

*Sustainability Report* **2014**







# Letter from the General Director

[G4-1]



In May 2014, Itaipu Binacional celebrated two very important dates: 40 years since its foundation and 30 years of operation. As a demonstration of the success and maturity of this enterprise, the entity ended the year with an operational efficiency index of 99.3%, the best in its history.

This means that our productivity was very close to maximum available water use. We must also remember that 2014 was a year of serious water crises. Within this context, the operational excellence of Itaipu further reiterates its strategic importance to the electricity systems of Brazil and Paraguay.

Over these three decades of operation, Itaipu has produced 2.2 billion megawatts-hour (MWh), enough energy to supply global electricity demands for around 40 days. Through this performance, Itaipu remains a global leader in accumulated production of clean and renewable energy.

Among the main achievements of 2014, of note was the completion of the expansion works on the Right Bank Substation, which completes the critical infrastructure for the new Paraguay Transmission System. Through the new 55 kV power lines, which began operation last year, Paraguay can now make headway in the industrialization of its economy.

The excellent operational results we have attained in recent years are a reflection of the continued effort to improve the management of production factors. Through the dedication

and commitment of all our employees to the strategic business objectives, Itaipu has successfully been fulfilling its institutional mission.

If generating energy is Itaipu's core business, recognition and international prestige attained in recent years is certainly not down to operational efficiency alone. Nowadays, our brand is closely associated to sustainability.

Itaipu's forward thinking has spread, for example, into the areas of the development of new renewable energy sources, sustainable mobility (electric vehicle), regional integration and land development, technological innovation, sustainable tourism, combat against child and adult exploitation, gender equality, volunteer work and social inclusion.

One initiative with major regional impact in the current administration was the creation of the Itaipu Technological Park Foundation (ITP), which celebrated its 10<sup>th</sup> anniversary in 2014. Besides meeting the research and development needs of the plant itself, the ITP has become a catalyzer and driver of a dynamic regional hub of higher education, research and technological innovation.

This institutional environment, which supports and encourages innovation, has already born fruit. Some pioneering initiative developed at the ITP have become benchmarks in the creation of national public policies and international cooperation projects, which is specifically the case of biogas production on farms, employing the waste generated through livestock farming activities.

Another highlight in the previous year was the organization of the Brazil 2014 WEPs Award (Women's Empowerment Principles), as a way to encourage gender equality in Brazilian companies. This initiative was led by Itaipu in collaboration with the efforts of the United Nation's Global compact and UN Women to promote the empowerment of women at a global level.

But, surprisingly, the highest form of recognition came in early 2015, with the "Water, source of life" Award, granted by the UN to the Cultivating Good Water Program, in the "Best Practices in Water Management" category. The ceremony was hosted at the organization's headquarters, in New York, in March.

In addition to the visit to the Itaipu plant by UN Secretary General, Ban Ki-moon, in February, the award is a powerful incentive to continue acting locally, alongside thousands of partners, to preserve the environment and, thereby, respond to the threats of global warming.

The commitment to excellence in energy generation and sustainability – reaffirmed in the business vision established for 2020 – leads to Itaipu constantly renewing and reinventing itself. Thanks to this clarity regarding the direction to be taken, our priority for 2015 is to conduct a tactical and operational review of our Business Plan, with the participation and engagement of all areas.

This is the Itaipu we are building, founded on principles and values of sustainability and a new culture of organization.

In this Sustainability Report, we share the advances made over the past year. It can be considered a photograph,

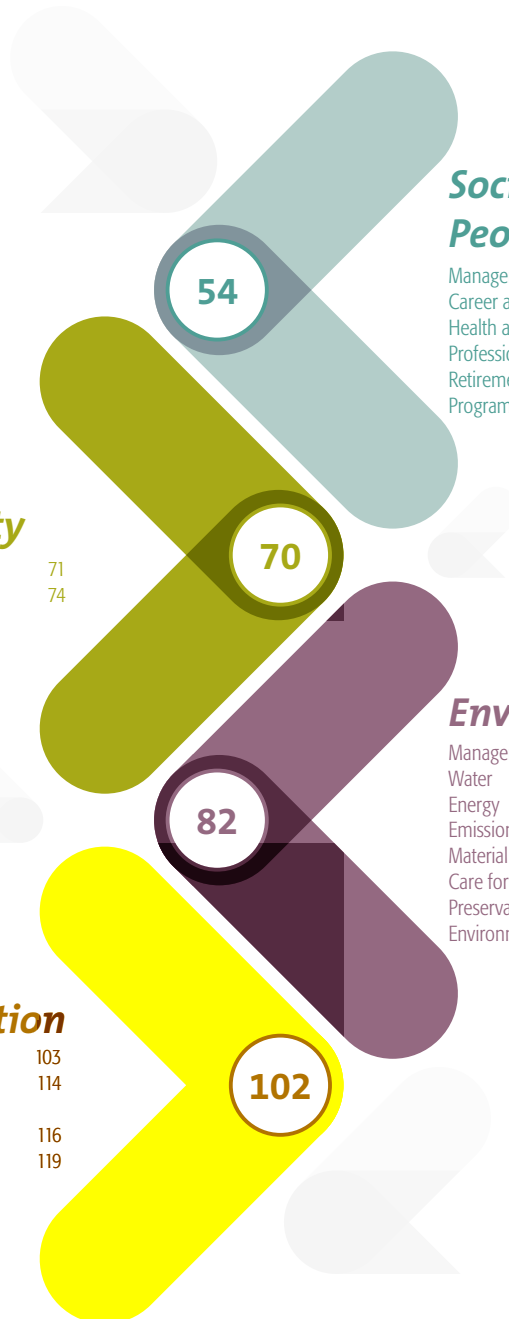
but one that offers a good outlook of Itaipu's registered trajectory over the past 12 months. Being a part of this transformation is what drives all the managers and employees of this great entity.

*Enjoy reading!*



**Jorge Miguel Samek**  
Brazilian General Director





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# About the Report

For 12 years, Itaipu Binacional has been publishing an annual Sustainability Report. For the second year running, the document was prepared in line with the option “In Accordance” - Comprehensive of G4, the newest version of the Global Reporting Initiative (GRI) Guidelines, and the set of indicators specific to the electric energy industry.

Since the company adopted the GRI methodology, in 2007, the Report has been prepared with the aid of Focal Points of Sustainability (employees that represent all the boards and foundations maintained by Itaipu), under the coordination of the Social Responsibility Advisory Board.

The document is submitted to limited assurance (independent verification) (learn more on page 116) and formally presented to the planning and coordination advisors from the boards, the strategic planning advisor and the coordinator of the Sustainable Management System (SMS). [G4-29; G4-30; G4-32; G4-33; G4-48]

## Reading guide

- The action presented in this Report were conducted between January 1<sup>st</sup> and December 31<sup>st</sup>, 2014. [G4-28]
- The economic, governance and energy production information refers to actions in Brazil and Paraguay. The socio-environmental and personnel management data only consider initiatives on the Brazilian side of the company. Exceptions are signaled throughout the document.
- The report presents information about the foundations created by the company: Itaipu-Brazil Social Security and Welfare (Fibra, the Portuguese acronym), Itaipu Technological Park (ITP) and Itaipuap. [G4-17]
- The report considers operating units that are significant to the industrial area of the plant and the offices located in Foz do Iguaçu, Santa Helena, Guaíra and Curitiba. Despite the strategic importance to business, the Brasília and São Paulo offices do not present significant environmental and social impacts.
- Itaipu’s area of influence is the region of the Paraná Watershed 3 (BP3), comprised of 28 municipalities in the western region of Paraná and 1 in Mato Grosso do Sul.
- In this document, Itaipu is also referred to as plant, entity, binational, company and organization.
- “Lake” means the hydroelectric plant reservoir.
- The individuals that comprise the framework of the company are called “employees”.
- The term “workforce” means the entire staff, including direct employees, youth apprentices, interns and employees from outsourced service providers.



## Process for definition of Report content

The topics listed in the table below were defined in 2012, with the aid of employees, Brazilian specialist in sustainability and representatives from the community within Itaipu's area of influence. They are based on the company business, corporate planning, on issues relevant to the holding *Centrais Elétricas do Brasil* (Eletrobras) and the Brazilian electricity industry, as well as indexes and protocols provided by Itaipu, among them the São Paulo Stock Exchange's Corporate Sustainability Index (ISE, the Portuguese acronym) and the Protocol of the International Hydropower Association (IHA).

For this edition of the Report, the topics were reassessed by Itaipu's internal public during a workshop held with the support of a specialized consultancy. Based on this review, the topic "Indirect Economic Impact" will highlight Itaipu's approach in contributing to "Regional Development". The item "Combat against forced labor and child labor" was increased to discuss the issue of "Human Rights". These alterations are aimed at the internalization of the Materiality Matrix and are improvements geared towards accompanying trends in sustainable management. [G4-18; G4-19; G4-20; G4-21; G4-22; G4-23; G4-25; G4-26; G4-27; G4-37]

## Material topics

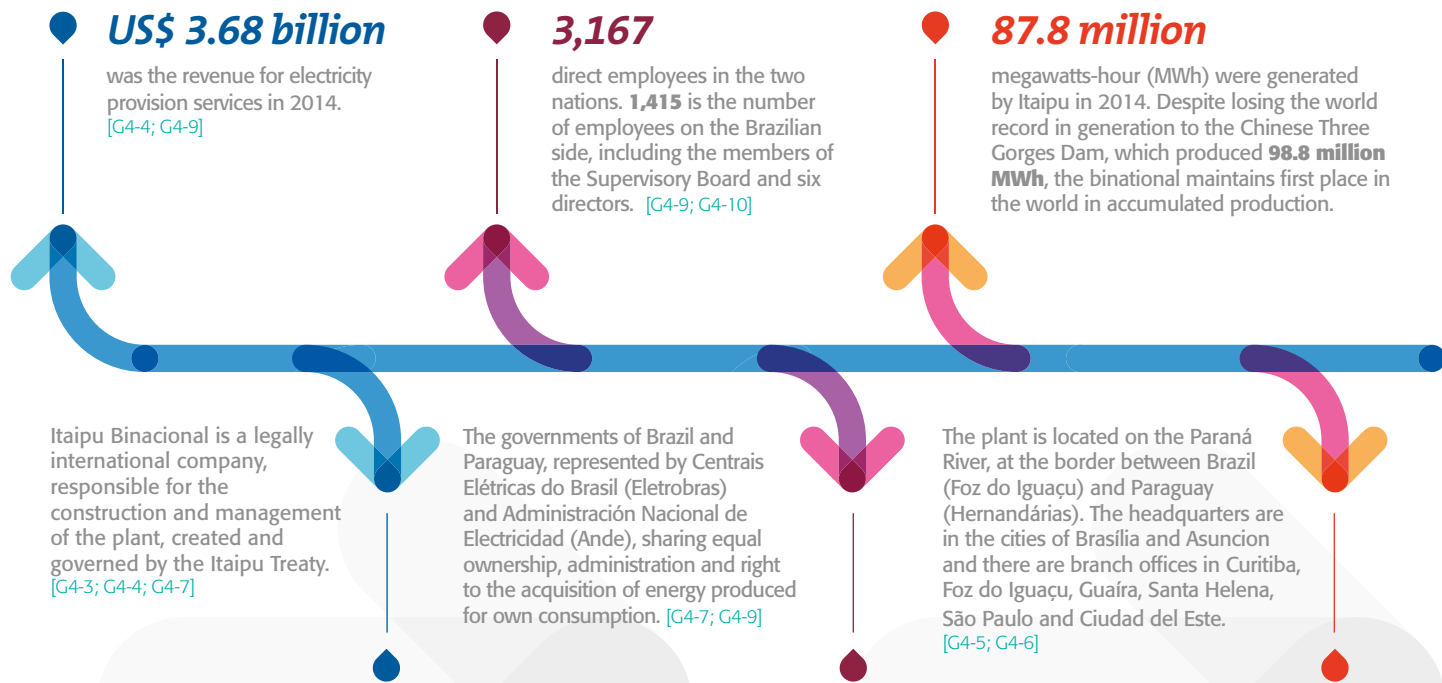
	Relevance		Impacts		
	External stakeholders	Internal stakeholders	Economic	Environmental	Social
Water *	X	X	X	X	X
Energy *	X	X	X	X	X
Economic Performance *	X	X	X	X	X
Environmental Management	X	X	X	X	X
Biodiversity *	X	X		X	
Operational Performance	X	X	X	X	X
Community Relations	X		X	X	X
Training and Education *		X			X
Risks and Opportunities	X	X	X	X	X
Indirect Economic Impact / Regional Development *	X		X		X
Human Rights	X		X		X
Governance Practices	X	X	X	X	X
Anti-corruption Practices	X		X		
Technological Research & Development *	X	X	X	X	X
Diversity and Equality of Opportunity *		X	X		X
Human Resources Management		X	X		X

When being prepared, in 2013, the Materiality Matrix considered aspects, topics and performance indicators from the G3.1 version of the GRI Guidelines. As such, not all the topics coincide exactly with the Specific Aspects of version G4 of the Guidelines. This situation shall be resolved in the review/preparation of the next Materiality Matrix.

# Company Profile

**Mission** To generate quality electricity via socially and environmentally responsible practices, and to foster sustainable economic, tourist, and technological development in Brazil and Paraguay.

**Vision** Until 2020, Binational Itaipu will consolidate as the best performance generator of clean and renewable power, with the best operative performance and the best practices of sustainability in the world, impelling the sustainable development and regional integration.



Recognition received in 2014	Granting entity
<b>Belmiro Siqueira Administration Award</b>	Conselho Federal de Administração – CFA (Federal Administration Counsel)
<b>2014 Eco Award</b>	Câmara Americana de Comércio – Amcham Brasil (American Chamber of Commerce)
<b>Major Southern 500 – Large and Leaders Award</b>	Amanhã Magazine and PricewaterhouseCoopers (PwC Brasil)
<b>Best Management and Administrative Contract Inspection Practices Award</b>	Consultancy firm GVP Parcerias Governamentais
<b>2014 Recognition Award</b>	NGO Childhood Brasil - “Na Mão Certa” Program
<b>Notabile CIO Brasil Award</b>	IT4CIO Network Technology
<b>7<sup>th</sup> International Conference on Production Research Americas 2014 (ICPR)</b>	International Foundation for Production Research (IFPR)

## Basic Policies and Guidelines

- Respect with the Human Being
- Binational integration
- Proactivity and innovation
- Accountability and rendering accounts
- Recognition of people's work
- Corporative sustainability
- Regional sustainable development
- Ethical values

[G4-56]

**14%**

of the electric energy consumed in Brazil in 2014 was generated by Itaipu. In Paraguay, participation reached **79%** of the demand.

[G4-8]

**99.3%**

was the operational efficiency index, the best in three decades of operation. This means that practically all the water that passed through the turbines was used in the generation of energy.

The milestone becomes even more expressive because in 2014 Brazil faced a major drought, the most severe in 84 years.

**2.2 billion MWh**

is the total amount of energy produced since the first generator unit began operating, on May 5, 1984. It is enough to supply the whole world with electricity for **37 days**.

Itaipu celebrated two important milestones in 2014; the **40<sup>th</sup> anniversary** of the entities **creation** and **30<sup>th</sup> anniversary** of **energy generation**.

Over the past decade, average production was **92 million MWh** per year, a number far higher than the energy lined to the contracted power, which is **75 million MWh**. The energy linked to the contracted power is that which Itaipu is committed to delivering to Ande and Eletrobras each year.

**US\$ 9.4 billion** has already been spent by Itaipu on the payment of royalties in the two nations. In 2014, some **US\$ 253.1 million** was paid to Brazil and **US\$ 273.2 million** to Paraguay. In Brazil, the amount passed on to municipalities surrounding the reservoir means an average increase of **52%** in collection, benefiting around **600,000 people**.

### Recognition received in 2014

Istoé Greater Corporate Awareness Award

Exame Sustainability Guide

Cumbres de Guadarrama 2014

2015 Water for Life Award

2014 Brazilian Environmental Benchmarking

7<sup>th</sup> Ozires Silva Sustainable Entrepreneurism Award

### Granting entity

Editora Três

Editora Abril

Environmental Council of the Community of Madrid – Spain

UN Water

More Corporate Projects

Instituto Superior de Administração e Economia – Isae (Higher Institute of Administration and Economics), Fundação Getúlio Vargas – FGV (Getúlio Vargas Foundation) and Grupo Paranaense de Comunicação – GRPCOM (Paraná Communication Group).

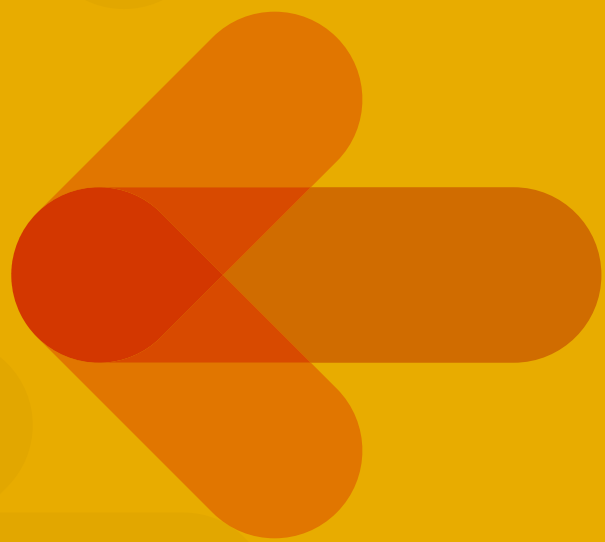
# Company Profile

## Time Line

<b>1966</b>	Signing of the Iguacu Act: Brazil and Paraguay initiated negotiations to articulate an agreement to use the Paraná River to generate energy for both countries. Brazil was experiencing an “economic miracle” and major works were underway, such as the Rio-Niterói bridge and the Trans-Amazonian Highway.
<b>1967</b>	Practical measures are undertaken for the implementation of the plant, such as the formation of a consortium to develop project viability studies, joined by the North American company International Engineering Company (IECO) and Italian firm Electroconsult (ELC).
<b>1973</b>	Signing of the Treaty of Itaipu by the presidents Emílio Garrastazu Médici and Alfredo Stroessner. The document contains 25 articles and three annexes and dealt with the creation of Itaipu Binacional, responsible for building and operating the plant.
<b>1974</b>	The legal entity Itaipu Binacional is formed and the Brazilian and Paraguayan presidents, Emílio Garrastazu Médici and Alfredo Stroessner indicated the two first general directors of the company, Brazilian José Costa Cavalcanti and Paraguayan engineer Enzo Debernardi. Infrastructure necessary to house the workforce is assembled.
<b>1975</b>	Work begins on the plant’s construction. After removing 55 million m <sup>3</sup> of earth and rock, on October 20 <sup>th</sup> the course of the Paraná River was altered. The explosion of the diversion channel was witnessed by the presidents of both nations, 1,000 guests, 500 journalists and broadcast live.
<b>1978</b>	A hospital and over 9,000 homes were built to house the men involved in the construction of the plant. Foz do Iguacu saw its population leap from 20,000 to 101,000 in just ten years. At the peak of the work, there were approximately 40,000 people laboring in the work site or administrative offices.
<b>1979</b>	Signing of an agreement for technical-operational cooperation between the sites of Itaipu and the Corpus plant (an enterprise between Argentina and Paraguay), known as the Tripartite Agreement.
<b>1982</b>	In October, the dam works are finalized and formation of the reservoir begins. The water was expected to take 90 days to reach quota of 220, but at precisely that time, following a historic flood of the Paraná River, it took just 14 days to reach the necessary reservoir volume.
	On November 5 <sup>th</sup> , the presidents of Brazil and Paraguay opened the spillway gates, releasing the dammed water. And thus, the world’s largest hydroelectric plant was inaugurated, after 50,000 hours of work.
<b>1983</b>	The first mechanical turn of the turbine wheel took place on December 17 <sup>th</sup> , during the operation test phase. Besides assembly, another major challenge was transporting whole parts (each wheel weighed 300 tons) from São Paulo to Foz. The first wheel took three months to reach the work site.
<b>1984</b>	On May 5 <sup>th</sup> , for the very first time, the Paraguayan electricity system received energy generated by Itaipu. It arrived in Brazil five months later, when Furnas completed transmission line works. The plant ended the year with two generator units installed, generating 277,000 megawatts-hour (MWh).
<b>1985</b>	With three generator units installed, Itaipu begins to effectively market generated electricity, totaling 6,327 MWh. With new units entering into operation, production gradually begins to increase.
<b>1991</b>	The 18 <sup>th</sup> generator unit begins operating. The plant reaches 12,600 megawatts (MW) of installed power and ends the year with a production of 58 million MWh. Brazilian municipalities and states are included in the distribution of royalties.

<b>1995</b>	By generating 77.2 million MWh, for the first time ever, Itaipu exceeds the mark of 75 million MWh of energy cited in the contract with Eletrobras and Ande. Also in this year, the plant is selected as a candidate for the Seven Modern Wonders of the World by US magazine Popular Mechanics.
<b>1997</b>	After six years of negotiations, Itaipu signs a contract with Eletrobras to refinance its US\$ 16.2 billion debt by 2023, implementing adjustments to mitigate the risk of exchange rate variations. The amount is in reference to the financing used in the construction of the hydroelectric plant.
<b>1999</b>	For the first time, Itaipu hits the 90 million MWh mark for energy production.
<b>2000</b>	Itaipu breaks its previous record, establishing a new one with 93,427,598 MWh, despite the energy crisis faced by Brazil since the previous year. The amount generated corresponds to 24% of the Brazilian market demand.
<b>2003</b>	Itaipu promotes a widespread review of its corporate planning and through this expands its institutional mission and the strategic objectives, which now include social and environmental responsibility, as well as sustainable economic, touristic and technological development.
<b>2005</b>	The governments of Brazil and Paraguay exchange Reversal Letters to establish which social and environmental initiatives the company would permanently adopt in the activity of energy generation.
<b>2007</b>	The last generator unit planned in the original plant project begins operating, adding a further 700 MW of power, equivalent to medium-size hydroelectric plant, totaling 14,000 MW. <a href="#">[G4-EU1]</a>
<b>2008</b>	After eight years, Itaipu once again breaks its own record with the production of 94,684,781 MWh of energy. The energy produced supplies 19% of the Brazilian energy demand and is enough to supply the entire world for five days.
<b>2010</b>	In September, during a routine inspection, cracks are noted in the turbine unit of generator U6. A team of 40 employees is mobilized for an unprecedented efforts, finally completed in March 2012.
<b>2012</b>	Third highest production index attained: 98,287,128 MWh. The Sustainability Management System (SMS) is also launched, created specifically to help Itaipu reach its goal established for 2020.
<b>2013</b>	For the fourth time, Itaipu is named the world's largest generator of electric energy. With production of 98,630,035 MWh, it is responsible for supplying 17% of the almost 530 million MWh consumed by the country. In November, a new transmission line is put in operation, linking the plant to Asunción, the capital of Paraguay. Considered one of the most important works by the Paraguayan government, the system is aimed at guaranteeing the nation's supply, reducing overloads and technical losses.
<b>2014</b>	Itaipu celebrates the 40 <sup>th</sup> anniversary of its creation and 30 years of energy generation, while boasting a number of annual electric energy production records. The Binational's goal is to produce 100 million MWh in the years to come.

*Electricity  
Production and Supply*



# Management approach

In May 2014, Itaipu celebrated 30 years of energy generation. At the time when the binational was being built, the largest hydroelectric plant in operation in the world was the Grand Coulee Plant, in Washington, coming in at 5,000 megawatts (MW) of power.

In Brazil, the largest plant was Ilha Solteira, with 3,444 MW, located upstream of the Paraná River, on the border between the states of São Paulo and Mato Grosso. And in 1985, when it began marketing the energy produced, Itaipu's potential (12,600 MW at the time) consisted in practically half the entire installed capacity in the country.

Over the past three decades of operation, the plant has become essential to the energy supply of Brazil and Paraguay. And it hasn't only broken a series of world records for generation, but has also maintained first place in accumulated production, beating developments that began operating earlier than it (find out more on page 18).

Even though energy generation fell 11% short compared to the year before, the binational achieved an important milestone in 2014: the operational efficiency index was recorded at 99.3%, that is, practically all the water that reached the reservoir could be used to produce energy. And the fact that Brazil had faced the worst drought in 84 years makes this achievement even more special, as Itaipu reiterates its commitment to ensuring the

best use of water and to contributing to ensure the Brazilian energy matrix is one of the world's cleanest.

The main challenge faced by management will lie in preparing professionals to cope with technology advances that Itaipu will undergo in the near future. The project has passed through a number of pilot phase, such as the modernization of pumps and power station elevators. The goal is to increase flexibility in the maintenance of equipment for 82 days, increase the machine use period to cater to the demands of the Brazilian and Paraguayan electricity industry.

## *Factors that determine the productive process*

Four factors directly influence energy generation: availability of water resources; generator units in perfect operational order; transmission systems with the capacity to ensure energy flow; and energy demand by Brazilian and Paraguayan consumers, defined in Brazil by *Operador Nacional do Sistema Elétrico – ONS* (Brazilian Electric System Operator) and in Paraguay by *Administración Nacional de Electricidad – Ande* (National Electricity Administration).

# Electricity Production and Supply

Net energy output broken down by primary energy source and by regulatory regime (GWh) [G4-8; G4-EU2]

Source	2014		2013		2012	
Hydraulic	87,165		97,878		97,533	
Regulatory System	Brazil	Paraguay	Brazil	Paraguay	Brazil	Paraguay
	76,522	10,644	88,467	9,411	88,783	8,750

\* Net energy is the total energy generated excluding the amount consumed by Itaipu during its operational processes.

**20** Generator Units = **700** MW = **2.5** million  with a monthly consumption average of **200** KWh

- To surpass Itaipu in accumulated production, the Chinese Three Gorges Dam, which began operating in 2003, and boasts the largest installed capacity in the world, it would take at least **140 years** with an annual production of over **100 million MWh**.
- In **30 years** of generation, **there have been no plant failures** that have interrupted the provision of electricity.
- The **2.2 billion MWh** produced in the first 30 years of operation would be enough to supply Brazilian consumption for four years and eight months, and cater to Paraguayan needs for **176 years and 9 months**.
- Itaipu's **high generation index** is largely explained by its location and the water flow of the Paraná River, which is **greater than 8,000 m<sup>3</sup> per second 90% of the time**.
- The Itaipu reservoir stores **29 billion m<sup>3</sup>** of water. It is the seventh largest in the country and has the best water use index: **each 0.1 km<sup>2</sup>** of flooded area can generate **1 MW**.
- The water that drives the Itaipu turbines stem from various rivers, belonging to four watersheds: **Paranaíba, Grande, Tietê and Paranapanema**. Before reaching the binational, these waters generate energy at **55 other hydroelectric** plants.
- Brazil has **3,629 energy generation enterprises** in operation. Of these, **1,162 are hydroelectric plants**. Together, they represent **62% of the installed capacity**. There are **52 hydroelectric plants** currently under construction.





## Itaipu production

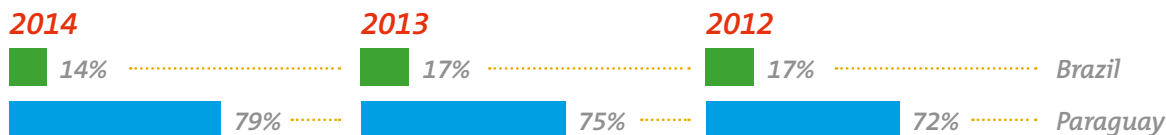
Year	Installed generator units	Generated energy (GWh)	Production potential (GWh) <sup>1</sup>	Performance <sup>2</sup> %
1984	2	277	95,420	0.3
1985	3	6,327	96,338	7
1986	6	21,853	89,216	24
1987	9	35,807	95,172	38
1988	12	38,508	94,874	41
1989	15	47,230	98,396	48
1990	16	53,090	96,850	55
1991	18	57,517	95,085	60
1992		52,268	105,651	49
1993		59,997	101,907	59
1994		69,394	97,521	71
1995		77,212	97,772	79
1996		81,654	96,213	85
1997		89,237	104,132	86
1998		87,846	104,296	84
1999		90,002	99,913	89
2000		93,428	98,517	95
2001		79,307	84,410	92
2002		82,914	91,242	89
2003		89,151	95,933	92
2004		89,912	96,804	92
2005	87,971	95,881	91	
2006	19	92,690	99,302	92
2007	20	90,620	96,164	93
2008		94,685	98,255	96
2009		91,652	100,670	91
2010		85,970	101,027	85
2011		92,245	104,140	88
2012		98,287	100,884	97
2013		98,630	100,507	98
2014		87,795	91,527	96

<sup>1</sup> Energy that, according to estimates, could be generated considering the availability of water resources in the Paraná River, at the point where Itaipu is located.

<sup>2</sup> Production by Itaipu in relation to potential production, according to estimates.

# Electricity Production and Supply

## Participation of energy generated by Itaipu in the Brazilian and Paraguayan markets <sup>[G4-8]</sup>



## Largest electric energy plants in the world, in accumulated production

Plant	Location	Installed Capacity (MW)	Generation start-up	Accumulated production (MWh)
1 <sup>st</sup> Itaipu Binacional	Brazil/Paraguay	14,00	1984	2.2 billion
2 <sup>nd</sup> Guri	Venezuela	10,000	1978	1.3 billion
3 <sup>rd</sup> Grand Coulee	United States of America	6,800	1941	1.2 billion
4 <sup>th</sup> Sayano	Russia	6,400	1978	0.93 billion
5 <sup>th</sup> Churchill Falls	Canada	5,480	1971	0.9 billion
6 <sup>th</sup> Bratsk	Russia	4,510	1967	0.8 billion
6 <sup>th</sup> Três Gargantas	China	22,500	2003	0.8 billion
7 <sup>th</sup> Tucuruí	Brazil	8,370	1984	0.78 billion
8 <sup>th</sup> Volzhskaya	Russia	2,590	1961	0.8 billion
9 <sup>th</sup> Ust-Ilimsk	Russia	3,840	1980	0.76 billion
10 <sup>th</sup> Robert-Burassa	Canada	5,610	1979	0.75 billion
11 <sup>th</sup> Krasnoyarsk	Russia	6,000	1971	0.7 billion
12 <sup>th</sup> Tarbela	Pakistan	3,470	1976	0.41 billion

## Ten largest electric energy plants in Brazil

Plant	Reservoir area (km <sup>2</sup> )	Installed Capacity (MW)	Plant	Reservoir area (km <sup>2</sup> )	Installed Capacity (MW)
Itaipu (PR) <sup>1</sup>	1,350	14,000	Xingó (AL/SE)	60	3,162
Belo Monte (PA)	516	11,233 <sup>2</sup>	Santo Antônio (RO)	421.5	3,568 <sup>3</sup>
Tucuruí (PA)	2,850	8,370	Marimbondo (SP/MG)	438	1,440
Jirau (RO)	258	3,750 <sup>3</sup>	Serra da Mesa (GO)	1,784	1,275
Ilha Solteira (SP/MS)	1,195	3,444	Sobradinho (BA)	4,214	1,050

<sup>1</sup> Considering the total installed capacity and total reservoir area of the binational entity.

<sup>2</sup> Under construction.

<sup>3</sup> In operation, though at a phase of generator unit installation.



## *Availability and reliability of electricity supply*

Over the past four decades, the internal consumption of energy has increased thirty times in Paraguay and ten in Brazil. As Itaipu plays a fundamental role in energy supply, the company constantly strives to attain and maintain operational excellence.

Despite not being able to control water conditions, the plant boasts exceptionally accurate control (within a scope of five days), and also benefits from the 55 hydroelectric plants upstream, which help to regulate the flow of rivers. However, as the plant operates according to the run-of-the-river system – when water is not dammed, simply passing through the reservoir – it is not possible to make long-term forecasts.

It is at this point that a business practices call “the water dance” occurs, that is, operations are adjusted according to the water resources available at that moment. Another measure that ensure better use of the raw material was a change in the periodicity of generator unit shutdowns for preventative maintenance.

In 1993, annual shutdowns lasted 23 days. Ten years later, they are implemented in two days, without jeopardizing employee safety and the reliability of equipment. The completion of the maintenance cycle implemented in 2013 is scheduled for 2015. An assessment will define the need for any possible changes to the plan as from 2016. [G4-DMA]

## *New system to prevent human error*

In 2014 Itaipu operators began employing the Real Time Rule Activation System – Sartre, developed by professionals from the Superintendencies of Operation, Maintenance and Engineering. Acting in unison with the Digital Plant Supervision and Control System (Scada, the Portuguese acronym), Sartre monitors activities 24 hours/day and works as a barrier to prevent human errors in real time operations.

The system is currently comprised of 14 rules and the principle is “Prevent Interruption to Ande/Furnas”. In 2014, operators canceled only 12 commands due to Sartre warnings, out of a total 7,605 commands executed at supervised points. For now, the software is exclusively Itaipu’s, though it has already been presented at seminar in Brazil and abroad, drawing interest from both domestic and foreign companies.

## *Expansion of the substation on the Paraguayan bank of the plant*

In September, Paraguay was able to receive half of all the energy produced by Itaipu, after completing works to expand the substation on the right bank and the sectioning of two transmission lines part of the 50 Hz system, the frequency used in the country.

Previously, two 50 Hz lines left the plant and ran directly to the Furnas substation, in Foz do Iguacu. Now, the lines enter the substation in Paraguay and, from there, the energy is redistributed: four lines continue to Furnas and another five

supply Paraguay – among them, the 500 kV line linked to Villa Hayes, inaugurated in 2013.

The measure guarantees greater reliability of the Brazilian and Paraguayan electricity system, as the two lines increase and vary the substation’s distribution capacity, even in the face of planned or unexpected interruptions. The alteration was planned and cited in Annex B of the Treaty of Itaipu and was executed by the binational. [G4-13]

# Electricity Production and Supply

## Average plant availability factor <sup>[G4-EU30]</sup>

	2014	2013	2012
<b>Number of hours of planned interruption</b>	6,387	6,468	7,800
<b>Number of hours of unplanned interruption</b>	349	169	2,787
<b>Total operating hours <sup>1</sup></b>	175,200	175,200	175,680
<b>Unit availability factor (%) <sup>2</sup></b>	96.16%	96.21%	93.86%

<sup>1</sup> 2012 was a Leap Year, as such the total number of plant operating hours were higher for the period.

<sup>2</sup> The percentage suffered a slight alteration due to the maintenance shutdown of generator U6 between the months of September 2010 and April 2012.

## Contingency Plans <sup>[G4-DMA]</sup>

### Organizational Structure

Itaipu relies on manager groups for its Emergency Action Plans (PAE, the Portuguese acronym) responsible for preparing and updating plans of action for unidentified contingencies, and also for coordinating test simulations and training for these plans. These binational groups gather to discuss and share lessons learned and relevant measures. Upon completion, the plans are published on the intranet.

#### Composition of Manager Groups:

- Permanent Managerial Commission: coordination of Group efforts.
- Technical Analysis Group: establishes the need to elaborate a new plan.
- Simulated Administration Group: promotes and systematically analyzes the simulated exercises.
- Contingency Analysis Group: prepare and maintain plans updated. Split into nine subgroups: gallery flooding; fire/explosion of generator units; data center fire; power station evacuation in case of damage; improvements to the fire Emergency Action Plan in voltage elevator transformers for generator units; fire in the production building; vessel or foreign body adrift in the direction of the main dam; Influenza A (H1N1); fire in autotransformers and transformers in the substation on the right bank.

### How it Works

The methodology adopted to prepare the emergency plans consists of:

1. Identification of the problem.
2. Analysis and processing of data.
3. Study of solutions.
4. Complementary studies.
5. Definition of goals, methods and deadlines.
6. Preparation of the Emergency Action Plan.
7. Final report.
8. Actions after the emission of the report (training, implementation monitoring, comparison with that planned and review of procedures).

#### Capacity building:

- Employees: annual lectures and simulation involving professionals affected in specific emergency situations.
- Outsourced personnel: integration simulations and lectures on safety at the outset of service provision.

## Existing Plans

- Fire and/or explosion.
- Flooding of the Paraná River.
- Foreign bodies or vessels adrift on the reservoir in the direction of the main dam.
- Collapse of transmission line towers.
- Rescue of victims in elevator E5, located in front of generator unit 18.
- Infectious disease (H1N1 influenza).
- Safety of online data.
- Reservoir level variability (depletion).
- Communication.

## Research, development and innovation initiatives [G4-DMA]

	Dam safety	Transmission and distribution technology
Goal	<ul style="list-style-type: none"> <li>▪ To develop applied research through a Center of Advanced Dam Safety Studies (Ceasb, the Portuguese acronym) about the behavior of structures and their respective materials.</li> <li>▪ To develop computer intelligence techniques related to the behavior and safety of dams.</li> </ul>	To undertake research, tests and verification regarding the dynamic performance of equipment and systems associated to the generation, transmission and distribution of electric energy on digital platforms with real time simulations conducted in the Electric System Automation and Simulation Laboratory (Lasse, the Portuguese acronym).
Investment	US\$ 631,939.28	US\$ 718,900.55
Main partners	Itaipu Technological Park Foundation (ITP).	Itaipu Technological Park Foundation (ITP).
Main results in 2014	<ul style="list-style-type: none"> <li>▪ In October, the presentation of the National Dam Registration System, which holds information on around 1400 dams and which currently serves as the official database of the <i>Comitê Brasileiro de Barragens</i> – CBDB (Brazilian Dam Committee).</li> <li>▪ Professionals from Itaipu helped to format the on-site specialization course in Dam Safety: Technical and Legal Aspects, promoted by Polytechnic School of the Federal University of Bahia. With around 40 students, 2015 will be brought to a close with a visit to the binational.</li> <li>▪ Ceasb has developed a system for sending mobile messages with alerts about alterations to Itaipu's dam and the exact location of the problem. The project was presented in San Francisco, USA, and generated much interest from a Spanish energy generation firm.</li> <li>▪ Parts that faithfully reproduce the Itaipu structure were printed in 3D for research purposes, providing a view from many different angles, something which was once restricted to paper or a computer. Over three thousand projects have been analyzed and myriad inspections have been necessary of the dam in order to obtain the result.</li> </ul>	<ul style="list-style-type: none"> <li>▪ End of the project PI-AF (Plant Information Asset Framework - an OSIssoft tool), which provides an overall view of the system and processes and which will be used in Business Intelligence to support Itaipu's business management.</li> <li>▪ Conclusion of the project "Maintenance Data Analysis System for monitoring Switches and Partial Discharges", aimed at increasing the service life and reducing the time equipment is made unavailable.</li> <li>▪ Finalization of the "Disturbance Register and Phase Measurement" project, equipment that permits the anticipation of actions and operations in real time in electric power systems to limit disturbances in a coordinated and selective manner.</li> </ul>

# Electricity Production and Supply

## Research, development and innovation initiatives [G4-DMA]

	Hydrogen research	International Hydroinformatics Center
Goal	To develop studies at the Hydrogen Research Center (NUPHI, the Portuguese acronym) that will allow Itaipu to extract hydrogen from water and surplus power in the future. Stored in huge cylinders, in the form of gas, hydrogen can be used in fuel cells and to produce electric energy to supply homes, industries and even electric vehicles.	<ul style="list-style-type: none"> <li>▪ Promote hydroinformatics (a branch of computer science dedicated to water management) and to become established as an international benchmark.</li> <li>▪ Make operational and monitor the technological development and implementation of technologies in an integrated manner, through projects and programs related to renewable energies, an emphasis on the territorial management of water resources.</li> </ul>
Investment	US\$ 117,046.23	US\$ 353,113.27
Main partners	Itaipu Technological Park Foundation, Eletrobras and the National Center of Reference in Hydrogen energy of the State University of Campinas (Unicamp).	Itaipu Technological Park Foundation, International Hydrology Program of the United Nations Organization for Education, Science and Culture (UNESCO) and the Latin American Energy Organization (Olade).
Main results in 2014	<ul style="list-style-type: none"> <li>▪ The NUPHI, installed in the Itaipu Technological Park, has been producing hydrogen on an experimental scale since 2014.</li> <li>▪ Inaugurated in December, the first Hydrogen Production Plant in Paraná and the second in the southern region of the country. The goal is to investigate the life cycle of hydrogen, involving the stages of production, purification, compression, storage, quality control, transport and end use.</li> <li>▪ Completion of installation and commissioning of the electrolyzer, the main piece of equipment that allows for the production of hydrogen by splitting water molecules. While oxygen is released into the atmosphere, hydrogen is purified, compressed and stored.</li> <li>▪ Completion of the installation and commissioning of the fuel cell, equipment that produces electric energy through hydrogen.</li> </ul>	<ul style="list-style-type: none"> <li>- In July, realization of the 15<sup>th</sup> edition of the Water Information Summit (WIS), an international meeting aimed at presenting and developing solutions related to the management of water and the environment over the web. The Center demonstrated its involvement in the development of web territorial management system through free software.</li> <li>▪ Project initiated in partnership with the Federal University of Viçosa to develop a methodology for the implementation of Spatial Data Infrastructure for a hydroelectric plant, by means of a Free Software Territorial Management Platform. The system will provide information that will assist in the making of decisions and may be replicated in companies from the electricity industry.</li> </ul>

	<b>Renewable Energy Platforms</b> [G4-EC1; G4-EC2; G4-EC8; G4-SO1]	<b>Electric Vehicle</b> [G4-EC1; G4-EC2; G4-EC8; G4-EN27; G4-SO1]
<b>Goal</b>	Spread the use of renewable energy sources and efficient energy technologies, with an emphasis on biogas, by means of the development of projects that allow for the creation of new business opportunities and which promote energy self-sufficiency for the livestock farming and agro-industry sectors, in parallel with an environmental sanitation process.	To develop research and innovation in technology to develop mobility solutions, and to support initiatives for the development of renewable and clean energy sources, working towards energy efficiency and the sustainable development of the area of influence.
<b>Investment</b>	US\$ 2,338,648.11	US\$ 5,194,459.30
<b>Main partners</b>	International Center of Renewable Energies-Biogas (CIBiogás, the Portuguese acronym).	Education and research entities and public and private companies.
<b>Main results in 2014</b>	<ul style="list-style-type: none"> <li>▪ Restructuring of the distance refresher course in biogas energies. Two classes were opened, totaling 52 students from seven nations: Argentina, Bolivia, Chile, Cuba, Ecuador, Paraguay and Uruguay.</li> <li>▪ The Ajuricaba Family Farming Agro-Energy Condominium, formed by 33 small farms with hog and cattle farming activities in Marechal Cândido Rondon – PR, began operation connected to a public electric energy distribution network, in August.</li> <li>▪ In 2014, the biogas demonstration units received a total of 50 visits, comprised of around 790 people. The most visited unit was the Ajuricaba Condominium, with 20 visits. The venue even received a visit from the UN Secretary of Energy, Spaniard Ivan Veras.</li> <li>▪ Itaipu's vehicle fleet now boasts six powered by biomethane, as part of the research conducted by CIBiogás. November saw the first public demonstration of a bus (produced through a partnership with Scania) that uses natural gas vehicle (NGV) and /or biogas as fuel.</li> </ul>	<ul style="list-style-type: none"> <li>▪ The pilot project <i>Ecoelétrica Curitiba</i> was launched in June. The city was the first in the country to implement the use of an electric vehicle in public services, such as the Municipal Guard and Secretariat of Transit and Transport.</li> <li>▪ Partnership formed with the Brazilian Army of the Special Border Platoon of Tiriós, in Pará, for the installation of an industrial version of the Intelligent Energy Storage System developed by the binational. The aim is to improve the availability of electric energy in isolated regions using solar panels.</li> <li>▪ Production completed on two electric minibuses; tests initiated on the first crewed electric plane from Latin America and the studies to develop a hybrid ethanol/sodium battery bus; installation of 16 intelligent and eight conventional charging stations.</li> <li>▪ Inauguration, in June, of the operation center for the Intelligent electric Mobility Program (Mob-i) at the Itaipu Technological Park Foundation. The complex is the result of a partnership between Itaipu and the Mobility Industry Center of Excellence (CEiiA), from Portugal.</li> </ul>

*Governance*





# Management Approach

In 1966, with the signing of the Iguazu Act, Brazil and Paraguay took the initial steps to split the hydropower of the Paraná River. The following year, negotiations began for the implementation of the plant. One of the first initiatives was the establishment of a mixed official commission, with representatives from both governments, in order to study the viability of the project, which resulted in the hiring of binational consortium Ieco-ELC, made up of North American firm International Engineering Company and an Italian firm called Eletroconsult.

On April 26<sup>th</sup>, 1973, the presidents signed the Treaty of Itaipu, which set forth the conditions for the creation of Itaipu Binacional, the internationally legal company responsible for the construction and administration of the hydroelectric plant. The document further defined that the headquarters would be sited in Brasília and Asunción, that initial capital would total US\$ 100 million, and established equal sharing of energy to be produced, as well as cost formation.

Created in 1974, Itaipu is governed by a Treaty and three annexes, complementary diplomatic acts and through a binational regulatory framework. The Brazilian and Paraguayan governments share equal right and duties, with *Centrais Elétricas Brasileiras* (Eletrobras) and *Administración Nacional de Electricidad* (Ande) each owning an equal share of the share capital. What made the project viable was

the fact that the energy generated by Itaipu would be subject to guaranteed sale to both governments, this way ensuring the entry of resources necessary to cover the costs of the development.

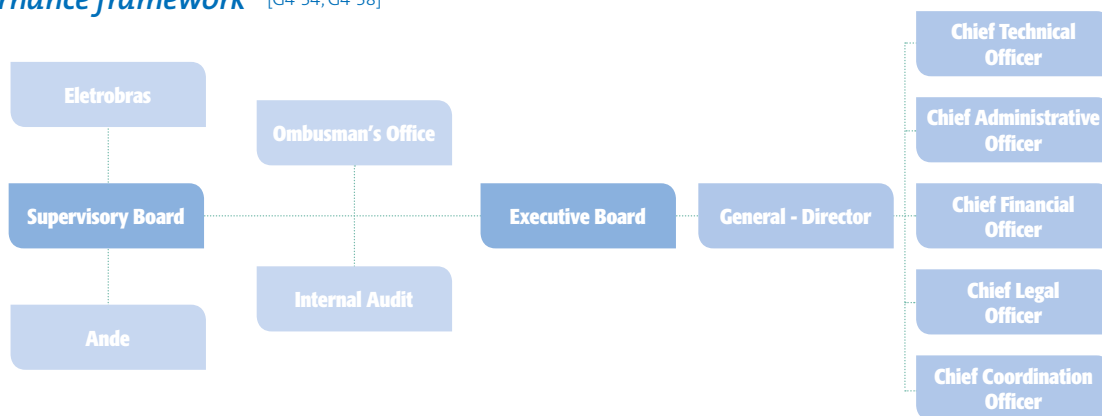
The highest governance body of the company is the Supervisory Board, followed by the Executive Board, formed by an equal number of Brazilian and Paraguayan representatives. All corporate management decision are fruit of the understanding reached between Eletrobras and Ande. Only in the event of failing to reach consensus, the issue shall be resolved by the governments of the two nations.

## Treaty serves as a model to Nepalese and Indian governments

The Treaty of Itaipu and its model for joint cooperation between the two countries will serve as inspiration for the Pancheshwar project, which plans the construction of a binational hydroelectric plant on the Mahakali River, on the border between Nepal and India. A Nepalese delegation has previously visited the plant, in 2008 and 2011, to learn more about political and diplomatic negotiations between Brazil and Paraguay. The most recent visit was in January 2015.

# Governance

## Governance framework [G4-34; G4-38]



## Composition of the Supervisory Board and the Executive Board 12/31/2014 [G4-13; G4-34; G4-38]

Supervisory Board	
Brazil	Paraguay
Alceu de Deus Collares	Anibal Saucedo Rodas
João Vaccari Neto <sup>1</sup>	Carlos Alberto González
José Antônio Muniz Lopes	Leila Teresa Rachid Lichi
Luis Pingelli Rosa	Oswaldo Román Romei
Orlando Moisés Fischer Pessuti <sup>2</sup>	Sixto Luís Duré Benitez
Aloísio Mercadante Oliva <sup>2</sup>	Víctor Raúl Romero Solís
Representative from the Ministry of Foreign Affairs	
Eduardo dos Santos <sup>3</sup>	Carlos María Ocampos Arbo
Brazilian Executive Board	Paraguayan Executive Board
General Director: Jorge Miguel Samek	General Director: James Edward Clifton Spalding Hellmers
Executive Technical Director: Airton Langaro Dipp <sup>4</sup>	Technical Director: José María Sánchez Tillería
Legal Director: César Eduardo Ziliotto	Executive Legal Director: Luis Alberto Breuer González
Administrative Director: Edésio Franco Passos	Executive Administrative Director: Carlos Jorge Paris Ferraro
Executive Financial Director: Margaret Mussoi Luchetta Groff	Financial Director: Miguel Ángel Gómez Acosta
Coordination Director: Nilton Miguel Friedrich	Executive Coordination Director: Francisco Pedro Domaniczky Lanik

<sup>1</sup> Replaced by Giles Carriconde Azevedo on 01/21/2015.

<sup>2</sup> In May 2014, Orlando Moisés Fischer Pessuti and Aloísio Mercadante 2014 replaced board members Orlando Pessuti and Roberto Átila Amaral Vieira, who left the Board in April and January of 2014, respectively.

<sup>3</sup> Replaced by Sérgio França Danese on 02/12/2015.

<sup>4</sup> Assumed the position in April 2014, which had previously been provisionally occupied by the Brazilian General Director since June 2011.

## *Supervisory Board*

<b>Composition</b> [G4-38]	<b>Main attributes</b> [G4-42; G4-45; G4-46]	<b>Meetings</b> [G4-41; G4-47]
<ul style="list-style-type: none"> <li>• All members are indicated by the Brazilian and Paraguayan governments, in equal numbers. There are no specification regard professional formation. [G4-40; G4-EC6]</li> <li>• Among the Brazilian nominations, one of the board members is indicated by the Ministry of Foreign Affairs and two by Eletrobras. [G4-40]</li> <li>• The Board members are not employed and do not occupy executive positions. [G4-39]</li> <li>• The mandate is for four years and members can be reconsidered for the position, just as they may be replaced at any time.</li> </ul>	<ul style="list-style-type: none"> <li>• Fulfill and ensure the fulfillment of the Treaty of Itaipu, its annexes and complementary acts. Define fundamental guidelines and the By-laws.</li> <li>• Examine the Annual Report, General Balance Sheet and Statement of Profit and Loss Account prepared by the Executive Board, and to present them with their opinion to Eletrobras and Ande.</li> <li>• Approve the budget and the Business Plan, which includes objective related to sustainability.</li> <li>• Decide: the basis for providing electricity services; the proposals of the Executive Board in reference to obligations and loans; a budget proposal for each year and its reviews, presented by the Executive Board.</li> </ul>	<ul style="list-style-type: none"> <li>• Conducted ordinarily every two months. A president is elected at each edition, always alternating between a Brazilian and Paraguayan representative and rotating to include all board members.</li> <li>• Board members share the business decision with equal voting powers. For decisions, the majority of board members from each country must be present.</li> <li>• In the lack of parity of votes, a draw will take place to decide which members will not vote, until reaching the equal number of voters for both countries.</li> <li>• Extraordinary meetings can be called by the board members or by the general directors, and are presided over by the member who oversaw the previous ordinary meeting.</li> </ul>

## *Executive Board of Directors*

<b>Composition</b> [G4-38]	<b>Main attributes</b> [G4-42; G4-46]	<b>Meetings</b> [G4-41; G4-47]
<ul style="list-style-type: none"> <li>• It is formed by all the directors from Brazil and Paraguay, with parity in both voice and vote.</li> <li>• The directors are selected by the respective Governments, and proposed by Eletrobras and Ande. [G4-40; G4-EC6]</li> <li>• Members are equal in number, capacity and hierarchy for both nations. There are no specifications regard professional formation. [G4-40]</li> <li>• The mandate last five years, with members eligible for reconsideration for the position. They can also be replaced at any time, in accord with government decision.</li> </ul>	<ul style="list-style-type: none"> <li>• They practice the administrative acts necessary to conduct the company business, fulfilling the Treaty and its annexes and the decisions of the Supervisory Board.</li> <li>• Submit the Itaipu Strategic Plan to the Board, define tactical guidelines and approve the operational plan, which contain sustainability objectives and goals. [G4-45]</li> <li>• Prepare and submit the General Balance Sheet and Statement of Profit and Loss Account for the previous year to the Board. [G4-49]</li> <li>• Assist the Board in making decisions with economic, environmental and social impact, as there are no specific committees, and assist in the enhancement of knowledge about sustainability. [G4-34; G4-43; G4-45; G4-49]</li> <li>• Transmit the initiatives achieved through the Sustainability Management System (SMS) to the Supervisory Board through the general director. [G4-34; G4-36]</li> </ul>	<ul style="list-style-type: none"> <li>• Conducted, ordinarily, at least twice a month. The General Directors alternate in presiding over meetings.</li> <li>• Only the General Directors can call extraordinary meetings. They also participate in meetings with the Supervisory Board, though they do not vote.</li> <li>• The Executive Board can only meet with the presence of the majority of its members.</li> <li>• Resolutions are adopted through a majority vote. And are only validated in the presence of both General Directors (or their temporary substitutes).</li> <li>• In the event of a tied vote for some issue, it may be called for consideration on two more occasions. When a tie continues, the issue is submitted to the Supervisory Board.</li> </ul>

# Governance

## Business Planning and Control System

Established through the Itaipu By-laws, the Corporate Planning and Control System is the management model adopted to assure attainment of the visions established for 2020, along with the strategic objectives. The Corporate Plan incorporates management concepts from the Balance Scorecard (BSC) and involves the development of a Strategic Business Map divided into sectors maps up to the level of superintendency, aimed at guaranteeing alignment between the strategy and operational actions.

In 2015, the priority will be conduction of a tactical and operational review of the Corporate Plan, with the effective participation of employees. The change will be led by managers, with contributions from departments, based on suggested improvements.

The idea is for Itaipu to become more efficient and less bureaucratic. Therefore, discussions with approach the

actions necessary to attain the vision for 2020. As such, a range of workshops will be held, covering topics like human resources, access to information and anti-corruption policies, renewable energies and electric-powered mobility, regional and social development with a strategic focus on the production of energy, operational efficiency and sustainable development.

Another tool that contributes to Itaipu maintaining its level of excellence, and which is used as a benchmark in strategic planning, is the International Hydropower Association (IHA) protocol. Since 2010, Itaipu has been preparing to submit its actions for assessment. The IHA team visited the plant in 2014 for prior analysis and the official evaluation will take place in 2015. [G4-2]

## Project and process offices

The Corporate Project and Process Offices are comprised of a team that provides support in the use of the project management methodology, created through the customization of the PMBOK Guide by the Project Management Institute (PMI). It also monitors the performance of programs developed by the company, especially the fulfillment of objectives, deadlines and costs. There are six offices in operation on the Brazilian side, linked to Planning and Coordination Consultancies from each of the management areas.

By means of the Process-oriented Management model, Itaipu aims to obtain greater control of resources, along with foreseeability and continued improvement in results, all sustainably. The objectives of the Process Offices is to identify the critical processes and their respective performance indicators, align processes with business strategies and monitor performance.

Corporate goals	Goal	Performance in 2014	Goal for 2015
<b>Classification of financial risks (by Standard &amp; Poor's)</b>	Rating brAAA	Attained	Rating brAAA
<b>Economic-Financial Balance Index <sup>1</sup></b>	≥ 98% e ≤ 102%	Attained 98%	≥ 98% and ≤ 102%
<b>Total Liability Index over EBITDA <sup>1</sup></b>	≤ 9	Exceeded 8.21	≤ 8
<b>Generation Availability Index</b>	≥ 94%	Exceeded 96.16%	≥ 94%
<b>Annual growth in visitation to the Itaipu Tourism Complex (Brazilian side)</b>	10%	Not attained -15.48%	5%
<b>General satisfaction index for the organizational atmosphere survey (Brazilian side) <sup>2</sup></b>	Not implemented in 2014		76%
<b>Reduction in electric energy consumption <sup>3</sup></b>	5%	Exceeded 5.5%	5%
<b>Reduction in fossil fuel consumption <sup>3</sup></b>	3%	Exceeded 25%	3%

<sup>1</sup> The economic-financial outlook for Itaipu is structured to meet the objectives of Annex C of the Treaty and the respective indicators were prepared aimed at ensuring 100% balance is maintained in the energy tariff between revenue and expenses, and that in 2013 the debt is fully amortized.

<sup>2</sup> The survey is conducted every two years. In 2013, the goal of 74% was surpassed, reaching 74.9%.

<sup>3</sup> Goals refer to consumption in 2015 compared to that registered in 2012. The performance reported refers to the reduction obtain in the last two years.

## Sustainability Management System (SMS)

The SMS consists of an innovative business management model integrated into the Strategic Planning. It was created in 2012, aligning the vision with the corporate mission. The system was alongside the “Sustainable Itaipu” website, available on the company intranet, with the aim of creating an environment for interactive discussion, formation and dissemination of the sustainability culture, inside and outside of Itaipu.

Sustainable Dialogue are periodically held, which consist of meetings to keep employees abreast and to disseminate concrete measures related to sustainability, such as efficiency in Itaipu’s energy production, actions to promote professional evolutions of employees and the well-being of people in order to realize the company strategy.

Each year, the Corporate Planning department meets with the sustainability coordinator and the group of articulators (comprised of representatives from all areas), to discuss

the methodology and review indicators for all programs and actions, in order to ensure adherence to the corporate policy and the principles and values of sustainability.

Following two years of experimental activity on the Brazilian side of the company, the first assessment by members shows the need for changes, such as clarification regarding the involvement roles and the inclusion of a branch coordinator, to facilitate the work of the articulators and communication among the different areas.

In 2014, the Executive Board approved the expansion of the SMS to the Paraguayan side and a binational work group was formed to present an implementation proposal by May 2015. A binational Sustainability Policy was also approved, in line with the company Strategic Plan, the governmental policies of both nations, and in convergence with the global norms applicable to the issue. [G4-25; G4-35; G4-36; G4-37]

# Governance

## Principles of the Binational Sustainability Policy, by dimension:

Corporate	Environment	Social and environmental development	Cultural
<ul style="list-style-type: none"> <li>▪ Rational, balanced and efficient management of people, resources and business processes.</li> <li>▪ Ethical, transparent and fair relations, respecting differences.</li> <li>▪ Ample, integrated and collaborative vision and management of actions.</li> <li>▪ A commitment to continued improvement and innovation.</li> <li>▪ Integrated management of corporate risks.</li> <li>▪ Sustainable Procurement and development of local suppliers.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Generation, incentive and use of energy from clean and renewable sources.</li> <li>▪ Action in partnership with social players to leverage sustainability.</li> <li>▪ Conservation and preservation of the environment and respect for biodiversity.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Be an active agent in sustainable human development.</li> <li>▪ Promote the sustainable development of the territory.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Effective use of competencies and experiences present in the framework of Itaipu and its foundations.</li> <li>▪ Promote and consolidate a culture of sustainability, acting as an example to the world.</li> <li>▪ Encouragement of sustainable attitudes.</li> </ul>

## Award for the best practices in water management

Prior to World Water Day (celebrated on March 22, 2015), the program Cultivating Good Water (*Cultivando Água Boa* – CAB, in portuguese), developed by Itaipu over the past twelve years, was awarded first place by the United Nations (UN) for Water for Life 2015, in the category “Best water management practices”.

The initiative was up against 40 practices from around the world as the best water resource management policy on the planet and was arranged to contribute to international commitments that deal with water, these include the Sustainable Development Goals, which will be launched

in the second half of 2015, the Millennium Development Goals, Agenda 21, the Earth Charter and the Johannesburg Plan of Implementation.

A month before the announcement, the UN Secretary General, Mr. Ban Ki-Moon, visited the plant as part of an official visit to Paraguay. The visit was at his own request, in order to learn more about the binational’s varied initiatives. He affirmed that Itaipu plays a leading role in the challenge of improving the world’s social and environmental conditions.



## *Risks and opportunities*

When considering the principle of precaution, the only irreversible environmental risk at Itaipu would be compromising the physical integrity of the plant dam. Despite being highly unlikely, the organization is a global benchmark when it comes to the subject and invests special attention and procedures (find out more on page 21). There are over 2,400 monitoring instruments installed, with regular visual and auscultation inspections, in addition to seismological monitoring and auditing every four years, overseen by an international board of civil consultants.

With regards to the management of business risks, including those in the social and environmental categories, the Integrated Internal Control Risk and Environment Management System is at a final stage of implementation. It is linked to the myriad corporate processes aimed at establishing standards for identification, assessment, response and monitoring. Of the 65 items that comprise the Itaipu risk Map, 15 were prioritized for assessment and

handling, based on an impact and vulnerability matrix, and the most relevant risks will be definitively responded by December 2015.

Among priority risks are the environmental impacts. Other social and environmental risks listed in the matrix are: social mobilization, water management, natural phenomenon, social and economic impacts, river bank and conduit overflow, which will definitively be dealt with as from 2016.

Another manner of identifying business opportunities and risks is during the annual process for the review of the Business Plan, when the entity's strategy is adapted to transformations in the scenarios in which it is found. Once the business strategy has been developed into sector maps, all the risks and opportunities discussed in the Strategic Business Map are analyzed again, considering the views of each management sector and superintendency. [\[G4-2; G4-14; G4-SO2\]](#)



## *Climate change*

The Impacts, Adaptation and Vulnerability Report concerning Climate Changes, part of the Intergovernmental Panel on Climate Change (IPCC), was published in March 2014 and highlighted water safety risks in South and Central America. In Brazil, 2014 began with a water storage volume of 43% for reservoirs in the Southeast/Central-West Region, and ended the year at just 19% of its full capacity.

The situation in these watersheds was not overly aggravated thanks to a reduction in water flow determined by Operador Nacional do Sistema Elétrico – ONS (National Electric System Operator) over the course of the year, aimed at guaranteeing water use for human needs and energy generation. Within this scenario, thanks to its privileged location, Itaipu played an important role in supplying the country, as it was called upon by the ONS to maintain the highest possible volume of water stored in reservoirs in the Northeast, Southeast and Central-West.

For 2015, the binational's focus will be on increasing operational efficiency, to mitigate possible restrictions to available water, with the aim of enhancing the cost-result ration attained. [\[G4-EC2\]](#)

## Transparent management practices [G4-DMA; G4-49; G4-56; G4-58; G4-SO3]

Action	How it works	Initiatives in 2014
<p><b>Adherence to Sarbanes-Oxley Act (SOX)</b></p> <p>Objective: To identify risks and establish internal controls that assets to the authenticity, integrity and transparency of information part of the Financial Statements.</p>	<p>Adaptation to the 22 business process and 3 Information Technology and general control norms was initiated, aimed at mitigating possible financial and operational risks to the company.</p> <p>Monitoring is continuous and each year controls are submitted to Internal and External Auditing.</p>	<ul style="list-style-type: none"> <li>- Preparation and approval of the internal controls manual to comply with North American SOX law and flow charts for the entire process.</li> <li>- Approval of the new management model for the managing group and reorganization of its work flow and that of the managing departments of its processes.</li> <li>- Preparation and approval of the SOX communication plan.</li> <li>- Capacity building of professionals involved in the management of SOX and those responsible for control tests in Internal Auditing.</li> <li>- Continuation of process initiated in 2013 for the review and detailed assessment of all internal risks and controls part of each of its SOX processes, as well as updates for all documentation belonging to each process.</li> <li>- Continuation of the enhancement project for monitoring and oversight procedures for actions plans aimed at mitigating gaps identified by Internal and External auditors.</li> </ul>



Action	How it works	Initiatives in 2014
<p><b>Internal Audit</b></p> <p>Objective: Analyze and assess the suitability and efficiency of administrative system and their respective controls. Verify the fulfillment of contracts, the adaption of activities developed through foundations created by Itaipu and, when necessary, give warning about the inexistence or unsuitability of policies and guidelines inherent to business activities.</p>	<p>Activities are developed by binational teams and follow a work plan that extends for five years, reviewed annually to consider the risks inherent to the developed activities, the materiality of programs and the mapped financial risks, along with SOX Act compliance.</p> <p>The Internal Audit is hierarchically subordinate to the Supervisory Board and, administratively, overseen in coordination by the general directors. Work plans and policies are submitted to the Executive Board of Directors and/or Supervisory Board for approval.</p> <p>It also periodically informs the Board about the status of actions being implemented, in order to fulfill recommendations by Auditors aimed at resolving identified nonconformities.</p> <p>Projects not listed in the annual plan and that are requested by the Board or general directors all denominated "special" and executed by teams with auditors made up of the same nationality as the requesting party, though they may be binational, too. <a href="#">[G4-50]</a></p>	<ul style="list-style-type: none"> <li>- Administrative system audit. In Brazil: Budgeting System; Benefits; Maintenance; Sustainable Electric Mobility; Planning and Control body (Financial); and Material Administration. In Paraguay: Information Technology System; Financial; Hiring; Personnel Development; The Environment and Social Responsibility.</li> <li>- Management audit: conducted through programs selected in accord with materiality and criticality.</li> <li>- Risk-based audit: SOX-Itaipu Project.</li> <li>- Special projects.</li> </ul>

## Transparent management practices [G4-DMA; G4-49; G4-56; G4-58; G4-SO3]

Action	How it works	Initiatives in 2014
<p><b>Independent External Audit</b></p> <p>Objective: Emission of a audit report on adaptations to the Financial Statements to the accounting norms and pertinent legislation; evaluation and test of internal controls according to Sarbanes-Oxley Act (SOX) and in accord with the US Public Company Accounting Oversight Board (PCAOB); and validation of the Sustainability Report.</p>	<p>For periodic verification of the General Balance Sheet and the Profit and Loss Account Statement, Itaipu contracts independent auditors, with proven technical capacity and accepted by international financial entities, in accord with that cited in article 86 of the Itaipu By-laws.</p> <p>An binational consortium is contracted, made up of Brazilian and Paraguayan auditors, through a binational call for tenders. The work and emission of the audit report are jointly conducted by both companies from the consortium.</p> <p>Work relative to the field of Financial Statements are conducted on a quarterly basis, at least, and generally last two weeks.</p> <p>Each year the audit consortium also assesses and tests the entity's internal controls, according to SOX and PCAOB concepts.</p> <p>By means of another contract, with a Brazilian audit company, the Sustainability Report is also submitted annually for external verification of the information, a practice initiated in 2004.</p>	<ul style="list-style-type: none"> <li>- Emission of audit reports without expert opinion about the Intermediary Financial Statements from the first, second and third quarters of 2014.</li> <li>- Emission of audit reports without expert opinion about the Financial Statements for the year of 2014.</li> <li>- Validation of the Sustainability Report for 2013, with no derogatory notes.</li> </ul>
<p><b>Adhesion to GestãoTransparente.Org</b></p> <p>Objective: To offer information about legislation and, using a tool, simulate the level of risk to corruption for each institution. According to the results, actions are recommended to mitigate risks.</p>	<p>Action It is a Portuguese non-governmental organization that combats corruption and encourages transparency among organizations. Itaipu was the first institution outside of Portugal to join the initiative.</p>	<p>The document was signed in November 2014, leading Itaipu to publicly commit and voluntarily combat corruption.</p>
<p><b>Specific training</b> [G4-SO4]</p>	<p>The Chief Financial Officer and Chief Legal Officer jointly organized a management body workshop, in June, with a three-hour session on the issue of "Corruption prevention – a competitive edge".</p>	<p>The activity discussed Brazilian legislation for fighting corruption, based on Law 12,846 (8/1/2013) and presented the Business Risk Simulator developed by the Center of Excellence in Innovation in the Automobile Industry (Ceia) and based on regulations and institution like the UK Bribery Act, considered the world's leading anti-corruption law. Participants were also introduced to the Transparency International risk perception index.</p>

Action	How it works	Initiatives in 2014
<p><b>Ombudsman</b></p> <p>Objective: Transform manifestations (complaints, criticism, reports, suggestions, praise, requests for information and measures) into opportunities for improvements in Itaipu's processes, thereby contributing to participatory and transparent management and greater efficiency in business processes. [G4-57]</p>	<p>Created in 2009 to meet the need of external stakeholders, in December 2012 it also began catering to internal stakeholders. The Ombudsman is hierarchically subordinate to the Supervisory Board and managed by the general director of its nationality. [G4-50]</p> <p>Contact methods include an online form on the website and intranet, via telephone, letter, e-mail (ouvidoria@itaipu.gov.br), or by scheduling personal contact for the internal public.</p> <p>All manifestations received are registered in the Computerized Ombudsman System (SOU, the Portuguese acronym) implemented in August 2013. The system can be used anonymously. Documents may also be attached and status of the incident can be monitored.</p> <p>An annual report for each side of the plant is presented to the Supervisory Board at the first ordinary meeting. Periodic information about existing demands are submitted to the general director.</p> <p>When necessary, specific reports are issued aimed at the internal company departments for the recommendation of improvement actions and administrative measures necessary to the prevention, combat and correction of the identified facts.</p>	<ul style="list-style-type: none"> <li>- When necessary, specific reports are issued aimed at the internal company departments for the recommendation of improvement actions and administrative measures necessary to the prevention, combat and correction of the identified facts. [G4-50]</li> <li>- Of the 178 validated manifestations, 128 were made using the SOU system. There are 11 pending issues, and 11 are currently underway, with 16 partially resolved. Only 23 demands were not met within the deadline.</li> <li>- The main demands were related to the Itaipu Tourism Complex and visits; job or internship requests; technical data or demands for school research.</li> <li>- In all, there were seven complaints related to human rights, with four originating from external stakeholders. Two manifestations are underway, three have been considered unfounded and the other have all been resolved. Of the registered manifestations, five were related to discrimination, of which three were unfounded. [G4-LA16; G4-HR3; G4-HR12]</li> <li>- Of the two registers regarding the environment, one was judged unfounded and the other was submitted to the Environmental Police – Green Brigade. [G4-EN34]</li> </ul>

Action	How it works	Initiatives in 2014
<p><b>Online Purchase Portal</b></p> <p>Objective: To guarantee more transparency and agility in the purchase process.</p>	<p>Launched in September 2014, the tool for national and binational acquisitions can be visited at <a href="http://www.compras.itaipu.gov.br">www.compras.itaipu.gov.br</a>.</p> <p>Developed by a binational consortium, under the management of the Itaipu Superintendency of Information Technology and Purchases, the electronic process was adapted to the particularities of the binational plant. The portal offers modalities such as quotation requests, electronic auctions and low value purchases, as well as a monitoring channel for the supplier.</p> <p>Due to technical problems with the tool used previously (Licitacoes-e), since 2009 Itaipu has been holding on-site binational auctions, which, in some situations, may jeopardize the transparency of procedures.</p>	<ul style="list-style-type: none"> <li>- The portal allowed for a reduction in the number of quote requests and low value purchase from 14 to 5 steps, fostering economy and promptness in processes, which are now completed in 20 days instead of 60, as in the past.</li> <li>- Expansion in the participation of suppliers, reducing postal services by 70% and 90% in the consumption of envelopes for invitation letters. In all, negotiations on the Portal totaled US\$ 422,984 in 2014.</li> <li>- 60 processes completed since the launch of the Online Purchase Portal. All processes are available for consultation in the public area, offering greater transparency and agility, with information about participants, values and the winning proposal. The system also permits questions to be raised about materials/services that are being acquired, as well as entering a request to contest the tender.</li> </ul>
<p><b>Integrated Business Management System (SAP)</b></p> <p>Objective: To foster better management and reliability of information and processes.</p>	<p>The management software adopted by Itaipu in 2005 and implemented in 2006, in the Chief Financial Officer, to integrate different sectors, such as budgeting, accounting, procurement, contracts, material and stock control, among others.</p> <p>In 2013, a debt management model was introduced, allowing the entire payment and charge application calculation process, which was previously done on spreadsheets. To be automated, this ensured greater safety and reliability of the binational's accounts.</p>	<p>In March, implementation began on SAP-HR for the preparation of payrolls and personnel registration.</p>

Action	How it works	Initiatives in 2014
<p><b>Talk to us</b></p> <p>Objective: To offer the population and on-line service channel. It aims to respond requests for information and clarify doubts for internet users.</p>	<p>The messages reach Itaipu's corporate e-mail address (itaipu@itaipu.gov.br), by means of a contact form on the company website.</p>	<p>Registrations totaled 4,128 responses, made up of requests for support/sponsorship, technical questions, assistance for school and academic projects, as well as requests for information about selection processes, visitation, internships, tenders and the auction of Itaipu fleet vehicles.</p> <p>The channel also received questionnaires, academic research objects, in the areas of environmental, financial, administrative and technical education, which were answered by managing departments with the support of specific areas of the company.</p>
<p><b>Ethics Committee</b></p> <p>Objective: To analyze and issue opinions on proven or suspected cases or those submitted for the Committee's consideration, occasionally through the Ombudsman. It also serves to guide, advise on and promote the Code of Ethics, both internally and externally. [G4-S7; G4-HR12; G4-LA16]</p>	<p>Comprised of six full members and two alternates, with equal representation of Brazilian and Paraguayan employees, designated by the Supervisory Board, with at least one representative from Chief Legal Officer from each country.</p> <p>The mandate is three years, with reelection permitted once. Ordinary meetings are held every two months. Deliberations are only validated in the presence of all sitting members and the decisions are adopted through a majority vote system.</p> <p>Any individual or legal entity may file a written or verbal report against an Itaipu employee or outsourced third party. Once the report has been formalized, two members are selected, comprised of one from each country, to investigate the matter within a time frame of 90 days. The report is sent to the general directors with recommendations of suitable measures.</p> <p>Committee members that have a direct or continued relation with the person under investigation may not participate during meetings and deliberations. Verification of any infraction committed by a committee member will be investigated by a group named by the Executive Board. In the case of infractions committed by a director or board member, these will be overseen by an Ethics Committee formed ad hoc, with members named by the Supervisory Board, Ande and Eletrobras.</p>	<p>In 2014, two cases of offense and moral harassment were received and dealt with. One report of sexual harassment received during the period was only concluded through proceedings in 2015. And one case of moral duress registered in 2013 was finalized in 2014.</p>

# Governance

## National and international associations

Itaipu participates in and supports organizations that promote sustainable initiatives and that are in line with the binational's strategies. They include association, institutes, committees and councils that defend the interests of hydropower, conservation and the efficient management of energy; water resources; human rights; sustainable management; biodiversity and regional development.

Since August 2013, Itaipu has been participating actively in PC277, a committee part of the International Organization for Standardization (ISO), charged with the preparation of ISO 20.400 – the Sustainable Procurement regulation. In February 2014, Itaipu hosted the international plenary meeting and enjoyed the opportunity of heading up the Brazilian delegation at three international plenary meetings. [G4-16]

## Initiatives which the organization subscribes or endorses [G4-15]

- Earth Charter
- Eletrobras Environmental Education Commission
- Istanbul Water Consensus (IWC) – “Water Compact”
- Declaration of Corporate Commitment to Combating Sexual Violence Against Children and Adolescents
- Guidelines for Responsible Business Conduct for Multinational Companies by the Organization for Economic Co-operation and Development (OECD)
- Friend to Children Company
- Agenda 21 Forum of Paraná and Foz do Iguaçu
- Seminar on the Treaty on Environmental Education for Sustainable Societies
- Memorandum of Understanding: Integrated Water Resource Management – UNESCO MoU
- Memorandum of Understanding: Use of renewable energies and energy efficient technology - Onudi - Eletrobras MoU
- Corporate Compact against the Sexual Exploitation of Children and Adolescents along Brazilian Roadways
- United Nations Global Compact
- Nation Compact for the Eradication of Slave Labor in Brazil
- National Plan for Human Rights
- Principles for Responsible Management Education (PRME)
- Women’s Empowerment Principles (WEPs) of the UN and UN Women Global Compact
- National Council of Justice’s “Começar de Novo” (Begin Over) Program
- “Vira Vida” (Turn Life Around) Seal
- Term of Adhesion to the Network for Combating Sexual Exploitation of Children and Youths
- La Plata River Watershed Treaty



## Stakeholder engagement and communication channels

In order to communicate with its target public, Itaipu relies on a number of channels. The main ones are the Ombudsman, Talk to Us, the Press Office, company website, social network profiles (YouTube, Twitter and Facebook) and internal communication channels, especially the Itaipu Online News site (JIE, the Portuguese acronym) and the Itaipu News Board (JIM, the Portuguese acronym).

Definition of the public to be engaged is based on the area of Itaipu's influence, which consists of the region of Paraná River Watershed 3 (BP3). In all, there are 29 municipalities (28 in Paraná and 1 in Mato Grosso do Sul), though it may extend to cities on the boarder of Paraguay and Argentina, which benefit from joint actions within the fields of health and infrastructure.

There is no formal engagement process, but the company involves the stakeholders in the preparation, planning, execution and evaluations of programs, projects and actions it develops. One example is the "Workshops of the Future", employing a methodology inspired by *Agenda 21 do Pedaço* and developed by Ecoar Institute for Active Citizenship, adopted by the Cultivating Good Water program to allow for dialogue and participation of different social players in diagnosing and proposing solutions in a joint fashion (learn more on page 86).

The experience in participatory management, by means of local management committees, has become consolidated as a benchmark in the recovery of micro-basins and has already been adopted in many regions of Brazil and other nations, including Guatemala, Dominican Republic, Bolivia, Argentina, Uruguay and Paraguay.

Another engagement initiative is the program "*Oeste em Desenvolvimento*" (West under Development). Fruit of the joint effort of various representative sectors of the region, by means of an agreement with the Itaipu Technological

Park Foundation (read more on page 78), it is aimed at increasing opportunities for generating income and employment in the region's leading productive chains through public and private investments.

Also in 2014, the Supplier Development Program held a workshop for the first time ever for company representatives, those from the plant's area of influence, with contracts with Itaipu, aimed at leveraging management and production practices, with tools offering easy access and implementation, as well as alignment with the binational's principles of sustainability. The results of this action are expected to arise in the assessment of suppliers during the course of 2015 (more information on page 53). [[G4-25](#); [G4-27](#)]

## Stakeholders and relationship types [G4-24; G4-26]

Stakeholders	Relationship	Communication channels and documents
Financial and credit agents	The main financiers of Itaipu's construction, creditors, financial agents in which the company holds the majority of resources, financiers of projects and enterprises.	Meetings, notices, data, information or accounting reports and other documents.
Associations and cooperatives	Partners for the development of specific actions, cooperation agreements for the exchange of information and initiatives related to the implementation of program actions.	Periodic encounters, meetings, e-mails, participation in committees and programs, technical cooperation agreements, rendering of accounts, institutional visits, events.
Local authorities and public entities	Institutional relations and the support of social, environmental, watershed management and safety actions.	Periodic encounters, notices, meetings, institutional visits, accounting information or reports, events and others.
Clients / Equity holders	Contractors for available power and the energy associated to it.	Notices, accounting information or reports, periodic encounters, institutional visits, events involving Work Groups of the holding Eletrobras and Sustainability Report.
Employees	Responsible for the operation of the company.	Talks, e-mails, JIE (Itaipu Online News), JIM (Itaipu News Board), intranet, team meetings, theater presentations, institutional visits, events, Sustainable Dialogues and Sustainability Report.
Local communities	Partnership in a number of social and environmental programs.	Participation on varied committees and donation campaigns, reports, institutional visits, events, Sustainability Report.
Public utility concessionaires	Suppliers of essential services.	Letters, meetings, e-mails and technical cooperation agreements.
Public and private companies	Partnerships in social and environmental programs, technical and scientific cooperation, campaigns and other events.	Letters, e-mails, reports, meetings, agreements, campaigns and others.
Trade associations	Labor relations and technical cooperation for the exchange of information.	Notices, institutional visits, events, other documents and meetings.
Education and research entities	Partnership and support agreements for projects and technical cooperation, internship relations.	Meetings, e-mails, accounting information or reports, institutional visits, events and other documents.



Stakeholders	Relationship	Communication channels and documents
Suppliers	Business opportunities and sustainable practice incentives.	Procurement portal, public notices, notices, financial statements, certificates of good standing and other documents.
Foundations	Services, technical assistance, consultancy, capacity building, agreements and partnerships in social and environmental programs.	Letters, reports, courses, e-mails, institutional visits, meetings, participation on boards, rendering of accounts and others.
Governments	Partnerships in projects, articulation of legal and regulatory issues, exchange of information, institutional relations, cooperation agreements, enterprises and construction.	Meetings, inspections, financial statements, certificates of good standing, notices and other documents, tax certificates and statements, institutional visits, events, letter of intent and cooperation agreement.
Institutes	Gathering and exchange of data and information, studies, partnerships, certification related to biodiversity and services.	Term of commitment, letters, reports, e-mails, website, meetings, data, accounting information, institutional visits, events and others.
Media	Campaigns, varied reports, clippings and research.	Submission of releases via e-mail, telephone, meetings with journalists, information, accounting reports and Sustainability Report.
NGOs and Civil Society Organizations of Public Interest	Partnership in the development of projects and support in different actions.	Meetings, events, e-mails, agreements and other documents.
Business organizations	Participation in the BM&FBovespa Business Sustainability Index , partnership in different specific actions, including economic and tourism development and regional integration.	Meetings, notices, agreements, e-mails, institutional visits, events, Sustainability Report and other documents.
International organizations	Partnership in social and environmental programs, technical and scientific cooperation, support in the dissemination of programs and social and environmental commitments.	Letters, e-mails, meetings, events and Sustainability Report, agreements, technical cooperation and confidentiality agreements, institutional visits.
Brazilian military organizations	Partnership in the organization of events and projects, technical cooperation and information transmission.	Notices, e-mails, meetings, talks, institutional visits and events.
Insurance companies	Different types of cover according to the possible damage to facilities, equipment and personnel.	Notices and other documents.

***Economic Dimension***



# Management approach

The Treaty of Itaipu ensures relative stability within the energy market, which results in accurate revenue predictions, as the document states that Eletrobras and Ande are obliged to purchase all the energy generated. And as Itaipu is not aimed at profit, the fee charged for the electricity service is enough to cover operating expenses, debts and obligations listed in Annex C, which defines the financial framework of the organization.

Macroeconomic variables, such as exchange rates and inflation, are also monitored, as they impact the budgeting process and the results of the company. This is because the company's budget is calculated in American dollars, but executed in other currencies, chiefly so the Brazilian real and Paraguayan guarani.

Despite oscillations in the American currency, especially the high price recorded in Brazil as from September, Itaipu managed to fulfill all its obligations for 2014. Among them was the payment of US\$ 912.1 million in fees cited in Annex C (royalties, remuneration for energy transfers, capital earnings and reimbursement of administration and supervision fees), and all the interest commitments and debt amortization for loans and financing, which total around US\$ 2,055.4 million in the year.

## Revenue

Accumulated revenue since 1985 (which includes contracted power revenue, remuneration for energy transfers, the royalties and reimbursement for administrative and supervision fees relative to additional energy linked to the contracted power) is US\$ 71,652.2 million, with US\$ 3,680.4 million corresponding to 2014. Up to December 31<sup>th</sup>, the accumulated total received by Itaipu was US\$ 70,660.5 million.

The difference corresponds to the revenue from energy supplied over the last months of the year, which is due in the first quarter of 2015; the amount owned by the Brazilian Ministry of Mines and Energy for the payment of energy provided by Paraguay to Brazil; and dollar adjustment provisions for 2014 and part of 2013 (installments are paid through 12 monthly quotas, with the first due in March the following year. [\[G4-DMA\]](#))

# Economic Dimension

## Tariff and cost of providing electricity services

The production of energy at Itaipu varies according to consumption demands, water and operational conditions. The Treaty of Itaipu states that Eletrobras and Ande are obliged to contract the available installed power and, as such, Itaipu is ensured sufficient revenue to cover its expenses. The tariff applied in 2014 for the monthly contracted power was US\$ 22.60/kW (a value practices since 2009).

The average registered cost of energy supplied was US\$ 38.57/MWh, higher than the US\$ 34.98/MWh in 2013 (this amount is lower the higher the amount of energy supplied, and in 2014 generated energy was 11% less than the previous year). Although the same rate is charged for both the Brazilian and Paraguayan markets, the average final cost of energy supplied to each may differ, depending

on the respective degree of contracted power use and the additional consumption of energy linked to the contract.

The charges in Annex "C" are split into equal parts for both nations, except the remuneration for energy transfers, which corresponds to the excess Paraguayan energy acquired by Brazil. The Ministry of Mines and Energy (MME) is responsible for two thirds of the amount and Eletrobras for one third, which is passed on to Itaipu so that it may be transferred to the National Treasury of the neighboring country.

In the case of Brazil, the value of fees paid since the start of operation are higher than those of Paraguay due to the interest and charges on arrears incurred due to greater delays in payments. [G4-DMA]

## Cost of electricity service

Components	2014	2013	2012
<b>Royalties:</b> Financial compensation owed to the Brazilian and Paraguayan governments for the use of the hydropower potential of the Paraná River for energy generation.	US\$ 477.2 Million	US\$ 528.8 Million	US\$ 523.2 Million
<b>Earnings on invested capital:</b> Remuneration owed to Ande and Eletrobras at a rate of 12% per year calculated on the participation of paid-in capital, updated for inflation.	US\$ 48.8 Million	US\$ 48.1 Million	US\$ 47.8 Million
<b>Operational expenses:</b> Spending on personnel, materials, goods and services.	US\$ 803.4 Million	US\$ 764.4 Million	US\$ 865 Million
<b>Financial charges and amortization of loans and financing:</b> Values paid for financial charges and debt amortization. <sup>1</sup>	US\$ 2,052.8 Million	US\$ 2,053.7 Million	US\$ 2,056.5 Million
<b>Administration and supervision charge reimbursement:</b> Remuneration owned in equal parts to Ande and Eletrobras to financial compensate administration and supervision efforts.	US\$ 36.7 Million	US\$ 40.7 Million	US\$ 40.3 Million
<b>Results of income account in the year: Annual balance between revenue and the cost of electricity service.<sup>2</sup></b>	US\$ (56.9) Million	US\$ (12.3) Million	US\$ (113.6) Million

<sup>1</sup> This value does not consider the charges and amortization of loans by *Caja Paraguaya de Jubilaciones y Pensiones del Personal de la Itaipu Binacional* (Cajubi) reimbursed by Ande and Banco Itau (of Paraguay) contracted for the execution of works and services aimed at reinforcing the electric system of Alto Paraná Department, in Paraguay, which were not included in the costs of electricity services.

<sup>2</sup> In 2014, the income account presented a negative balance resulting in a difference between operational income, not including energy transfer, of US\$ 3,362 million and the service costs of US\$ 3,418.9 million. By means of Supervisory Board Resolution (RCA-046/14), authorization was given for recomposition of the income account balance with resources from earnings on financial applications. The recomposed amount for the year of 2014 was US\$ 151.9 million. With this result, the accumulated balance for the income account exceeded US\$ (75.1) million at the end of the year.

## *Solidity and reliability*

Itaipu primordially follows the accounting practices adopted in Brazil and Paraguay. The exceptions, resulting from particularities pertaining to the binational, are clarified in the Explanatory Memorandums of the Financial Statements.

To make the process all the more effective and transparent, the Chief Financial Officer prepared a strategic binational map of the sector, with 12 objectives measured through indicators. In 2014, development of these objectives initiated, based on the selection of critical processes and priority projects, with criteria based on the relevance in attaining the 2020 business vision. The forecast is that this stage be finalized in 2015.

For the first time Itaipu obtained an international rating. Issued in June by the risk classification agency Moody's, it obtained a "Baa2" rating in foreign and local currency. This achievement positions the company within an average investment grade and reflects the company's strong level of competition and its stable and predictable cash flow.

Up to that point, the plant had only been assessed by the Standard & Poor's Brazil National Scale, which also reaffirmed the long-term corporate credit rating in June of 'brAAA' on the national scale, attributed to the organization

## *Debt services and due balance*

Resources raised from national and international financial entities for the construction of the plant, including financial rollovers, total US\$ 27 billion. The debt, paid in monthly installments, should be settled by 2023.

In 2014, all installments due for the service debt in the year were paid in full, totaling US\$ 2,055.4 million (with US\$ 1,168.2 million in amortization of the main total and US\$ 887.2 in financial charges). At the end of the year, Itaipu presented a balance of US\$ 12,683.2 million.

With the goal of assessing options to reduce the financial charges of Itaipu's debt, in 2014 studies were undertaken to

since 2009. On a global scale, Itaipu obtained a 'BBB' rating in foreign currency, 'BBB' in local currency and an individual credit profile of 'bb+'. In September, the agency Fitch attributed a long-term foreign and local currency rating of 'BBB' and a long-term national rating of 'AAA (bra)' to Itaipu.

In all three cases, the strong points sustaining the ratings are the Treaty (which establishes the rules and price of energy generated by the binational), the strict operational indexes, management and corporate governance of the company; and Federal Brazilian Law 5,899, which determines that all electricity services from Itaipu that Brazil acquires (through sale by Eletrobras) will be used by concessionary companies in the quotas destined to them by an authorized body.

On the other hand, agencies seen indebtedness and a weak point. However, this risk is minimized, as revenue is received in American dollars – the same currency as almost the entire debt, and by the fact that Itaipu's main creditors, on the Brazilian side, are the Treasury and Eletrobras.

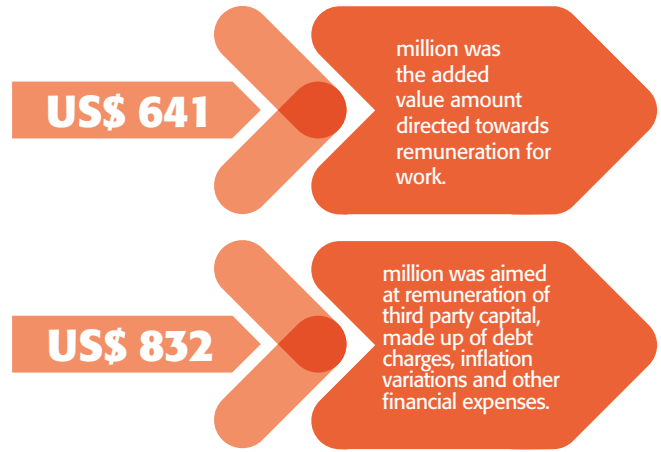
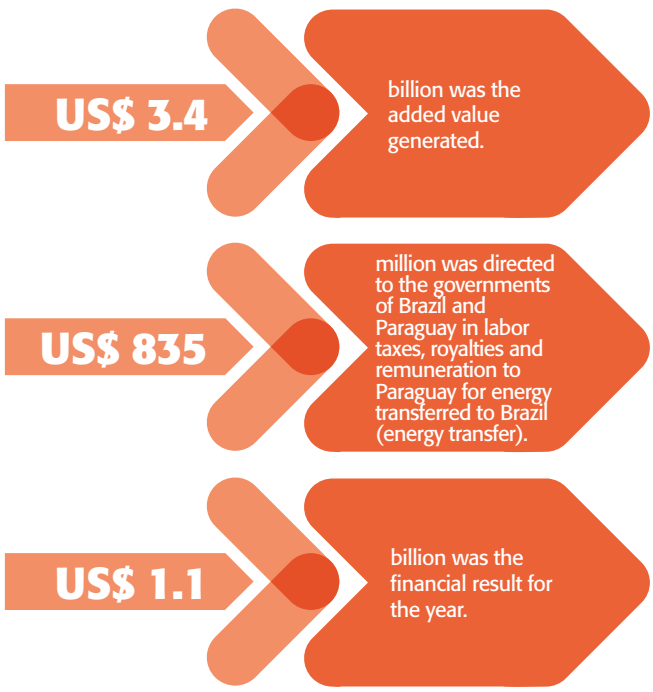
[G4-DMA]

alter the indebtedness profile. A range of financial institutions (domestic and foreign) presented proposals for Itaipu to issue bonds in the international market, raising funds with cheaper interest rates than those currently paid as part of its debt. The proposals presented, even though not corresponding to the total amount of the binational's "most expensive" debt, indicated the possibility of reducing the cost of the debt.

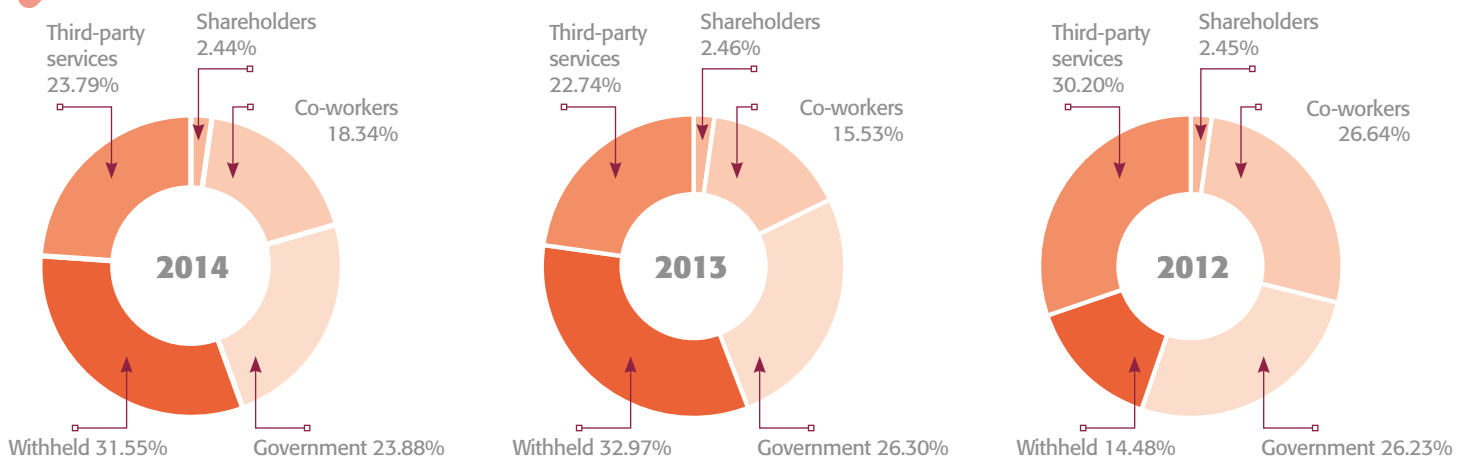
An impact study of the Itaipu tariff over the years, resulting from a possible debt exchange, was presented to the Supervisory Board, the Ministry of Mines and Energy of Brazil and the company's leading creditors – Eletrobras and the National Treasury. [G4-DMA]

# Economic Dimension

## Highlights in 2014:



## Value Added Distribution





	2014	2013	2012
<b>GENERATION OF ADDED VALUE</b>			
<b>Revenues</b>			
Energy Supply	3,291,012,000	3,291,012,000	3,291,012,000
Remuneration for energy transfer	318,374,804	377,020,357	378,718,002
Cost reimbursement - unassociated energy	70,975,712	132,328,557	128,136,896
Diverse Revenues (expenses)	(49,702,979)	(14,998,634)	(10,484,940)
	<b>3,630,659,537</b>	3,785,362,280	3,787,381,958
<b>(-) Inputs acquired from third parties</b>			
Materials	17,901,251	16,429,962	16,152,007
Third Party Services	101,961,380	106,702,421	104,645,775
Other operational expenses	74,912,219	80,913,537	122,372,673
	<b>194,774,850</b>	204,045,920	243,170,455
<b>GROSS ADDED VALUE</b>	<b>3,435,884,687</b>	3,581,316,360	3,544,211,503
<b>(+) Added value received in transfers</b>			
Financial Revenue	62,651,745	25,240,357	51,544,219
<b>ADDED VALUE TO DISTRIBUTE</b>	<b>3,498,536,432</b>	3,606,556,717	3,595,755,722
<b>DISTRIBUTION OF ADDED VALUE</b>			
<b>Work compensation</b>			
Direct remuneration	294,442,152	319,684,107	298,282,562
Benefits	164,906,101	166,979,004	152,676,209
Post-employment benefits	123,996,093	43,921,855	424,962,959
Labor indemnity	51,200,778	22,365,649	74,640,560
FGTS (Government Severance Indemnity Fund for Employees)	6,920,204	7,084,133	7,260,064
	<b>641,465,328</b>	560,034,748	957,822,354
<b>Government compensation</b>			
INSS and IPS (Brazilian and Paraguayan Social Security Institute)	40,033,054	42,762,976	41,155,156
Royalties	477,204,666	528,810,294	523,229,326
Remuneration for energy transfer	318,374,804	377,020,357	378,718,002
	<b>835,612,524</b>	948,593,627	943,102,484
<b>Remuneration of third party capital</b>			
Debt charges	885,738,220	960,998,877	1,030,007,341
Monetary variations	(55,735,307)	(140,797,875)	(56,155,222)
Other financial expenses	2,145,628	7,766	67,569
	<b>832,148,541</b>	820,208,768	1,086,230,132
<b>Remuneration of company capital</b>			
Capital earnings	48,784,814	48,139,048	47,789,688
Administration and supervision charge reimbursement	36,708,052	40,677,714	40,248,410
	85,492,866	88,816,762	88,038,098
<b>Result of the year</b>	<b>1,103,817,173</b>	1,188,902,812	520,562,654
<b>DISTRIBUTED ADDED VALUE</b>	<b>3,498,536,432</b>	3,606,556,717	3,595,755,722

\* Binational data.

# Economic Dimension

## Ibase model Social Accounting Report (in thousands of US\$) [G4-EC1]

1 - Calculation Base	2014			2013		
Net Revenue (NR)	3,680,363			3,800,361		
Operational Result (OR)	1,103,817			1,188,903		
Gross Payroll (GPR)	405,960			430,786		
2 - Internal Social Indicators	Amount (thou)	% on GPR	% on NR	Amount (thou)	% on GPR	% on NR
Food	18,080	4.45%	0.49%	19,253	4.47%	0.51%
Compulsory social charges	46,953	11.57%	1.28%	49,847	11.57%	1.31%
Private pension	63,197	15.57%	1.72%	60,597	14.07%	1.59%
Health	68,850	16.96%	1.87%	71,729	16.65%	1.89%
Workplace Health and Safety	1,240	0.31%	0.03%	1,157	0.27%	0.03%
Education	6,609	1.63%	0.18%	6,861	1.59%	0.18%
Culture	0	0.00%	0.00%	0	0.00%	0.00%
Capacity building and professional development	2,162	0.53%	0.06%	2,232	0.52%	0.06%
Kindergarten and kindergarten assistance	1,968	0.48%	0.05%	1,683	0.39%	0.04%
Participation in profit or results	36,675	9.03%	1.00%	38,801	9.01%	1.02%
Others	60,244	14.84%	1.64%	55,987	13.00%	1.47%
<b>Total - Internal Social Indicators</b>	<b>305,978</b>	<b>75.37%</b>	<b>8.31%</b>	<b>308,147</b>	<b>71.53%</b>	<b>8.11%</b>
3 - External Social Indicators	Amount (thou)	% on OR	% on NR	Amount (thou)	% on OR	% on NR
Education	29,746	2.69%	0.81%	24,362	2.05%	0.64%
Culture	417	0.04%	0.01%	295	0.02%	0.01%
Health and sanitation	22,154	2.01%	0.60%	18,188	1.53%	0.48%
Sport	13	0.00%	0.00%	0	0.00%	0.00%
Fight against hunger and food safety	274	0.02%	0.01%	142	0.01%	0.00%
Others	28,702	2.60%	0.78%	27,712	2.33%	0.73%
<b>Total of contributions to society</b>	<b>81,306</b>	<b>7.37%</b>	<b>2.21%</b>	<b>70,699</b>	<b>5.95%</b>	<b>1.86%</b>
Taxes (excluding social charges)	0	0.00%	0.00%	0	0.00%	0.00%
<b>Total - External Social Indicators</b>	<b>81,306</b>	<b>7.37%</b>	<b>2.21%</b>	<b>70,699</b>	<b>5.95%</b>	<b>1.86%</b>
4 - Environmental Indicators	Amount (thou)	% on OR	% on NR	Amount (thou)	% on OR	% on NR
Investments related to company production/operation	4,562	0.41%	0.12%	6,642	0.56%	0.17%
Investments in external programs and/or projects	11,169	1.01%	0.30%	11,212	0.94%	0.30%
<b>Total investments in the environment</b>	<b>15,731</b>	<b>1.43%</b>	<b>0.43%</b>	<b>17,854</b>	<b>1.50%</b>	<b>0.47%</b>
Regarding the establishment of "annual goals" to minimize waste, general consumption in production/operation and increasing efficiency in the use of natural resources, the company:	( ) has no goals ( ) fulfilled 0 to 50% ( ) fulfilled 51 to 75% (x) fulfilled 76 to 100%					



<b>5 - Staff Indicators <sup>1</sup></b>	<b>2014</b>	<b>2013</b>
Number of employees at the end of the period	3,142	3,283
Number of admissions during the period	99	146
Number of outsourced employees <sup>2</sup>	489	746
Number of interns <sup>3</sup>	102	109
Number of employees aged over 45	1,353	1,482
Number of women employed at the company	607	619
Percentage of managerial positions held by women	7.10%	7.43%
Number of black employees at the company	247	263
Percentage of managerial positions held by black people	2.40%	3.42%
Number of people with deficiencies or special needs	58	58
<b>6 - Information relative to the exercise of corporate citizenship</b>	<b>2014</b>	<b>Goals 2015</b>
Relation between the highest and lowest remuneration at the company	ND	ND
Total number of workplace accidents <sup>3</sup>	16	0
The social and environmental projects developed by the company were defined by:	( ) Executive management (x) Executive management and managers ( ) All employees	
Health and safety standards within the workplace were defined by:	( ) Executive management and managers ( ) All employees (x) all + Cipa (Internal Accident Prevention Committee)	
Regarding freedom of union association, the right to collective bargaining and internal representation of the workforce, the company:	( ) is not involved ( ) follows the ILO regulations (x) follows and encourages the ILO	
Private pension covers:	( ) Executive management ( ) Executive management and managers (x) All employees	
Participation in profit or results includes:	( ) Executive management ( ) Executive management and managers (x) All employees	
In the selection of suppliers, the same ethical standards and social and environmental policies adopted by the company:	( ) are not considered ( ) re suggested (x) are required	
Regarding the participation of employees in voluntary work programs, the company:	( ) is not involved ( ) offers support (x) organizes and encourages	
Total number of complaints and negative feedback from consumers:at the company:	at the company: NA at Procon: NA at the Justice Department: NA	
Percentage of complaints and negative feedback dealt with or solved:at the company:	at the company: NA at Procon: NA at the Justice Department: NA	
Total added value to be distributed (in thousand US\$):	<b>US\$ 3,498,536</b>	US\$ 3,606,557
Value Added Distribution (VAD):	23.88% government 18.34% employees 2.44% shareholders 23.79% third parties 31.55% retained	26.30% government 15.53% employees 2.46% shareholders 22.74% third parties 32.97% retained
<b>7 - Other Information</b>		

Data is binational, however, the information referring to functional indicators on the Paraguayan side are not part of the scope of assurance.

<sup>1</sup> The number of outsourced service provider employees, interns and total number of workplace accidents presented are only for the Brazilian side of the company.

<sup>2</sup> Itaipu does not contract outsourced services that develop work directly linked to business or administrative areas, strictly complying with legislation and jurisprudence. This item carries a list of employees from outsourced companies hired on the Brazilian side to render services such as maintenance, kitchen and building cleaning staff.

<sup>3</sup> Data from the Brazilian side of the entity only on December 31.

ND – No binational data available. NA – Not applicable as Itaipu has no direct end consumers.

# Economic Dimension

## Royalties

Itaipu is a pioneer in the payment of royalties for the use of water resources. The composition is defined in the Treaty and is based on the megawatt/h of energy supplied, with adjustments made based on inflation indicators from the United States.

The Treaty also establishes that payment be in equal amounts to both countries. Even though the plant in initiated commercial operation in 1985, payment of royalties only began in 1989, to Paraguay, and in 1991, to Brazil.

As a result of the different values paid and the resulting interest and charges on arrears in the payment of royalties to Brazil, the amount aimed at this nation is US\$ 4.8 billion, while Paraguay received US\$ 4.5 billion.

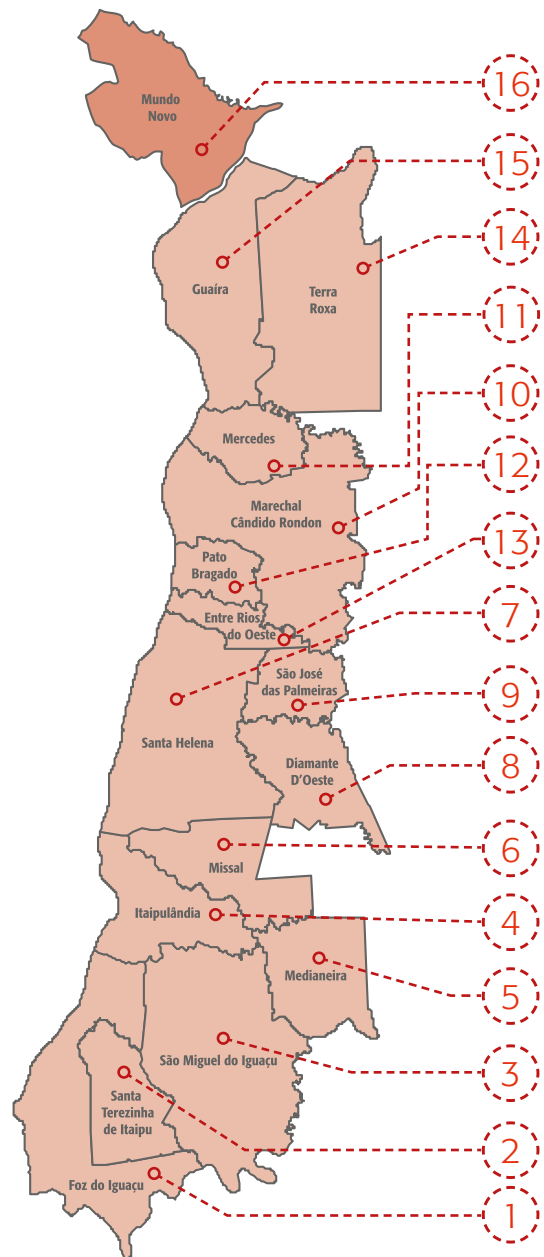
The resources paid by Itaipu to Brazil are split among the federal government (10% of the amount) and state and municipal governments (45% each), with the amount received by each municipality directly affected by the plant proportional to the extension of area flooded to form the reservoir, according to percentages defined by the National Electric Energy Company (Aneel). In the case of Paraguay, the Ministry of Finance takes 50% of the financial compensation and the rest is split among municipalities (40%) and states (10%).

[G4-DMA; G4-EC8]

- **US\$ 253.1 million** were paid in royalties to Brazil in 2014. The amount is 2.2% less than the amount the year before, due to reduced energy production during the period.

- Of the total, **96.8 million** were received by neighboring municipalities, which have directly been affected by the reservoir (fifteen from Paraná and one from Mato Grosso do Sul).

- **US\$ 273.2 million** was paid to Paraguay. The amounts due in January 2015 (**US\$ 20.1 million**) were paid in advance by Itaipu in December 2014.





## Distribution of royalties paid by Itaipu to the Brazilian Treasury (in thousands of US\$) [G4-EC8]

	2014	2013	2012	Accumulated 1991-2014
Ministry of the Environment	7,593.5	7,767.40	7,401.20	72,203.8*
Minister of Mines and Energy	7,593.5	7,767.40	7,401.20	72,203.8*
National Scientific and Technological Development Fund	10,124.7	10,356.50	9,868.40	96,271.7*
Government of Paraná	96,108.0	98,308.70	93,673.80	1,598,665.6
Government of Mato Grosso do Sul	2,266.8	2,318.70	2,209.40	35,487.3
Other states indirectly affected	15,527.8	15,883.40	15,134.60	259,616.8
Municipalities indirectly affected	17,085.4	17,476.60	16,652.70	283,053.4
<b>1 - Foz do Iguaçu</b>	18,618.7	19,045.30	18,147.30	309,408.2
<b>2 - Santa Terezinha de Itaipu</b>	3,865.0	3,953.50	3,767.20	64,229.5
<b>3 - São Miguel do Iguaçu</b>	8,386.0	8,578.00	8,173.60	151,824.5
<b>4 - Itaipulândia</b>	16,579.3	16,958.90	16,159.40	263,049.1
<b>5 - Medianeira</b>	107.1	109.50	104.40	1,779.1
<b>6 - Missal</b>	3,696.3	3,780.90	3,602.70	61,424.8
<b>7 - Santa Helena</b>	24,330.5	24,887.90	23,714.50	404,327.4
<b>8 - Diamante do Oeste</b>	518.5	530.30	505.30	8,615.6
<b>9 - São José das Palmeiras</b>	179.0	183.10	174.50	2,974.7
<b>10 - Marechal Cândido Rondon</b>	5,169.5	5,287.80	5,038.50	92,792.6
<b>11 - Mercedes</b>	1,782.2	1,823.00	1,737.10	28,276.9
<b>12 - Pato Bragado</b>	4,342.0	4,441.40	4,232.00	68,890.5
<b>13 - Entre Rios do Oeste</b>	3,034.8	3,104.30	2,958.00	48,151.5
<b>14 - Terra Roxa</b>	145.8	149.10	142.20	2,423.0
<b>15 - Guaíra</b>	4,705.4	4,813.20	4,586.30	78,194.8
<b>16 - Mundo Novo</b>	1,356.9	1,388.00	1,322.50	22,486.7
<b>Total**</b>	<b>253,116.7</b>	<b>258,912.90</b>	<b>246,706.80</b>	<b>4,206,302.3</b>

Source: Itaipu Financial Department. \*Accumulated from 2004-2014.

\*\* The percentages for royalty distribution were established in 1991. Prior to this, Itaipu paid the Brazilian Treasury US\$ 614,561,700, thereby totaling the payment of US\$ 4.8 billion in royalties since the company initiated operations.

# Economic Dimension

## Procurement practices

Due to being binational, the Treaty of Itaipu establishes its own regulation for hiring services and the acquisition of equipment, the General Rule for Bids. The Sustainable Procurement Policy, approved by the Supervisory Board in 2013, encourages regional development by prioritizing hiring and acquisition from micro and small Brazilian and Paraguayan companies, in addition to economic advantages for the company.

March saw the kickoff of the expanded and updated version of the Supplier Assessment System, created the year before, with the latest feature being a more detailed assessment of all suppliers in relation to the adoption of sustainable practices, guided by ISO 14.000, OHSAS 18.001, SA 8.000, ISO 26.000 and Women's Empowerment Principles (WEPs). Through this incentive, the hope is to increase sustainable management practices and the percentage of local purchases, which, over the past three years, have totaled 48% of total purchases.

With the aim of increasing participation, offering greater transparency, reliability and agility in procurement processes, in September Itaipu implemented an Online Procurement Portal called *ComprasE*. It is used for low value purchases (LVP), domestic, binational and international acquisitions in LVP modalities, quotations and auctions. With the system, it was possible to reduce the process from 14 to 5 steps, reducing costs and time. The expectation is to economize on 128,000 sheets of paper over 2015, for example.

On the Brazilian side, of the 1,070 suppliers selected over the year, 14 were based on sustainability criteria, that is 1.3%. For materials, five companies were hired to supply printer cartridges and toner, four for paints, one for lubrication oil and one for the acquisition of air conditioning units. And for services provision, one company was selected for coffee breaks, one for roadway maintenance and one for miscellaneous metals.

Among the requirements called for from the hired companies are the implementation of measure for the prevention of pollution (reduction in impacts from disposal of residual water, contamination and water, and minimization of atmospheric emissions) and the use of

an environmental management system based on ABNT/ NBR ISO 14.001. The initiative is part of the Sustainable Procurement Program, which, since 2013, has been aimed at defining technical specifications for products and services considering social and environmental aspects, while also mapping those considered critical due to operational risks to business or related to sustainability. [G4-DMA; G4-12; G4-EC9; G4-EN32; G4-EN33; G4-SO9; G4-SO10; G4-HR5; G4-HR6]

## Monitoring

Suppliers (local or otherwise) are monitored in terms of fulfilling the contractual requirements through the application of assessment questionnaires responded periodically by the respective managers of hired parties. Even though Itaipu does not directly monitor possible incidents of human rights violations, from the registration stage all companies are obliged to learn more about Itaipu's social commitments.

The Supplier Code of Conduct, which contains anti-corruption guidelines, was approved in December and delivered under a protocol of awareness to each registered supplier. For those already a part of the registration database, notice is given upon registration renewal. For existing contracts, the respective managers are undertaking awareness-raising actions to ensure the Code is introduced to all registered suppliers.

In bids for tender, and later in the contract clause, it is required for candidates to sign a declaration that: they do not employ youths aged under 18, except in the condition of apprentice aged 14 or older; not use operations identified as having a significant risk of forced or slave labor or related to sexual exploitation; and respect for gender equality. During the period there were no reports of child labor, dangerous labor involving youths, forced or slave labor in the Itaipu supply chain. [G4-DMA; G4-12; G4-EC9; G4-SO4; G4-SO9; G4-SO10; G4-HR5; G4-HR6]



## Proportion of spending on local suppliers at significant locations of operation [G4-12; G4-EC9]

	2014		2013		2012	
	Amount in US\$	%	Amount in US\$	%	Amount in US\$	%
<b>Purchase of products and services from local suppliers*</b>	48,352,484	<b>46</b>	50.734.389.94	<b>47</b>	45,438,750	<b>49</b>
<b>Total product and service purchases</b>	104,344,270		106.047.65		90,926,097	
<b>Direct purchases from local suppliers</b>	5,714,900.43		9.091.672.82		6,445,449.52	
<b>Total direct purchases</b>	<b>33,513,029.80</b>		29,640,134.44		22,091,804.87	

\* Local suppliers are those located within the western region of the state of Paraná.

Program name	Sustainable Procurement	Supplier Development
<b>Goal</b>	Include sustainability as one of the criteria for the acquisition of products and services for Itaipu.	Improve best practices in management and production in supplier companies.
<b>Beneficiaries</b>	Brazilian and Paraguayan suppliers and employees, from various areas of the company, involved in procurement processes.	Itaipu suppliers, with existing contracts and/or valid registrations on the Procurement Portal.
<b>Main stakeholders</b>	Employees and suppliers.	Local and regional suppliers, municipal executives of the region and employees.
<b>Main results in 2014</b>	<ul style="list-style-type: none"> <li>- With the establishment of the Sustainable Procurement Committee, in December 2013, the group began studies to define sustainability requirements for 40 objects that, on average, represent 32% of the amount acquired on an annual basis.</li> <li>- Actions related to the program with widely promoted, with training and presentation by Itaipu's upper management and other companies from the market, coupled with the launch of the Supplier Code of Conduct.</li> <li>- Other programs and projects by the company were incorporated into Sustainable Procurement to ensure sustainability throughout the process, among them reverse logistics and rational inventory management.</li> <li>- Itaipu is part of the Brazilian delegation participating in the draft of the ISO Sustainable Procurement regulation.</li> </ul>	<ul style="list-style-type: none"> <li>- In March, the implementation of an expanded and updated version of the Supplier Assessment System. Since then, 100% of contracted suppliers are periodically assessed by their respective contract managers regarding fulfillment of contractual obligations and 100% of registered suppliers respond the self-evaluation process.</li> <li>- After analyzing the assessments, 38 companies from the western region of Paraná and Curitiba took part in a workshop to improve the capacity of organizations in taking part in tenders. The initiative is the result of the effort by the Internal Evaluation and Management Committee, created in 2013 to map and identify supplier demands.</li> </ul>

***Social Dimension -  
People Management***



## *Management approach*

Itaipu's human capital is one of the factors essential to the operational excellence of the plant. As such, renewal of the staff framework is a great challenge, especially so when it comes to professions linked to the technical area. Due to the size and a nature of the organization, operational knowledge has been obtained through experience, which makes it vital to adopt expertise management practices and hire qualified professionals.

Itaipu's staff framework was only formed in 1985. During the construction and assembly of electromechanics, technicians from the leading government-owned companies in the national electricity sector were hired, as the Treaty permits the requisition of public employees and servers from other public entities. Although the Treaty does not establish selection methods for the admission of employees, since 2005 the binational has been holding selection process for entry into the organization.

Work contracts are governed by international protocol, signed by the governments of both nations, and comply with existing national legislation and provisions negotiated with trade unions. Managerial positions are occupied by employees and executive board members and directors are nominated by the federal government. In 2014, the selection process to fill 30 vacancies received 10,440 registrations.

To adapt the human resources policy to the business strategy in order to attain the 2020 vision, three principle actions were adopted in 214: the principle of efficiency in corporate processes, with the application of Kaizen, the Japanese methodology that emphasizes continued improvement; enhancement of financial processes,

which included the implementation of the SAP system for payroll and personnel registration, in March; and an expansion in the participation of employees in projects and decision-making processes, aimed at ethical and more transparent relations.

In compliance with requests from employees identified in a survey the previous year, the HR portal on the intranet underwent changes aimed at facilitating access and the offer of services, such as the simulation of Permanent Voluntary Retirement Program. The computerized Performance Management System tool was also improved, aimed at promoting a culture of feedback and allowing managers to monitor the performance of their teams in structured manner. And the new Competency-based Career and Remuneration Plan came into effect for employment contracts in Brazil and Paraguay as from January 2014.

## *Benefits and communication channels*

The main benefits offered to all employees are the medical health and dental plan, with national cover that can be extended to dependents, education assistance (agreements and reimbursements) and a membership-based private pension with maintenance of the health plan during retirement.

Employees can manifest their intent via the Ombudsman, Talk To Us channel and the Ethics Committee, and can also obtain information via the internet, the online newsletter RH Informa, the JIM (Itaipu News Board) and JIE (Itaipu Online News) channels. [G4-DMA; G4-EC6; G4-LA2]

# Social Dimension - People Management

## Profile of Itaipu employees in 2014 [G4-10]



<sup>1</sup> Includes 25 employees requisitioned from other entities and one absent for health reasons.

<sup>2</sup> Employees for a specific period are those with the work duration stipulated on the contract signed with Itaipu. It includes 14 employees requisitioned from other federal, state or municipal bodies, directors and executive board members.

Foz do Iguaçu, Santa Helena and Guairá	Curitiba	Brasília	São Paulo
<p><b>1,025</b> men <b>201</b> women</p> <p><b>8</b> men and women contracted for a specific period</p> <p><b>85</b> interns, <b>59</b> of which are women</p>	<p><b>91</b> men <b>66</b> women</p> <p><b>19</b> men and women contracted for a specific period</p> <p><b>17</b> interns, <b>15</b> of which are women</p>	<p><b>2</b> men <b>2</b> women</p>	<p><b>1</b> women</p>

- **100%** of the employees are covered by the Collective Bargaining Agreement signed between Itaipu and unions. [G4-11]
- Of the **125 managerial positions**, **26** are occupied by **women** (21%). Of these, **18** are aged between **30 and 50**.
- **30 employees** were hired in 2014, of which **11** were women. Of these, **13** are aged up to **30**.
- **80 employees** left the company, **16** of which were women and **3** due to deaths. Of the total, **72** were part of the **Permanent Voluntary Retirement Program**. The year before saw **74 people** leave the company, **58** of which were men and **62** via retirement program.
- **25 years** is the average time spent working at the company for employees who left in 2014.
- **22 female employees** and **44 male employees** enjoyed maternity/paternity leave in 2014 and **100%** returned to their professional activities and continued employed for 12 months after the end of leave. Guaranteed by the Collective Bargaining Agreement, neither employment or salary can be affected by maternity/paternity leave, which lasts five days for men and up to six months for women. [G4-LA3]





## Composition of governance bodies and breakdown of employees per employee category [G4-LA12]

Gender	Supervisory Board*	Executive Board **		Managers			College degree			No college degree		
	2014	2014	2013	2014	2013	2012	2014	2013	2012	2014	2013	2012
Men	7	5	4	99	99	98	409	423	406	619	650	657
Women		1	1	26	26	27	149	151	144	100	105	103
<b>Total</b>	<b>7</b>	<b>6</b>	<b>5</b>	<b>125</b>	125	125	<b>558</b>	574	550	<b>719</b>	755	760

Aged	Supervisory Board*	Executive Board **		Managers			College degree			No college degree		
	2014	2014	2013	2014	2013	2012	2014	2013	2012	2014	2013	2012
Under 30						1	49	68	71	60	74	88
Aged 30 to 50	1	1	1	58	60	64	368	359	342	462	463	434
Over 50	6	5	4	67	65	60	141	147	137	197	218	238

Race	Supervisory Board*	Executive Board **		Managers			College degree			No college degree		
	2014	2014	2013	2014	2013	2012	2014	2013	2012	2014	2013	2012
White	6	6	5	118	115	115	467	481	465	543	566	571
Yellow							21	22	21	4	4	4
Black	1			1	1	1	6	6	6	19	23	24
Mixed Race				5	8	8	63	64	58	153	161	160
Indigenous				1	1	1	1	1			1	1

\* Data from 2014 is the same for 2013 and 2012.

\*\* Data from 2012 is the same as 2013.

# Social Dimension - People Management

Total number and rates of new employee hires and employee turnover by age, gender and region [G4-LA1]

Male		Employees			Hired			Dismissed			Hired and dismissed in the same year *			Turnover Rate		
		2014	2013	2012	2014	2013	2012	2014	2013	2012	2013	2012	2014	2013	2012	
Curitiba	Under 30 years old	4	2	4	2	1	2									
	Aged 30 to 50	55	55	56	2	3	4		2					0.036		
	Over 50	32	36	37				6	7	5			0.188	0.194	0.135	
	<b>Total</b>	<b>91</b>	<b>93</b>	<b>97</b>	<b>4</b>	<b>4</b>	<b>6</b>	<b>6</b>	<b>9</b>	<b>5</b>			<b>0.066</b>	<b>0.097</b>	<b>0.052</b>	
Foz, Santa Helena and Guairá	Under 30	66	98	116	2	24	19			1		1		0.009		
	Aged 30 to 50	664	654	617	13	40	16	1	2	3	1		0.002	0.003	0.005	
	Over 50	295	316	321		1	1	57	47	56			0.193	0.149	0.174	
	<b>Total</b>	<b>1.025</b>	<b>1.068</b>	<b>1.054</b>	<b>15</b>	<b>65</b>	<b>36</b>	<b>58</b>	<b>49</b>	<b>60</b>	<b>1</b>	<b>1</b>	<b>0.057</b>	<b>0.046</b>	<b>0.057</b>	
<b>Total (all regions and age brackets)</b>		<b>1.118</b>	<b>1.163</b>	<b>1.152</b>	<b>19</b>	<b>69</b>	<b>42</b>	<b>64</b>	<b>58</b>	<b>67</b>	<b>1</b>	<b>1</b>	<b>0.057</b>	<b>0.05</b>	<b>0.058</b>	

Female		Employees			Hired			Dismissed			Turnover Rate			
		2014	2013	2012	2014	2013	2012	2014	2013	2012	2014	2013	2012	
Curitiba	Under 30	2	1	2	1									
	Aged 30 to 50	42	46	46		2	1			1				0.022
	Acima de 50 anos	22	18	19					2	5	1	0.091	0.278	0.053
	<b>Total</b>	<b>66</b>	<b>65</b>	<b>67</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>5</b>	<b>2</b>	<b>0.003</b>	<b>0.077</b>	<b>0.030</b>	
Foz, Santa Helena and Guairá	Under 30	37	41	38	8	12	5			1	2		0.024	0.053
	Aged 30 to 50	121	118	112	2	10	4	1	3			0.008	0.025	
	Over 50	43	48	46				13	7	9		0.302	0.146	0.196
	<b>Total</b>	<b>201</b>	<b>207</b>	<b>196</b>	<b>10</b>	<b>22</b>	<b>9</b>	<b>14</b>	<b>11</b>	<b>11</b>	<b>0.070</b>	<b>0.053</b>	<b>0.056</b>	
<b>Total (all regions and age brackets)</b>		<b>270</b>	<b>275</b>	<b>266</b>	<b>11</b>	<b>24</b>	<b>10</b>	<b>16</b>	<b>16</b>	<b>13</b>	<b>0.059</b>	<b>0.058</b>	<b>0.049</b>	

Male + Female		Employees			Hired			Dismissed			Hired and dismissed in the same year *			Turnover Rate		
		2014	2013	2012	2014	2013	2012	2014	2013	2012	2014	2013	2012	2014	2013	2012
Curitiba	Under 30	6	3	6	3	1	2									
	Aged 30 to 50	97	101	102	2	5	5		2	1				0.02	0.010	
	Acima de 50 anos	54	54	56				8	12	6			0.148	0.222	0.107	
	<b>Total</b>	<b>157</b>	<b>158</b>	<b>164</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>14</b>	<b>7</b>			<b>0.051</b>	<b>0.089</b>	<b>0.043</b>	
Foz, Santa Helena and Guairá	Under 30	103	139	154	10	36	24		1	3		1		0.007	0.019	
	Aged 30 to 50	785	772	729	15	50	20	2	5	3		1	0.003	0.006	0.004	
	Over 50	338	364	367		1	1	70	54	65			0.207	0.148	0.177	
	<b>Total</b>	<b>1,226</b>	<b>1,275</b>	<b>1,250</b>	<b>25</b>	<b>87</b>	<b>45</b>	<b>72</b>	<b>60</b>	<b>71</b>	<b>1</b>	<b>1</b>	<b>0.059</b>	<b>0.047</b>	<b>0.057</b>	
<b>Total (all regions and age brackets)</b>		<b>1,388</b>	<b>1,438</b>	<b>1,418</b>	<b>30</b>	<b>93</b>	<b>52</b>	<b>80</b>	<b>74</b>	<b>80</b>	<b>1</b>	<b>1</b>	<b>0.058</b>	<b>0.051</b>	<b>0.056</b>	

\* There were no dismissals of employees hired in the same year in 2014, 2013 and 2012.



## Career and remuneration

Joining the organization is through a public selection process, which initiated in 2005. New admissions are planned through the monitoring of dismissals and in conjunction with the specific departments. Based on the need to meet the demands for personnel, internal and external selection processes are held. The Itaipu turnover rate is low and has not varied significantly in recent years, as personnel usually only leave at the time of retirement.

On both the Brazilian and Paraguayan sides, the Competency-based Career and Remuneration Plan (PCR, the Portuguese acronym) was adopted for new admissions contracted as from January 2014. It is aimed at increasing the value of professional contribution and the alignment of conduct and initiatives with the business strategy instead of focusing on the position or job performed. Up to then, only the Career and Salary Plan (PCS, the Portuguese acronym) was in play, implemented for Brazilian employees in 1989 and finally becoming binational in 2002. However, it was only applicable to employees not part of the PCR.

The change came about after organizational atmosphere research showed the need to establish a policy based on meritocracy and that presented clear career and professional development perspectives. As such, employees hired as from December 31, 2013, could opt to migrate to PCR or maintain the PCS system. Of the 1,388 employees part of Itaipu's staff, 609 joined the PCR, that is 44%.

The PCR foresees a Multidisciplinary Career Advancement Committee, formally designated and composed of superintendents from the respective executive offices, which will meet annually to analyze promotion requests for the last career position (presents the level of complexity of attributions and greater responsibility). Indications shall be

submitted for deliberation by the department director and sent for approval by the administrative and general directors of both nations.

Itaipu has no restrictions for contracting women for any position. The basic salary and remuneration are fixed considering the specificities of the function and professional qualification, as such there are no gender differences. Salaries for supervisory board members and executive directors are decided by the governments, represented by Eletrobras and Ande, in common accord, as cited in Annex A of the Treaty of Itaipu.

Values in reference to the salaries of supervisory board members and executive directors are not published for safety reasons. On the Supervisory Board, the proportion between genders is zero, as there are no Brazilian women as members. The proportion on the Executive Board is 100, as there are no differences in salaries, with the exception of the general director, whose attributes are different. [G4-DMA; G4-51; G4-52; G4-53; G4-54; G4-55]

# Social Dimension - People Management

## Salaries and remuneration for men and women [G4-LA13]

	2014			2013			2012		
	Average basic salary proportion	Average basic salary (BRL)		Average basic salary proportion	Average basic salary (BRL)		Average basic salary proportion	Average basic salary (BRL)	
	Women / Men	Men	Women	Women / Men	Men	Women	Women / Men	Men	Women
<b>Managerial <sup>1</sup></b>	87.9	15,765.14	13,860.62	85.4	14,742.14	12,595.45	84.7	13,654.60	11,559.31
<b>College degree</b>	88.7	8,838.24	7,841.23	87.3	8,125.13	7,093.06	87.4	7,566.03	6,631.21
<b>No college degree</b>	95.7	4,843.89	4,636.24	99.7	4,418.53	4,404.24	101.8	4,152.98	4,228.49

<sup>1</sup> For employees in managerial positions, the Complementary Function Bonus was added to the value of the basic salary. It is not linked to the basic salary and is of a non-permanent nature.

## Health and safety

Identifying health problems and the profile of employees is among the strategies adopted by Itaipu to help improve the life quality of its workforce. At the company, hearing problems count as one of the main operational risks. In 2014, some 1,106 hearing exams were taken by Brazilian employees.

So that employees linked to workplace safety and medicine know how to accurately assess the noise risk in different work areas, a group took part in a course on Occupational Noise Exposure Assessment, administered in November in partnership with Fundacentro, an institute linked to the Ministry of Labor and which is responsible for occupational hygiene regulations.

Medical care, periodic exams and data from programs developed in 2014 show that problems like obesity and being overweight among Brazilian employees was above the national average. Based on these data, the goal is to develop an incentive program throughout 2015 aimed at weight loss and the adoption of health habits, along with actions to prevent skin cancer.

Since 2009, the plant has had a Multidisciplinary Group that has identified that mental and behavior disorders are the third main reason for absence from work among Brazilian employees. In April, mental health was discussed as part of the program for World Day for Safety and Health at Work and a primer on the subject was distributed. The subject was also discussed during the internal Accident Prevention Week, held in August and attended by 800 people. It was the first edition of the event in which employee family members could also participate in activities.

2015 will see the start of the implementation project for Safe Work Management. The Canadian model, developed by Utility Risk Management (URM), was selected by Itaipu as it allows for gradual implementation with involvement from a range of company areas.

Employees are encouraged to participate in work groups, committees and commissions composed of representatives from all areas and all hierarchy levels, representing 100% of the staff body.

During the year, some 25 accidents were reported, with 16 characterized as typical accidents and two cases of occupational illness. A total of 445 days were lost, a number which impacted the frequency and gravity indicators. In 2013, there were 17 accidents and 118 days lost. Studies are underway to comprehend the reasons for the increase, which are coupled by the implementation of mitigation measures. [G4-DMA; G4-LA5; G4-LA7]

## Rates of injury, occupational diseases, lost days, absenteeism and work-related fatalities, by gender [G4-LA6]

	2014			2013			2012	
	Men	Women	Service providers <sup>4</sup>	Men	Women	Service providers <sup>4</sup>	Men	Women
<b>Injury rate <sup>1</sup></b>	3.86	0	14.17	4.59	2.07	13.16	1.11	0.34
<b>Lost day rate <sup>2</sup></b>	171.69	0	86	28.49	2.07	75.22	11.61	1.69
<b>Absenteeism rate <sup>3</sup></b>	2.29	3.01	NA	2.74	3.27	NA	2.49	
<b>Fatalities</b>	0	0	0	0	0	0	0	0
<b>Occupational diseases rate</b>	0.39	0.39	0	0	0	0	0,07	0

It was not possible to obtain data for the region.

<sup>1</sup> Includes minor injuries, representing all accidents leading to absenteeism. The accidents statistics are registered in accord with NBR 14.280.

<sup>2</sup> The days lost are represented as civil days and the count begins on the day following the accident.

<sup>3</sup> The calculation is based in the total hours worked (scheduled), without gender distinction, and does not include maternity or paternity leave or election compensation.

<sup>4</sup> Itaipu has limited control in terms of absenteeism, accidents and gender of service providers from outsourced companies.

NA - Data not available.

## Health and safety actions

Initiative	Objective
<b>Prevention and Environmental Risks Program</b>	Preserving the health and physical integrity of the workforce, through the development of stages for anticipating, recognizing, assessing and, consequentially controlling the occurrence of existing physical, chemical and biological risks or those that may develop within the workplace, considering the protection of the environment and natural resources. It also evaluates the activities developed by employees in the exercise of their functions and task, determining whether they are being exposed to harmful agents, with the potential to jeopardize health or physical integrity, in accord with the parameters established in existing social security legislation for the purpose of special retirement.
<b>Occupational Health Medical Control Program</b>	To create and maintain a culture of prevention suited to the company's social responsibility, at all hierarchy levels. It is active in the promotion of health, prevention, tracking and early diagnosis of health hazards related to work. Reducing the index of workplace accidents and occupation illness, fulfill labor legislation in the sense of workplace health, standardize and regulate actions aimed at occupational health medical control.

# Social Dimension - People Management



Initiative	Objective
<b>Reviving Program</b>	Active in the prevention and treatment of illnesses such as smoking and chemical dependence, offering physical activities, massages, nutrition services and financial education. More information on page 68.
<b>Hearing Conservation Program</b>	Active in preventing occupationally-related hearing disorders. Define attributes and responsibilities within the range of areas involved in the control of the workforce exposed to noise pressure levels higher than the tolerance limits established in Regulatory Norm number 9 and 15. Fulfill all legal dispositions and implement improvements to the working environment. Develop a culture of workplace health and safety at the company and minimize risks inherent to each labor activity and the varying sectors, in a comprehensive manner. Program actions include noise monitoring, the study and implementation of collective protection measures, distribution of hearing protectors, periodic hearing exams, training, talks and actions to raise awareness about hearing health.
<b>Committees</b> [G4-LA5]	<ul style="list-style-type: none"> <li>- Internal Committee on Accident Prevention</li> <li>- Permanent Emergency Action Plan Oversight Committee</li> <li>- Permanent Work Group for Electricity Safety</li> <li>- Hearing Conservation Program Committee</li> <li>- Work Group for the Analysis of Employees with Labor Restrictions</li> <li>- Binational Commission on Electrical Risk Hazards</li> <li>- Committee for People with Disabilities at Itaipu</li> </ul>
<b>Collective Bargaining Agreement (Specific clauses)</b> [G4-LA8]	<ul style="list-style-type: none"> <li>- Supply and mandatory use of personal protective equipment</li> <li>- Analysis and study of electromagnetic fields</li> <li>- Additional for hazardous and unhealthy work or work involving physical hardship</li> <li>- Ergonomic and technical survey of the environmental conditions in the workplace</li> <li>- Complaints system and joint committee for health and safety including representative from governance</li> <li>- Right to refuse unsafe work</li> <li>- Periodic health and safety inspections with the participation of workers' representatives.</li> </ul>
<b>Training</b>	<p><b>For employees:</b> Training and simulations related to emergency and other specific plans. An example is the working at height safety training that has benefited over 200 employees from a number of departments, in compliance with Ministry of Labor regulation NR 35. The course is held every two years and usually occurs in March and June. It was created to cater specifically to Itaipu's needs. Instead of the eight hours required by the regulation, four different modalities have been created: Working at Heights - Basic (12 hrs), Working at Heights on Towers and Transmission Lines (16 hrs), Working at Heights for Distribution Employees (16 hrs) and Rescue at Heights, aimed at firemen (24 hrs). All modalities featured four theoretical classroom hours, with the remainder employed in practical exercise. [G4-DMA]</p> <p><b>For outsourced service providers:</b> Of the 489 professionals working with Itaipu during the year, 150 received training on corporate and work safety, health and environmental regulations, which corresponds to 31% during the "Integration Seminar". The reduction in relation to previous years is due to the large number of employees that previously underwent training, as the duration of the contracts signed with outsourced services providers is a minimum of two years. Only employees that have a contract longer than six months participate in the training. For shorter contracts, information on health and safety are provided via induction folders and videos (these were not counted as part of the 31% trained the previous year). [G4-EU18]</p>

## Professional development

Ensure favorable conditions for professional development is one of the premises of Itaipu, and as such the company has adopted a competency-based management model. Aimed at guaranteeing equal treatment, in 2012 the company updated the Performance Management System and, in 2014, it implemented a new Career and Remuneration Plan.

Employees are evaluated each year according to their competencies. The analyses by managers are available through an online system and provide support to the individual development plan, which defines the capacities necessary to develop competencies that contribute to executing the business strategy. Employees in probation periods are assessed through the New Employee Evaluation.

The second consecutive cycle of system in 2014 led to more than two thousand individual feedback meetings among managers and the employees evaluated. 896 male

(80%) and 237 female (89%) employees were evaluated, totaling 81% of the staff body. In relation to the previous year, the performance analysis in general dropped 3%, for male employees 4%, while female employees showed an increase of 8%.

Access to capacity building is through corporate training programs and specific training. In addition, the organization boasts the Itaipu Business University, which is focused on research, development and innovation (RDI) and the management of expertise with long-term formation. Employees further benefit from partnerships between Itaipu and education, research and technology institutions, as well as assistance in paying for capacity building and refresher courses offered outside of the company. [G4-DMA; G4-LA10; G4-LA11]

## Average hours of training per year, per employee, by gender and by employee category\* [G4-LA9]

	2014			2013			2012		
	Men	Women	Average per employee	Men	Women	Average per employee	Men	Women	Average per employee
Managers	72.39	50.69	67.88	75.71	68.58	74.22	82.8	77.41	81.63
College degree	76.59	51.53	69.90	68.25	49.21	63.24	70.98	62.81	68.84
No college degree	44.33	26.37	41.84	54.42	26.88	50.59	54.07	82.24	57.88

\* No training was offered to executive board members or supervisory board members in the past three years. Graduate and language courses were not considered.

# Social Dimension - People Management

## Capacity building and innovation

Iniciativa	Objetivo
<b>Training of new operators</b> [G4-DMA]	<p>A group of recently-admitted operators (eight Paraguayans and three Brazilians) underwent specific training on real time operation, as they will be joining the team that operates and supervises the plant 24 hours a day. The course at Itaipu lasted three months, with the majority administered by more experienced operators and the collaboration of colleagues from diverse areas of the Executive Technical and Administrative Offices. And an additional three months of external training at another company from the electricity industry. During the last stage, they take part in a rotation system, spending time in different sectors of the binational to become familiar with the personnel, equipment and systems. The training was highlighted in the magazine Hydro Review Worldwide, one of the most important in the hydropower industry.</p>
<b>Human Rights Training</b> [G4-HR2; G4-HR7]	<p>Employees from the security department, totaling 159 direct employees (corresponding to 11% of the staff body) and 183 from outsourced service providers underwent mandatory security guard refresher courses in order to exercise the role. The course also includes aspects of Human Rights. They also took part in a talk by a specialist on the topic. The duration of the course was six hours.</p>
<b>Eureka! Award</b>	<p>After four years focused on the area of Corporate Security, in 2014 the award was extended to cover employees from the Executive Administration Office to leverage an innovative and creative organizational environment. The award is aimed at creating a formal channel so that employees can suggest improvements to tasks, activities or work processes that lead to gains in efficiency and effectiveness. Of the 23 registered proposals, 14 passed the technical viability filter and reached the final stage of the award. The winning selection was based on issues such as alignment with company strategy, benefits, savings in time and implementation costs. The winners were projects for reducing the energy consumption of elevators in the Curitiba office, heating water in staff kitchens using solar energy and the update of vehicle passes. Besides financial compensation, the professionals received formal praise on their employee records. The proposals will be implemented and the employees stand the chance to participate in a congress related to their areas of operation.</p>
<b>Education Introduction Course in Process-Based Management</b>	<p>During the course, 45 employees from all executive offices develop 11 projects aimed at improving company processes – many of which are already at a stage of implementation. Among the topics discussed are procurement requirements, acquisition of inventory material, improvement in budget and concession allocation education benefit management. To end the course, ex-director of Embraer, Cezar Lima, gave a talk on innovation and the Kaizen method, which aims for continued improvement.</p>





## *Diversity and Equality of Opportunity*

The 2005 adoption of the public selection process in order to join the company has contributed to important advances in terms of the diversity and equality of opportunities. In 2014, the Committee for People with Disabilities became official and also a milestone, thanks to the Brazilian General Directors' approval of the regulation and designation of members, who represent all the executive offices of the company.

The committee will be responsible for suggesting changes and adaptation to facilitate accessibility, while also implementing action to raise awareness and spread information related to inclusion. The creation is the result of the effort of the committee formed at the end of 2012 to check that Itaipu was in line with the Convention on Rights for People with Disabilities, aimed at assuring access to facilities, transport and information and communication, including the identification and elimination of obstacles. In 2014, there were 32 people with disabilities employed at the company.

With regards to gender equality, Itaipu was one of the pioneers in the Brazilian electricity sector in developing specific affirmative actions. Since 2003, as part of the Gender Equality Incentive Program, the company not only seeks to increase female participation in leadership roles and ensuring better working conditions for female employees. Also organizes external action to combat violence against women and to promote women's empowerment in the work market and other social spheres. [G4-DMA]



## *2014 WEPs Brazil Award*

With the institutional support of the UN Global Compact, UN Women and the Brazilian Network of the Global Compact, Itaipu hosted the first Brazilian edition of the award aimed at contributing to the empowerment of women based on the Women's Empowerment Principles – Equality Means Business (WEPs), launched in 2010.

The initiative welcomed enrollments from 186 companies from all regions of the country, of which 13 won in three categories (Large, Medium and Micro & Small Companies) and seven received honorable mention thanks to practices and programs they develop in support of gender equality in their businesses.

To find out more, visit:  
[www.premiowepsbrasil.org](http://www.premiowepsbrasil.org).

# Social Dimension - People Management

## Retirement and private pension

At Itaipu, contract termination due to retirement occurs through the Permanent Voluntary Retirement Program, when employees complete 100% of the grace period of the complementary pension from the Itaipu-Brazil Social Security and Welfare Foundation. Upon retirement, employees have the right to severance benefits through dismissal without cause and also receive specific indemnity provided through the program.

To assist employees and their spouses in preparing for the end of their careers, the company developed the Retirement Reflection Program, with talks about financial planning, life projects, entrepreneurship, health and quality of life. Capacity building consisted of 24 hours and included the participation of 70 people, with 42 employees at the stage of retirement (leaving the company between August 2014 and July 2015) and their family members. [G4-EC3; G4-EU15]

## Percentage of employees eligible to retire in the next 5 and 10 years\* [G4-EU15]

		Base year 2014		Base year 2013		Base year 2012	
		2015 -2019	2015 -2024	2014 - 2018	2014 - 2023	2013 - 2017	2013 - 2022
Managers	Curitiba	36%	75%	30%	74%	29%	71%
	Foz, Santa Helena and Guaira	41%	72%	32%	74%	30%	73%
College degree	Curitiba	29%	54%	24%	51%	24%	51%
	Foz, Santa Helena and Guaira	17%	30%	17%	30%	16%	32%
No college degree	Curitiba	22%	50%	32%	60%	32%	49%
	Foz, Santa Helena and Guaira	22%	37%	24%	41%	25%	44%
<b>Total (includes all regions and employee categories)</b>		<b>22%</b>	<b>39%</b>	<b>22%</b>	<b>41%</b>	<b>23%</b>	<b>43%</b>

\*The data is based on the employment limit date at Itaipu, which includes the date for the right to retirement in the Foundation and the date chosen by the employee due to Retirement Program.

## *Fibra - Itaipu-Brazil Social Security and Welfare Foundation*

Created by Itaipu in 1988 to offer complementary pension to employees, Fibra is a non-profit entity with expenses covered by monthly contributions made by participants and the binational. Joining is voluntary and 99% of employees decided to join the plan, which offers a retirement benefit for time contributed, retirement due to invalidity, special retirement, age-related retirement, pension, temporary benefits due to death, assistance in commitment to an institution and funeral cover.

In 2014, Fibra paid BRL 162.4 million in benefits to members (including the payment of redemptions) – 14% more than in 2013, and received BRL 75.5 million in contributions from active participants. Since its establishment, BRL 1,853 million has been paid out in benefits.

By the end of the year there were 1,593 beneficiaries and 1,437 active participants, and forming the second consecutive year in which the number of assisted beneficiaries surpassed the number of active participants. Including dependents, the total number of beneficiaries is 3,903. And during the year, 41 employees joined the program.

Employees make monthly contributions, with amounts calculated according to salary levels and actuarial criteria, and retired participants contribute with 10% of the benefit value. Fibra's administrative expenses are cover in full by Itaipu, through a monthly transfer of 15% of the total contributions to the plan. The binational passes on an additional 2.32%, in reference to the cost of cover for time of service for founding participants.

Fibra follows a strategic management process, aligned to good governance, risk management and participant relationship practices, considered a benchmark in the segment. All of the fund's actions are overseen by the National Superintendence of Complementary Pensions (PREVIC, the Portuguese acronym) and in 2014 Fibra's total equity was valued at BRL 2.66 billion. For the Fibra annual report, visit: [www.fundacaoitaipu.com.br](http://www.fundacaoitaipu.com.br) [G4-EC3]

## *Fibra in numbers*

	2014	2013	2012
<b>People directly benefited</b>	6,933	6,951	6,819
<b>Active participants in the Foundation <sup>1</sup></b>	1,427	1,490	1,473
<b>Retirees assisted by the pension plan <sup>1</sup></b>	1,379	1,308	1,266
<b>Beneficiaries assisted by the pension plan <sup>1</sup></b>	207	208	191
<b>Benefits paid in continued income (BRL)</b>	162 million	141.6 million	126.5 million
<b>Benefits paid since its creation <sup>2</sup> (BRL)</b>	1,853 million	1,582 million	1,307 million
<b>Social security contribution <sup>3</sup> (BRL)</b>	75 million	67.4 million	60.3 million
<b>Government collection for tax payments (BRL)</b>	23.4 million	18.5 million	18.5 million
<b>Technical reserves (net equity) (BRL)</b>	2,700 million	2,460 million	2,391 million
<b>Technical reserves (actuarial liabilities) (BRL)</b>	2,882 million	2,614 million	2,332 million

<sup>1</sup> Corrected by the National Consumer Price Index (INPC).

<sup>2</sup> Received from Sponsors and Participants.

# Social Dimension - People Management

## Programs developed for employees

Program name	Reviving [G4-LA7]	Encouragement of Gender Equality [G4-LA12]	Volunteer Force [G4-EC7; G4-SO1]
<b>Goal</b>	To contribute to raising awareness about the importance of quality of life, through the integration of actions that promote health and well-being.	To contribute to the equal inclusion of women and men in participation and decision processes in the company and society in general.	To encourage, leverage and value voluntary effort in social projects involving Itaipu employees.
<b>Beneficiaries</b>	Employees and their families, interns, young apprentices and employees from outsourced service providers.	Employees and society in general.	Employees and their families and the community within the area of influence.
<b>Investment</b>	US\$ 292,087.20	US\$ 5,098.78	US\$ 45,397.29
<b>Main stakeholders</b>	Industry Social Services (Sesi), Hospital Ministro Costa Cavalcanti (HMCC), City Administration of the Foz do Iguaçu Office, NGOs and education institutions.	Municipal, state and federal public entities, non-governmental organizations, private entities and international organizations, like UN Women.	Public entities (municipal, state and federal), non-governmental organizations and private companies.
<b>Main results in 2014</b>	<ul style="list-style-type: none"> <li>- In Foz do Iguaçu, 76% of employees catered to by the program in a range of activities held throughout the year.</li> <li>- To celebrate the 20<sup>th</sup> anniversary, Reviving developed the Place of Well-Being Project with the theme “Relive through Movement” in which participants were invited to reflect on the importance of self care and individual responsibility when it comes to health. The two days of activity include hula-hoop classes, organic breakfast, massage, reflexology, information about healthy eating habits, hand spa, physical and lifestyle assessment, guidance on the benefits offered by the company, hearing conservation and the prevention of cancer, as well as equipment for rock climbing and slack line.</li> <li>- 2.3 tons of gelatin were collected by employees for the “Caring for Life” campaign, which donated the food to institutions that support the treatment of cancer in Foz do Iguaçu.</li> </ul>	<ul style="list-style-type: none"> <li>- Itaipu’s experience in the program was presented at the annual event for Women’s Empowerment Principles (WEPs) held in New York and the 12<sup>th</sup> Global Compact Annual Local Network Forum, hosted in Addis Ababa (Ethiopia).</li> <li>- Award ceremony for the first edition of the 2014 Brazil WEPs Award – Companies Empowering Women. Of the 186 registered organizations, 20 were recognized for their gender equality practices.</li> <li>- Itaipu signed the term of commitment of the 5<sup>th</sup> edition of the Gender and Race Equality Program, an initiative by the Federal Government’s Department of Policies for Women. The binational also took part in the four previous editions.</li> <li>- A series of actions were organized during the campaign “16 days of Activism for an end to violence against women”, in conjunction with other company programs. Among them, advertising pieces were created to encourage reports of violence through the Women’s Service Center (Call 180) and were applied to vehicles that transport employees. The adhesives were also placed on the fleet of buses in Foz do Iguaçu.</li> </ul>	<ul style="list-style-type: none"> <li>- BRL 76,164.78 was used in the execution of nine proposals approved at the 9<sup>th</sup> edition of the Project Bank. Projects are developed by employees, who are also responsible for their execution at social institutions where they act as volunteers. Around 50 people, among employees and entity representatives from Foz do Iguaçu and Curitiba, took part in workshops to prepare projects promoted through the program.</li> <li>- 955 volunteers took part in 11 actions held throughout the year, catering to some 4,090 people in the regions of Curitiba and Foz do Iguaçu.</li> <li>- 2,150 people, among children and the elderly, were benefited by the Easter campaign and the “Adopt a little star this Christmas” campaign, made possible through the financial collaboration of Itaipu employees and beneficiaries.</li> <li>- 37 institutions and around 220,000 people benefit directly from the capacity building offered at no cost by Volunteer Force to organizations from the voluntary sector.</li> </ul>

Program name	Retirement Support [G4-LA10]	Internships [G4-EC8; G4-SO1]	Initiation and Incentive to Work [G4-EC8; G4-SO1]
<b>Goal</b>	Assist employees in preparing for the end of their professional careers, through the Retirement Reflection Program (PRA), and offer financial incentives to employees ready for retirement, by means of the Permanent Voluntary Retirement Program (PPDV).	Prepare students regularly enrolled in higher or secondary education institutions and professional education for productive employment, through supervision within the work environment.	Promote the professional initiation of adolescents from low income families and offer opportunities to subsidize the family's monthly income.
<b>Beneficiaries</b>	Employees readying for retirement.	University students or those in professionalization course.	Students from Curitiba and Foz do Iguaçu aged between 15 and 17 and regularly enrolled in primary or secondary education.
<b>Investment</b>	US\$ 31,208.74	US\$ 744,805.66	US\$ 1,364,706.03
<b>Main stakeholders</b>	Specialized consultancies that administer capacity building courses and the Itaipu-Brazil Social Security and Welfare Foundation.	Higher or secondary education institutions and professionalization course.	National Service for Industrial Training, Guarda Mirim and Paraná Association of Family and Social Education.
<b>Main results in 2014</b>	<ul style="list-style-type: none"> <li>- "Crossing Over" seminar, hosted each year by PRA, included the participation of 70 people, with 42 employees at the stage of retirement (leaving the company between August 2014 and July 2015) and their family members. A 24 hour capacity building session was held by consultants specialized in financial planning, entrepreneurship, health and quality of life, etc.</li> <li>- 72 employees left the company through PPDV. The year before registered 62 people.</li> <li>- Since 2008, when the PPDV and PRA underwent restructuring, 512 new people joined the PPDV and 523 took part in PRA activities.</li> </ul>	<ul style="list-style-type: none"> <li>- 304 students catered to in Foz and Curitiba.</li> <li>- 48 students from diverse regions of the country enrolled in internships during the vacation period of July, in Foz do Iguaçu.</li> </ul>	<ul style="list-style-type: none"> <li>- 316 adolescents catered to in Foz and Curitiba.</li> <li>- 189 youths took part in capacity building workshops held in Foz do Iguaçu.</li> <li>- 17 students left the program in December took part in a vocational orientation project, with weekly lectures during the months of September and October. The initiative was idealized by an Itaipu intern from the HR Selection and Monitoring Division.</li> </ul>

*Social Dimension -  
Society*

## Management approach

In the year that Itaipu celebrated its 40<sup>th</sup> anniversary, the city of Foz do Iguaçu commemorated its 100<sup>th</sup>. Over these four decades, according to an IBGE census, the municipality has seen a rise in population from 20,000 inhabitants to 263,508 residents. And it has also become an increasing national economic force: with a per capita GDP (which is the sum of all the municipal wealth divided by the number of residents) of BRL 30,000, Foz is ahead of 21 Brazilian capital cities, while forming the largest city in the western region and the seventh largest in Paraná.

Tourism has been a major source of income for the city since 1939, with the Iguaçu National Park, home to the Iguazu Falls, considered one of the seven natural wonders of the world. Despite this, the binational needed to provide infrastructure for its employees and operators when works began on the plant, as the population grew around 300% during the period.

Avenida Juscelino Kubitschek and Avenida Tancredo Neves (a two-lane expressway that links the city to the plant) were built; large access routes to residential complexes and all areas of influence; investments in channeling streams, lighting and security; a school was built, along with Hospital Ministro Costa Cavalcanti. Another reflection was an increase in the number of city schools and the inauguration of the first university, in 1979. Itaipu

also contributed to the organization of cultural activities, such as a cinema, performances and recreational hall.

At the end of the works, the company continued investing in tourism infrastructure for the city, in order to support initiatives to generate jobs and income. It oversaw the payment of labor indemnity and unemployment benefits for contractors, and later allowed for the sale of the homes, through *Caixa Econômica* Federal bank, to the workers living in them.

In 2014, the Iguaçu National Park and city airport broke records. The first welcomed 1,550,607 visitors from 172 countries. The second registered 1.8 million passengers, including the South Korean national soccer team, which chose Foz as its host for the FIFA World Cup. The city was also chosen to host the first luxury hotel under the Park Hyatt brand in Brazil, in 2017, and was classified by the International Congress and Convention Association (ICAA) as third in the ranking of cities that most welcome international events in the country. [\[G4-DMA; G4-EC7; G4-EC8; G4-SO1\]](#)

# Social Dimension - Society

## Commitment to the community

Itaipu has been a driver agent for sustainable development since the time of its construction. This commitment has been recognized and is present in a Diplomatic Instrument signed between the two nations, in the Corporative Plan and the Sustainability Policy. Action in favor of the communities of Foz do Iguaçu, where the plant is sited, as well as the area of influence has engaged 100% of those involved in voluntary programs and projects, sponsorships, terms of commitment and agreements signed with institutions that support the development of institutional action and articulation, aimed at attracting investment and enterprises to the region.

In 2014, the binational invested US\$ 49 million in initiatives developed in the western region of Paraná, in the areas of health, education, culture, tourism, professional capacity building and improvements to infrastructure that aim, whenever possible, to cooperate regionally with public policies established by the federal government. The community is involved in decision, through manager committees and a number of national and international documents are adopted as references, both in the preparation and execution of programs and projects.

In August, the region welcomed an innovative initiative, aimed at accelerating and multiplying economic development in 54 municipalities. The West in Development Program is fruit of a partnership among a range of public and private institutions, including Itaipu.

Based on the shared governance model, the program permits integrated management of the region's four most

important productive chains. Partner institutions will act jointly to stimulate public and private investments that will help boost business, generate income, jobs and new business.

Another advance, set to benefit 42 municipalities in the southeast region, was the cooperation agreement signed in May between Itaipu, the Itaipu Technology Park Foundation and ten other institutes with the aim of developing action and promoting the exchange of education, scientific, technological and research issues to implement the Integrated Regional Development Plan in the Southeast of Paraná, drafted in 2014.

The binational is also part of the board for the Foz do Iguaçu Economic and Social Development committee (Codefoz, the Portuguese acronym), created in 2012 by the City Chamber to accelerate projects considered strategic for the city. One of the priority actions is the preparation of the Foz do Iguaçu Economic Development Plan, with planning forecasts for 2040.

Since 1985, Foz do Iguaçu has already received over US\$ 309 million in royalties from Itaipu, in compensation for the flooded area. Additionally, being the site of the plant's installation, the city is now ranked seventh in Paraná for ICMS (tax on services and manufactured goods) collections. [G4-DMA; G4-EC7; G4-EC8; G4-SO1]

### 101,092.5 hectares

were expropriated for the construction of the plant, including 6,913 farms and 1,606 urban properties. Reimbursement cost US\$ 208 million and 99.8% of the expropriation dealings occurred amicably, which attests to the fair value of the assessments. The National Institute for Colonization and Agrarian Reform prepared and monitored the project for resettling the families. The portion that was not reallocated was offered support from Itaipu for the acquisition of new properties. [G4-EU22]





## *Synergy in favor of the western region*

One of the best examples of articulation between Itaipu and the federal government is the establishment of the Federal University of Latin American Integration (Unila), in 2010. The company donated the land, within the plant area, for the installation of a campus, covering the costs for architectural design and reforming the blocks of the Itaipu Technology Foundation to house the temporary headquarters of the institution. This was all determined so the Ministry of Education (MEC) would select Foz do Iguaçu to host the institution.

Four years later, Unila boasts some 1,600 students from ten countries, with the first groups already having graduated. It also created the first medicine program in the city (which could make viable the creation of a university hospital). By the end of 2015, the institution plans to introduce 24 new programs, totaling 41 undergraduate courses and 3,000 vacancies.

Also deserving of praise is the effort by the Itaipu on the Foz do Iguaçu Economic and Social Development Committee,

which unites 31 member entities and which is responsible for the Beira Foz project, aimed at the reurbanization of 34 kilometers along the banks of the Iguazu and Paraná Rivers, the reform of the Friendship Bridge (initiated in January 2005) and the construction of the second bridge between Brazil and Paraguay, the Solidarity Bridge.

In August 2013, Itaipu signed a cooperation agreement for the Integrated Management of Tourism for Foz do Iguaçu, with the Municipal Tourism Department and Iguaçu Tourism Promotion (Iguaçu fund), aimed at increasing the tourism potential of the region, which, together with the logistics sector, accounts for 54% of the municipal economy. Among the actions underway are airport expansions, revitalization of *Espaço das Américas* and the Tri-Point Border Mark, duplication of roadway BR-469 (section kilometer 8.8 between the Iguaçu National Park and the interchange that leads to Argentina) and the construction of the Municipal Market. [G4-DMA]



## *Sustainable cities*

In December, the city of Quatro Pontes took first place in the Small Cities category at the first edition of the Sustainable Cities Award. The municipality, which boast the third highest Human Development index (HDI) in Paraná, is located in the Paraná Watershed 3 (BP3) and was the only city in Paraná among the 12 winners.

The implementation of the Sustainable Cities program in the region began in November 2011, with the support of Itaipu, which promoted the initiative in the 53 municipalities that comprise the Association of Municipalities of West Paraná . By adopting the platform, the locations also adopt goals related to a number of sustainability indicators along 12 thematic branches. In all, 34 municipalities have already joined the initiative, 26 of which lie within BP3.

# Social Dimension - Society

## Social programs developed or supported by Itaipu

Program name	Tourism Incentive [G4-EC7]	Itaipu Technological Park Foundation (ITP) [G4-EC7; G4-EC8; G4-SO1]
<b>Goal</b>	Bolster the development of tourism in Foz do Iguaçu and the surrounding region, by means of articulation, promotion campaigns, capacity building for industry professionals and investments in infrastructure.	Leverage projects and programs aimed at social inclusion, the generation of jobs and income, sharing of scientific and technological expertise and regional development, taking advantages of the technical expertise generated by the construction and operation of the plant.
<b>Beneficiaries</b>	Regional inhabitants, Brazilian and foreign tourists and the tourism trade.	Undergraduate and graduate students, professional education students, those from regional public schools and entrepreneurs.
<b>Investment</b>	US\$ 938,494.36	US\$ 16,681,632.07
<b>Main stakeholders</b>	Public and private institutions part of the tourism industry, such as Infraero, hotel chains, travel agencies and event organizers.	Federal, state, municipal government, incubated companies, higher education institutions, public schools and voluntary sector organizations.
<b>Main results in 2014</b>	<ul style="list-style-type: none"> <li>- Itaipu registered 19 million visitors since opening in 1977. Seven years after implementing paid visitation, the Itaipu Tourism Complex has recorded three million tourists.</li> <li>- In 2014, Itaipu was awarded a Certificate of Excellence by TripAdvisor, one of the world's leading tourism websites. The award is given to enterprises that earned a large number of positive evaluations on the website.</li> <li>- Foz do Iguaçu was ranked third among cities for attracting foreign business and events tourists, behind only Rio de Janeiro and São Paulo, according to a survey by the Getúlio Vargas Foundation for Brazilian Tourism Institute (Embratur).</li> <li>- In the year that Brazil hosted the FIFA World Cup, and Foz welcomed the South Korean national soccer team, the airport registered its highest record in traffic for the month of July. There were 1.8 million passengers, 12% more than the year before.</li> </ul>	<ul style="list-style-type: none"> <li>- In October, the ITP celebrated its 10<sup>th</sup> anniversary. Around 5,000 people circulate through the area daily, which houses 80 entities, including universities with 2,800 registered students.</li> <li>- Cooperation agreement with the Federal University of Latin American Integration (Unila) for the creation of a medicine program in Foz. Opening in the second semester of 2014, the program offered 60 vacancies. New undergraduate, specialization, master's and doctorate programs are also planned.</li> <li>- Approval of the installation of the United Nations Development Programme (UNDP) office on ITP premises. Foz is set to be the first Brazilian city to host one of the organization's projects.</li> <li>- Incubator Santos Dumont, at the ITP, and the accelerator Start You Up, by Espírito Santo, promoted an unprecedented action in the country. Ten projects were selected to participate in the incubation and receive funding from investors for three years. Eight of the selected projects are from Paraná.</li> </ul>

Program name	Ministro Costa Cavalcanti Hospital (HMCC) [G4-EC7]	Health on the Border [G4-EC7; G4-SO1]
<b>Goal</b>	To provide high quality preventative and curative medical and hospital care to the community, by means of agreements with the public and private health network, and provide conditions for the formation and enhancement of personnel in the medical-sanitary field.	Support health actions within the area of Itaipu's influence, the border region between Brazil, Paraguay and Argentina, in accord with the respective public policies of the sector.
<b>Beneficiaries</b>	The population of nine municipalities in the western region of Paraná, totaling around 430,000 inhabitants, in addition to approximately 250,000 Brazilian residing in Paraguay that seek medical care in Foz do Iguacu.	Professionals and technicians from the field of health in Brazil, Paraguay and Argentina and, indirectly, residents of the region.
<b>Investment</b>	US\$ 4,128,145.96	US\$ 35,343.09
<b>Main stakeholders</b>	Federal, state and municipal government, Itaipu and education and research institutions.	Ministries of Health from Brazil, Argentina and Paraguay, health departments, health professionals and public and private institutions.
<b>Main results in 2014</b>	<p>In November, the Hospital earned Level 3 Hospital Accreditation, the maximum degree of recognition for quality granted by the National Accreditation Organization. The first seal of quality was obtained in 2007 and the second in 2012.</p> <ul style="list-style-type: none"> <li>- 60% of the care provided is for patients from the Brazilian Unified Health System. In 2014, 10,000 patients received care in the Oncology Center, 6,000 at the Emergency and Urgent Care Clinics and 45,000 outpatient medical consultancies were registered.</li> <li>- HMCC was one of 21 state hospitals to earn the title of Child-friendly Hospital, granted by UNICEF and the World Health Organization. The certification has been maintained since 2005.</li> <li>- The Itaipu Foundation (hospital administrator) was one of the 83 organizations taking part in the fifth edition of the Department of Policies for Women's Gender and Race Equality Program. By joining, the Foundation has established an action plan to overcome inequality in terms of gender and race within the organization.</li> </ul>	<ul style="list-style-type: none"> <li>- Organization of ten ordinary meetings for debates, proposals and the drafting of projects, with the participation of 1,200 health professionals and technicians from the three nations and involving 45 institutions, on average.</li> <li>- 1,500 professionals trained during the year, covering an array of topics, such as mental health, integrated community therapy, public health risks and emergencies of international concern and indigenous health.</li> <li>- Implementation initiated on a system of health indicators for the Tripoint border, aimed at integrating information to guide the actions of the Program and health managers in the tri-national region in the formation of public policies.</li> <li>- Foz do Iguacu took the first step in establishing a health emergency committee that will act in an integrated manner in the tri-national region. The goal is to facilitate procedures in the case of epidemics, simplifying the language, integrating and unifying processes to identify diseases more promptly.</li> </ul>

# Social Dimension - Society

## Social programs developed or supported by Itaipu

Program name	Medicinal Plants [G4-EC7; G4-SO1]	Solidarity Energy [G4-EC8; G4-SO1]
<b>Goal</b>	Educate, develop, cultivate, benefit and distribute medicinal, aromatic and condimentary plant species, with quality, to bolster social, economic and environmental projects at Itaipu and in the surrounding region, producing technological and scientific results.	Collaborate to leverage the social inclusion of the community, promoting social rights and the social and economic development of residents from the region of Village C, neighboring the plant.
<b>Beneficiaries</b>	Farmers, health professionals, researchers, universities, indigenous communities, <i>quilombolas</i> , land reform and pastoral settlements, mothers' clubs, associations and the community in general.	The entire community of the Village C community, comprised of 33 neighborhoods and approximately 35,000 inhabitants.
<b>Investment</b>	US\$ 161,909.08	US\$ 480,057.09
<b>Main stakeholders</b>	Universities, associations, Itaipu Technology Park, research institutes, Ministry of Health, Ministry of Agrarian Development, Oswaldo Cruz Foundation (Fiocruz) and municipal administrations of the Paraná Watershed 3 (BP3) region.	The Village C Community Committee (CCVC, the Portuguese acronym), Municipal Administration and public and private institutions.
<b>Main results in 2014</b>	<ul style="list-style-type: none"> <li>- BP3 Medicinal Plant Management Committee restructured.</li> <li>- 115.89 kilograms of herbs were provided free of charge to employees and the Health Clinic of the cities: Céu Azul, Foz do Iguaçu, Itaipulândia, Santa Terezinha de Itaipu, Toledo, Pato Bragado and the Medianeira Parish Health Unit. The phytotherapeutics subsidize patient treatment in Arterial Hypertension and Diabetes programs, in quitting smoking, mental health and other illnesses typical to the region.</li> <li>- 75,068 saplings of various species were produced in the medicinal plant nursery, of which 32,949 were donated to agricultural cooperatives, schools, universities, social centers, city hall and communities for the creation of productive areas, vegetable gardens and use in scientific research.</li> <li>- 7 fruit and vegetable gardens created in BP3.</li> </ul>	<ul style="list-style-type: none"> <li>- Five courses offered through CCVC, based on a survey of demands during a professions trade fair, in 2013. Courses for human resources assistant, kitchen assistant, Spanish, English and judo were offered through a partnership with the National Service for Industrial Training (Senai) and the National Services for Trade Education (Senac).</li> <li>- The CCVC was recognized by the Ministry of Culture as one of five Cultural Points of Foz do Iguaçu and, for a period of three years, will receive BRL 5,000 per month to invest in the expansion of the effort in favor of local residents. Resources will be used to cover the expense of activities and equipment.</li> <li>- 2,000 people are benefited each month through professionalization courses and sporting, cultural and legal activities.</li> <li>- 80 children, living in Village C, took part in the projects called "Tourism and Culture: Building Social Empowerment", created by the Village C Community Committee welfare, with support from Itaipu. They visited local tourism points to learn about the history of the region, the plant and the neighborhoods they live in.</li> </ul>

Program name	Solidarity Waste Collection [G4-EC8; G4-SO1]	Sustainability of Indigenous Communities [G4-EC8; G4-SO1]
<b>Goal</b>	To encourage and support the social and productive inclusion of recyclable waste collectors from the Paraná Watershed 3 (BP3) region through integrated municipal solid waste management.	Develop actions in cooperation with legally authorized entities and support organizations, within the areas of infrastructure, livestock farming, food safety and in terms of culture for two Guarani villages in the municipality of Diamante do Oeste and another in São Miguel do Iguaçú.
<b>Beneficiaries</b>	Recyclable waste collectors.	Population of the Tekoha Ocoy, Tekoha Añetete and Tekoha Itamarã villages, which total some 1,460 people.
<b>Investment</b>	US\$ 248,052.79	US\$ 207,186.96
<b>Main stakeholders</b>	Recyclable waste collector associations and cooperatives, Public Ministry of Labor and the Environment, Municipal Administrations of the BP3 region, <i>Lixo e Cidadania</i> Institute, National Front of Recyclable Waste Collectors, Brazilian Bank of Development (BNDES) and the Interministerial Committee on Social Inclusion of Recyclable Material Collectors.	Municipal administrations, prosecutor's offices, National Indigenous Foundation (Funai), Center for Operational Support of the Justice of Protection for Indigenous Communities (Caop), the Paraná Employment and Technical Assistance Cooperative (Biolabore), Small Farmer Support Center (Capa), indigenous schools and indigenous community associations.
<b>Main results in 2014</b>	<ul style="list-style-type: none"> <li>- 85 leaders from 25 associations, four cooperatives and two groups took part in eight modules of the "BP3 Waste Collector Leadership Formation Meeting", held between April and November through a partnership between Itaipu and the Foz do Iguaçú Environmental Agents Cooperative (Coaafi). At one of the meetings, waste collectors visited the Itaipu Sorting Center.</li> <li>- Creation and formalization of a network of referral technicians (employees of the Foz do Iguaçú city administration) to oversee the integrated municipal management of waste with the social and productive inclusion of waste collectors. Further definitions in conjunction with Coaafi include a regional division to receive permanent and continued consultancy (six municipalities per technician) and for the development of a communication network among waste collectors of the BP3 region.</li> <li>- Around 120 people, including waste collectors, public managers and support entity representatives from BP3 took part in the Regional Forum on Waste and Active Citizenship in BP3, in July. One of the main objectives of the meeting is to discuss strategies for the development of a Solidarity Waste Collection Program in each of the 29 municipalities in BP3. In September, Itaipu promoted a talk which introduced the basic concepts to help municipal administration to prepare plans for managing waste.</li> </ul>	<ul style="list-style-type: none"> <li>- In ten years, the program has already built over a hundred homes, communal houses, handcraft center, clinics and schools, graveling of access and internal roads and implementation of a sewage and electricity system. Furthermore, food hampers were donated and transport provided for food donated via the Children's Nutritional Program developed by other institutions.</li> <li>- In 2014, the three villages produced and traded 178,000 kg of cassava, 33,000 kg of maize and almost 9,000 handcrafts. Itaipu also replaced 19 cages, used to breed pacu fish for local consumption. Approximately 1.5 tons of fish were landed. The Federal Government program for Food Acquisition has 18 indigenous farmers registered to commercialize agricultural produce.</li> <li>- Educational activities have been held to explain the harms of alcoholism in the villages, in partnership with Caop and cultural exchange workshops with indigenous music and choir groups, in addition to offering support for presentations by providing transport, food, clothing and equipment.</li> </ul>

# Social Dimension - Society

## Social programs developed or supported by Itaipu

Program name	West in Development [G4-EC7; G4-EC8; G4-SO1]	Municipal Penitentiary of Foz do Iguaçu [G4-EC8; G4-SO1]
<b>Goal</b>	To promote the economic development of the western region of Paraná through a participatory process, access to new technologies and mobilization for innovation, leveraging cooperation among public and private stakeholders in planning and implementing an integrated development strategy.	Reinsert former convicts into society through employability and professionalization programs.
<b>Beneficiaries</b>	Employers and other stakeholders in the four main productive chains: tourism, animal protein (poultry, pork, fish and dairy), food agriculture (grains and starch for human consumption); and transport material.	Convicts under probation, in an open prison system (community service) or former inmates and their families.
<b>Investment</b>	US\$ 646,224.12	US\$ 57,435.74
<b>Main stakeholders</b>	Service of Support for Micro and Small Enterprises in Paraná (Sebrae-PR), Association of Municipalities of West Paraná (Amop), Coordinator of Commercial and Industrial Associations of Paraná (Caciopar), Federation of Industries of Paraná (Fiep), agricultural cooperatives, municipal development committees, universities, association and unions.	Municipal Welfare, Family and Community Relations Department, State Secretary of Justice, Citizenship and Human Rights (Seju) and the State University of West Paraná (Unioeste).
<b>Main results in 2014</b>	<ul style="list-style-type: none"> <li>- Launched in August, the program aims to multiply opportunities for income and employment in the 54 municipalities of the region, which is home to some 1.3 million people.</li> <li>- During the swearing in ceremony for the first management board, a study by the Itaipu Technology Park Foundation was presented and outlined a diagnosis of the region's most important economic activities. These will be the focus of the program, as they have potential to make new business viable through public and private investments, workforce capacity building and infrastructure improvements.</li> <li>- Organized into technical chambers, business executives and technicians from the sectors to benefit from the program met in December to learn more about the proposed work methodology and the specific actions for each segment.</li> </ul>	<ul style="list-style-type: none"> <li>- In 2014, around 7,300 consultancies were provided, along with the preparation for legal proceedings and hearings.</li> <li>- 10,500 temporary inmates and convicts from the penitentiaries in Foz do Iguaçu, Cascavel, Francisco Beltrão and Londrina were represented by 58 public defenders in a mass effort called "Public Defense Without Borders", held in November.</li> <li>- The project was one of three finalists for the Innovare Award, granted for actions and projects of an innovative nature and with results that contribute to the administration of justice.</li> </ul>

Program name	Integrate Project [G4-EC8; G4-SO1]	Financial Education [G4-EC8; G4-SO1]
<b>Goal</b>	Improve educational performance and promote social and digital inclusion of students, teachers and the school community through support in the adoption of innovative education actions and provision of educational software and pedagogical and technological resources.	Create conditions to improve the life quality of Itaipu's employees and those from less favored segments of society in the region, especially the low income community, based on knowledge about effective financial resource management.
<b>Beneficiaries</b>	1 <sup>st</sup> to 5 <sup>th</sup> year and Youth and Adult Education (EJA) students from the Padre Luigi Salvucci Municipal School, located in the neighborhood of Village C, close to Itaipu, in Foz do Iguaçu.	Itaipu employees, their dependents and other company employees, education institutions, teachers, city administration and non-governmental organizations.
<b>Main stakeholders</b>	Foz do Iguaçu city Administration, Itaipu Technology Park Foundation (ITP) and Positivo Informática.	Public schools from Foz do Iguaçu, Santa Helena and Guaira, the Department of Industry and Trade of Santa Helena and other Itaipu programs.
<b>Main results in 2014</b>	<ul style="list-style-type: none"> <li>- 40 teachers took part in 40 hours of capacity building to integrate educational technology solutions in the pedagogical projects developed at school. Over the two previous years, 82 teachers were trained.</li> <li>- 796 students benefited from an interactive whiteboard and 300 netbooks with Aprimora software, offering a combination of interactive activities and periodic assessments aimed at teaching Portuguese language and mathematics.</li> <li>- The school scored 7.1 in the Basic Education Development Index (Ideb) published in 2014. The increase was 0.7 in relation to the score attained in 2011. The use of educational technology solutions can be considered one of the factors that contributed to this great performance.</li> <li>- Thanks to the positive results, the school has become a technological benchmark in Foz do Iguaçu and has awakened the possibility of expanding the project to a further 51 schools in the city.</li> </ul>	<ul style="list-style-type: none"> <li>- Around 800 children studying at the city schools of Santa Helena and Guaira took part in the theater-class about financial education. Entertaining aspects of the project stimulate reflection about concepts such as expenses, earnings and interest. Students not only assimilate the subject but also carrying it home to their parents.</li> <li>- Over 8,000 Financial Education kits were distributed among students, teachers and lecture/course participants. The kit is composed of three books.</li> <li>- In March, Itaipu employees participated in the talk "Fine net: don't get caught!". The aim of the meeting is to provide guidelines on Annual Income Tax declarations, such as: what to declare and the leading mistakes.</li> <li>- Young apprentices, sailors, canoeists and sprinters supported by Itaipu's Child and Adolescent Protection Program took part in capacity building in which conscientious consumption and good money management formed the point of focus.</li> </ul>

# Social Dimension - Society

## Social programs developed or supported by Itaipu

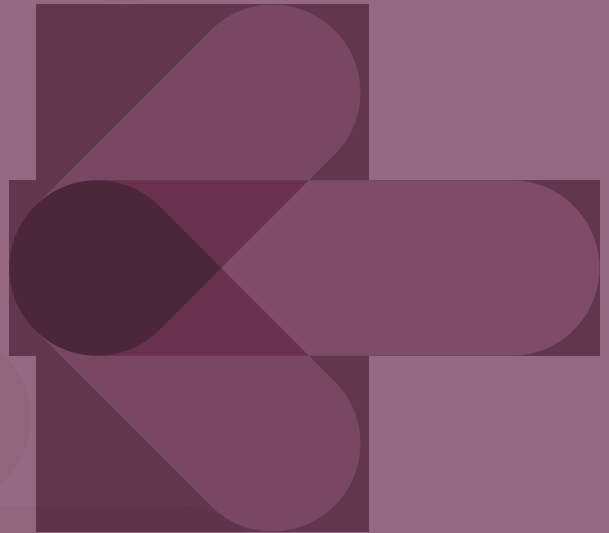
Program name	Child and Adolescent Protection Program (PPCA) [G4-EC8; G4-SO1]	Lake Boys [G4-EC8; G4-SO1]
<b>Goal</b>	Articulate and promote actions and campaigns with the goal of encouraging the defense of children and adolescent rights, while contributing to the fight against child labor, sexual exploitation and other forms of violence against young girls and boys from the Tri-point Border region and that of Itaipu's interest.	Develop canoeing among children and adolescents in situations of social vulnerability, helping to improve school performance, discovering and encouraging new talents in the sport.
<b>Beneficiaries</b>	Society in general, as the focus lies on promoting and protecting the rights of children and youths that live in situations of risk and social vulnerability.	Children and adolescents (from 08 to 18 years old) studying in public schooling systems, residing in the neighborhoods of Village C and Morumbi, in Foz do Iguaçu.
<b>Investment *</b>	US\$ 469,015.10	
<b>Main stakeholders</b>	Public bodies, social entities, NGOs, international organizations and private companies.	Brazilian Canoeing Federation, Lake Boys Institute (Imel) and the Brazilian Development Bank (BNDES).
<b>Main results in 2014</b>	<ul style="list-style-type: none"> <li>- Just prior to the FIFA World Cup, launch of two advertising campaigns by Itaipu and partners. The first, with the slogan "Child-Youth Violence – Use your voice to shut up injustice", was formally represented by television personality Xuxa Meneghal and the pieces were produced in Portuguese, English, Spanish and Guarani. The second relied on the national soccer stars Neymar and Daniel Alves to raise awareness and encourage reports via the Hotline 100.</li> <li>- Itaipu was one of 40 institutions that took part in "National Day for Combating the Sexual Exploitation of Children and Adolescents", celebrated on May 18. The day included talks, rounds of conversation, a public hearing, distribution of pamphlets and a walk through the city of Foz.</li> <li>- The book "Childhood, Adolescence and Rights" was launched in February by the group Marista with the support of the PPCA. The book, which will be used as a reference for work in the region, is the result of a 2001 study of documents related to the vulnerability of children and adolescents.</li> </ul>	<ul style="list-style-type: none"> <li>- A number of medals have been won by young canoeists taking part in the project. The main one was gold at the Pan American Slalom Canoeing championship, held in Mexico, and secured by Foz do Iguaçu local Felipe Borges da Silva, who has been part of the project since 2009.</li> <li>- 31 youths part of the PPCA sports projects were included in the Olympic Talent of Paraná Program (TOP 2016), an initiative by the state government, providing monthly financial aid to the best athletes in Paraná, based on their athletic performances.</li> <li>- Ten athletes from the project were called up for the Permanent Slalom Canoeing Team headquartered in Foz do Iguaçu and formed by the 20 best nationally ranked athletes, in the junior and senior categories.</li> <li>- A bilateral agreement signed between Brazil and Paraguay in November will allow Paraguay athletes to take part in Brazilian competitions in a number of modalities, including canoeing.</li> </ul>

\* It includes the amount invested in the Lake Boys, Sailing is needed and Young Athletes projects.



Program name	Sailing is needed [G4-EC8; G4-SO1]	Young Athletes [G4-EC8; G4-SO1]
<b>Goal</b>	Establish the practice of yacht sailing in Foz do Iguaçu, forming athletes able to participate in national and international competitions.	Developing sporting activities to promote active citizenship and initiate careers in athletics in a range of modalities.
<b>Beneficiaries</b>	Children and adolescents, students from the public schooling system that live in the region of Três Lagoas.	Children and adolescents, students from the public schooling system in situations of social vulnerability.
<b>Main stakeholders</b>	Itaipu Lake Yacht Club (Idi)	Foz do Iguaçu Athletics Institute and Foz do Iguaçu city Administration.
<b>Main results in 2014</b>	<ul style="list-style-type: none"> <li>- Since the implementation of the project in 2001, over a thousand children in situations of social vulnerability have been helped. Many of them represent Foz do Iguaçu in state, national and international competitions.</li> <li>- The project was awarded at the 12<sup>th</sup> edition of Champion of Sports Trophy, aimed at paying tribute to professionals that have stood out in the sports world during the year.</li> <li>- 14 year old sailor, Andrey Godoy, was the highlight of the project in 2014. He won the title of 13<sup>th</sup> best in South America, was the first sailor from Paraná to be placed among the top 10 sailors in the Brazilian championships, the third person from Paraná to classify for the North American Sailing Championship, in the Optimist class, held in Nayarit, Mexico.</li> <li>- Foz welcomed the Southern Brazil Optimist Championship, the 11<sup>th</sup> Mercosur Optimist Cup, the Southern Brazil Laser Championship and the Mercosur Laser Cup. The sailors from the project performed excellently in all disputes.</li> </ul>	<ul style="list-style-type: none"> <li>- Inclusion in the Paralympic modality.</li> <li>- Jair Pacentchuk Júnior, aged 17, is ranked first in Brazil for hammer throw and third in South America, with a record of 61.33 meters, and won the silver medal at the South American Athletics Championships, in Colombia. Rallison Thomas Marques Guerra took 4<sup>th</sup> place in the Brazilian ranking for hammer throw and broke the Paraná state record with a distance of 56.41 meters during the Sunder-23 Brazilian Athletics Championship, held in São Paulo.</li> <li>- Indiamara de Oliveira is ranked third in Brazil for the 100 meter sprints. While Edson Cestari Monteiro took 5<sup>th</sup> place in the Brazilian ranking and established himself as the new state record-holder for youth javelin with a distance of 59.02 meters.</li> <li>- Ten members of the project won a place on the podium at the 59<sup>th</sup> edition of the Paraná Caixa Athletic Championship, held in Maringá.</li> </ul>

*Environmental  
Dimension*



## *Management approach*

Over the past 40 years, Itaipu has generated a lot more than energy. Since the time of its construction, the company has been especially committed to the environment. An example of this is the creation of the Environmental Conservation Plan, in 1975, and the formation of an Chief Coordination Office, considered the first formal department for the environment and community relations in the Brazilian electricity industry.

With the expansion of the mission, based on guidelines from the presidency of the Republic, in 2003 the binational created the Cultivating Good Water Program (CAB, the Portuguese acronym), which promotes 19 environmental programs and 61 initiatives in the 29 municipalities that comprise the Paraná Watershed 3 (BP3) to deal with problems that could affect the plant's energy production, quality of water and the environment of the region.

Deforestation and the resulting silting, abusive use of agrochemicals by farmers in the region and the proliferation of algae and water plants were environmental problems that limited multiple forms of using the water and revealed the difficulty in attaining sustainability in the region. They were identified through a diagnosis by Itaipu, which served as a reference for business planning and expansion of the mission.

In partnership with community associations, municipal administration, cooperatives and environmental organizations, CAB has lead the way in transformation for the sustainable development of the region. Winner of a number of national and international awards, the program has developed into social and environmental technology and being reapplied in varying regions

of Brazil and also Guatemala, Dominican Republic, Uruguay, Argentina and Paraguay. In March 2015, the initiative was recognized as the best water management policy on the planet by UN Water, by winning the Water for Life Award.

Itaipu also organizes projects for more sustainable production systems, environmental education, water quality monitoring, reduction of internal material consumption and prioritizing those with the least environmental and social impacts. It develops research on alternative sources of energy, electric mobility (learn more on page 23), and maintains facilities for the conservation of animals and plants, such as the Bela Vista Biological Sanctuary (RBV, the Portuguese acronym), which celebrated its 30th anniversary in 2014, and considered a benchmark in the reproduction of rare or threatened regional species.

Itaipu's current social and environmental plan is the Environmental Management Master Plan, implemented in 2000. In 2014, a work group was created to update the document. Among the intentions for 2020 are the creation of a climate change management committee; consolidation of the National Low Carbon Agriculture Program throughout BP3; and articulation so that 50% of the municipalities in the watershed and other municipalities in the west are able to provide products and services to Itaipu in accord with the binational's sustainability criteria.

No fines or sanctions (monetary or other) resulting from non-compliance with environmental laws and regulations were registered by Itaipu in 2014. Over the year, the company invested US\$ 15.6 million in environmental initiatives. [G4-EN27; G4-EN29; G4-EN31]

# Environmental Dimension

## Time line

1973	Signing of the Treaty of Itaipu between the governments of Brazil and Paraguay. Itaipu already possessed studies and environmental recovery and conservation measures.
1975	Draft of the Basic Environmental Conservation Plan, aimed at making use of the creation of the reservoir to improve the situation of the region's environment, which was significantly degraded.
1982	In line with the Brazilian Environmental Policy and the legal requirements of Paraguay, Itaipu prepared a Master Plan for the Reservoir area, describing the multiple uses. The reservoir was created and, simultaneously, the <i>Mymba Kuera</i> ("Animal catch" in Guarani), which involved around 200 people and rescuing some 29,000 regional animals species.
1983 a 2002	To conserve regional flora and fauna which had resisted the drive of agricultural advances in the 1950's, and reduce erosion, silting, and contamination of the reservoir, Itaipu reforested its banks, within its area of ownership. This gave rise to the Protection Section, measuring 200 meters wide and 2,900 km long and now home to approximately 40 million trees. It also created a new sanctuary and biological reserves, which occupy an area of 40,031 hectares. Brazil is home to the Bela Vista and Santa Helena biological sanctuaries and Paraguay hosts the biological reserves of Itabó, Limoy, Carapá, Tati Yupi and Yui Rupá. There is also the Biological Maracaju Sanctuary, located on the border of the two nations.
2000	Following the construction of the plant, the Environmental Management Master Plan was drafted and approved. The document also considered aspects of social and economic development.
2003	Creation of the Cultivating Good Water Program, based on the inclusion of social and environmental responsibility concepts in Itaipu's mission. It is grounded on the management of micro-watersheds that form the Paraná Watershed 3 (Brazilian side) and the Rio Carapá y Poti Watershed (Paraguayan side).

To build the world's largest electric energy generator, **101,092.5 hectares** were expropriated in Brazil. Of this total, **57%** of the area is submerged and now forms aquatic ecosystems and **43%** are areas aimed at the protection of the reservoir. Of the **34,000 hectares of area** owned by Itaipu on the Brazilian side, **18,000** were previously highly degraded due to agricultural activity in the region during the period prior to the reservoir, and are now at a phase of recuperation. [G4-EU13]



*Total environmental protection expenditures and investments by type (in US\$)* [G4-ENB31]

Type of expense	2014		2013		2012	
	Operation (internal expenses)	Investments (in external projects)	Operation (internal expenses)	Investments (in external projects)	Operation (internal expenses)	Investments (in external projects)
Collection, treatment and disposal of waste	404,518.22	246,269.99	312,625.23	100,374.36	235,489.42	170,965.30
Recovery of third party degraded areas and areas of protection		2,336,475.98		1,122,019.50		2,675,052.25
Biodiversity conservation	452,760.35	49,377.00	397,758.43	34,138.43	474,102.33	
Environmental management (internal personnel and cost of environmental area)	8,806,605.77	898,621.96	14,060,128.28	573,978.75	8,446,853.75	26,616.60
Research and development	83,884.00	2,013,842.22	15,959.64	2,565,487.31	9,492.18	1,774,626.59
Monitoring of reservoir sediments	14,288.32		34,856.20		14,077.72	
Groundwater diagnosis					7,672.34	
Monitoring of reservoir water quality	26,444.55	125,599.77	29,065.58	120,372.48	86,850.60	21,712.65
Others	440.31	164,687.83		725,689.57	13,435.21	23,698.81
<b>Total</b>	<b>9,788,941.52</b>	<b>5,834,874.72</b>	14,850,393.36	5,242,060.40	9,287,973.55	4,692,672.20

# Environmental Dimension

## Cultivating Good Water (CAB)

Eleven years ago the Paraná Watershed 3 (BP3) changed the way it relates with the environment, based on initiatives brought about through CAB. The program proposal is based on the ethic of care, as such it encourages the adoption of a new way of being, living, producing and consuming. And it has benefited the region composed of around a million inhabitants, spread throughout the 28 municipalities in the western region of Paraná and one in the state of Mato Grosso do Sul.

CAB is inspired by federal government public policies, especially in terms of the guidelines of the National Environmental Conferences and the National Water Resource Plan. It also lends from other planetary documents, among them the Earth Charter, *Agenda 21*, Millennium Development Goals, Global Compact, Kyoto Protocol and the Treaty on Environmental Education for Sustainable Societies and Global Responsibility.

Among the program's leading actions are recovery of micro-watersheds, environmental education in communities

surrounding the Itaipu reservoir, support to organic and family-based farming, aquaculture and the cultivation of medicinal plants, as well as productive social inclusion and improvements in the quality of life of vulnerable segments of society, such as indigenous communities and recyclable material collectors.

The internationalization process for the program was consolidated in 2014. Besides adopting the methodology in twelve micro-watersheds in Latin America and two in Spain, the interest among international organizations and governments has been growing.

CAB is a technical and scientific cooperation initiatives with the Brazilian government, with support from the Brazilian Cooperation Agency (ABC) and the National Water Agency (ANA), formed in 2012. It has become a reference model for watershed management for international organizations like the UN, UNESCO and the Earth Charter. [G4-EC7; G4-EC8; G4-EN27; G4-SO1]

## Participatory management

The fundamental pillar of CAB is the empowerment of the community. There are over 2,000 partners and 40,000 people directly involved. And in each municipality of BP3 there is a legally appointed managing committee, formed by representatives of government bodies, volunteer sector organization, private companies, community leaders and representatives from Itaipu, responsible for planning, executing and assessing the actions undertaken. The result is that approximately 30% of the territory receives initiatives, resulting in the involvement of 26 micro-watersheds.

## Engagement

For every micro-watershed involved, a participatory self diagnosis is held, which consists of four stages. The community diagnoses its social and environmental problems, defines a work plan to resolve them and formalizes an assumed commitment, celebrated in the Water Compact. To leverage community participation, between the month of March and June, CAB hosted "*Encontros e Caminhos*" in the 29 municipalities that comprise BP3. Around 80,000 people took part in approximately 400 activities.



## Water

With the capacity to store 29 billion m<sup>3</sup> of water, the Itaipu reservoir is the seventh largest in the country. And it not only holds the needs required for hydropower, but is also used for sailing, fishing, irrigation, leisure and tourism, while also forming a capture point to supply the region with water.

Due to the strategic, economic, social and environmental relevance of the reservoir, the binational holds actions to conserve, protect and recover the riparian forests of the springs and streams, control erosion, reduce contamination of water by agrochemicals, pollution through waste effluents

from livestock farming and monitoring water quality throughout the entire Paraná Watershed 3 (BP3).

One example is the project for the revitalization of the Córrego Brasília micro-watershed, located in Village C, neighboring the plant, which is polluted by garbage and sewage. In June 2014, Itaipu, Foz do Iguaçu city administration and around 600 residents signed the Water Compact Charter aimed at cleaning and caring for the region, and a commitment to transform it into a family leisure area.

[G4-DMA]



## Consumption

Itaipu's highest form of consumption is in the production of energy (non-consumptive use), without creating any significant changes to the quality or volume of water. In 2014, the consumption of treated water, which supplies the plant offices (Brazilian side), was reduced due to periodic maintenance on the supply system, adoption of a more economical attitude by employees and guidelines to outsourced employees about measures for reducing water consumption. However, certain developments by the company within the plant contributed to increased consumption at these points.

Measurements of treated water consumption in Itaipu's building on the Brazilian side are aimed at assessing water loss in supply lines the per capita consumption of employees. Despite measurements not being implemented in full, the available data is already being used as a base for a water consumption reduction policy. Regarding quality,

one of the controls realized by the company is an analysis of water from purifiers located in the staff kitchens and drinking fountains. Data confirms that the quality is far higher than in the water tanks, replaced two years ago due to susceptibility to contamination through handling, transport and cleaning.

Inspections include items like PH, chlorine, total coliforms and bacteria like *Escherichia coli*, in addition to physical-chemical analyses. All tests comply with the provisions of Ministry of Health Directive number 2914/11. Control is implemented both on the water that undergoes treatment at the Water Treatment Station on the Brazilian side of Itaipu and at points of consumption. [G4-DMA; G4-EN8; G4-EN9]



## Disposal

Measurements of domestic effluent flows are taken at the plant's Sewage Treatment Stations (STS). The remaining values are estimated in relation to the individual consumption of water, considering 80% of the volume consumed is later disposed. The same estimate is applied to the buildings that still do not send their waste to STS.

Up until 2012 there were losses considered "untreated" and where not counted by the network, but which left the Water

Treatment Station (WTS) and reached the STS/Septic Tanks. As from 2013, 80% of this volume was considered infiltration, as it was lost prior to reaching points of consumption, and the differences was classified as "untreated", as they are points not linked to WTS or septic tanks. Due to the new methodology, in 2014 the untreated volume reduced significantly. [G4-DMA;

G4-EN22; G4-EN26]

# Environmental Dimension

## Total volume of water withdrawal per source, for non-consumptive use (in m<sup>3</sup>)\* [G4-EN8]

Source	Type	Captured	Consumption	2014	2013	2012
Paraná / Itaipu Reservoir	Surface	Itaipu	Turbine	308,814,940,800	349,168,579,200	344,470,233,600
			Spilled	6,040,396,800	10,102,752,000	11,901,427,200
			Cooling	365,868,058	365,868,058	365,868,058
<b>Total</b>				<b>315,221,205,658</b>	<b>359,637,199,258</b>	<b>356,737,528,858</b>

\* Calculation estimated based on the operation of 18 generator units, which is the Itaipu standard.

## Total volume of water withdrawal per source, for consumptive use (in m<sup>3</sup>)\* [G4-EN8]

Source	Type	Captured	Place of Consumption	2014	2013	2012
Paraná River / Itaipu Reservoir	Surface	Itaipu	Plant offices (Brazilian side)	78.255	102,617	124,481
			Industrial area	165.575	214,274	231,621
			Bela Vista Biological Sanctuary <sup>1</sup>	168.192	210,240	175,744
			Itaipu Technology Park <sup>2</sup>	22.889	20,373	NA
Cayguava, Piraquara and Iraí Rivers	Surface	Sanepar	Foz do Iguaçu (including offices, ITP and Unila)	48.471	41,775	57,909
		Itaipu	Curitiba	4.791	3,970	4,409
Rainfall <sup>3</sup>			Foz do Iguaçu	753	1,104	-
<b>Total</b>				<b>488.926</b>	<b>578,264</b>	<b>601,207</b>

<sup>1</sup> Volume calculated based on the pumping characteristics (operation time and power) of the equipment installed at the facility.

<sup>2</sup> Measurements started in 2013 and include all the institutions housed in Itaipu Technology Park, such as the Astronomy Center, universities, laboratories, snack bars, restaurants, bank branches and postal services. NA – Data not available.

<sup>3</sup> System for harvesting rainwater installed in 2012, with an estimated volume registered as from 2013.

## Percentage and volume of water recycled (in m<sup>3</sup>) [G4-EN10]

Source	2014	2013	2012
Volume of recycled water <sup>1</sup>	456,909	484,445	590,282
Volume of reused water <sup>2</sup>	5,787	5,388	7,043
<b>Total</b>	<b>462,696</b>	<b>489,833</b>	<b>597,325</b>
Total amount of water withdrawal	488,926	578,264	601,207
<b>Percentage</b>	<b>94.63%</b>	<b>84.7%</b>	<b>99.3%</b>

<sup>1</sup> Volume in reference to the water in the animal enclosures at the Bela Vista Biological Sanctuary (RBV). The cycle begins with removal, treatment and return to the enclosure to prevent further removals of water. Four enclosures have water meters installed and their readings provided the data. In other areas the volumes were estimated based on the flow curve and the time the filter pumps operate.

<sup>2</sup> Consists of the volume used in the rainwater harvest system and the effluent from the Sewage Treatment Stations. The rainwater harvesting system was installed in 2012 at two car wash points located on the Brazilian side of the company and measurements only began in 2013.





## Total water discharge, by quality and destination (in m<sup>3</sup>)\* [G4-EN22]

Type of destination	2014	2013	2012
Surface water	113,466	108,436	148,307
Ground seepage	108,393	133,325	112,392
Recirculation	101,129	122,923	124,537
Evaporation <sup>1</sup>	128,102	146,742	147,644
<b>Total</b>	<b>451,089</b>	<b>511,426</b>	<b>532,880</b>

Treatment method	2014	2013	2012
Sewage Treatment Stations /septic tanks	193,261	237,062	263,599
Ground seepagev	95,734	115,873	54,813
Untreated	33,992	11,749	74,808
Evaporation <sup>1</sup>	128,102	146,742	147,644
<b>Total</b>	<b>451,089</b>	<b>511,426</b>	<b>540,864</b>

\* Water loss occurs in the water supply system and not during sewage collection, as such, in 2013 a change was made to the methodology and water previously considered as untreated is now registered as seepage. The data from 2012 was recalculated for equivalence of comparative parameters.

<sup>1</sup> Part of the water produced by the Water Treatment Stations from the industrial area is used for replacement in the Evaporation Centers.



## Electricity

In compliance with the Eletrobras Climate Change Commitment Declaration, signed in 2012, Itaipu has established a goal of reducing the consumption of electricity purchased from distributors by 5% by 2015 (offices and other facilities in the area of the plant, in Foz, are supplied by energy generated by the plant).

The consumption of electricity is closely linked to maintenance activities and the installation of new equipment that, despite occurring every year, may vary significantly depending on the service being executed. Consumption data is obtained in gauges installed in the main power boards that feed auxiliary services from the plant at 50 Hz and 60 Hz.

After implementing a series of improvements, such as the exchange of fluorescent light bulbs for LED (Light Emitting Diode) bulbs and the installation of thermal heating in some buildings, in January 2014 Itaipu initiated a modernization project for the 23 passenger elevators in the power station and the dam wall, which should be completed by the end of 2015. Estimates are that energy consumption will be

reduced by 70% while also reducing costs on maintenance of equipment and offering more safety to users.

At the office in Curitiba, in December, an energy saving system was implemented for the elevators. The equipment is partially or completely shut down at time with less flow or when there are no employees, outsourced service providers or business activities. The idea, presented by an employee, won the Eureka! Award for innovation promoted by the Chief Administrative Officer

Work also began in the offices in Foz to replace one hundred old air conditioning units, replaced with models featuring technology that keeps the compressor unit on constantly, simply reducing the speed of the inverter. This way, it reduces the consumption of electricity as there are no piques in consumption when turned back on. The noise is also less and the gas used pollutes less. [G4-DMA; G4-EN3; G4-EN5; G4-EN6]

# Environmental Dimension

## ISO 50.001 and Procel Edifica

Itaipu's Internal Energy Conservation Committee has initiated the process of implementing international norm ISO 50.001 at the company. The document carries guidelines concerning efficient energy management, with performance assessments and continued improvement.

There are only 13 companies certified in Brazil. In the electricity industry, besides Itaipu, Eletronorte, Eletronuclear and Chesf are all at a stage of implementation. The average period to attain certification is six months.

In all there will be three pilot programs: reforms to the Executive Center, in the Production building and route lighting, expected to begin in 2015. Besides these, the areas will have the opportunity to extend the scope of the norm to include other systems. The whole cycle for complete implementation is expected to take around three years.

The Committee of Itaipu was also used as a reference in the creation of the Paraná Sanitation Company (Sanepar) board (it is one of the state's largest energy consumers). At the binational, the organization is comprised of representatives from a number of sectors. It has existed since 1995 and is responsible for preparing the Annual Energy Conservation Plans, with goals and justifications. The plans are an effort to reduce technical and commercial electricity loss.

Besides ISO 50.001, which deals with management, Itaipu is preparing to request the National Energy conservation Label from the National Institute of Metrology, Quality and Technology (Inmetro) – known as Procel Edifica. The label assesses three branches related to the conservation of energy: lighting, refrigeration (air conditioning) and architectural solutions for buildings, such as use of natural light and ventilation. [G4-DMA]

## Electricity consumption within the organization (in kWh)\* [G4-22; G4-EN3; G4-EN6]

Source		2014	2013	2012
Hydropower <sup>1</sup>	Renewable	102,065,000	102,570,000	102,487,000
Hydropower <sup>2</sup>	Renewable	1,518,168	1,834,003	2,230,969
Wind power <sup>2</sup>	Renewable	24,586	17,505	16,143
Thermal <sup>2</sup>	Non-renewable	446,640	411,892	270,059
Nuclear <sup>2</sup>	Non-renewable	59,415	68,349	81,104
<b>Total</b>		<b>104,113,810</b>	104,901,749	105,085,275

\* Includes 32.16 MWh of electricity used to fuel the company's fleet of electric vehicles.

<sup>1</sup> Electricity generated and consumed by Itaipu in the plant facilities.

<sup>2</sup> Energy acquired by Itaipu from electricity system concessionaires to supply offices located outside of the plant's area (Foz and Curitiba). The volumes reported for each source consider the percent of participation in the Brazilian energy matrix in accord with reports from the National Electric Energy Agency (Aneel).

## Fuels

In further compliance with the Eletrobras Climate Change Commitment Declaration, in 2012 Itaipu established a goal to reduce gasoline and diesel consumption by 3% by 2015. Since then, the fleet has received 28 electric vehicles of a range of models. Among them are 32 compact Renault Twizy models, which were part of the first vehicles assembled at the binational in November and can be used by employees through car sharing.

When time comes to change a vehicle in the company fleet, priority is always given to dual fuel vehicles. Preference is also given to vehicles fueled by ethanol. In 2014, there was a 36% reduction in gasoline consumption compared to 2013, and an increase in the use of ethanol. [G4-DMA; G4-EN3; G4-EN6; G4-EN30]

## Electricity consumption within the organization (in GJ) [G4-22; G4-EN3; G4-EN6]

Source		2014	2013	2012
Ethanol	Renewable	7,220	5,875	5,141
Diesel <sup>1</sup>	Non-renewable	5,350	7,282	6,291
Gasoline	Non-renewable	864	1,354	2,021
Liquefied petroleum gas	Non-renewable	41,900	52,756	1,729
Natural Gas <sup>2</sup>	Non-renewable	91		
<b>Total</b>		<b>55,425</b>	<b>67,267</b>	<b>15,182</b>

As from this Report, data will be reported in gigajoules (GJ) The volume of ethanol and gasoline refers to consumption in the Foz do Iguacu and Curitiba vehicle fleet.

<sup>1</sup> The volume of diesel presented a slight variation in 2013 due to the supply of generator groups for the plant's emergency systems, which is conducted every two years and demands around 30,000 liters of fuel.

<sup>2</sup> Data reports initially began in 2014.

## Energy consumption outside of the organization [G4-EN4]

Source		2014	2013	2012
<b>Fuel</b>				
Aviation fuel (km)*	Non-renewable	<b>8,945,140</b>	7,722,410	9,257,906

\* Refers to trips by airplane for passengers and cargo.

# Environmental Dimension

## Emissions

Itaipu does not emit significant volumes of Greenhouse Gases (GHG) through its operational processes. The only gas present at the company that may be linked to global warming is Sulfur hexafluoride (SF<sub>6</sub>), used to isolate magnetic fields in the plant substation, though its escaping emissions are within regulatory standards and limits.

The best form of carbon sequestration is through reforestation, which the company implements in areas surrounding the reservoir and also within its area of influence (BP3). But other initiatives contribute to the reduction of GHGs, such as the renewal of the vehicle fleet with electric cars or those powered by ethanol, a reduction in flights for employees with the use of video conferences, and the replacement of one hundred air conditioner units for equipment that uses less pollutant gas, initiated in Foz in 2014.

Part of the company bus fleet hired to transport Brazilian employees was also renewed in Foz do Iguaçu. Of the 18 vehicles, six use Euro 5 technology, taken from the Automobile Pollution Control Program. The annual renewal is part of the sustainability protocol signed by services providers with Itaipu. Minibuses and vans are already circulating in accord with the standard.

The binational is also investing in the development of technologies and projects for renewable energy, such as the production of water-based hydrogen, biogas and the development of electric car prototypes, which include recharging and battery systems. Find out more on page 23.

[G4-DMA]

## Study on emissions in reservoirs

Prepared in conjunction by companies part of the Eletrobras system and ten Brazilian research institutions, the study called "Reservoir Carbon Balance" verified that the majority of Brazilian hydroelectric plants emit a reduced level of carbon dioxide and that some reservoirs absorb carbon.

The study was conducted between 2011 and 2013 and included 11 hydroelectric plants, of which eight were in operation, including Itaipu. Data was collected on the emission of carbon dioxide, nitrous oxide and methane gas. The latter has a global warming power twenty times greater than carbon dioxide.

## Total direct and indirect emissions and a reduction in greenhouse gas emission (GHG), by weight (t CO<sub>2</sub> eq.) [G4-EN15; G4-EN16; G4-EN17; G4-EN18; G4-EN19]

	2014	2013	2012
<b>Scope 1 (direct emissions)</b>	7,626.69	8,083.22	8,303.33
<b>Scope 2 (electricity consumption)</b>	282.99	201.43	148.58
<b>Scope 3 (indirect emissions)</b>	1,896.89	1,761.35	1,996.85
<b>Total</b>	<b>9,806.57</b>	10,046.01	10,448.76
<b>Sequestration (biomass)</b>	2,116,643	2,454,940	2,384,610
<b>Annual balance (emissions sequestered) *</b>	<b>-2,106,836</b>	-2,444,894	-2,374,161
<b>Generation of electricity (MWh)</b>	87,795,393	98,630,035	98,287,128
<b>Emission/generation factor (tCO<sub>2</sub>eq./MWh)</b>	0.00011	0.000102	0.000106

\*The minus sign indicates that carbon sequestration was greater than the emissions registered during the period.

## *Material approach*

Aligning cost reduction and respect for the environment has been one of Itaipu's goals. Through a project to Rectify, Organize and Maintain Materials in Stock, which will be completed in 2015 and will promote a review of transversal processes between the areas of Materials, Maintenance and Procurement and define joint criteria for material management, a range of inventory management tools are being created to enhance efficiency and minimize the risk of unavailability at generator units due to a lack of materials.

There is also the project Good Use, aimed at developing a methodology to create and execute action plans for the rational use of stocked material, in conjunction with the Sustainable Procurement program. In 2014, a pilot was staged involving paints and there are plans to test two other materials over the next year to validate the methodology and expand into other area of the organization.

Another of the project's actions was an update in technology for printing and photocopying services in all the offices, which involved the replacement of 394 printers and 130 multifunctional devices places in islands. Among the advantages are a reduction in spending on processes for acquisition and the maintenance of printers, asset control,

inventory management, a drop in the number of copies and lower electricity consumption. This action was implemented in conjunction between the Superintendencies of Materials, General Services and Informatics.

And further aimed at reducing the consumption of paper and printer cartridges, while also speeding up processes, an electronic approval system was implemented for the request and return of material and for employee travel.

Since 2001, Itaipu has been using regenerated oil lubricants in different pieces of equipment. The oil used in generator units is removed and stored until reaching a minimum volume of 30,000 liters. It is then sent to a third party company responsible for refining, a process that recovers the physical and chemical properties through filtering and the addition of additives. The volume of recycled oil use varies annually, in accord with the results of physical-chemical analyses periodically conducted on equipment. In 2014, 89,200 liters were used, in 2013 the number was 83,000, while in 2012, 45,000 liters were used. [G4-DMA; G4-EN1; G4-EN2]

## *Materials used by weight or volume* [G4-EN1]

Materials used	2014	2013	2012
Chemical material (kilos)	147,042	169,920	164,730
Oils/lubricants (liters)	27,810	11,651	56,291
Resins (liters)	1,488	800	1,177
Solvents/Varnish (liters)	31,802	34,565	34,751
Batteries (units)	14,771	14,629	15,231
Tires (units)	938	971	973
Light bulbs (units)	46,466	43,207	46,590
Bond paper - packages (units)	23,251	25,421	27,607
Disposable cups (units)	5,683,480	5,815,020	6,236,500
Cartridges and toners (units)	4,205	5,649	5,715
Wood (m <sup>3</sup> )	159	137	166

\*Data in the table is binational.

# Environmental Dimension

## Waste approach

In December the Reverse Logistics project was finalized, with the creation of the Industrial Waste Control Plan. The document contains a description of the waste identified, technical and legal references, handling and correct destination, as well as a description of the procedure for receipt and a contingency plan for oil spills or leaks.

Itaipu sent 98.83 tons of dangerous waste for environmentally correct disposal, with a highlights including 8.83 tons of decontaminated light bulbs (corresponding to 39,323 units) and 303 cartridge and toner units returned to the manufacturer.

Harmless waste totaled 927.02 tons, of which 100.33 tons were sent to the Foz do Iguaçu Environmental Agents Cooperative for recycling and 404.11 tons of iron scrap was

sold to recycling companies that comply with environmental regulations through binational competition. Auctions were also held to sell 64 vehicles from the company fleet.

To optimize selective waste collection at the company, around 3,000 garbage bins were updated with new visual communication. New features included garbage bins with the generic name of the 'recyclable material' instead of 'plastic', so as to avoid doubts at the time of disposing of items like polystyrene, for example. The other two containers that form the set are 'paper' and 'non-recyclables'. [G4-DMA; G4-EN23]

### Light bulbs

Each month, around **400 fluorescent light bulbs are replaced** at the company. After removal, the material is returned to the warehouse and then sent to the company that decontaminates and then correctly disposes of the product. Once recycles, the bulbs return to the productive cycle in the form of raw material (glass and metal). With the replacement of fluorescent bulbs for **Light Emitting Diodes (LEDs)**, the volume of disposed items is reduced, as the durability of the new material is greater.

### Electronic waste

In Foz do Iguaçu, the company organized the **South American Mobile Phone and Notebook Throw Championship**, an initiative by an employee in conjunction with the Itaipu Physical Safety Recreation and Sports Association. The winner who throws the device the furthest is crowned champion. The **championship is aimed at the collection of old devices from the community**, which, thanks to the financial support of Itaipu, are separated, disassembled, decontaminated and sent for recycling. The **2014 edition saw over two tons** of equipment collected, the highest volume since the creation of the event.



## Total weight of waste, by type and disposal method (in tons) [G4-EN23]

Harmful waste	2014	2013	2012	Disposal
Fluorescent bulbs	8.83	12.10	12.54	Decontamination
Diverse industrial resins	9.81		4.50	Co-processing
Used lubricant oil	42.99	73.04	39.60	Regeneration
		52.80		Refining
Diverse scrap metal	404.11	176.10	157.10	Recycling
Diverse types of electric material scrap			3.82	Recycling
Tires		5.01	17.27	Recycling
Medical waste	1.82	1.92	2.73	Incineration
Air filters	4.10	1.84	4.76	Recycling
Oil filters	2.04		5.60	Recycling
Oil sludge	32.78		10.46	Co-processing
Glass wool			2.80	Recycling
<b>Total</b>	<b>506.48</b>	322.81	<b>261.18</b>	
Harmless waste	2014	2013	2012	Disposal
Recyclables (paper, cardboard, plastic)	98.90	92.33	88.95	Recycling
Polystyrene	0.35	0.75	0.44	Recycling
Aluminum	1.08	1.15	0.58	Recycling
Organic waste	395.50	442.93	456.980	Landfills
<b>Total</b>	<b>495.83</b>	537.16	546.95	

\* Data in the table is binational. Annual variations presented occur due to the need to store waste until forming representative lots to initiate the tender process to hire a company that correctly handles industrial waste, ensuring an environmentally correct destination.

# Environmental Dimension

## Care for aquatic biodiversity

Itaipu has been a fully installed enterprise since 2007, when assembly was completed on the final generator unit. Since then, there have been no interventions (works or procedures) that potentially impact the biodiversity of protected and unprotected areas. The pre-established operational routine has continued as normal.

The only operational measure that has the potential to damage the biodiversity are when generator units are shut down for maintenance. However, Itaipu boasts preventative operational measures that consist of rescuing fish trapped in the turbines. The fish are later released back into their natural habitats. In 2014, the joint effort of the technical and environmental departments resulted in the rescue of 592 fish, made up of 38 species, trapped in the penstocks. With a reduction in the time between shutdown of the machines and closing the penstock gates, the number of fish rescued has dropped considerably since 2010, when 2,803 individuals were saved.

Another protocol for life saving is applied during fluctuations in the level of the reservoir. Due to climatic oscillation that reduce the rainfall in the Paraná River Basin, the banks of the reservoir retracts and isolated lakes are formed, some of which become the temporary home of trapped fish. Technical teams provide constant monitoring and intervention in specific areas, opening channels to allow the fish to access the reservoir and thereby

preventing the mortality through physical-chemical factors or predatory fishing.

## Studies and research

Measuring ten kilometers long, the Itaipu Spawning Channel connects the Paraná River, below the plant, to the plant reservoir. It is the largest and most complex ecological corridors for fish in the world, with a structure comprised of natural sections of river, lakes and artificial channels.

Studies to monitor local biodiversity began ten years ago and have permitted the identification of 188 species, residing in the Channel or using it as a migration route. Of these, around 70 species are permitted for fishing activities in the reservoir.

The binational also develops studies aimed at captive breeding programs for native fish species, later sent to fattening net-tanks maintained by indigenous peoples, agrarian reform settlers, riparian communities, colonies and fishing associations that are part of the program Producing Fish in Our Waters. [G4-DMA; G4-EN11; G4-EN12; G4-EN13; G4-EU8; G4-EU13]

### 45,000 tags

Work on **tagging fish at Itaipu began in 1997** and always involves migratory species - such as *pacu*, *dourado* and *curimba* species. **Through simple external tags and PIT-Tag (Passive Integrated Transponder) type electronic tags**, which operate using radio frequency, it is possible to trace the routes of species, identify their needs in terms of life areas and their behavior patterns along the **Spawning Channel**, generating information that contributes to the enhancement of project for neotropical fish transposition systems.

A **group of Itaipu employees assisted in tagging** Threespot leporinus (*Leporinus friderici*) fish with the PIT-Tags in June, during the commemoration celebrating the **30<sup>th</sup> anniversary of the Bela Vista Biological Sanctuary**. In May, another activity aimed at **ichthyofauna monitoring** technology, in which **Itaipu is a pioneer in Brazil**, was hosted at the Bela Vista Biological Sanctuary. It involved a course on tagging and identifying using radio frequency for researchers, students, professionals from the hydropower industry and environmental agencies.





## Preservation and conservation of fauna and flora [G4-DMA; G4-EN11; G4-EN13; G4-EU13]

Initiative	Objective
<b>Reforestation</b>	To recover protected areas measuring 1.007 km <sup>2</sup> , including Eco Corridors, Reserves and Sanctuaries, on both sides, which were devastated prior to the creation of the plant through agriculture and livestock farming activities. Since 1979, more than 44 forest specie seedlings have been planted. It is considered the largest reforestation effort by a hydroelectric plant in the world. The company also supports farmers in the Paraná Watershed 3 (BP3) who want to recover the riparian forests on their properties, providing technical guidance, seedlings, wire and posts for the construction of isolation fencing.
<b>Protection Area (Brazilian side)</b>	It serves as support to natives species of fauna and flora, reduces erosion, aggradation and pollution of the reservoir. Recovery of riparian forests along the banks of the reservoir was conducted based on a 1976 survey of remaining forests in the Paraná river region. The study showed that the Brazilian side was only made up of 23% of forests and 24.7% of natural areas at a phase of natural regeneration, while agriculture occupied 50.3% of the land. Covering a total area of 34,000 hectares, around 23 million seedlings have been planted in reforested areas of the years.
<b>Santa Maria Ecological Corridor</b>	Aimed at linking government and/or private natural areas, which have become isolated through the destruction of the region's original forests, guaranteeing the flow of genes of the plants and animals and the conservation of biodiversity. The project was initiated in 2003 and encompasses the recovery of permanent preservation areas and legal reserves, in addition to the environmental health of the properties. Along a straight line it measures 13 kilometers long, interlinking the riparian forests of the Itaipu reservoir to the Iguacu National Park.
<b>Spawning Channel</b>	To promote connectivity among migratory fish populations from the region, restoring the flow of genes and mitigating the effects of habitat fragmentation. The channel is 10.3 km long and comprised of natural sections of the Bela Vista River, concrete channels and artificial lakes. It was inaugurated in 2002.
<b>Protected Areas</b>	To guarantee the conservation of biodiversity, by means of studies and research on fauna and flora species and environmental education. Itaipu maintains eight reserves and biological sanctuaries located in Brazil and Paraguay. Protected areas, which include native and reforested areas, total 41,039 ha. Brazil is home to the Bela Vista Biological Sanctuary (1,920 ha) and the Santa Helena Biological Sanctuary (1,482 ha). There is also the Maracaju Biological Sanctuary (1,356 ha), located on the border of the two nations and managed by both. These areas are maintained by environmental inspection and protection teams, as well as forest firefighter teams.
<b>Itaipu Binational Wild Animal Breeding Facility</b>	Aimed at research on captive breeding of rare species from the region and those threatened with extinction in Brazil. Located in the Bela Vista Biological Sanctuary, it has the capacity to house up to 300 animals. At the end of 2014, there were 170 animals from 23 species. During the year, four pygmy brockets ( <i>Mazama nana</i> ), one crested cariamia ( <i>Cariama cristata</i> ) and two harpy eagles ( <i>Harpia harpyja</i> ) were born at the facility. Since its creation, some 884 births were registered at the facility, from 43 species, mainly the pygmy brockets, margay ( <i>Leopardus wiedii</i> ) and harpy eagles, with a survival rate of over 70%.

# Environmental Dimension

## Preservation and conservation of fauna and flora [G4-DMA; G4-EN11; G4-EN13; G4-EU13]

Initiative	Objective
<b>Roberto Ribas Lange Zoo</b>	Aimed at showcasing 44 species of regional fauna. There are 192 animals, made up of 27 reptiles, 2 amphibians, 120 birds and 43 mammals – among them jaguars. The animals all originate from Itaipu Binational Wild Animal Breeding Facility, other zoos or were sent to the facility by environmental agencies. Two collared peccary ( <i>Pecari tajacu</i> ), one South American tapir ( <i>Tapirus terrestris</i> ), two bare-faced curassow ( <i>Crax fasciolata</i> ) and five pygmy brockets ( <i>Mazama nana</i> ) were born at the facility in 2014, totaling 152 captive births since its creation.
<b>Veterinary Hospital</b>	To provide care to wild animals in captivity or living free in the region under the plant's influence. Located in the Bela Vista Biological Sanctuary, it offers outpatient and clinical care, along with diverse diagnoses, surgeries, autopsies and scientific research.
<b>Germplasm Bank</b>	Aimed at stocking the genetic material of native animal (land and aquatic) and plant species for immediate or potential use in the future. It currently has material from 9 species in nitrogen, 27 forest species in its seed bank, as well as 120 medicinal plant species at the Itaipu Nursery.
<b>Forest Nursery</b>	Produce native species seedlings from the region. In 2014, 198,290 seedlings from 21 species were produced, with a highlight on the purple ipê ( <i>Tabebuia impetiginosa</i> ), cedrela ( <i>Cedrela fissilis</i> ) and red ivorywood ( <i>Balfourodendron riedelianum</i> ) used in the recovery of the riparian forests in the Paraná Watershed 3 (BP3), in the Protection Area and Maracaju Biological Sanctuary. In 2014, the nursery relied on the collection of 342 kg of seeds from 57 species.
<b>Medicinal/Herb Garden</b>	Educate, develop, cultivate, benefit and distribute medicinal, aromatic and condimentary plant species, with quality, to bolster social, economic and environmental projects at Itaipu and in the surrounding region, producing technological and scientific results. Located in the Bela Vista Biological Sanctuary, it features infrastructure for the production of seedlings (medicinal nursery), cultivation and maintenance of a germplasm bank, as well as processing and transformation (herb garden). In 2014, 75,000 seedlings from 78 species were produced and 25 species were cultivated and harvested. Over the year, 115.89 kilograms of dehydrated plants were used in the Health Clinics, by employees, the community and education and research institutions.



## Total number of IUCN Red List species and national conservation list species with habitats in areas affected by the operations, by level of extinction risk [G4-EN14]

FAUNA									
Species	IUCN*	CITES**	BR	PR	Captivity Nursery	Germplasm Bank	Fauna Inventory 1977-1979	Fauna Rescue 1982	
Vinaceous Amazon ( <i>Amazona vinacea</i> )	EN	1	VU	NT	2		Yes		
Black-fronted piping guan ( <i>Pipile jacutinga</i> )		1	EN	EN	3		Yes		
Oncilla ( <i>Leopardus tigrinus</i> )	VU	1	EN	VU	21	Yes	Yes	Yes	
South American tapir ( <i>Tapirus terrestris</i> )		2	VU	EN	9		Yes		
Marsh deer ( <i>Blastocerus dichotomus</i> )		1	VU	CR	2		Yes		
White-lipped and collared peccary ( <i>Tayassu pecari</i> )		2	VU	CR			Yes		
Giant anteater ( <i>Myrmecophaga tridactyla</i> )		2	VU	CR	2				
Bare-faced curassow ( <i>Crax fasciolata</i> )				CR			Yes		
Chaco tortoise ( <i>Chelonoidis chilensis</i> )		2					Yes		
Yellow-footed tortoise ( <i>Chelonoidis denticulata</i> )		2							
Margay ( <i>Leopardus wiedii</i> )		NT	1	VU	VU	13		Yes	
Jaguar ( <i>Panthera onca</i> )	1		VU	CR	2	Yes	Yes		
Maned wolf ( <i>Chrysocyon brachyurus</i> )	2		VU	VU	2		Yes		
Harpy eagle ( <i>Harpia harpyja</i> )	1		VU	CR	20		Yes		
Blue-winged macaw ( <i>Primolius maracana</i> )	1			EN	14				
FLORA									
Species	IUCN	CITES	BR	PR	Forest Nursery Production	Seed Collection	Seed Bank BP3	Forest Inventory 1976	
Peroba-rosa ( <i>Aspidosperma polyneuron</i> )	EN			rare			Yes	Yes	
Red ivorywood ( <i>Balfourodendron riedelianum</i> )				rare		Yes	Yes	Yes	
Cedrela ( <i>Cedrela fissilis</i> )				VU		Yes	Yes	Yes	Yes
Piúna ( <i>Myrcianthes pungens</i> )							Yes	Yes	Yes
Amendoim-bravo ( <i>Pterogyne nitens</i> )	NT						Yes	Yes	

\* International Union for the Conservation of Nature and Natural Resources

\*\* Convention on International Trade in Endangered Species of Wild Fauna and Flora.

VU - Vulnerable; EN - Endangered; NT - Near threatened; CR - Critical.

# Environmental Dimension

## Environmental programs and actions

Program name	Watershed Management [G4-EN11; G4-EN13; G4-EN27; G4-SO1]	Environmental Monitoring and Assessment [G4-EN11; G4-EN13; G4-EN27; G4-SO1]	Biodiversity, our Heritage [G4-EN11; G4-EN13; G4-EN27; G4-EU13]
<b>Goal</b>	To promote the sustainable handling and management of water and land in the Itaipu basin, consolidating.	Environmental diagnoses and assessments so that water is kept in good conditions for multiple uses of the reservoir: electricity generation; public, industrial and livestock supply; and preservation of aquatic life.	Contribute to the preservation, conservation and recovery of regional flora and fauna, placing value on biodiversity in protected areas and the reservoir.
<b>Beneficiaries</b>	Residents of the Paraná Watershed 3 (BP3) micro-watersheds.	BP3 residents, water resource users and managing organizations.	Residents of the western region of Paraná.
<b>Investment</b>	US\$ 2,031,834.74	US\$ 196,751.90	US\$ 1,694,679.34
<b>Main stakeholders</b>	Environmental organizations, researchers, universities, associations, cooperatives and NGOs.	Education and research institutes, analysis laboratories and environmental organizations.	Public entities for the inspection, defense and conservation of biodiversity, higher education institutes, NGOs, foundations, institutes and companies.
<b>Main results in 2014</b>	<ul style="list-style-type: none"> <li>- Agreements formed with the municipalities of Marechal Cândido Rondon, Ouro Verde and Santa Terezinha de Itaipu.</li> <li>- Ten course held on Rural Environment Registration, aimed at municipal secretariats, environmental technicians and farmers. The initiative is part of the Forest Code implementation process (approved in 2012), aimed, among other things, at the environmental regulations of rural properties.</li> <li>- Environmental health works, such as upgrade of 96 km of roadway, graveling of 230 km of roadway and provision of 8 community water tanks and 32 waste distributors.</li> </ul>	<ul style="list-style-type: none"> <li>- Emission of a report on sediment monitoring in the BP3 region for an international board of civil consultants that assess the plant every four years.</li> <li>- Water quality assessment at 45 points around the reservoir and at BP3 and the fitness for recreational use of eight artificial beaches.</li> <li>- Calculation of the company's GHG (greenhouse gas) emissions, which remain within the established reduction goal of 3% by 2015.</li> </ul>	<ul style="list-style-type: none"> <li>- Bela Vista Biological Sanctuary (RBV) celebrates 30<sup>th</sup> anniversary. The shelter is home to 406 animals, including mammals, bird life and reptiles. The focus of the effort is on the reproduction of rare and endangered species, thus far registering 1,064 births from 58 species.</li> <li>- Ten new bird species were sighted at the RBV and in the plant area in a local survey by Itaipu employees, with four never before registered in Foz do Iguaçu. Registrations will compose the Paraná Participatory Bird Inventory (Ipave-2014). During the survey 146 species were cataloged in the area, totaling 193 registration since the first survey in 2007.</li> <li>- In the six samples taken from the Spawning Channel, 58 species of fish were registered, both resident and migratory species. Monitoring has been underway for ten years and 188 species have been recorded.</li> <li>- In the Forest Nursery, 198,000 seedlings from 23 native species were produced, of which 57,000 were planted.</li> </ul>

Program name	Environmental Education [G4-EN27; G4-SO1]	Fish Production in Our Waters [G4-EC8; G4-EN11; G4-EN13; G4-EN27; G4-SO1]	Sustainable Rural Development [G4-EC8; G4-EN11; G4-EN13; G4-EN27; G4-SO1]
<b>Goal</b>	Raise awareness among people and social groups in order to act, self-educate and contribute to the education of other individuals for the construction of sustainable societies.	To bolster the native fish life in the reservoir and the eight other water courses, while also supporting fishing and aquaculture as a form of generating income and nutrition for regional communities.	Support and leverage the more vulnerable segments of the rural population, within areas of interest to Itaipu, through sustainable livestock production, by means of a network of services for Rural Technical and Extension Assistance.
<b>Beneficiaries</b>	Residents of the BP3 region and Itaipu employees.	Fishers, agrarian reform settlers, indigenous riparian communities in the Paraná Watershed 3 (BP3).	Family farmers, indigenous communities, <i>quilombola</i> communities and agrarian reform settlers.
<b>Investment</b>	US\$ 697,710.32	US\$ 226,107.03	US\$ 603,575.04
<b>Main stakeholders</b>	Municipal administration from BP3, education institutions, NGOs, local councils and committees.	Professional and recreation fishing colonies and associations, indigenous communities, municipal administration and technical assistance institutions.	Technical assistance and research institutions, universities, NGOs and family farming organizations.
<b>Main results in 2014</b>	<ul style="list-style-type: none"> <li>- 15 meetings were hosted to develop environmental education through, in the 29 municipalities of BP3, benefiting 300 teachers.</li> <li>- Participation of 472 community environmental teachers at 57 meetings to discuss alignment and leverage the BP3 Municipal Teachers Groups.</li> <li>- 14 Workshops for the Future, involving communities in the diagnosis and construction of an action plan to recover micro-watersheds, with the participation of 450 regional inhabitants.</li> <li>- Eight talks to raise awareness about environmental education and conscientious consumption were attended by 300 Itaipu employees.</li> <li>- Capacity building for 160 members of kitchen staff from municipal schools in BP3 regarding agro-ecological gastronomy, medicinal and condimentary plants and complete use of foods.</li> </ul>	<ul style="list-style-type: none"> <li>- Fish production in net-tanks throughout BP3 recorded 145 tons, more than double the amount obtained the previous year. During the year, 42,000 fingerlings were provided for fattening and 60 net tanks were delivered.</li> <li>- 350 fishers that operate within the Itaipu reservoir had the opportunity to visit the company facilities and see the actions developed to favor fishing activities, such as the Spawning Channel and the Aquaculture Station on the Paraguayan side.</li> <li>- In an unprecedented action, regional fishing community gathered en masse to remove trash from the reservoir, under Itaipu's coordination. In all, some 41.5 tons of litter was collected, with approximately 70% composed of recyclable material, especially PET bottles.</li> </ul>	<ul style="list-style-type: none"> <li>- 1,400 families benefited; 4,800 technical consultancies conducted on farms by 26 technicians; 1,200 consultancies offered to family farming cooperatives and 306 group activities (talks, courses, meetings and field activities).</li> <li>- Itaipu signed a technical cooperation agreement with the Food and Agriculture Organization of the United Nations (FAO) to promote action with a direct influence on family agriculture. The aim is to share practices previously adopted by the company to add strength to the fight against hunger in Latin America and the Caribbean.</li> <li>- Based on contract with Biolabore, Itaipu increased its number of consultants that provide support to six family farming cooperatives from BP3. They will number six in total and each will cater to a cooperative. In all, 20 technicians will consult with around 700 agricultural families, beekeepers and <i>quilombola</i> communities.</li> <li>- BP3 was selected by the federal government to initiate the National Environmental Registration System in Paraná. To assist farmers, Itaipu hosted a course on the Rural Environment Registration.</li> </ul>

*Technical Information*



## GENERAL STANDARD DISCLOSURES

General Standard Disclosures	Page	Omissions	External assurance
<b>Strategy and analysis</b>			
G4-1	4		Yes, page 116
G4-2	28, 31		Yes, page 116
<b>Organizational profile</b>			
G4-3	10		Yes, page 116
G4-4	10		Yes, page 116
G4-5	10		Yes, page 116
G4-6	10		Yes, page 116
G4-7	10		Yes, page 116
G4-8	11, 16, 18		Yes, page 116
G4-9	10		Yes, page 116
G4-10	10, 56		Yes, page 116
G4-11	56		Yes, page 116
G4-12	52, 53 Monitoring the chain of suppliers is being enhanced and addition information about the companies hired by Itaipu will be reported within two years.		Yes, page 116
G4-13	19, 26		Yes, page 116
G4-14	31		Yes, page 116
G4-15	38		Yes, page 116
G4-16	38		Yes, page 116
<b>Identified material aspects and boundaries</b>			
G4-17	Itaipu does not possess a consolidated statement or equivalent document, as it has no investments with profit in mind in other entities.		Yes, page 116
G4-18	9		Yes, page 116
G4-19	9 When being prepared, in 2013, the Materiality Matrix considered aspects, topics and performance indicators from the G3.1 version of the GRI Guidelines. As such, not all the topics coincide exactly with the Specific Aspects of version G4 of the Guidelines. This situation shall be resolved in the review/preparation of the next Materiality Matrix.		Yes, page 116
G4-20	9 Itaipu does not list the relevance of aspects by groups of entities as explained in G4-17.		Yes, page 116
G4-21	9		Yes, page 116
G4-22	9 The changes that occurred are highlighted in specific indicators.		Yes, page 116
G4-23	9		Yes, page 116

## GENERAL STANDARD DISCLOSURES

General Standard Disclosures	Page	Omissions	External assurance
<b>Stakeholder engagement</b>			
G4-24	40		Yes, page 116
G4-25	29, 39		Yes, page 116
G4-26	9, 40		Yes, page 116
G4-27	9, 39		Yes, page 116
<b>Report profile</b>			
G4-28	8		Yes, page 116
G4-29	8		Yes, page 116
G4-30	8		Yes, page 116
G4-31	119		Yes, page 116
G4-32	8, 116		Yes, page 116
G4-33	8		Yes, page 116
<b>Governance</b>			
G4-34	26, 27		Yes, page 116
G4-35	29		Yes, page 116
G4-36	27, 29		Yes, page 116
G4-37	9, 29		Yes, page 116
G4-38	26, 27		Yes, page 116
G4-39	27		Yes, page 116
G4-40	27		Yes, page 116
G4-41	27		Yes, page 116
G4-42	27		Yes, page 116
G4-43	27		Yes, page 116
G4-44		The company has no formal mechanism to assess the performance of the highest level of governance.	Yes, page 116
G4-45		<sup>27</sup> The Integrated Risk Management System is at a final phase of implementation and will contribute to enhanced management of this indicator.	Yes, page 116



## GENERAL STANDARD DISCLOSURES

General Standard Disclosures	Page	Omissions	External assurance
<b>Governance</b>			
G4-46	27		Yes, page 116
G4-47	27		Yes, page 116
G4-48	8		Yes, page 116
G4-49	27, 32		Yes, page 116
G4-50	33, 35		Yes, page 116
G4-51	59		Yes, page 116
G4-52	59		Yes, page 116
G4-53	59		Yes, page 116
G4-54		Information in this indicator is protected by a confidentiality clause, as it involved security issues.	Yes, page 116
G4-55		Information in this indicator is protected by a confidentiality clause, as it involved security issues.	Yes, page 116
<b>Ethics and integrity</b>			
G4-56	11, 32		Yes, page 116
G4-57	35, 37		Yes, page 116
G4-58	32		Yes, page 116

## SPECIFIC STANDARD DISCLOSURES

Disclosures on management approach and indicators	Page	Omissions	External assurance
<b>CATEGORY: ECONOMIC</b>			
<b>Material Aspect: Economic Performance</b>			
G4-DMA	43, 44, 45		Yes, page 116
G4-EC1	47, 48		Yes, page 116
G4-EC2	23	Currently unavailable. The financial implications and risks reports will be improved within two years, thanks to projects already underway.	No
G4-EC3	66		No

## SPECIFIC STANDARD DISCLOSURES

Disclosures on management approach and indicators	Page	Omissions	External assurance
<b>CATEGORY: ECONOMIC</b>			
<b>Material Aspect: Economic Performance</b>			
G4-EC4	Since October 2013, Itaipu has received periodic transfers from the National Scientific and Technological Development Fund for the development of the project "Electric/ethanol hybrid bus" on the Brazilian side of the company. The financial amount, with a total value of BRL 10 million, is the result of an agreement signed with the Study and Projects Funding Agency (Finep) for a term of 36 months.		No
<b>Material Aspect: Indirect Economic Impacts</b>			
G4-DMA	50, 71, 72, 73		No
G4-EC7	68, 71, 74, 78, 86		No
G4-EC8	50, 69, 71, 74, 101		No
<b>CATEGORY: ENVIRONMENTAL</b>			
<b>Material Aspect: Energy</b>			
G4-DMA	89, 90, 91		Yes, page 116
G4-EN3	89, 90, 91		Yes, page 116
G4-EN4	91 To maintain comparability among publications, data was related in kilometers. For the next Report, information will be provided in GJ.		No
G4-EN5	The most suitable ration will be between the energy used and the energy generated by the company, the result of which is not very significant, having been registered at less than 0.1 in recent years.		No
G4-EN6	89, 90, 91		Yes, page 116
G4-EN7		Not applicable. Itaipu is a renewable energy generator.	No
<b>Material Aspect: Water</b>			
G4-DMA	87		No
G4-EN8	87, 88		No
G4-EN9	87 By capturing an average 800 m <sup>3</sup> /day of water, Itaipu does not significantly affect the water sources, in accord with National Water Agency (ANA) Resolution n° 1175 (9/16/2013), which classifies deviation above 19,000 m <sup>3</sup> /day as expressive. There was no removal in any areas listed in Ramsar Convention.		Yes, page 116
G4-EN10	88		No
<b>Material Aspect: Biodiversity</b>			
G4-DMA	96, 97, 98		Yes, page 116
G4-EN11	96		Yes, page 116
G4-EN12	96		Yes, page 116
G4-EN13	96, 97, 98, 100, 101		No
G4-EN14	99		Yes, page 116

## SPECIFIC STANDARD DISCLOSURES

Disclosures on management approach and indicators	Page	Omissions	External assurance
<b>CATEGORY: SOCIAL</b>			
<b>SUB-CATEGORY: LABOR PRACTICES AND DECENT WORK</b>			
<b>Material Aspect: Training and Education</b>			
G4-DMA	63		Yes, page 116
G4-LA9	63		Yes, page 116
G4-LA10	63, 69		No
G4-LA11	63		No
<b>Material Aspect: Diversity and Equal Opportunity</b>			
G4-DMA	65		Yes, page 116
G4-LA12	57		Yes, page 116
<b>SUB-CATEGORY: SOCIETY</b>			
<b>Material Aspect: Anti-corruption</b>			
G4-DMA	32		Yes, page 116
G4-SO3		Currently unavailable. Although Itaipu has channels and procedures to prevent and minimize risks related to corruption, said measure is yet to be undertaken. Studies on the subject are being developed and they are expected to be completed in 2017.	Yes, page 116
G4-SO4	34, 52 There was no training for the upper level of governance, which is expected to occur in 2016.		Yes, page 116
G4-SO5	There were no cases or lawsuits brought against Itaipu or its employees involving corruption.		Yes, page 116



## ADDITIONAL INFORMATION - NON-MATERIAL ASPECTS

### SPECIFIC STANDARD DISCLOSURES

Disclosures on management approach and indicators	Page	Omissions	External assurance
<b>CATEGORY: ECONOMIC</b>			
<b>Market Presence</b>			
G4-EC5	The lowest salaries, from men and women, are 300% higher than the national minimum in all offices.		No
G4-EC6	27, 55		No
<b>Procurement Practices</b>			
G4-DMA	52		No
G4-EC9	52, 53		No
<b>CATEGORY: ENVIRONMENTAL</b>			
<b>Materials</b>			
G4-DMA	93		No
G4-EN1	93 Itaipu does not possess equipment containing polychlorinated biphenyl (PCB).		No
G4-EN2	93		No

## SPECIFIC STANDARD DISCLOSURES

Disclosures on management approach and indicators	Page	Omissions	External assurance
<b>CATEGORY: ENVIRONMENTAL</b>			
<b>Emissions</b>			
G4-DMA	92		No
G4-EN15	92		No
G4-EN16	92		No
G4-EN17	92		No
G4-EN18	92		No
G4-EN19	92		No
G4-EN20		Not applicable. Itaipu's emissions for this indicator are not significant.	No
G4-EN21		Not applicable. Itaipu's emissions for this indicator are not significant.	No
<b>Effluents and Waste</b>			
G4-DMA	87, 94		No
G4-EN22	87, 89		No
G4-EN23	95 Itaipu does not possess equipment containing polychlorinated biphenyl (PCB).		No
G4-EN24	There were no significant spills in 2014.		No
G4-EN25	No harmful residue was transported internationally.		No
G4-EN26	Now water body used by Itaipu for capturing or disposal is located in wet lands listed on the Ramsar Convention. The company did not conduct any drainage of any nature or extent. Office effluents are treated by the concessionaire responsible for the collection and treatment of sewage and do not represent a significant volume. Disposals from the plant facilities, in Foz, are sent to the Pomba Cuê River, the flow and volume of which is sufficient to mitigate any negative environmental impact resulting from disposal.		No
<b>Products and Services</b>			
G4-EN27	23, 83, 86, 100, 101		No
G4-EN28		Not applicable. Itaipu is a electric energy generator.	No
<b>Compliance</b>			
G4-EN29	83		Yes, page 116

## SPECIFIC STANDARD DISCLOSURES

Disclosures on management approach and indicators	Page	Omissions	External assurance
<b>CATEGORY: ENVIRONMENTAL</b>			
<b>Transport</b>			
G4-EN30	91		No
<b>Overall</b>			
G4-EN31	83, 85		Yes, page 116
<b>Supplier Environmental Assessment</b>			
G4-EN32	52		No
G4-EN33	52		No
<b>Environmental Grievance Mechanisms</b>			
G4-EN34	35		Yes, page 116
<b>CATEGORY: SOCIAL</b>			
<b>SUB-CATEGORY: LABOR PRACTICES AND DECENT WORK</b>			
<b>Employment</b>			
G4-DMA	55		Yes, page 116
G4-LA1	58		Yes, page 116
G4-LA2	55		No
G4-LA3	56		No
<b>Labor/Management Relations</b>			
G4-LA4		The Collective Bargaining Agreement (ACT) signed between Itaipu and trade unions states that significant changes or important decisions must be notified at least four weeks in advance.	No
<b>Occupational Health and Safety</b>			
G4-DMA	60, 61		Yes, page 116
G4-LA5	61, 62		No
G4-LA6	61	Currently unavailable. Data per region was not reported. Improvements in the management system are being implemented and this information will be available within two years.	Yes, page 116
G4-LA7	61, 68	Currently unavailable. Not reports were made on the number of employees with a high rate or high risk of occupational illnesses. Improvements in the management system are being implemented so that information is available within two years.	No
G4-LA8	62		No
<b>Equal Remuneration for Women and Men</b>			
G4-DMA	59		No
G4-LA13	60		No

# GRI Content Index

## SPECIFIC STANDARD DISCLOSURES

Disclosures on management approach and indicators	Page	Omissions	External assurance
<b>SUB-CATEGORY: LABOR PRACTICES AND DECENT WORK</b>			
<b>Labor Practices Grievance Mechanisms</b>			
G4-LA16	35	Currently unavailable. In 2014, there were 86 labor claims filled with authorized legal bodies and eight were brought to a close in the same year. Proceeding continue for the remainder. It was not possible to cite the number of claims prior to 2014 that were solved by the end of the year, which should be resolved in the following report.	Yes, page 116
<b>SUB-CATEGORY: HUMAN RIGHTS</b>			
<b>Investment</b>			
G4-HR1		Not applicable, as Itaipu does not invest in other companies or projects with other organizations such as joint ventures, partnerships, etc.	
G4-HR2	64		No
<b>Non-discrimination</b>			
G4-HR3	35	Confidentiality restrictions. The corrective measure was not reported to ensure the privacy of those involved.	Yes, page 116
<b>Child Labor</b>			
G4-DMA	52		No
G4-HR5	52		No
<b>Forced or Compulsory Labor</b>			
G4-DMA	52		No
G4-HR6	52		No
<b>Security Practices</b>			
G4-HR7	64		No
<b>Indigenous Rights</b>			
G4-HR8		There were no reports of infringement of the rights of indigenous peoples in 2014, ad with previous years.	No
<b>Assessment</b>			
G4-HR9		In 2013, Itaipu contracted a consultancy which will completed its human rights assessment by 2015.	No
<b>Human Rights Grievance Mechanisms</b>			
G4-HR12	35, 37	Currently unavailable. Claims opened and solved in 2014 and prior to this will be available in the next report.	Yes, page 116
<b>SUB-CATEGORY: SOCIETY</b>			
<b>Local Communities</b>			
G4-DMA	71, 72, 73		Yes, page 116
G4-SO1	68, 71, 74, 86, 100		Yes, page 116
G4-SO2	31		No

## SPECIFIC STANDARD DISCLOSURES

Disclosures on management approach and indicators	Page	Omissions	External assurance
<b>SUB-CATEGORY: SOCIETY</b>			
<b>Compliance</b>			
G4-SO8		There are no financial records of fines of a significant value or non-monetary sanctions resulting from non-conformities with laws and regulations. Sanctions that surpass 1% of the company's Net Operational Revenue (NOR) are considered significant, in accord with guidelines from Eletrobras.	Yes, page 116
<b>Supplier Assessment for Impacts on Society</b>			
G4-DMA	52		No
G4-SO9	52		No
G4-SO10	52	Currently unavailable. The impact of chain of suppliers was not reported. However, the company is enhancing oversight of the supply chain and such information will be available within two years.	No
<b>Grievance Mechanisms for Impacts on Society</b>			
G4-SO11		Of the manifestation registered on the communication channels, there were no cases that were classes as having an impact o society.	No
<b>SUB-CATEGORY: PRODUCT RESPONSIBILITY</b>			
<b>Marketing Communications</b>			
G4-PR6		Not applicable, as Itaipu is a company that produces clean and renewable energy.	No
G4-PR7		There were no cases of non-conformity.	No



## SPECIFIC STANDARD DISCLOSURES FOR THE ELECTRIC UTILITIES SECTOR

Disclosures on management approach and indicators	Page	Omissions	External assurance
<b>Organizational Profile</b>			
G4-EU1	13		Yes, page 116
G4-EU2	16		Yes, page 116
G4-EU3		Not applicable - Itaipu does not have direct end customers like homes, industries and commercial facilities.	No

# GRI Content Index

## SPECIFIC STANDARD DISCLOSURES FOR THE ELECTRIC UTILITIES SECTOR

Disclosures on management approach and indicators	Page	Omissions	External assurance
<b>Organizational Profile</b>			
G4-EU4		Not applicable - Itaipu is not an electricity transmission or distribution company. However, it possesses 75.2 km of 500 kV power lines used to connect the substations that carry electricity to the electric systems of Brazil and Paraguay. Additionally, the plant has an internal distribution system of 13.8 kV that supplied offices and attached facilities within the plant area, including the ITP.	No
G4-EU5	Itaipu does not participate in the carbon credit market and does not have any projects that would permit the possession of these credits. Reforestation of the reservoir protection areas and the biological sanctuaries have been part of the company's plans since the start of activities, regardless of earning carbon credits.		No
<b>Availability and Reliability</b>			
G4-DMA	19	Currently unavailable. The indicator was partially reported and the company intends to state the value of the investment next year.	Yes, page 116
G4-EU10	Itaipu has already reached its maximum installed capacity.		Yes, page 116
<b>Demand-Side Management</b>			
G4-DMA		Not applicable - Itaipu is a electricity generation company and does not develop programs for managing demand. These initiatives are developed by Eletrobras and distribution companies.	Yes, page 116
<b>Material aspect: Research and Development</b>			
G4-DMA	21, 22, 23, 96		Yes, page 116
<b>Nuclear Plant Decommissioning</b>			
G4-DMA		Not applicable – Itaipu has no nuclear units.	No
<b>System Efficiency</b>			
G4-EU11		Not applicable – Itaipu has no thermoelectric units.	No
G4-EU12		Not applicable – Despite owning transmission equipment to connect to the energy distribution system, Itaipu does not operation within the distribution segment.	No
<b>Material aspect: Biodiversity</b>			
G4-EU13	84, 96, 100		Yes, page 116
<b>Employment</b>			
G4-DMA	62, 63		Yes, page 116
G4-EU15	66		No



## SPECIFIC STANDARD DISCLOSURES FOR THE ELECTRIC UTILITIES SECTOR

Disclosures on management approach and indicators	Page	Omissions	External assurance
<b>Employment</b>			
G4-EU17		Not applicable. Itaipu does not have employees that provide services to Itaipu in activities directly linked to the generation of energy.	No
G4-EU18	62		No
<b>Local Communities</b>			
G4-DMA		Not applicable – Itaipu is a fully installed development and as such does not generate any dislocations.	No
G4-EU22	72	Not applicable – Itaipu is a fully installed development and as such does not generate any dislocations.	No
<b>Disaster/Emergency Planning and Response</b>			
G4-DMA	20		No
<b>Access</b>			
G4-DMA		Not applicable – Itaipu does not have direct end consumers, as all the generated energy is sold to Eletrobras and Ande, responsible for delivering energy to distributors.	No
G4-EU26		Not applicable – Itaipu is not active in the distribution of energy.	No
G4-EU27		Not applicable – Itaipu is not active in the distribution of energy.	No
G4-EU28		Not applicable – Itaipu is not active in the distribution of energy.	No
G4-EU29		Not applicable – Itaipu is not active in the distribution of energy.	No
G4-EU30	20		No
<b>Provision of Information</b>			
G4-DMA		Not applicable – Itaipu is not an electricity distributor, as such it does not deal directly with end consumers.	No
<b>Customer Health and Safety</b>			
G4-EU25	There were no records of accidents, deaths or illness among people from the community.		No

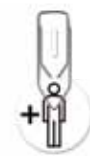


# Global Compact Principles



## 1. Businesses should support and respect the protection of internationally proclaimed human rights

- Itaipu participates in national and international organizations and/or endorses human rights initiatives.
- Maintains complaint channels such as the Ombudsman Office, the Contact Us and the Ethics Committee
- Offers its employees benefits such as medical, dental and educational assistance.
- Stimulates the action of committees designed to ensure the health and safety of workers.
- Adopts social clauses in suppliers' contracts.
- Develops the Reviving Program.
- Develops the Volunteer Force Program.
- Develops the Gender Equality Incentive Program.
- Develops the Initiation and Incentive to Work program.
- Created the Ministro Costa Cavalcanti Hospital and participates in its management.
- Develops the Health on the Border Program.
- Performs actions that encourage the use and production of Medicinal Plants.
- Develops the Sustainability of Indian Communities Project.
- Performs improvements in a *Quilombola* community.
- Sponsors actions of social reintegration of ex-convicts and encourages their hiring by supplier companies.
- Develops the Child and Adolescent Protection Program.
- Supports initiatives to fight against sexual exploitation of children and adolescents.



## 2. Businesses should make sure they are not complicit in human rights abuses

- Performs an annual seminar on Human Rights for security professionals (employees and employees of companies that provide services to Itaipu).
- In the bidding processes, Itaipu includes social clauses on contracting young people, forced labor or slave labor and respecting gender equality.
- Determines that the contracted service providers should prove the payment of wages, overtime, thirteenth salary, advance notice and other charges; the contract may be terminated in case of breach.



## 3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining

- All employees have union representation and are covered by the Collective Bargaining Agreement.



## 4. Businesses should uphold the elimination of all forms of forced and compulsory labour

- Develops the Initiation and Incentive to Work program.
- Develops the Child and Adolescent Protection Program.
- Develops the Program for Child and Adolescent Protection Program.
- Includes social clauses on the supplier selection process.
- Determines that the contracted service providers should prove the payment of wages, overtime, thirteenth salary, advance notice and other charges; the contract may be terminated in case of breach.
- Requires the Statement on Knowledge and Fulfillment of Social Commitments of its suppliers.



## 5. Businesses should uphold the effective abolition of child labour

- Uses social criteria when selecting suppliers.
- Develops the Child and Adolescent Protection Program.
- Requires the Statement on Knowledge and Fulfillment of Social Commitments of its suppliers.



#### 6. Businesses should uphold the elimination of discrimination in respect of employment and occupation

- Has selection processes for the formation of the staff since 2005.
- Adopts wage policies and education programs that are independent of gender.
- Has a Code of Conduct.
- Has Policies and Guidelines for Gender Equality since 2011 and a Committee of Gender Equality.
- Has a Committee for People with Disabilities since 2014.



#### 7. Businesses should support a precautionary approach to environmental challenges

- Develops the Cultivating Good Water program, with the participation of many partners - participative management.
- Has goals for reducing energy and fossil fuels consumption.
- Performs proper disposal of waste and uses recycled materials.
- Develops the Environmental Education Program.
- Restores and conserves water resources, riparian areas around the reservoir and in the Paraná Watershed 3 (BP3) region.
- Restores and conserves aquatic ecosystems, including fishery monitoring in the reservoir
- Renewable Energy Platforms
- Electric Vehicle Project.



#### 8. Businesses should undertake initiatives to promote greater environmental responsibility

- Sustainability Policy and Sustainability Management System.
- Keeps the Itaipu Technological Park Foundation (ITP).
- In addition to the programs, projects and actions carried out in the social and environmental areas, the company acts as an articulator to formalize partnerships with governments, third sector and public and private companies in actions aimed at the socio-economic and sustainable development of the region of influence.



#### 9. Businesses should encourage the development and diffusion of environmentally friendly technologies

- Keeps the Itaipu Technological Park Foundation (ITP).
- Through the Renewable Energy Platform, conducts research with emphasis on Distributed Biogas Generation.
- Encourages research and development of mobility solutions, especially prototypes of electric vehicles and their components.
- Adopts computer technologies that reduce the use of paper.



#### 10. Businesses should work against corruption in all its forms, including extortion and bribery

- Has a Code of Conduct and maintains complaint channels such as the Ombudsman Office and Ethic Committee.
- Adherence to Sarbanes-Oxley Act (SOX)
- Submits procedures and documents to the assurance of Internal Audit and external companies' audit.
- Uses management information systems
- Follows the General Rule for Bids (NGL), which governs the hiring of services and purchase of products and conducts binational electronic bids.



# Technical Information

## Independent Auditors' Limited Assurance Report <sup>[G4-32]</sup>

**To the Supervisory Board and other stakeholders of Itaipu Binacional Curitiba - PR**

### Introduction

We were hired by Itaipu Binacional ("Itaipu" or "Company") to apply limited assurance procedures to the information disclosed in the 2014 Sustainability Report of Itaipu Binacional, related to the year ending on December 31<sup>st</sup>, 2014.

### Itaipu's Administrative Responsibilities

The management of Itaipu is responsible for preparing and properly presenting the information contained in the 2014 Sustainability Report according to the Sustainability Report Guidelines issued by the Global Reporting Initiative – GRI (GRI-G4), along with the GRI Electric Utilities Sector Supplement and the internal controls the company deems necessary for such information to be prepared free of relevant distortions, whether caused by fraud or error.

### Independent auditors' responsibilities

Our responsibility is to provide a conclusion about the information contained in the 2013 Sustainability Report, based on our limited assurance work performed according to Technical Notice (Comunicado Técnico - CT) 07/2012, approved by the Brazilian Federal Accounting Board, and prepared based on NBC TO 3000 (Assurance Engagements other than Audits and Reviews), issued by the Brazilian Federal Accounting Board – CFC, which is equivalent to the international ISAE 3000 standard, issued by the International Federation of Accountants, applicable to non-financial historical information. Those standards demand compliance with ethical requirements, including independence requirements, and that the efforts are carried out in order to provide limited assurance that the information disclosed in the 2014 Sustainability Report, taken as a whole, is free of relevant distortions.

Limited assurance work carried out according to NBC TO 3000 (ISAE 3000) mostly comprises asking questions to the Company's

management and other staff involved in the preparation of the information contained in the 2014 Sustainability Report, as well as the use of analytical procedures to obtain evidence enabling us to reach a conclusion in the form of limited assurance about the information taken as a whole. Additionally, limited assurance engagements also require the use of additional procedures when independent auditors become aware of issues leading them to believe the information contained in the 2014 Sustainability Report may present relevant distortions when taken as a whole.

The procedures were chosen based on our understanding of the aspects related to the compilation, materiality and presentation of the information contained in the 2013 Sustainability Report, other work-related circumstances, and our consideration about areas and processes associated with the material sustainability information disclosed in the 2013 Sustainability Report, where relevant distortions may be found. The procedures included:

- (a) planning the work, considering the materiality of the aspects and topics for Itaipu activities, the relevance, volume of quantitative and qualitative information, and the operating systems and internal controls on which the preparation of the information contained in the 2014 Sustainability Report was based; This analysis defined the indicators to be tested in detail;
- (b) understanding and analysis of the information published in relation to the management method for material aspects;
- (c) analysis of process for preparation of the 2014 sustainability Report and the structuring of its content, based on the Principles of Content and Quality from the Sustainability Report Guidelines from the Global Reporting Initiative - GRI (GRI-G4);
- (d) evaluation of the sampled non-financial indicators:
  - understanding the calculation methodology and procedures to compile the indicators, through interviews with the managers responsible for preparing the information;

- applying analytical procedures to quantitative information and asking about qualitative information and their correlation to the indicators disclosed in the information contained in the 2014 Sustainability Report;
- analysis of evidence supporting the disclosures of information;
- visits to Itaipu units and offices for the application of these procedures, as well as items (b), (c) and (d);
- analyzing the reasonableness of justifications for omissions of performance indicators associated to aspects and topics pointed out as matter in the analysis of materiality for the company.

We believe the information, evidence and results obtained by our efforts are sufficient and appropriate to validate our conclusion in the limited form.

#### **Scope and limitations**

The procedures used in a limited assurance engagement are substantially less comprehensive than those used in a reasonable assurance engagement. Consequently, they do not enable us to be certain we have learned about all the topics that would have been identified in a reasonable assurance engagement meant to issue an opinion. In case we had worked with the purpose of issuing an opinion, we may have identified other topics and occasional distortions that might exist in the information contained in the 2014 Sustainability Report.

Non-financial data are subject to have more inherent limitations than financial data, given the type and diversity of the methods used to obtain, calculate or estimate such data. Qualitative interpretations regarding data materiality, relevance and accuracy are subject to individual assumptions and judgments. Additionally, the scope of our work did not include any work on data reported for previous periods, in the evaluation of the adequacy of its

policies, practices and performance in sustainability, or regarding future estimates.

#### **Conclusion**

Based on the procedures used, as described in this report, we became aware of nothing that might have led us to believe the information contained in the 2014 Sustainability Report of Itaipu Binacional, had been compiled, in all relevant aspects, in a manner other than in accordance with the Sustainability Report issued by the Global Reporting Initiative – GRI (GRI-G4), along with the Electric Utilities Sector Supplement, and the records and files on which its preparation was based.

São Paulo, June 29<sup>th</sup>, 2015.

KPMG Risk Advisory Services Ltda.

CRC-SP-23233/O-4



Eduardo V. Cipullo

Accountant CRC-SP-35597/O-6

# Technical Information

## Focal Points

Since Itaipu adopted the Global Reporting Initiative (GRI) Guidelines for the preparation of the Sustainability Report, in 2007, the “Focal Points of Sustainability” have played a part in the definition of materiality, providing data for indicators and reviewing the document prior to publication.

### *Chief Administrative Officer*

Adriano Bardou; Antônio Rizatti; Carlos Eduardo Tavares; Eliane Ventura; Genésio Engel; Henrique Vital; Júlio César Maia; Paulo César Fernandes; Paulo Cezanoski; Rodrigo César Cardoso; Rodrigo Luiz de Cardoso; Rogério Miranda; Rosana Cordeiro.

### *Chief Coordination Officer*

Anderson Braga; Ben-Hur Stefano; Caroline Henn; Emerson Suemitsu; Janine Groenwold; Reinaldo Santos; Rodrigo Cupelli; Sérgio Angheben; Valéria Borges; Vinícius Ortiz.

### *Chief Financial Officer*

Adriano Hamerschmidt; Alexandre Mugnaini; Eduardo Guerra; Fabrício Rocha; Gilmar Cândido Alves; Grace Tomoko; Luiz Henrique Nascimento; Mauro Mateus Sonego; Rafael Pasini; Simone Rogoginski.

### *Brazilian General Director*

Cleverson Batista; Daniel Reis; Fabiane Ariello; José Crassuski; Lígia Neves; Lúcia Mascarello; Luciana Lobo; Márcio Bortolini; Márcio Massakiti; Maristela Beal; Natália Roter; Tania Solagna.

### *Chief Legal Officer*

Ângela Derengoski; Gianna Loss; José Acácio Ferreira; Marcos Ribeiro.

### *Chief Technical Officer*

David Krug; Luciana Piccione; Vanessa Lewrentz; Victor Hugo Filho.

### *Itaipu Technology Park Foundation (ITP)*

Cláudio Costa and Daniela Veronezi.

### *Itaipu-Brazil Social Security and Welfare (Fibra)*

Malton Moroz and Flórcio Medeiros.

### *Itaipu Health Foundation (Hospital Ministro Costa Cavalcanti)*

Rogério Bohm, Elielci Luiza Borba and Silvana Ferreira.



### ***General coordination***

Social Responsibility Advisory Office  
Helôisa Covolan

### ***Executive coordination***

Bernardo Soares and Mônica Dantas Thedesco

### ***GRI Technical Consultancy***

Focus Training and Consulting

### ***Content preparation***

Komuniki - Soluções em Comunicação

### ***Graphic concept***

Competence Comunicação e Marketing Ltda

### ***Publication***

Social Communication Office

### ***Contact*** <sup>[G4-31]</sup>

Social Responsibility Advisory Office  
Telephone n°: +55 (41) 3321.4415 and +55 (45) 3520.5921  
E-mail: [responsabilidadesocial@itaipu.gov.br](mailto:responsabilidadesocial@itaipu.gov.br)

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