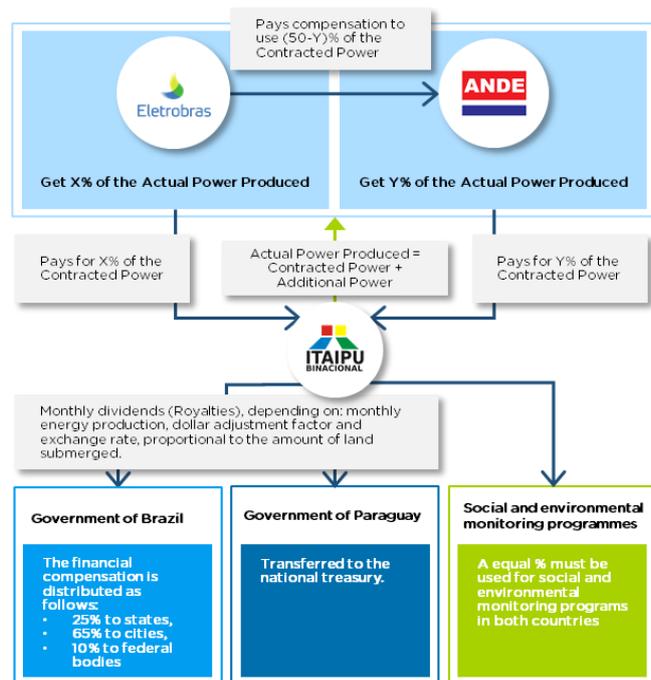
Sharing of costs and benefits

As per the Treaty of Itaipu, all the costs and benefits, as well as the implementation of social and environmental mitigation measures from Itaipu Binacional, are split equally between the two countries³⁴. This entails that the debt for the construction of the Dam and its maintenance costs are also evenly distributed³⁵.

Furthermore, the Treaty of Itaipu stipulates that the total quantity of energy generated must be bought by the two countries³⁶ and is divided equally, such that any surplus electricity not used by either country must be sold to the other at a price corresponding to the cost of generation defined in the treaty.

In 2009, Paraguay used between 4% and 5% of its share of the electricity produced³⁷ and in the first quarter of 2020 this figure rose to about 12.5%³⁸. In accordance with the Treaty of Itaipu, Paraguay has thus been selling the rest of its share to Brazil. The treaty, when originally signed, required Paraguay to sell its unused electricity to Brazil for USD 120 million a year until 2023. Paraguay expressed concerns about this amount and after several months of negotiations, the two countries signed a deal in July 2009, under which Brazil agreed to triple its payments to Paraguay³⁹.

In parallel, and as per the Treaty of Itaipu, the Brazilian and Paraguayan Governments have been receiving ‘royalties’ (a compensation payment) from Itaipu Binacional since the start of electricity production from the Dam in 1985. They are paid on a monthly basis as financial compensation for the use of the natural resources of the reservoir.



Main cost-sharing mechanisms (source: Authors based on data from Itaipu Binacional)

³² Itaipu Binacional (2018). *Sustainability report 2018* & Itaipu Binacional (2015). *Sustainability report 2015*. Available at: <https://www.itaipu.gov.br/en/social-responsibility/sustainability-reports>.

³³ Itaipu Binacional (2020, April 8th). Video-conference interview.

³⁴ Kramer, A.; Hensengerth, O., Mertens, A. & Carius A. (adelphi, Berlin) (2012). *Assessment of RBO-Level Mechanisms for Sustainable Hydropower Development and Management*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

³⁵ LADB (2009). *Paraguayan-Brazilian Dispute Over Itaipu Could go to International Arbitration*. Available at <https://digitalrepository.unm.edu/notisur/13789>

³⁶ Itaipu Binacional (2020, April 8th). Video-conference interview.

³⁷ LADB (2009). *Paraguayan-Brazilian Dispute Over Itaipu Could go to International Arbitration*. Available at <https://digitalrepository.unm.edu/notisur/13789>

³⁸ Andres Schipani (2020). Itaipú dam talks with Brazil set to vent Paraguay’s pent-up energy. *The Financial Times* (online). Available at: <https://www.ft.com/content/48b3f930-56cf-11e9-8b71-f5b0066105fe>

³⁹ Ibid.

The royalties are proportional to the amount of land submerged by the lake. According to Itaipu Binacional, Brazil has received USD 5.7 billion in royalties since 1987, while Paraguay has received USD 5.4 billion. In Brazil, Itaipu Binacional reports that “the financial compensation is distributed as follows: 25% to states, 65% to cities and 10% to federal bodies (Ministry of the Environment, Ministry of Mines and Energy, and the National Scientific and Technological Development Fund)”⁴⁰. The Brazilian Government must pass on the funds within ten days of payment made by Itaipu Binacional. In Paraguay, royalties are transferred to the national treasury. The Paraguayan Government decides afterwards how to redistribute the compensation, depending on “government priorities”⁴¹. There is no law nor obligation defining which proportion of the royalties must be used to mitigate social or environmental aspects of the project; the domestic share of royalties is independent of the bilateral agreements⁴².

Itaipu Binacional, further to the Treaty of Itaipu, must spend equal amounts for social and environmental monitoring programs in each country⁴³.

The fare, paid yearly by the two owners, is pegged to the US dollar. The values of royalties are calculated based on three variables: monthly energy production, the dollar adjustment factor and the exchange rate⁴⁴.

Management

Political and operational coordination

The Dam infrastructure is owned by the Governments of Brazil and Paraguay. The two governments, through their national administrations in charge of electricity – Eletrobras and Ande, own Itaipu Binacional. Eletrobras and Ande each share 50% of the company equity. Itaipu Binacional, in return, is responsible for construction and operations of the Dam.

The company’s administration is shared by both countries. It is composed of an Administrative Council (also called the Supervisory Board), and an Executive Board of Directors. The Treaty of Itaipu and the company’s bylaws define the tasks and competences of the Boards. The appointment of the members of these two bodies is the responsibility of the Brazilian and Paraguayan Governments. Each position allotted to a country has its counterpart on the other side.

Governance Structure
[102-18, 102-22, 102-23]



* the Ombudsman, the internal audit and the Compliance advisory are organizational units linked to the Administrative Council.

4. Governance structure of the Itaipu hydroelectric dam (source: Itaipu Binacional)

The Administrative Council counts 12 members – six members of each country – plus one representative of each country’s Ministry of Foreign Affairs. The Executive Board counts six members of each country – one for each department (see Figure 4), plus one General Director.

⁴⁰ Itaipu Binacional. Royalties. Available at: <https://www.itaipu.gov.br/en/social-responsibility/royalties>

⁴¹ Kramer, A.; Hensengerth, O., Mertens, A. & Carius A. (adelphi, Berlin) (2012). *Assessment of RBO-Level Mechanisms for Sustainable Hydropower Development and Management*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

⁴² Itaipu Binacional (2020, April 8th). Video-conference interview.

⁴³ Kramer, A.; Hensengerth, O., Mertens, A. & Carius A. (adelphi, Berlin) (2012). *Assessment of RBO-Level Mechanisms for Sustainable Hydropower Development and Management*. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

⁴⁴ Itaipu Binacional (2018). *Sustainability report 2018*. Available at: <https://www.itaipu.gov.br/en/social-responsibility/sustainability-reports>

Corruption, ethics and compliance

Corruption was an important issue at the time of construction⁴⁵. Today, the fight against corruption and fraud is central for Itaipu Binacional⁴⁶. Itaipu Binacional's commitments to combat fraud or corruption are described in the company's Basic Policies and Guidelines, in the Binational Sustainability Policy and in the Ethics Code, which applies to directors, officers, employees and the entire value chain.

The accounts of the company are jointly verified by external audits of the two partner countries and the results are communicated annually to the Executive Board and to the Administrative Council⁴⁷. Auditors are changed every two years⁴⁸. An independent binational internal audit group was established at the time the company was created and reports directly to the Supervisory Board. In addition, since 2006, Itaipu Binacional adheres to the rules of the Sarbanes-Oxley Act (SOX), whose central aspect is the identification of risks and the establishment of internal controls that certify the authenticity, integrity, and transparency of the information used on the elaboration of financial statements.

The General Ombudsman's Office, an autonomous body created in 2009, serves as a communication channel between Itaipu Binacional and the external public. The office receives suggestions, complaints, compliments and denunciations, and, after screening them, refers them to the relevant bodies. In parallel, the company formed an Ethics Committee which receives and evaluates the complaints about non-ethical conduct that constitute an infringement of the values, principles and norms of Itaipu Binacional Code of Ethics⁴⁹. The committee is composed of six members, divided equally between Brazilians and Paraguayans, who are employees appointed by the Executive Board with at least one representative of the Legal Management of each country. The mandate is three years, with one allowed renewal. Decisions are adopted by a majority of votes, in meetings held every two months. The general board and general directors receive reports and recommendations periodically.

A Compliance Advisory was created in both countries and responds directly to the Executive Board, with assignments to plan, coordinate, integrate and align the activities pertinent to the integrity system and compliance, the corporate risk management system and internal control processes⁵⁰. In July 2017, Itaipu Binacional approved the binational integrity and compliance program, which considered anticorruption aspects in its scope.

Harmonisation of rules, standards and procedures

Every four years, as a security measure, Itaipu Binacional conducts a Civil Consultants Meeting – Board, gathering civil engineers who analyse the data on the conditions of the dam structure to assess their conditions of use and safety (created in 1974). A multidisciplinary team, composed of Brazilians and Paraguayans from the plant itself, has been coordinating several studies over the last few years aiming at improving technology and equipment⁵¹.

Communication and outreach

Local communities are given the opportunity to influence the end use of the resources thanks to participatory mechanisms. Several channels are available for the population to address any demand to

⁴⁵ Straub, S., (2014). The Story of Paraguayan Dams Channels, Causes, and Consequences of Wrongdoings in Procurement. Yale Columbia Conference on Corruption in Intl. Business, Spring 2014

⁴⁶ Itaipu Binacional (2020, April 8th). Video-conference interview.

⁴⁷ Annual financial statements are publicly available at <https://www.itaipu.gov.br/en/company/annual-financial-statement>

⁴⁸ Itaipu Binacional (2018). *Sustainability report 2018*. Available at: <https://www.itaipu.gov.br/en/social-responsibility/sustainability-reports>.

⁴⁹ Itaipu Binacional (2018). *Sustainability report 2018*. Available at: <https://www.itaipu.gov.br/en/social-responsibility/sustainability-reports>.

⁵⁰ Ibid.

⁵¹ Ibid.

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Itaipu Binacional. The company's main communication tools with its stakeholders and the public are the Ombudsman and the Contact Us rubric online, corporate website and social networks (e.g. Twitter and Facebook). Itaipu Binacional also uses media relations and internal communication tools, such as Itaipu Electronic Journal (JIE) and Itaipu Panel Journal (JIM)⁵². Meetings are organised with designated community group leaders etc. Once a year, Itaipu Binacional holds a 2-3 day meeting that anyone can apply to participate in and discuss issues related to the Dam⁵³.

Conclusions

- **Strong governance and political support:** *The Itaipu Hydroelectric Dam is an example of how an infrastructure project generating important economic wealth and constructed in a context of military rule and suspicion of corruption can evolve towards more transparent governance and socio-environmental support measures.*
- **Collaboration and sharing of benefits:** *One of the main challenges lay in the fact that both countries have very different sizes, needs, and political agendas. The project was important for Brazil but was vital for Paraguay. The Itaipu Hydroelectric Dam managed to transform tensions into collaboration benefitting both countries⁵⁴.*
- **Lack of commercial incentives:** *Due to the different needs and political agendas of each country at the time, the project was designed to not make a profit⁵⁵. Itaipu Binacional is not a commercial company and has no incentive to operate for profit. The company produces electricity but is not responsible for its distribution.*
- **Business partners:** *The political tensions are not reflected in the company. Every decision in the company is discussed and is made in agreement between the two parties. The two countries act as partners. It is crucial that both countries have the same power, no matter who is buying the most energy⁵⁶.*
- **Promotion of regional development:** *Itaipu Binacional is helping the two governments develop the surrounding region – with the development of infrastructure such as bridges – as long as it does not jeopardise the company's budget. Investments are redirected to regions which might have been overlooked in the past.*
- **Driver of economic development:** *The Dam is responsible for providing an important development boost to Brazil and especially Paraguay. In Paraguay, royalties from hydroelectric power generation and sales have become a main source of public income and a key driver of the country's economy.*
- **"Wonder of the Modern World":** *From a technical point of view, the Itaipu Hydroelectric Dam is one of the largest dams in the world and has been named one of the 'Wonders of the Modern World' in 1994 by the American Society of Civil Engineers. It produces enough electricity to supply nearly 90% of the electricity consumed in Paraguay and about 15% in Brazil.*

⁵² Itaipu Binacional (2015). *Sustainability report 2015*. Available at: <https://www.itaipu.gov.br/en/social-responsibility/sustainability-reports>

⁵³ Ibid.

⁵⁴ Itaipu Binacional (2020, April 8th). Video-conference interview.

⁵⁵ Ibid.

⁵⁶ Ibid.