

BRAZILIAN BOARD



ITAIPU AND THE SDGs



Adolescents

Program.

visitors

since 1977.



INTRODUCTION

Itaipu Binacional is a Brazilian and Paraguayan hydroelectric plant, a global leader in the generation of clean and renewable energy, having produced nearly 3 billion megawatt-hours (MWh) since 1984 – enough to power the planet's consumption for 46 days.

Located on the border between the two partner countries, Itaipu has 20 generating units with a combined installed capacity of 14,000 MW. In 2022, the hydroelectric plant was responsible for supplying 8.7% of all the electricity consumed in Brazil and 86.4% in Paraguay.

Established in 1974, the company has become a strong symbol of integration between Brazilians and Paraguayans and has overcome numerous challenges, both in terms of engineering and in legal, financial, and diplomatic aspects.

Over time, Itaipu has broken successive records in energy generation. In 2016, it reached an annual mark of 103,098,366 megawatt-hours (MWh), its best production and the largest in the world at that time. In recent years, the plant has exceeded its own productivity index, which is based on achieving the maximum utilization of water for energy production.

Today, the plant is relevant not only for its production. With the growth of new renewable sources, particularly intermittent generation sources like solar and wind, hydroelectric plants such as Itaipu also serve as a kind of "battery" for the electrical system.

For Brazil, its installed capacity and quick response provide security to the National System Operator (ONS). When needed, the plant can rapidly respond to peak demand, even when solar and wind farms decrease their production (due to a lack of sunlight or wind, for example). Thus, Itaipu remains a guarantee for consumers, both in the present and the future.

In 2024, Itaipu will host the 15th Ministerial Meeting on Clean Energy, the 9th Ministerial Meeting of "Mission Innovation", and the G20 ministerial meeting. These events will take place in the year when Brazil will hold the presidency of the group, which brings together the world's major economies.

The choice is due to the extensive activities of the company, which go far beyond energy generation and are reflected in initiatives related to each of the 17 Sustainable Development Goals (SDGs) that make up the 2030

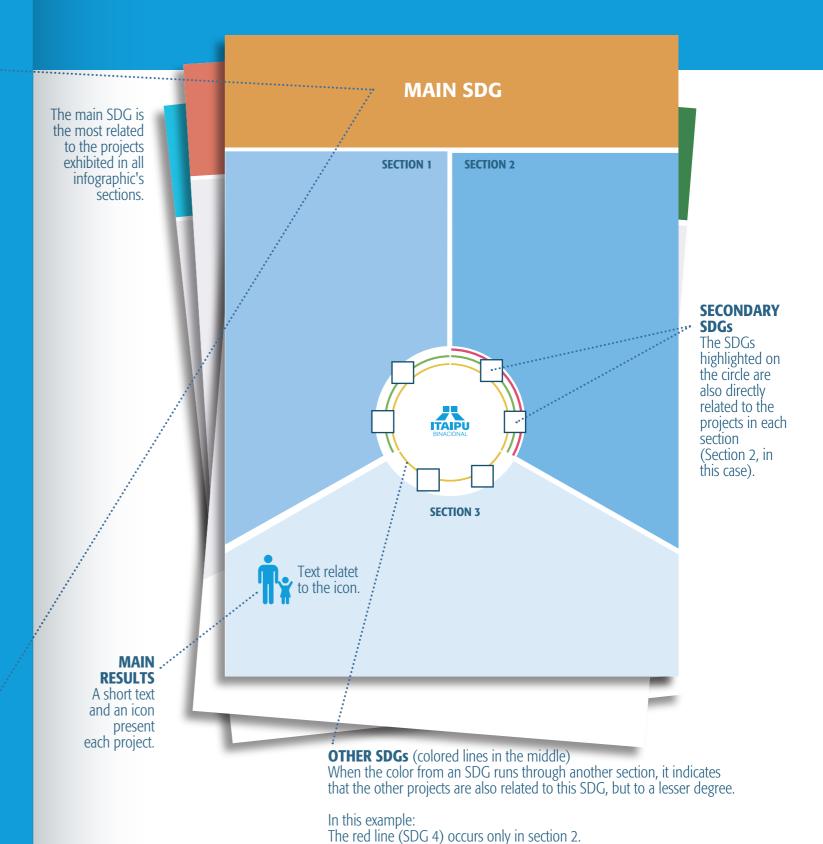
Agenda. In recent decades, the binational entity has become one of the main drivers of economic and social development in the border region between the partner countries and has established itself as a reference in environmental conservation, becoming a global icon of sustainable hydropower.

Environmental concern has been part of Itaipu's history. With the formation of the reservoir, the company invested in creating a green belt of over 100,000 hectares of preserved Atlantic Forest. There are eight biological reserves and refuges in both countries, totaling 45,000 hectares, including the reservoir protection zone. These areas are recognized by UNESCO as a Biosphere Reserve, making Itaipu the only hydropower plant in the world with this title. On the Brazilian side alone, Itaipu has planted 24 million trees. On both shores, the estimate is 44 million. In addition to reforestation and reservoir protection, another measure to reduce and offset the impacts caused by the project's implementation was the royalty system, paid to the national treasuries of both countries in accordance with their respective legislation. Royalty payments began in March 1985. Since then, the governments of Brazil and

Paraguay have jointly received over US\$13 billion.ltaipu's mission incorporates social and environmental responsibility, which is translated into various programs focused on the environment, the development of new technologies, local communities around the plant and the reservoir, tourism, and regional infrastructure improvements, contributing to job creation and income generation. In 2023, the Brazilian side of the plant expanded the scope of its socio-environmental actions to cover 434 municipalities, encompassing the entire state of Paraná and the southern part of Mato Grosso do Sul, with the "Itaipu Mais que Energia" (Itaipu: More than Energy) program. In this publication, through infographics, Itaipu provides an update on its key contributions to advancing the 17 SDGs within the Brazilian area of the plant's operations. For a better understanding of each infographic, please refer to the illustration that follows.

HOW TO READ THE INFOGRAPHICS





The green line points that projects in sections 1 and 2 are SDG 15 related. The yellow line indicates that all sections are SDG 7 related.

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SDG 1: NO POVERTY

SDG 2: ZERO HUNGER





Sustainable agriculture: support for sustainable agriculture and traditional farming practices



Education: support for formal education and professional qualification



INDIGENOUS COMMUNITIES

(3 ASSISTED VILLAGES: OCOY, AÑETETE AND ITAMARÃ)



Income generation: : support for activities promoting income generation, such as craftsmanship, through cooperatives and



Infrastructure: suitable and effective solutions for the well-being of indigenous

WASTE MANAGEMENT PROGRAM



increase in the income of recyclable collectors by 30%, on average, and in some cases, up to 50%



68 Recyclable Valorization Units (RVUs) in operation in Western Paraná, with 1.092 iobs



waste management training center established in Santa Terezinha de Itaipu

YOUTH INITIATION AND WORK INCENTIVE PROGRAM (PIIT)



6,600 teenagers served since 1988

SOCIAL INCLUSION THROUGH SPORT

sports activities in the after-school period for **public school** students



Kimono Amigo (Friendly Kimono): over 500 participants (expected to expand to 800 by 2028)





Meninos do Lago (Boys of the Lake canoeing): about 1,000 children, teenagers, and people with disabilities served

Xadrez para Todos (Chess for Everyone): 42 students qualified for the state championship



Joven Atletas Campeões do Futuro (Young Future Champion Athletes - athletics): about 1,000 young people served

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CONSTRUCTION OF AFFORDABLE HOUSES

ITAIPU





EDUCATION AND HEALTH

SUSTAINABLE RURAL DEVELOPMENT FROM 2020 TO 2023



approximately **3,500 families** benefited, including indigenous communities

75 family farmer organizations ____ served in 35 municipalities

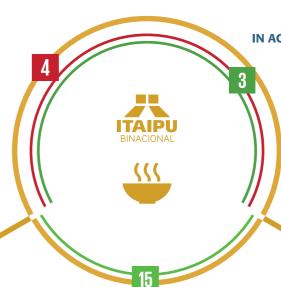
FISH FARMING







438 group training activities, with the participation of 3,993 farmers



EDUCATION FOR SUSTAINABILITY IN AGRICULTURE AND FOOD SECURITY

training for **480** nutritionists and chefs





over a **thousand cooks** participate in competitions

69 recipes published, healthy guidance books



CONSERVATION ACTIVITIES











SDG 3: GOOD HEALTH AND WELL-BEING

SDG 4: QUALITY EDUCATION

PARTNERSHIPS

ITAIPU-HEALTH WORKINGF GROUP



expansion of treatment and social reintegration for substance dependents

support of **health and well-being** initiatives addressing communities in the Triple Frontier region



strengthening public health policies in the region

coordination of actions to

EDUCATION

HEALTH EDUCATION

partnership with a regional university for hospital care qualification



training in

and "Education and Sustainability – Positive Psychology,"





integrate health services

POVERTY REDUCTION

HOSPITAL CARE



Itaipu maintains a reference **hospital** in Foz do Iguaçu, providing services to users of the Unified Health System

ARBOVIRUSES

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support for campaigns in the three borders region to **reduce cases of** dengue, zika and chikungunya

RESEARCH, DEVELOPMENT, AND INNOVATION

ITAIPU TECHNOLOGY PARK (PTI)



84 COURSES, including 30 undergraduate, 27 postgraduate, 11 specialization, 14 master's, and two doctoral programs



1,670 individuals trained in Dam Safety, Sustainability, and Applied Technologies by PTI



2,473 Scholarships already granted by the Itaipu Technology Park (PTI)

LABORATORIES

support for the Federal Institute of Paraná (IFPR) in the creation of a new laboratory block

FEDERAL UNIVERSITY OF LATIN AMERICA INTEGRATION



support for the **resumption** of construction work on the Foz do Iguaçu campus

UNIVERSITY OF MATO GROSSO DO SUL



agreement to build and equip a soil analysis and herbarium laboratory

SOCIAL DIMENSION







AWARENESS, MONITORING, AND CAPACITY BUILDING

ITAIPU



3,386 individuals trained in solid waste management since 2021



25,000 people impacted annually by the Knowledge Expedition (a mobile truck unit providing educational activities in sustainability)



course and competition for

kitchen workers with emphasis on organics and family farming





EDUCATIONAL SPACES

more than **35,000** children and teenagers visit the Ecomuseum and the Bela Vista Biological Refuge annually





SDG 5: GENDER EQUALITY

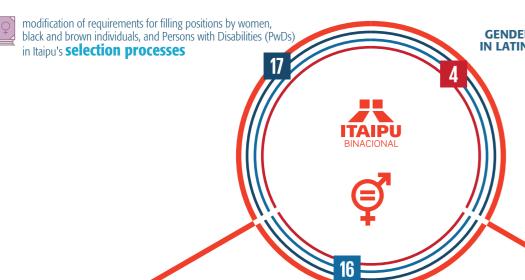
SDG 6: CLEAN WATER AND SANITATION

PROMOTION OF GENDER EQUITY









EDUCATION AND PEACE

Hangar Women Program, for training, support, and investment in promoting women's entrepreneurship

internal communication campaign to appreciate female employees at Itaipu

GENDER AND DIVERSITY OBSERVATORY IN LATIN AMERICA AND THE CARIBBEAN

in 2023, it began to include a representative from Itaipu; associated with UNILA, it serves as a space for **collaboration** in research, teaching, and extension on the topicsof Gender, Public Policies, and Diversity in Latin America and the Caribbean



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ECOSYSTEM SERVICES





175 water spring recovery workshops involving 2,625 people since 2020

WATER SECURITY

74,036 hectares of soil conservation



789 restored and protected water springs



65 water and sediment monitoring stations

SANTA MARIA ECOLOGICAL CORRIDOR + PARANÁ RIVER BIODIVERSITY CORRIDOR

promotion of **connectivity, restoration, and conservation** of ecosystems, coordinating with partner institutions



SUSTAINABLE REGIONAL DEVELOPMENT





assistance to **150 municipalities** supporting the implementation of water supply systems for 57 traditional communities in the states of Paraná and Mato Grosso do Sul

PROTECTION OF WOMEN AGAINST VIOLENCE

investment of **R\$ 3.5 million** in the new Women's Police Station and Identification Institute in Foz do Iguacu



investment of **R\$ 10 million** in the Casa da Mulher Brasileira (Brazilian Women Home), for victims of domestic and family violence in the Triple Frontier region



SDG 7: AFFORDABLE AND CLEAN ENERGY



14,000 mw of installed capacity

103,098 GWh, a world record for annual generation in 2016, equivalent to 550,000 barrels of oil daily and 50 million cubic meters of natural gas

> prevents the emission of 87 million tCO2e (coal) ind 39 million tCO2e (natural gas)

SUSTAINABLE MOBILITY

energy storage system with sodium battery, on experimental production

ITAIPU FLEET



15 vehicles powered by biomethane



BIOGAS

International Center for Renewable Energies (ClBiogás) established as a reference institution with 49 partner companies

TOLEDO BIOENERGY PLANT



324 MWh/month of electricity generation



ITAIPU BIOGAS AND BIOMETHANE **DEMONSTRATION UNIT**



taipu's restaurants





KNOWLEDGE TRANSFER IN BIOGAS AND BIOMETHANE

4,184 course completion certificates issued for 28 countries across all continents and 26 Brazilian states



SOLAR

funding for the installation of photovoltaic panels through the taipu More than Energy Program



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OTHER RENEWABLE SOURCES SOLAR-POWERED BATTERY SYSTEMS

development of Modular Energy Security Systems (SSEM) for isolated regions

research on second-life battery management systems, which are batteries that have already been used (e.g., in vehicles) and can be reused for other applications

SDG 8: DECENT WORK AND ECONOMIC GROWTH



3,525 families of family farmers benefited



\$670 million already contracted for the technological nodernization of the hydroelectric plant

700 fishermen and families with improved employment and well-being

LABOR PRACTICES AND HUMAN RIGHTS

Itaipu committed to the 10 universal principles of the United Nations Global Compact



3,386 individuals trained in solid waste management since 2021

YOUTH INICIATION AND WORK INCENTIVE PROGRAM (PIIT)

6,600 teenagers served since 1988



Ja 40% increase in per capita family income

EMPLOYMENT AT ITAIPU







over 9,000 active individuals, including researchers, professors, collaborators, and students

expanded **access to education and health** for teenagers with impacts on the family about **30** former PIIT participants **ITAIPU**

are now permanent employees of Itaipu

90% of apprentice teenagers completed high school; 5% entered higher education; higher likelihood of entering the job market compared to those who are not apprentices.



6.3 million tourists visited the Brazilian side of Itaipu between 2008 and 2022, resulting in revenues of R\$ 165 million, used for job generation and maintenance



since 1977, over **25.5 million** tourists on both sides

HYDROGEN

implementation of **experimental production**, including research and workforce training

ITAIPU MORE THAN ENERGY PROGRAM

funding for public structures: schools, municipalities, and hospitals in the installation of solar panels in the states of Paraná and Mato Grosso do Sul

SDG 9: INDUSTRY, INNOVATION AND INFRASTRUCTURE

SDG 10: REDUCED INEQUALITIES

EDUCATION, EMPLOYMENT, AND PARTNERSHIPS

UMUARAMA (PR)

paving of the Boiadeira Road, connecting northwest Paraná to Porto Murtinho (MS), a connection point with the bioceanic corridor linking Brazilian and Chilean ports



FOZ DO IGUAÇU (PR)

INTEGRATION BRIDGE

revitalization of the Iguassu Falls International Airport

new connection between Brazil and Paragua



for the Regional Airport

CASCAVEL/TOLEDO (PR)

development of the Executive Project

improvement works at

GUAÍRA (PR)

TERRITORIAL INTELLIGENCE CENTER (NIT)

technology for territorial management, enhancing efficiency in resource utilization



investment in and strengthening

of scientific research, in collaboration with 19 universities, resulting in 109 female scholars and 68 male scholars





DAM SAFETY

over **950 students** participated in 180 research projects

ENERGETIC EFFICIENCY

LABORATORY OF ELECTRICAL SYSTEMS AUTOMATION (LASSE)

26 solutions installed at Itaipu;

74 technological services performed in the simulation area;

over **100** researchers;

85 published articles

AND LEARNING

CHILD AND ADOLESCENT PROTECTION PROGRAM (PPCA)



Kimono Amigo (Friendly Kimono): over 500 participants (expected to expand to 800



Maestro da Bola (Ball Master): approximately 1,000 children served



Meninos do Lago (Boys of the Lake **canoeing):** about 1,000 children, teenagers, and people with disabilities served



Xadrez para Todos (Chess for Everyone): 42 students qualified for the state championship









INCLUSION

6,600 adolescents served since 1988; **40%** increase in per capita family income; expanded **access** to education and adolescent health with impacts on the family



around **30 former members** of PIIT are now permanent employees of Itaipu



90% of apprentice adolescents completed high school; 15% entered higher education; higher likelihood of entering the job market compared to those who are not apprentices





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US\$ 670 million already contracted for the technological upgrade of the dam











3,386 people trained in solid waste management since 2021



150 tons of fish produced per year

ECONOMIC GROWTH







SDG 11: SUSTAINABLE CITIES AND COMMUNITIES

SDG 12: RESPONSIBLE CONSUMPTION AND PRODUCTION

EDUCATION AND PARTNERSHIPS

DAM SAFETY





TERRITORIAL INTELLIGENCE CENTER (NIT)

technology for territorial management, increasing efficiency in resource utilization



investment in and strengthening of scientific research, in partnership with 19 universities, resulting in 109 female scholars and 68 male scholars

MUSEUM MANAGEMENT AND CULTURAL HERITAGE PRESERVATION



SUSTAINABLE TERRITORIAL MANAGEMENT

1,150 people trained

ATLANTIC FOREST BIOSPHERE RESERVE (RBMA)

innovation in the RBMA governance structure with the creation of the first Decentralized Management Unit



HOUSING FOR VULNERABLE FAMILIES





R\$ 125 million raised from the sale of Itaipu properties for investment in the Housing project

SUSTAINABLE AGRICULTURE

SUSTAINABLE RURAL DEVELOPMENT PROGRAM (FROM 2020 TO 2023)



3,500 families benefited, including indigenous communities



75 family farmer organizations served in 35 municipalities



25,000 technical consulting services for producers



438 group training activities, involving 3,993 farmers

SUSTAINABLE PURCHASING PROGRAM





ENVIRONMENTAL EDUCATION

4,410 participants in 183 training courses between 2020 and 2023



SOLID WASTE MANAGEMENT



3,386 people trained since 2021

SDG 13: CLIMATE ACTION

SDG 14: LIFE BELOW WATER

RENEWABLE ENERGY SOURCES CLIMATE MONITORING PLATFORM ITAIPU 173 integrated stations **20** generating units with 14,000 MW of installed capacity **103,098 GWh**, a world record for annual generation in 2016, equivalent to 550,000 barrels of oil daily and 50 million m³ of natural gas avoids the emission of 87 million tCO2e (coal) and **RESTORATION OF LAND ECOSYSTEMS** 9 million tCO2e (natural gas) annual sequestration of 6.4 million tons of CO² equivalents by forest biomass **TOLEDO BIOENERGY PLANT** production of **150,000 m³/month** of biogas over **34 thousand hectares** of Atlantic Forest preserved on the Brazilian side **324 MWh/month** of electricity generation **30,000 tons** of equivalent carbon/year not emitted into the atmosphere over **24 million trees** planted since the 1980s **BIOGAS AND BIOMETHANE AT ITAIPU 1,346 km** of fences installed for the **129 tons** of treated waste from restaurants protection of riparian forests **240 tons** of treated waste from seizures management of two **conservation** by the Receita Federal (IRS) and Ministry of Agriculture units in Paraná and one binational **40.7 million m³** of biomethane supplied management unit in Mato Grosso do Sul to Itaipu's vehicles, equivalent to 480,000 km travele conservation actions in the Santa Maria Ecological Corridor and the Paraná River **HYDROGEN** implementation of **experimental** production, including research and workforce **Biodiversity Corridor ITAIPU ITAIPU MORE THAN ENERGY PROGRAM funding** for public structures: schools, municipalities, and hospitals installing photovoltaic panels in the states of Paraná and Mato Grosso do Sul **KNOWLEDGE TRANSFER IN BIOGAS AND BIOMETHANE SOLAR-POWERED BATTERY SYSTEMS development** of Modular Energy **4,184** course completion certificates issued to 28 countries on all continents Security Systems (SSEM) for isolated regions and 26 Brazilian states

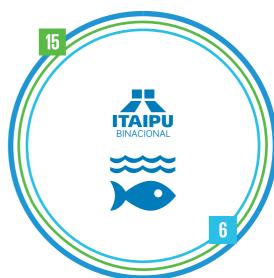
WATER AND TERRESTRIAL ECOSYSTEMS

AQUACULTURE MANAGEMENT PRACTICES



allocation of fingerlings to support aquaculture and a fish marking program produced in

sustainable systems without effluent generation



FISH PRODUCTION WITH BIOFLOCS



research on second-life battery management

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systems, which are batteries that have already been used

(e.g., in vehicles) and can be repurposed for other applications

experimental production for the dissemination of **good practices and technologies**

MICROPOLLUTANT MONITORING PROJECT

24 micro-watersheds monitored

(12 Brazilian and 12 Paraguayan); 43 pesticides identified, with 36 in Brazilian micro-watersheds, 28 in Paraguayan micro-watersheds, and 21 in both countries



implementation of **biodigesters**

as educational demonstration units

in all 399 municipalities in the states of Paraná and 35 in Mato Grosso do Sul

SDG 15: LIFE ON LAND

SDG 16: PEACE, JUSTICE AND STRONG INSTITUTIONS

3,500 farming families benefited (including indigenous) with technical assistance for sustainable and organic production

SOIL CONSERVATION

74 thousand hectares with soil conservation actions



BIODIVERSITY

over **24 million trees** planted in Brazil since the 1980s







ECOSYSTEM SERVICES

BIOSPHERE RESERVE

Itaipu's protected areas are recognized by
UNESCO's "Man and the Biosphere" program

conservation actions in the Santa Maria Ecological Corridor and the Paraná River Biodiversity Corridor



over **34 thousand hectares** of Atlantic Forest preserved on the Brazilian side



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EDUCATION

CHILD AND ADOLESCENT PROTECTION PROGRAM (PPCA)



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INEQUALITIES REDUCTION

CHILD AND ADOLESCENT PROTECTION PROGRAM (PPCA)

6,600 adolescents served since 1988: **40%** increase in per capita family income; expanded access to education and adolescent health with impacts on the family

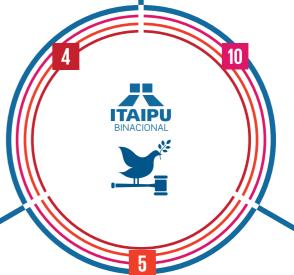


each year, direct impacts on the lives of an average of **200 adolescents** from Foz do Iguaçu, and indirect impacts on the lives of another 1,000 adolescents





adoption of the Integrity and Compliance System to prevent, identify, deter, and respond to illicit acts against Italian and posterior a culture of integrity in the company; various training sessions conducted for the internal audience since 2019



PROTECTION OF WOMEN AGAINST VIOLENCE



investment of **R\$ 3.5 million** in the new Women's Police Station and Investment of NS Joseph Invest



investment of **R\$ 10 million** in the Casa da Mulher Brasileira (Brazilian Women Home), for victims of domestic and family violence in the Triple Frontier region

