



Source: Itaipu Binacional Press Office

Itaipu Hydroelectric Dam



Location

Paraná River on the border between Brazil and Paraguay

Sector

Energy

Procuring authorities

Government of Brazil, Government of Paraguay

Project company

Itaipu Binacional

Project company obligations

Design, build, operate

Capital value

USD17.6 billion – 2018 value

Start of operations

Completion of 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 is located on the Paraná River on the border between Brazil and Paraguay. The structure which serves to generate power is about 7.9 km long, with a maximum height of 196 m.¹

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 Iguazu in 1966 and 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 benefits.² Itaipu Binacional, a company jointly owned by Brazil and Paraguay, was created by the Treaty of Itaipu to build and operate the dam.

The construction of the dam began in February 1971 and cost USD17.6 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 that 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 a General Ombudsman's office, Ethics Committee, and Internal Audits and Compliance Advisory functions.

Today, the dam, with its 20 generating units of 700 MW capacity each, is the largest operational hydroelectric energy-producing asset in the world. In 2018,³ the energy generated was used to supply nearly 90% of the electricity consumed in Paraguay and about 15% of that consumed in Brazil.⁴ About 85% of the energy generated by the plant is used by Brazil.⁵ 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 USD124 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 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 Iguazu and Treaty of Itaipu. 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

- **1966**
Signature of the Act of Iguazu
- **1971**
Start of the design and construction work on the dam
- **1973**
Signature of the Treaty of Itaipu
- **1982**
Completion of the dam works and start of the formation of the reservoir
- **1984**
Start of electricity generation with the first generation unit
- **1991**
Installation of the last of 18 (original) generation units
- **2007**
Expansion of the dam's generation capacity with the addition of two generation units, raising the dam's production capacity to 14 gigawatts
- **2009**
Renegotiation of the agreement concerning the level of Brazil's annual compensation to Paraguay for the purchase of the latter's unused share of electricity
- **2023**
Expiration of the Treaty of Itaipu and opening of renegotiations

Development

NATIONAL CONTEXTS

The Itaipu Hydroelectric Dam contract was signed and the dam 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 potential to produce hydroelectric power from water bodies on their shared border.⁶ Territorial sovereignty was at the heart of a conflict from March 1965 to June 1966. The Act of Iguazu, signed on 22 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 1973.⁷

The signature of the Treaty 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 by Paraguay, Argentina and Brazil, which sets out downstream flow requirements with which Itaipu Binacional must comply.⁸

POLICY AND PLANNING SETTING

The 1966 Act of Iguazu 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 Paraguay.⁹

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 Elétricas

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. (adelfi, 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 equity.¹¹

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 in 2023. This could lead to a revision of the rules of payment of royalties (see also the *Financing* section of this case study). 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 discussions.¹²

The Treaty of Itaipu also defines the conditions for the exploitation of the Paraná River by both countries for hydroelectric power, including 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 Figure 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

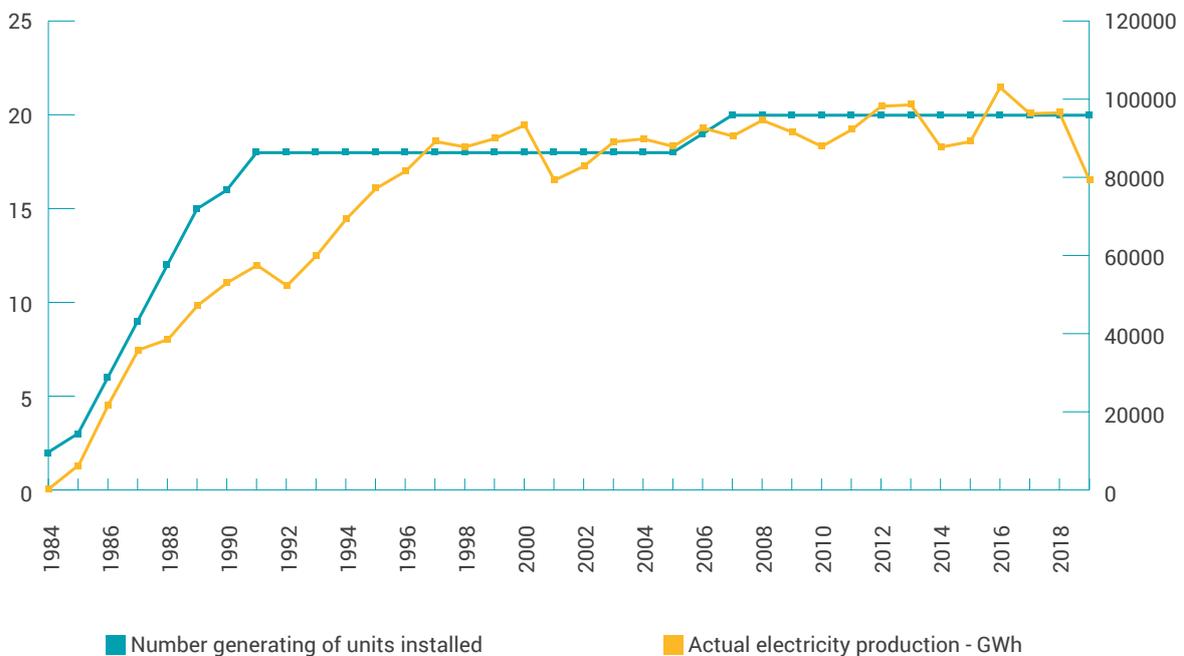


Figure 1: Yearly electricity production in relation to the number of generating units installed
 (Source: Authors, based on data from Itaipu Binacional¹⁴)

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>

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 also informed by the oil crisis at the time, which made hydroelectric power appear a more stable choice than fossil fuel-based energy sources.¹⁵ 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 power plants, a large proportion of Brazil's energy consumption still originates from fossil energy sources.¹⁷

The construction of the dam incurred significant environmental and social impacts. At the time, Brazil and Paraguay did not have legislation supporting biodiversity protection. The Guaira 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. In addition, 65,000 people were displaced – 40,000 people on the Brazilian side and 25,000 people on the Paraguayan side. Resettlement occurred in coordination between governments and Itaipu Binacional, which paid compensation of USD190 million to the displaced populations.¹⁸

PERCEIVED LONG-TERM BENEFITS

The dam is a major source of electricity for both countries, particularly Paraguay, for which the dam is a structural element of the country's economy.¹⁹ Around 10% of the public revenues of the country are derived from 'royalties' (compensation payments) related to two binational hydroelectric facilities – the Itaipu and Yacretá Hydroelectric Dams.²⁰ For Brazil, the dam 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 legislation.²¹ The allocation key provides that the areas most impacted by the dam receive the largest share of the revenues.²²

Since 2003, Itaipu Binacional has been conducting social and environmental protection activities, as mandated by the Brazilian and Paraguayan Governments in 2005.²³ 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
- health services to local communities.

Itaipu Binacional also helped to develop infrastructure in the region, such as bridges and hospitals. In Brazil, where development has tended to be concentrated towards the coastal region, these initiatives have contributed to the development of inland regions.²⁴

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>

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 economic 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 sustainability.²⁶

INFRASTRUCTURE FINANCING

The costs of building the 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 USD17.6 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 USD12 billion (2018 prices). The funds raised for the construction, including financial rollovers, totalled USD27 billion, in addition to the USD100 million in paid-in capital.²⁸

The repayment of the debt is assured by sales of the energy to Eletrobras and Ande, which hire the installed power available.²⁹ 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 costs.³⁰

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 costs.³¹ The service costs include the following:

- **Royalties:** A financial compensation payment is due to the Brazilian and Paraguayan Governments for the use of the hydraulic potential of the Paraná River. The amount is defined in Annex C of the Treaty of Itaipu, as the equivalent of USD650 per GWh generated by the dam. This amount cannot be inferior, annually, to USD18 million, shared equally between the two parties.
- **Capital investment income:** This is payable to Ande and Eletrobras in the amount of 12% per year of participation in the paid-up capital, adjusted for inflation.
- **Operating expenses:** These include expenses for personnel, materials, goods and services.
- **Financial charges and amortisation:** These include costs of loans and financing.
- **Reimbursement of management and supervision charges:** These are payable to Ande and Eletrobras as compensation for their management and supervision efforts. The charge is calculated as the equivalent of USD50 per GWh generated by the dam.
- **Operating account income for the year:** This is the annual between revenue and the cost of electricity service.

The rate applied throughout the year 2018, and since 2009, was USD22.60 per kW of contracted monthly power.³² The debt is expected to be repaid by 2023.³³

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>

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

29 Kramer, A.; Hensengerth, O., Mertens, A. & Carius A. (adelfi, 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>

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

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 countries.³⁴ This means that the debt for the construction of the dam and its maintenance costs are also evenly distributed.³⁵

Furthermore, the Treaty 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 produced and in the first quarter of 2020 this figure rose to about 12.5%.

In accordance with the Treaty, 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 USD120 million a year until 2023. After Paraguay expressed concerns about this amount, the two countries signed a deal in July 2009 after several months of negotiation, under which Brazil agreed to triple its payments to Paraguay.

In parallel, and as per the Treaty, the Brazilian and Paraguayan Governments have been receiving 'royalties' (compensation payments) 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.

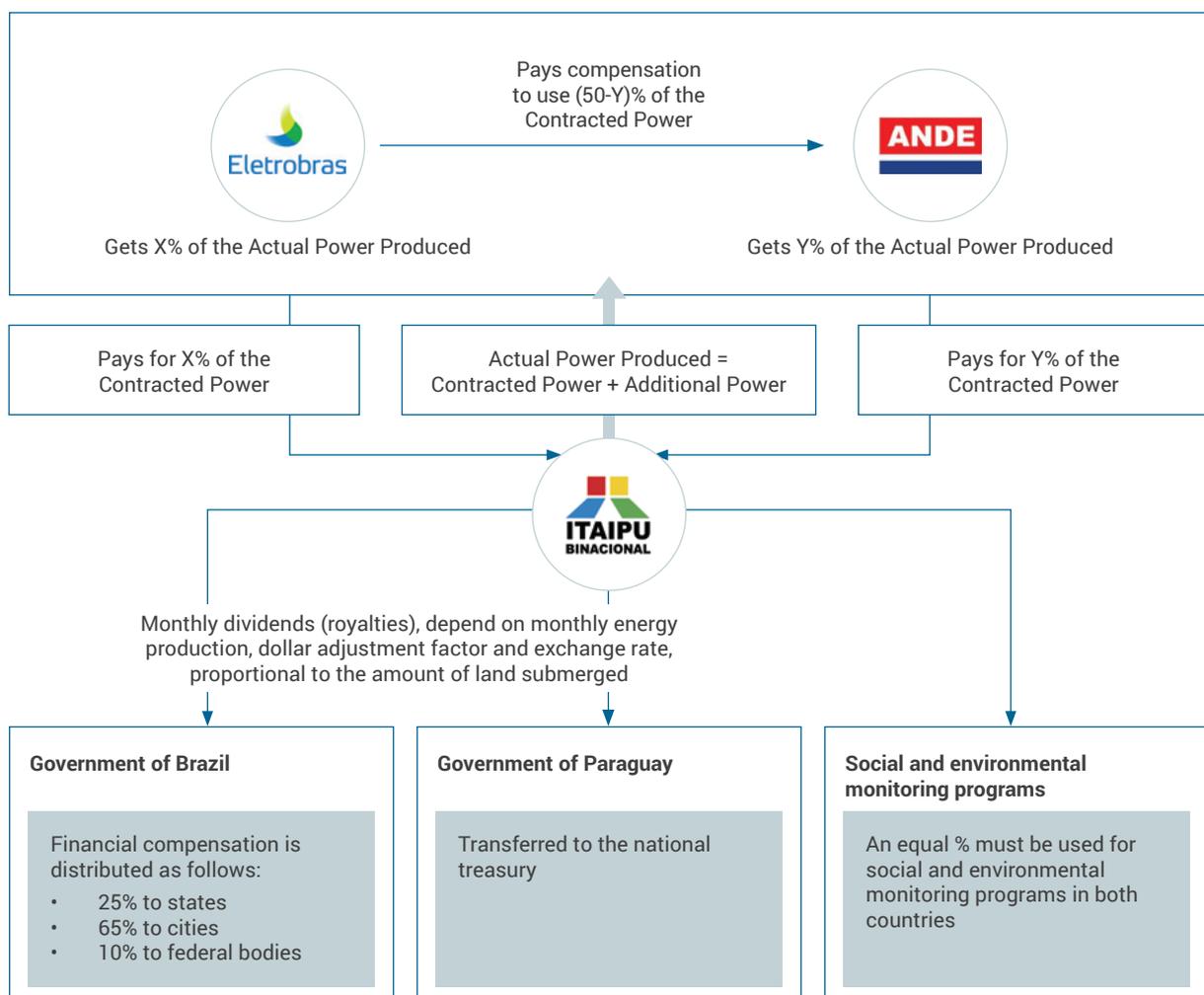


Figure 2: Main cost-sharing mechanisms (Source: Authors based on data from Itaipu Binacional)

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

The royalties are proportional to the amount of land submerged by the lake. According to Itaipu Binacional, Brazil has received USD5.7 billion in royalties since 1987, while Paraguay has received USD5.4 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).”³⁷ The Brazilian Government must pass on the funds within 10 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.³⁸

There is no law or 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 agreements.³⁹

Itaipu Binacional, further to the Treaty, must spend equal amounts for social and environmental monitoring programs in each country.⁴⁰

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 rate.⁴¹

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.

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.

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

The Administrative Council comprises 14 members, made up of six directors from each country plus one representative from each country’s Ministry of Foreign Affairs. The Executive Board consists of six members from each country, comprising one Director General and five department representatives (see Figure 3).

Governance Structure

(102-18, 102-22, 102-23)



* The General Ombudsman’s Office, Internal Audit and Compliance Advisory are organisational units linked to the Administrative Council.

Figure 3: Governance structure of the Itaipu Hydroelectric Dam (Source: Itaipu Binacional)

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

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

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

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

41 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 construction.⁴² Today, the fight against corruption and fraud is central for Itaipu Binacional.⁴³ Itaipu Binacional's commitments to combat fraud and corruption are described in the company's Basic Policies and Guidelines, the Binational Sustainability Policy and the Ethics Code, applying 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 Council.⁴⁴ Auditors are changed every two years.⁴⁵ 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 public. The office receives suggestions, complaints, compliments and denunciations, and, after screening them, refers them to the relevant organisations. In parallel, the company formed an Ethics Committee that receives and evaluates any complaints about non-ethical conduct that constitutes an infringement of the values, principles and norms of the Itaipu Binacional Code of Ethics.⁴⁶ The committee is composed of six members, equally 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 processes.⁴⁷ 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

As a security measure, Itaipu Binacional created in 1974 a Construction Consultants Board, a group of international dam engineering experts that every four years analyses the performance of Itaipu's construction structures, conducting inspections and analysing data to assess operating and safety conditions.

A multidisciplinary team, composed of Brazilians and Paraguayans from the plant itself, has been coordinating several studies over the last few years aimed at improving technology and equipment.⁴⁸

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 make requests of Itaipu Binacional. The company's main tools for communicating with stakeholders and the public are the Ombudsman, the Contact Us rubric online, the 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).⁴⁹

Meetings are also organised with designated community group leaders, and once a year, Itaipu Binacional holds a 2–3 day meeting that anyone can apply to participate in, to discuss issues related to the dam.⁵⁰

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

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

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

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

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

47 Ibid

48 Ibid

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

50 Ibid

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 the countries have very different sizes, needs and political agendas. The project was important for Brazil but was vital for Paraguay. The dam managed to transform tensions into collaboration, benefitting both countries.⁵¹
- **Lack of commercial incentives** – Due to the different needs and political agendas of each country at the time, the project was designed not to make a profit.⁵² Itaipu Binacional has not been set up to commercially operate and deliver profits. The company produces electricity but is not responsible for its distribution.
- **Business partners** – Itaipu Binacional reports that any political tensions are not reflected in the company, with every decision being discussed and made in agreement between the two parties acting as partners. Its view is that it is crucial that both countries have the same power, no matter who is buying the most energy.⁵³
- **Promotion of regional development**
 - Itaipu Binacional is helping the two governments develop the surrounding region (e.g. 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, but even more so to 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 was 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% of that consumed in Brazil.

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

52 Ibid

53 Ibid