



SUSTAINABILITY REPORT

2016

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18 years
in the industry

13,415
employees

31 million
people directly
served

7 million
tons of waste
collected annually

R\$ 1.4 billion
net income

5,400 and **104**
private and public
clients

ESTRE GROUP COMPANIES



AFFILIATED COMPANIES





SUSTAINABILITY REPORT

2016

LONG-TERM COMMITMENT TO **THE ENVIRONMENT**

Eighteen years ago, waste management in Brazil was completely different. At the time, I was working on a major logistics project, in which one of the guiding principles was that the shipping of something only makes sense if it adds some value to the overall process. Then I realized that transporting waste did not add any value, but rather raised costs. There was a clear opportunity to look at waste management from a different perspective.

In Brazil, this industry understood little about the issues surrounding waste management and was behind the curve in terms of technology. An appropriate environmental approach and communication strategy were needed to

highlight the sustainability of the business from an environmental and economic standpoint.

The realization of this dream began to take shape with our first landfill in Paulinia (SP), in the region of Campinas, which began operating in 1999. With this landfill, Estre was born. Today we can say that we were trailblazers and helped the waste management industry evolve, an achievement that fills me with pride.

Over these 18 years, environmental awareness has grown in every segment of society. Nevertheless, with the technological advances in the sector, there are still many challenges. To give you an idea, over 40% of solid waste is disposed improperly, a



Sustainability is a part of every activity at Estre and I can say that the company has never backed away from its commitment to the environment, regardless of the challenges that this choice involves.”

figure that shows the long road ahead and the size of the business opportunities in Brazil.

Sustainability is a part of every activity at Estre and I can say that the company has never backed away from its commitment to the environment, regardless of the challenges that this choice involves. An achievement of this magnitude is primarily due to the work of each of our employees, who incorporate the company's vision and values into innovative environmental solutions, in a safe and responsible manner.

Valuing our people has always allowed for the recognition of the professionalism and discipline of our employees. Listening attentively to the people and communi-

ties that reside in the areas surrounding our operations also contributed to this.

In 2016, we signed the United Nations Global Compact, the world's most important voluntary initiative for corporate responsibility. This commitment is another opportunity to show that our actions, plans and businesses are always in tune with our vision of innovation and competitiveness, combined with a sustainable future for the country and the planet.

Wilson Quintella Filho
Founder and Chairman
of the Board

GROWING WITH ETHICS, INNOVATION AND SUSTAINABILITY



This balance between investments, efficiency and sustainability will allow us to continue on our path towards our vision of being a leader and benchmark in the Brazilian environmental solutions market, while always promoting innovative, ethical and sustainable solutions.”

Even in an adverse macroeconomic scenario, last year’s performance met the main strategic priority of our company: creating value for clients, shareholders and employees, through the creation of innovative environmental solutions for society. The volume of waste managed by Estre grew 4.3% during a time in which the economy shrank by 3.6%.

Focusing on innovation, ethics and quality, Estre developed and conquered new public-sector customers, such as the cities of Bauru and Aracaju, as well as several major customers in the private sector, such as Apple. We also had the discipline necessary to reduce costs, enabling us to offer servi-

ces not only of global excellence, but also with the best prices in the industry.

Our strategy for sustainable growth was based on investments in new landfills and technologies, including the first recyclable waste sorting plant using German technology by STADLER, the world’s most advanced. Consequently, the Paulínia Waste Sorting Plant will be able to process 500 metric tons of urban solid waste daily, without the need for prior separation of recyclable and organic waste. We also invested in energy generation using biogas, which will expand our capacity by more than 40%.

Our continuous investment in new technologies, with gro-

wth in recyclable recovery, clean energy generation and the opening of new landfills in less developed regions of Brazil, is an integral part of the challenging targets posed by the elimination of dumpsites throughout the country. This balance between investments, efficiency and sustainability will allow us to continue on our path towards our vision of being a leader and benchmark in the Brazilian environmental solutions market, while always promoting innovative, ethical and sustainable solutions. In this scenario, there is a unique opportunity for growth and consolidation in the waste management industry both in Brazil and in Latin America.

In publishing our Sustainability Report, I think it is important to emphasize our subscription to the United Nations Global Compact—the largest corporate responsibility initiative in the world—which is crucial for us to play a leading role in sustainability in our industry. I take this opportunity to reiterate our commitment as a signatory of the Global Compact, and also its dissemination to our stakeholders, in tune with the 2030 Agenda and with the Sustainable Development Goals.

Sergio Pedreiro
CEO

ABOUT THIS REPORT

G4-18, G4-28, G4-30
G4-31, G4-32

The year of 2016 marks the beginning of a process to structure our vision of sustainability with a diagnosis, for which a multidisciplinary workgroup with participants from various departments was created. The primary objective is to align sustainability with business strategy.



Biogas burning facility in Paulínia (SP)

Estre's first sustainability report presents the company's main initiatives and social, environmental and economic performance. This report will also serve as a sustainability management tool for monitoring Estre's progress year after year.

This report was prepared by a company-wide workgroup, and followed **GRI-G4 indicators** and guidelines for the "in accordance" option—even if not in a comprehensive manner, mainly with regard to the preparation of the materiality matrix. It is also designed to report on Estre's progress with the principles of the **Global Compact**, a United Nations initiative to promote the adoption of business practices by organizations in the areas of human rights, labor relations, environment and anti-corruption.

The report is structured around the main topics identified in the process of developing the company's strategic planning for sustainability and reflects Estre's economic, environmental and social impacts, and those that influence assessments and decisions made by stakeholders, shareholders and employees. The topics are:



This sustainability report refers to Estre's activities in 2016 and the company intends to publish it annually.

ESTRE



The company is responsible for sweeping and cleaning the city of Curitiba (PR)

Estre Ambiental S.A. is the largest environmental services company in Brazil. While most still treat trash as the final result in the production or consumption chain, Estre sees trash as the starting point for a series of opportunities.

The company offers waste management solutions: it turns trash into energy with electrical power generation plants that use biogas, and through the production of Refuse-Derived Fuel (RDF). It specializes in reverse manufacturing, a process that reuses more than 85% of electronic waste and also recycles materials from the construction industry. Estre also uses microwave and electrothermal deactivation technologies for the treatment and disposal of healthcare waste. Soil decontamination by bioremediation is another service the company provides. With all these services, Estre reduces waste volume by up to 70% without polluting the air.

Every Estre Waste Management Center has facilities designed to

sort recyclable materials, which contributes to environmental preservation and social inclusion. The company's Waste Management Centers have soil sealing, drainage and percolated liquid treatment (leachate), rainwater collection and a system for removing and burning greenhouse gases—considered one of the most efficient in the world.

Headquartered in the city of São Paulo, state of São Paulo, Estre is a private company with operations in six other states: Alagoas, Bahia, Goiás, Paraná, Rio de Janeiro and Sergipe.

In its 18 years in the industry, Estre has become into Brazil's largest environmental services company, through acquisitions and successful greenfield projects.

OUR VISION







G4-3, G4-4, G4-5,
G4-7, G4-8, G4-56

To lead and serve as a benchmark in environmental solutions for Brazil, while promoting innovation, ethics and sustainability.

OUR MISSION

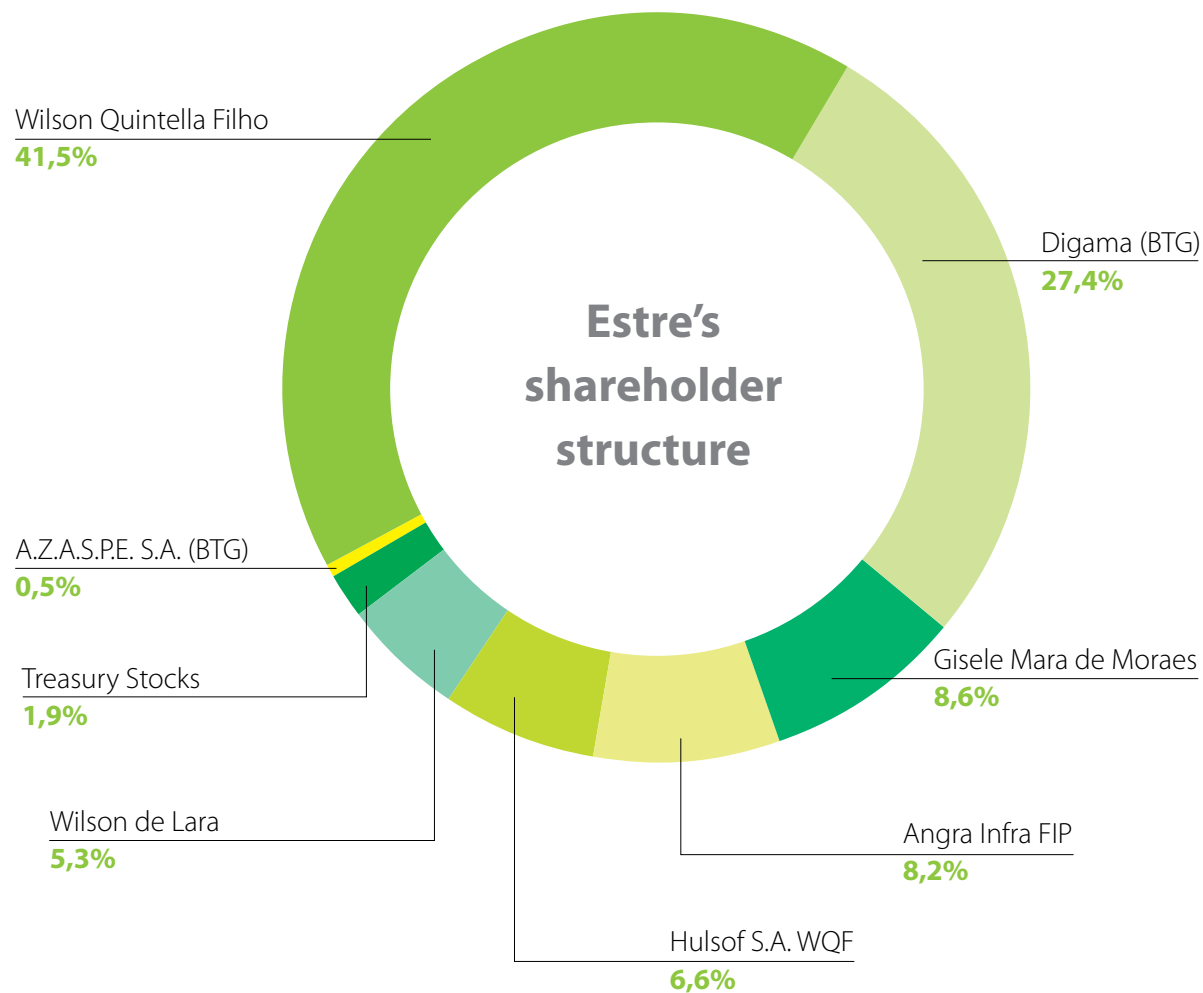
To provide innovative environmental solutions safely, responsibly and ethically, to improve people's quality of life, by promoting awareness and engagement, and creating value for our clients and shareholders.

OUR VALUES

-  We recognize and value our people.
-  We do the right thing, safely.
-  We are passionate about our business
-  We act like owners.
-  We act with humility, simplicity and ethics.
-  We encourage innovation.

CORPORATE GOVERNANCE

Estre is a privately held corporation, governed by its Articles of Incorporation and applicable legal provisions. Its shareholder structure is as follows:



BOARD OF DIRECTORS

The Board of Directors is composed of directors, who may be independent or not, and who are elected and dismissible by the General Meeting, which will appoint a Chairman and a Vice-Chairman, all with a unified term of one year, with the possibility of reelection. The Board of Directors is the company's top advisory and management body. It meets at least once a month at the company's headquarters for regular meetings and whenever deemed necessary in special meetings. The board is an active body which, besides meeting monthly, approves strategic and financial planning annually.

EXECUTIVE BOARD

Estre has five departments:

Department of Landfills and Value Recovery - Alexandre Ferreira Bueno

Department of Collection and Environmental Services - André Luís Lima Meira

Department of Legal Affairs, People and Management, Compliance, Sustainability and Corporate Affairs - Julio César de Sá Volotão

Department of Finance - Roberto Koiti Nakagome

Department of Private Business - Thiago Fernandes

BOARD OF DIRECTORS

2016 Management

Wilson Quintella Filho (President)

Carlos Daniel Rizzo da Fonseca (Vice-president)

Sergio Messias Pedreiro (CEO)

Wilson Ferro de Lara
Otavio de Garcia Lazcano
Alberto Ribeiro Guth
Andreas Yutaka Gruson



CONSISTENT GROWTH

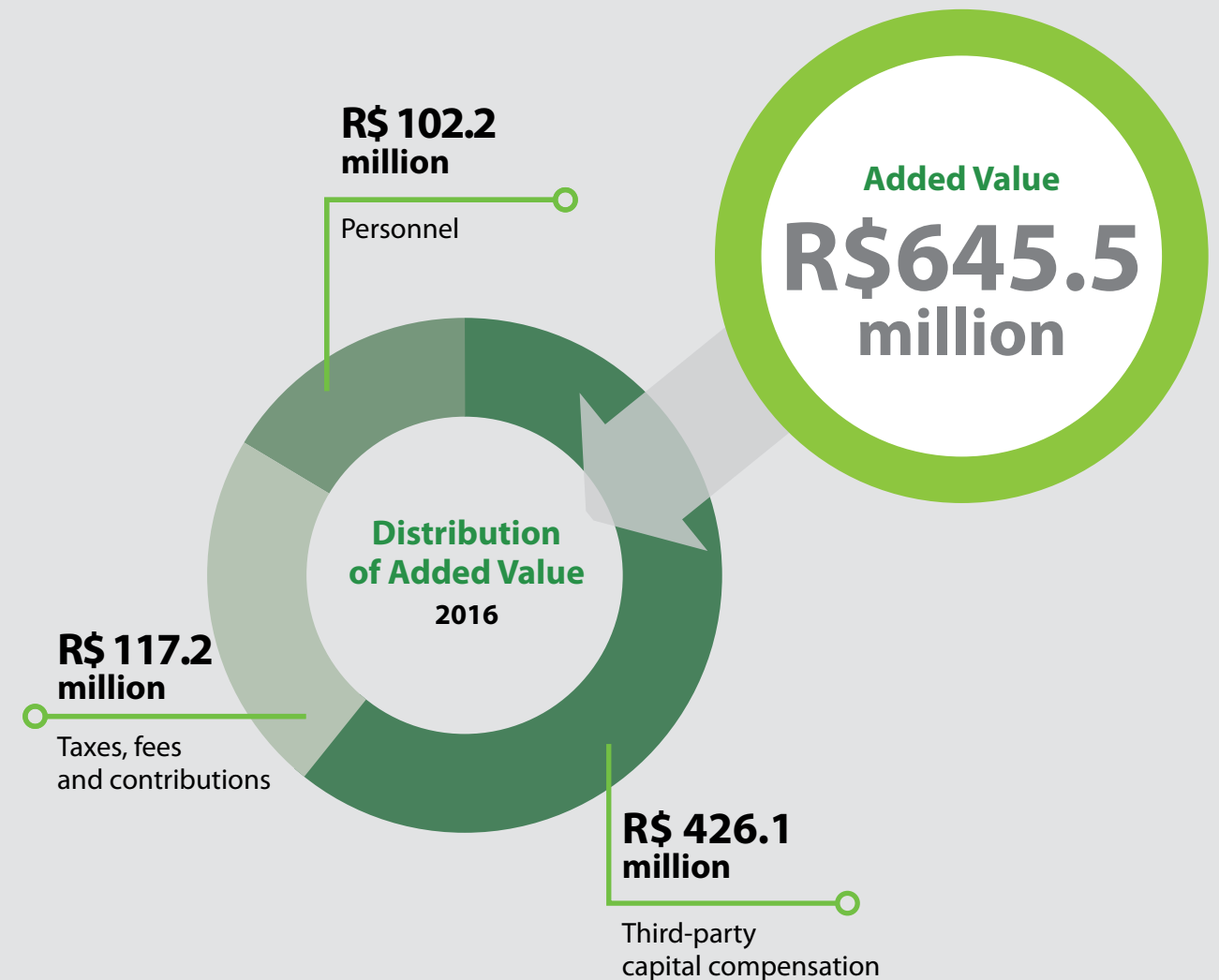
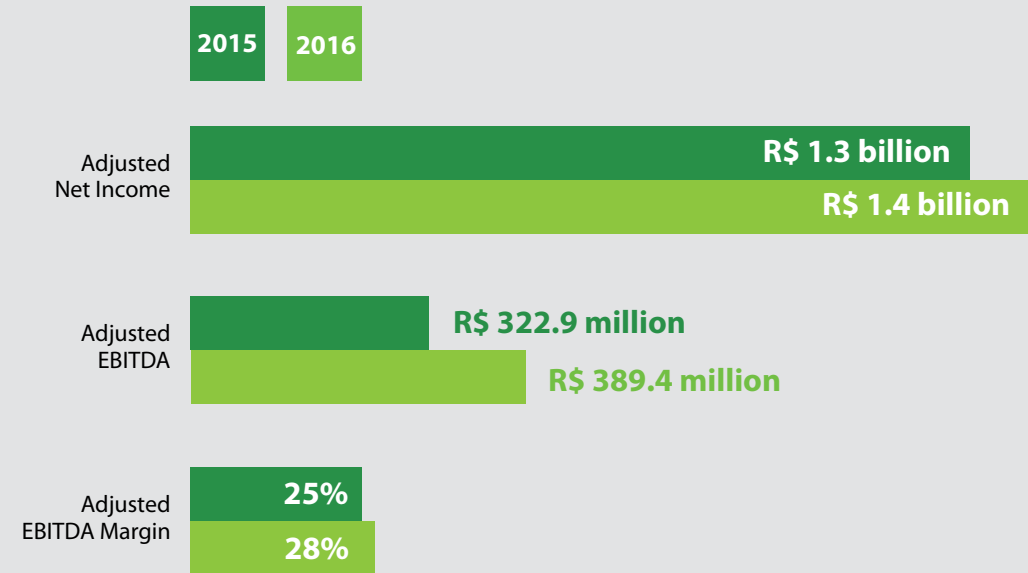
In 2016, Estre continued to stand out as one of the best prepared to maintain its strategic position in a market with huge growth potential, and to capture a significant portion of the unmet demand in the Brazilian waste management industry.

Net Income for 2016 was R\$ 1.4 billion, 7% higher than adjusted net income for 2015, which excludes discontinued operations. Adjusted EBITDA for 2016 came to R\$ 389.4 million, an increase of 21% on Adjusted EBITDA for 2015, mainly due to the company's focus on the efficiency of its operations and cost reductions. We also saw a noteworthy increase in Adjusted EBITDA Margin, which rose from 25% to 28%, comparable to levels of international companies in the industry.

Estre's growth in recent years has been achieved both organically and through acquisitions, allowing for an expansion of its portfolio of

services to cover the entire value chain in the waste management industry. The company leveraged funding for its acquisitions through the issue of debentures in the Brazilian domestic market, with Net Debt of R\$ 1.7 billion in December 2016 and a Net Debt/EBITDA ratio of 4.3x.

With regard to the distribution of added value, the amount of R\$ 645.5 million was distributed to personnel (direct compensation, benefits and FGTS – Employment Insurance Fund), taxes, federal, state and local fees and contributions, as well as third-party capital compensation (interest, rent, etc.).



PRESENT IN 7 BRAZILIAN STATES

G4-8, G4-9



SOLUTIONS FOR **CITIES**

With the enactment of the National Solid Waste Policy (PNRS), city governments are now responsible for winding down dumpsites, with deadlines ranging from 2018 to 2021, depending on the number of inhabitants. However, the dumpsites are already considered irregular, as they contaminate the environment and are places of high social vulnerability. City governments must also put in place other waste treatment and value recovery methods, such as

selective collection and composting for organic waste to reduce the quantity of waste sent to landfills.

Estre seeks out the best alternatives to ensure that waste undergoes value recovery or is sent to its final destination in an environmentally correct manner. The services offered to cities promote municipal sanitation with respect for the environment, encompassing everything from planning to the final disposal of urban solid waste.

A few of our Public Clients:

- City of Aracaju
- City of Bauru
- City of Campinas
- City of Curitiba
- City of Maceió
- City of Ribeirão Preto
- City of São Paulo



Cleaning services



- **Sweeping:** manual or mechanized sweeping of streets and public spaces.
- **Waste Collection:** manual or mechanized waste collection, ensuring correct final disposal, including selective collection in some cities.
- **Public sanitation:** encompasses everything from washing public monuments, including painting sidewalks and curbs, to cleaning and unclogging storm drains.

Treatment



- **Sanitary landfills:** the most appropriate technology for disposal of waste that cannot be reused, which ensures complete environmental protection.
- **Healthcare waste:** collection and treatment to ensure that its final disposal is safe and not a threat to human health or the environment.
- **Wastewater treatment:** treatment of the vast amounts of water contaminated with waste that need to be treated to avoid contaminating the environment.

Value Recovery



- **Construction waste recycling:** mechanized recycling that is able to process different types of construction materials, producing physical properties that are similar to new materials at a more competitive cost.
- **Mechanized Sorting Center:** sending selective collection waste to this center produces economies of scale turning recycling feasible and generate benefits for the public, recycling cooperatives and the industry.

SOLUTIONS FOR COMPANIES

Estre offers solutions for companies, ranging from planning to the final disposal of their waste. These solutions consider the possibilities for value recovery or appropriate disposal for all types of waste, whether industrial, healthcare, construction or other types of waste, ensuring protection for the client's brand and for the environment.

According to the PNRS, companies are responsible for implementing reverse logistics processes for their products and waste, so that these can be reused or correctly disposed of. Companies must look for the best way to manage their waste and to inform their consumers on the proper disposal of products and packaging.

Waste Management



- **Waste Management:** aimed at manufacturing and consumer goods and services companies of various sizes, it encompasses the entire waste chain, from generation up to final disposal, tracking all stages and mapping opportunities for operational improvements and savings.

A few of our Private Clients:

Apple
 Biosev
 Bosch
 Bunge
 Dow
 Eaton
 Ecoponte – Ecorodovias
 Faber Castel
 Goodyear
 Grupo Pão de Açúcar
 HP
 Kimberly-clark
 Latam
 O Boticário
 Pepsico
 Vale
 Volvo
 Votorantim Metais



Value recovery



Decontamination



Treatment

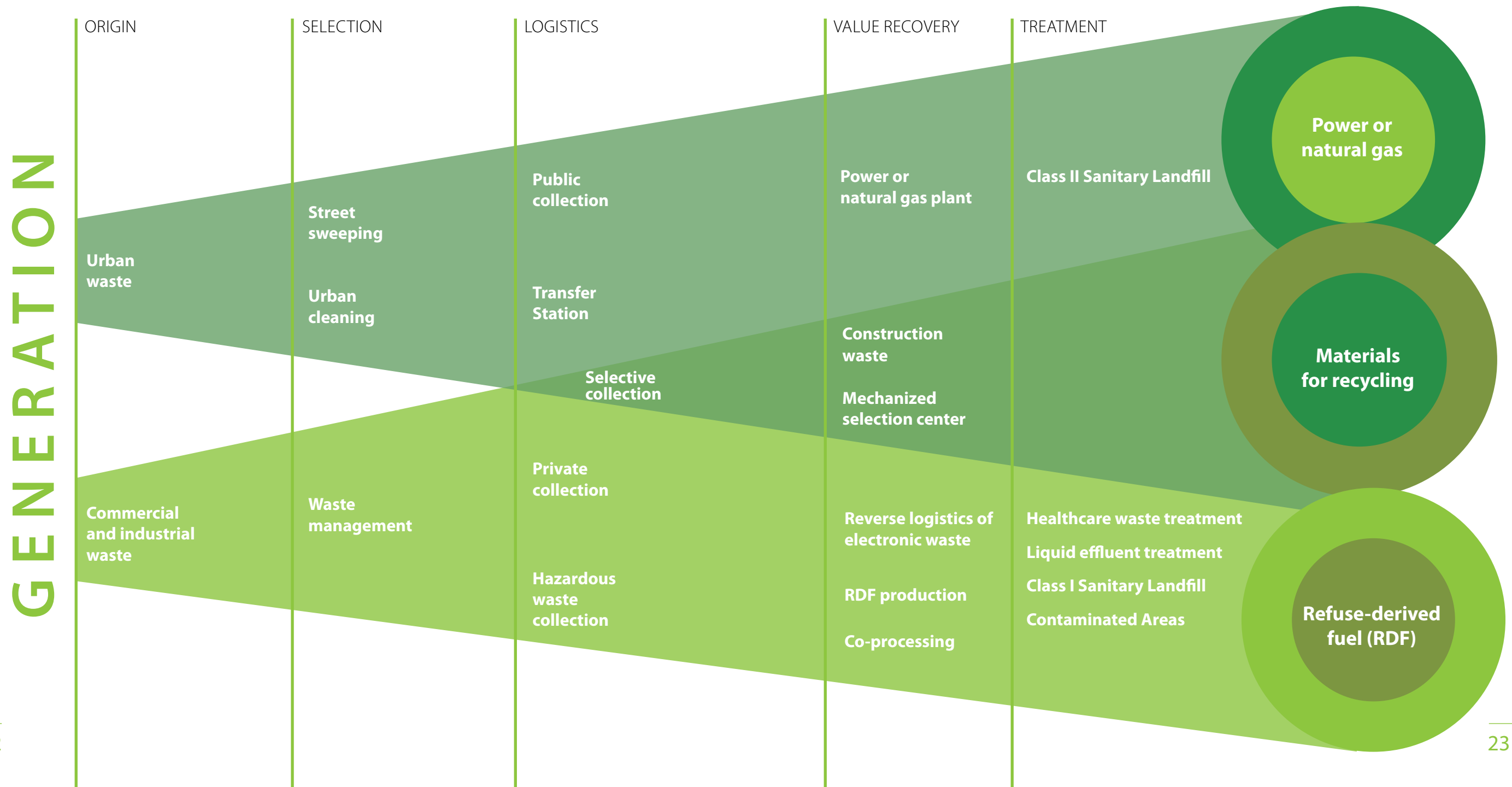


G4-4, G4-8

- **Refuse Derived Fuel (RDF):** non-hazardous urban and industrial solid waste is turned into fuel that may be used to fuel industrial furnaces (cement kilns, boilers and biomass plants) by reusing materials that are not organic or recyclable.
- **Co-processing:** conversion of useless and hazardous waste into fuel, which may be used in cement plants, ensuring the destruction of products and safeguarding brands.
- **Reverse manufacture of electronics:** breakdown of electronics and reuse of materials in three different stages: after manufacturing, after sales, and after consumption.
- **Construction waste recycling:** mechanized recycling that is able to process different types of construction materials, producing physical properties that are similar to new materials at a more competitive cost.
- **Energy:** biogas generated by waste decomposing in sanitary landfills is collected and burned to generate energy, which also contributes to reducing methane gas emissions.
- **Contaminated areas:** diagnosis, monitoring and remediation of contaminated areas. Land with environmental liabilities are, in principle, rendered unusable, but can be reverted through the remediation of contaminated water and soil.
- **Sanitary landfills:** the most appropriate technology for disposal of waste that cannot be reused, which ensures complete environmental protection.
- **Sanitary Landfills for Hazardous Waste – Class I:** landfills that receive hazardous waste (such as flammable, corrosive, reactive, toxic and pathogenic waste) and have even stricter controls to prevent soil, water or air contamination.
- **Healthcare waste:** collection and treatment of this hazardous waste to ensure that its final disposal is safe and not a threat to human health or the environment.
- **Wastewater treatment:** treatment of the vast amounts of water contaminated with waste that need to be treated to avoid contaminating the environment.

SOLUTIONS FOR CITIES AND COMPANIES

The Value Chain involves managing urban, commercial and industrial waste, as well as hazardous waste, through services, logistics, value recovery and final treatment. Este operates in all stages of management of all types of waste with its different brands, providing solutions for cities and companies.



ESTRE TIMELINE



Estre is Established

1998 99 2000 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16



Acquisition of **Guatapar and Jardimplis Waste Management Centers**

Estre Institute is Established

Partnership between Angra Infra Fund and Estre, followed by acquisition of **Veolia's assets**



Acquisition of **Itaborai**

Beginning of operation of the aste value recovery unit (Tyrannosaurus)

Acquisition of **Viva Ambiental**

Subscription to the **UN's Global Compact** and the Business Pact for Integrity and Against Corruption of the **Ethos Institute**



Beginning of the **Paulnia landfill**

1st **ISO 14001** Certification

Attend Ambiental is Established

Beginning of the **Macei, Curitiba and Itaborai landfills**

Acquisition of **Geo Vision**



Establishment of **Estre Energia**



Beginning of **Itapevi and Santos landfills**



Acquisition of **Oxil** (Reverse logistics of electronic waste)

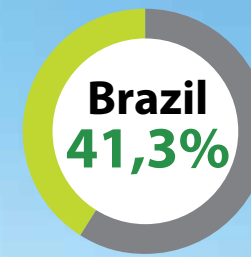


Acquisition of **Cavo** followed by Investment from BTG (beginning of operation in public cleaning)

SOLID WASTE IN BRAZIL

Generation of
waste in Brazil

218,874 t/day



of the waste generated is
improperly disposed of in Brazil



Aerial view of the Paulinia
(SP) sanitary landfill

BRAZILIAN NATIONAL SOLID WASTE POLICY

It took twenty years to enact a waste policy at the national level. This has provided a new outlook for the industry as well as challenges.

After more than 20 years of consideration by congress, Brazil passed a National Solid Waste Policy (Law No. 12,305) on August 02, 2010. With the law, solid waste management in Brazil gained a new framework, focused on the environmental, social, cultural, economic, technological and public health variables related to waste. The core guideline of the PNRS is the non-generation, reduction and treatment of solid waste, as well as the environmentally appropriate final disposal of

waste products.

The core guideline also seeks to exhaust all waste treatment and recovery possibilities using available technological processes up to the point where there are no other options and environmentally appropriate final disposal is necessary. Currently, the amount of waste that is subject to recycling or value recovery is very small, and the vast majority of it goes directly to final disposal, often in unsuitable locations, such as dumpsites, which pollute the environment.

The main challenges of the PNRS include:

- Implementation of **Integrated Waste Management** by municipalities.
- Making **companies responsible** for the reverse logistics of their products.
- **Shared responsibility** for waste generation throughout the entire production cycle.
- Implementation of **Selective Collection** in municipalities.
- **Closure of dumpsites and mandatory construction of sanitary landfills by 2021.**

OVERVIEW OF SOLID WASTE IN BRAZIL

Waste collection
198,750 t/day



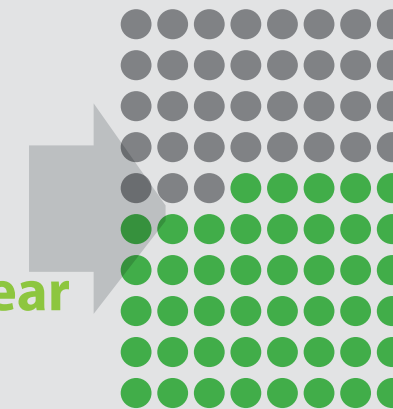
Waste production
1.071 kg/inhab/day



9,2%
of the waste is not served by collection



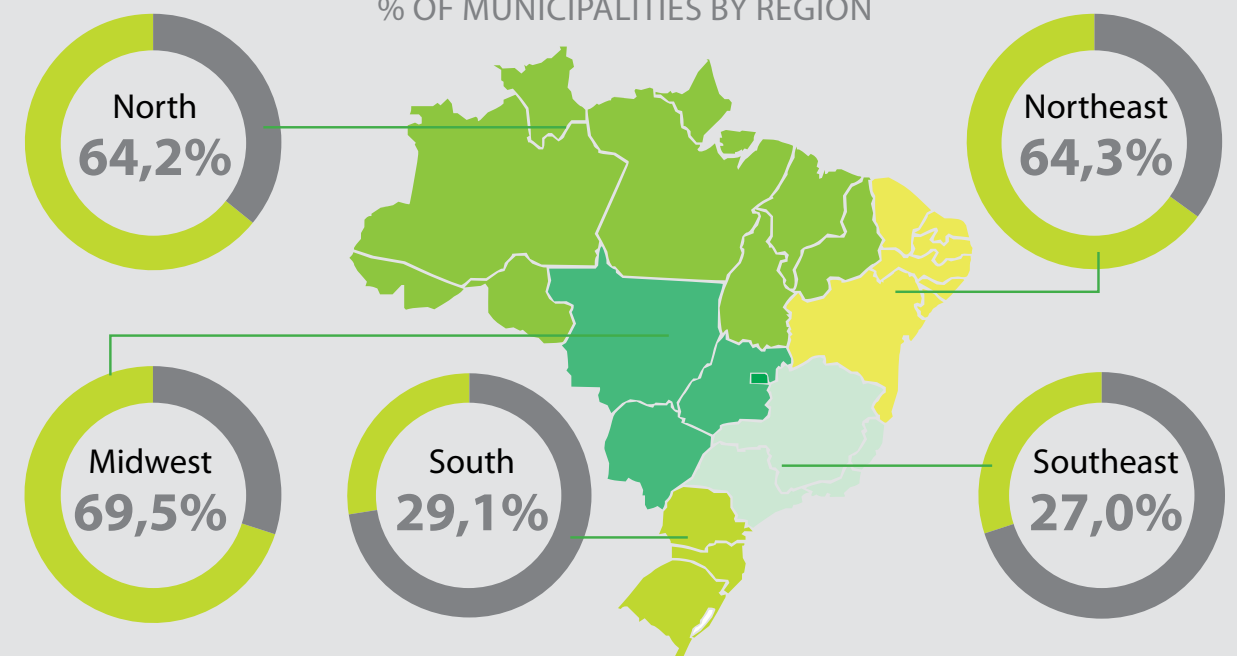
79.9 million metric tons/year of waste generated



30 million metric tons of waste receives improper disposal

42.6 million metric tons, or 58.7% of what is collected, goes to sanitary landfills

IMPROPER DISPOSAL % OF MUNICIPALITIES BY REGION



(SOURCE: ABRELPE "Overview of Solid Waste in Brazil" - 2015)

BRAZILIAN MARKET TRENDS

Estre is strategically positioned and prepared to capture a significant portion of the Brazilian market's unmet demand.

High potential for growth with urbanization and rising incomes

Regulatory changes and the business scenario will have a positive impact on the industry

Environmental awareness, technology and commodity prices

- ✦ Increase in the generation of all types of waste as a result of GDP growth and income inclusion.
 - ✦ Increase in the quality of recyclable waste.
 - ✦ The waste management market was worth R\$ 30 billion in 2015, potentially reaching R\$ 41 billion by 2020. In 2015, ABRELPE recorded the creation of 353,400 jobs in the public sanitation industry.
-
- ✦ The government is committed to sound environmental practices—Brazilian National Solid Waste Policy (PNRS)—with the adoption of sanitary landfills.
 - ✦ New obligations for municipalities, industry and commerce.
 - ✦ Long-term contracts based on public-private partnerships.
-
- ✦ Enhanced viability of projects such as recycling, waste value recovery for energy and organic waste treatment.
 - ✦ Increased mechanization of operations.



Oxil employee during a reverse manufacturing process for electronic waste

SUSTAINABILITY STRATEGY

Sustainability is at the heart of Estre's strategy, since its business contributes significantly to lessening the environmental and social impacts of waste management activities in the places where it operates.

Biogas burning facility,
in Paulínia (SP), which
generates carbon credits



Waste management team at Natura's Cajamar unit



Participants in Limpa Brasil Project, in which employees came together to clean cities

SUSTAINABILITY IN 7 CORE SUSTAINABILITY THEMES

In 2016, Estre saw the need to incorporate sustainability into the company's strategy in an even more effective and systematic way. This process was divided into three stages: diagnosis, pilot project for indicators and incorporation into the business, with the support and engagement of the company's top management.

The diagnosis was performed by an external consultancy, which held 15 face-to-face interviews with the leaders of the company and the Estre Institute, and reviewed internal documents and a study comparing both Brazilian and international companies in the industry. The first phase yielded seven core sustainability themes that should be priori-

tized and monitored to ensure that sustainability is fully integrated into Estre's business strategy. The core sustainability themes are:

Strengthening of Reputation in Sustainability and Relationship with Target Audiences

Ethics and Combating Corruption

Strategic Management of Internal Audience and Internal Culture for Sustainability

Operational Efficiency, Quality and Safety

Social License to Operate and Relationship with the Local Community

Environmental Management

Innovation in Waste Management

Many of the core themes were already being employed at Estre in a structured way to varying degrees, such as ethics and integrity. In this

phase, the strategic contribution of the Estre Institute to the business and its role in sustainability, as well as its importance to social initiatives and in the relationship with the communities where the company operates were all taken in account.

The second stage of the project involved developing performance indicators.

A pilot project for applying performance indicators was initiated using the Sustainable Return on Investment (SROI) method, a methodology developed by the IFC – World Bank, which calculates financial return on investment in community relationship projects. This methodology was applied to the social work carried out in the city of Rosário do Catete, state of Sergipe, where Estre operates. More information on this pilot project can be found on page 62 of this report.

The last stage in this process, ongoing in 2017, includes creating a sustainability workgroup with the participation of various corporate departments and the Estre Institute, the publication of this report, the launch of a sustainability policy and the creation of a system of indicators.

The entire company is working to make sustainability a competitive edge for Estre, one that will generate value for the business and its stakeholders. Based on this premise, the strategy for sustainability takes into account: use of indicators; incorporation of sustainability into the company's culture; publication of the company's formal commitments on this topic and strengthening of Estre's reputation as a key player in the topic of sustainability and waste management innovation.

FORMAL COMMITMENTS

STRENGTHENING OF REPUTATION

GLOBAL COMPACT

In 2016, Estre signed its commitment to the UN Global Compact with the aim of establishing business practices with values and goals that apply internationally and were agreed upon through the company's engagement with initiatives in human rights, labor rights, environmental protection and combating corruption. The commitment letter sent to the UN was signed by the Chief Executive Officer and the brand use agreement was signed by the Executive Director of Legal and Compliance.



BUSINESS PACT FOR INTEGRITY AND AGAINST CORRUPTION – ETHOS INSTITUTE

Since 2016, Estre has been a member of the workgroup on the Business Pact for Integrity and Against Corruption Workgroup, an Ethos Institute initiative, organized with the aim of encouraging debate on this subject. By signing the pact, companies commit to disseminating Brazilian anticorruption law to their employees and stakeholders, so that it is fully complied with. They also commit themselves to guarding against all forms of bribery, while promoting lawfulness and striving for transparency of information and collaboration in investigations, whenever necessary.



"Sustainable Community"
Project in Rosário do
Catete (SE)

G4-15, G4-16



ETHICAL BUSINESSES

ETHICS AND COMBATING CORRUPTION

In 2016, 100% of the units and processes were subject to corruption-related risk assessments and the significant risks were identified

Since 2012, Estre Ambiental has reinforced its integrity tools, particularly in 2015, when the General Office for Risk Management and Compliance was created, a decision made at the meeting of the board of directors held in February 2015. Since then the company has worked hard to make Estre's Compliance Program robust and aligned with best practices.

Today compliance involves all hierarchical levels, employees, partners, suppliers and intermediary agents, with a structured team, development and updating of policies, broad diffusion of information and communications, participation in and organization of pro-compliance events and campaigns.

The Risk Management and Compliance department has a team that is dedicated exclusively to planning and implementing initiatives for the Integrity Program. The responsibilities of this department are set forth in the Compliance Policy, approved by the Chief Executive Officer and published by the company.

Estre takes steps to reach all its stakeholders, and publishes policies related to integrity, as they are updated, on Estre's website (www.estre.com.br). The policies address: Anticorruption Policy, Code of Ethics and Business Conduct, and Policy for Sponsorships and Donations. Contracts with suppliers also contain specific clauses about integrity.



G4-56, G4-DMA,
G4-SO3, G4-SO4

Estre's employees sign a panel, representing their commitment to ethics and integrity

ETHICS COMMITTEE

A Top management participates in both regularly scheduled and special meetings of the Ethics Committee. All the meetings are attended by the Chief Executive Officer, the Executive Director of Legal and People and Management and the Chief Risk Management and Compliance Officer, permanent members of the Ethics Committee, in addition to the Executive Directors and members of the Board of Directors, who are invited to each meeting. This committee is established in the Ethics Committee Policy, and its main responsibility is to ensure the implementation and monitoring of Estre's Integrity Program.



COMPLIANCE PROGRAM

The Risk Management and Compliance department, created in June 2015, is responsible for implementing and managing the Compliance Program. The department makes periodic reports to the Ethics Committee and to the Board of Directors by:

- Managing the Complaints Channel;
- Implementing the Integrity Program (in compliance with Brazilian Anticorruption Law - Law No. 12.846);
- Developing training courses on anticorruption policies;
- Developing indicators to monitor corruption risks;
- Monitoring internal anticorruption controls; and
- Preparing Estre to obtain integrity program certification.



Event on the theme of ethics and integrity promoted by Estre

Other training courses and events offered in 2016:

- Training in Good Bidding Practices: offered at all units at the launch of the Bidding Process Policy, addressing the main topics covered in the policy and related conduct practices.
- Onboarding of new employees, covering Estre's values, Code of Ethics and Business Conduct.
- Onboarding of new Managers, Chief Officers and Executive Directors: covering integrity actions in the company, the Code of Ethics and Business Conduct, and the Anticorruption Policy.



CODE OF ETHICS AND CONDUCT

Estre's Code of Ethics and Business Conduct has existed since 2014, and its aim is to guide the personal and professional behavior of all company employees. The code addresses the following topics:

- Workplace Relationships and Individual Responsibilities
- Occupational Health and Safety
- Relationship with Clients
- Relationship with Suppliers
- Giveaways and Gifts
- Relationship with Investors
- Relationship with Unions
- Relationship with Government Agencies and Regulatory Bodies
- Relationship with Communities
- Relationship with the Environment
- Relationship with the Market and Competitors
- Relationship with the Media
- Sanctions/Penalties
- Approval and Validity

All employees, regardless of their level in the company, must fill out and sign the Declaration of Responsibility and Commitment to the Code of Ethics and Business Conduct. It should also be noted that a printed copy of the code in primer format is handed out by the HR department to each employee and contractor of the company during the onboarding process.

As part of the integrity program, approximately 6,300 people were trained in 2016 in face-to-face training courses.

Third-party liability

Outsourced employees who work at Estre receive onboarding material that is identical to that given to in-house employees. Outsourced employees also receive two hours of integrity training.

VALUING OUR PEOPLE

G4-DMA

Employees are key to the company's growth. This is why the company encourages them to continue to learn, develop skills and overcome challenges.

STRATEGIC MANAGEMENT OF INTERNAL AUDIENCE



Public sanitation
employees in Aracaju



Team responsible for the sweeping service at Curitiba



There are several programs that foster employee growth, by creating a favorable environment and offering tools that monitor and guide their development.

Estre uses a structured model of performance management, based on the breakdown, management and assessment of clear targets, covering everyone, from the president on down to coordinators. The model allows employees to understand Estre's strategy and motivates them to work together in pursue of the same objectives. Estre's skills management model is used to describe the behavior expected from each employee, highlighting and plotting a path for their development.

The delivery of results is measu-

red using individual targets and by the manner in which the employee achieves these results.

This process contributes to the execution of the Individual Development Plan and actions that optimize the achievement of new targets.

The performance assessment model also enables information to be used in the employee's career development process. This is why the People Committee was created: to promote discussion and alignment of performance, development, career, succession, potential movements, merit, acknowledgement, and other actions.

There are other programs designed to boost employee qualifications so that they can employ their

talent to benefit the company, and also become conscientious citizens, aware of their potential. The "People Cycle," for example, structures employee development, with performance assessed in terms of targets and competencies. The "Leadership Development Program"

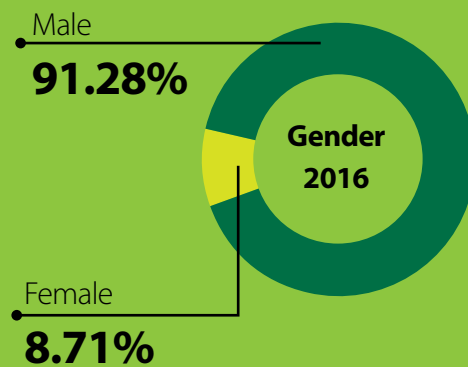
develops the managerial skills leaders need to achieve their goals more effectively. For operational employees, there are two programs: PEX Landfill and Pex Collect, which assess and recognize the company's best operational units with awards.

Employee training in the "Time to Learn Program" (PR)

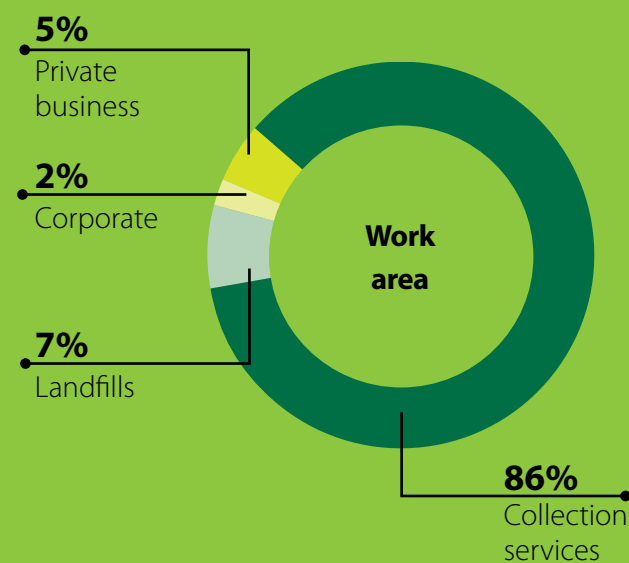
WHO ARE ESTRE'S EMPLOYEES?

In 2016, we had 13,415 employees, of whom more than 90% were male. This results from the fact that 86% of the personnel is allocated in public collection and cleaning services, work that is mainly performed by men, as shown in the table below.

EMPLOYEES ACCORDING TO GENDER



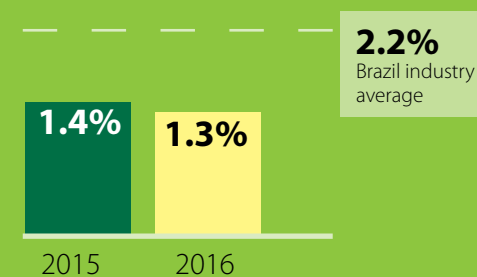
DISTRIBUTION OF EMPLOYEES ACCORDING TO WORK AREA



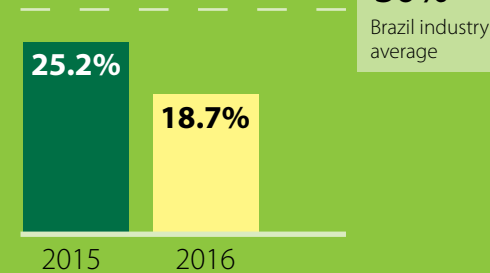
Besides being well below the industry average, absenteeism and turnover rates have decreased over the past two years, a reflection of our work on valuing employees.

ABSENTEEISM AND TURNOVER DATA

ABSENTEEISM



TURNOVER



EMPLOYEE PROGRAMS

G4-10, G4-LA6, G4-LA10

TIME TO LEARN

Besides the programs presented, we should make special mention of "Time to Learn," a program that has been running for 20 years, providing literacy skills to employees on Estre's frontlines. Most of these employees are in situations of social risk—12% to 15% of them are functionally illiterate, and about 30% do not have academic records or have not completed elementary school.



In 20 years, the Program:

- Has eradicated illiteracy at the Sanitation and Urban Collection unit in Curitiba, state of Paraná.
- Currently works with Middle and High School Education.
- Positively favors labor mobility.
- Makes it possible for students to attend other programs, for training as administrative assistants, mechanics and truck drivers and in English and information technology.
- Enables students to be admitted to technical schools and university programs.
- Has already been implemented in three other Urban Sanitation and Collection units: Ribeirão Preto (SP), Taboão da Serra (SP) and Maceió (AL).

PARTNERSHIP BETWEEN ESTRE AND INSTITUTO PROA

In 2016, Estre established a partnership with the ProA Institute on a project for professional qualification education for low-income youth. As a sponsor, in 2017 Estre will hire young apprentices who participate in the project, giving them the opportunity to experience their first jobs. The youth will be supervised by a manager, who will draw up a development plan for them. After the contract period, there is the possibility of them being hired as permanent employees.

OCCUPATIONAL HEALTH AND SAFETY

OCCUPATIONAL EFFICIENCY, QUALITY AND SAFETY

As seen in the previous chapter, more than 90% of Estre's personnel work on the frontlines: public collection and cleaning services or sanitary landfills. For this reason, workplace safety is a priority in Estre's operations.

Estre's policy on occupational health and safety establishes the following principles:

- A Prevention of work-related accidents must be considered a prime objective, one that cannot be compromised for any reason;
- Assessment and monitoring of risks is the responsibility of the employee (in-house or contractor) who performs the task and of the "owner" of the area where the service is performed;
- We cannot compromise the VALUE of SAFETY for the sake of profits and production.

Among the initiatives to ensure employee well-being, there is the Workplace Safety Program, which is a set of actions and steps designed to mitigate or eliminate the risks of work-related accidents and damage to assets.

The program, besides using methods for assessing and identifying hazards and risks, proposes a series of steps aimed at preventing occupational disease.

The program requirements are:

Organization: The departments must keep the procedures, forms and records organized so as to corroborate the practices in accordance with Estre's occupational health and safety standards.



Estre employee monitors operation of "Tyrannosaurus" in Paulínia (SP)

The objectives of Estre Ambiental's Occupational Safety Program are:

ACCIDENT PREVENTION

MONITORING OF WORK PRACTICES

RISK MANAGEMENT

LEGAL ASSISTANCE

STANDARDIZATION AND MONITORING

Investing on workplace safety is a commitment to society and, above all, with our greatest asset: the lives of our employees.

Commitment: Estre does not compromise on Occupational Health and Safety for the sake of profits or production. The commitment to workplace health and safety is the responsibility of all company employees, regardless of their level in their hierarchy.

Assessment: Safety indicators are a key component of the management system. All incidents

must be recorded and reported. Frequency rates, severity rates and traffic accident rates must be monitored and discussed, and actions proposed to reduce these rates.

Communication: All events must be communicated following the accident communication flow. Safety Alert is an example of compliance with this requirement.



Education and Training:

The manager is responsible for ensuring that employees who are directly exposed to risks are trained and qualified to perform their activities, by promoting an environment that favors incident prevention.

Monitoring Safety Risks:

Acknowledging risks and establishing controls to prevent incidents that may result in injury to employees.

Monitoring Health Risks:

Acknowledging health risks and establishing measures to prevent occupational diseases.

Monitoring work practices:

Monitoring work practices through procedures, forms, inspections, risk analysis, work permits for hazardous activities and non-routine activities. Developing

procedures for routine activities, including occupational health and safety requirements.

Incident Management: The organization must manage incidents by investigating, reviewing and proposing corrective and preventative actions with the aim of preventing recurrence.

An Occupational Health and Safety Committee

was established to ensure observance and efficacy of the Safety Policy. This is a requirement to encourage a safety culture by establishing priorities in decision-making, reviewing safety indicators, performing a critical analysis of monitoring elements and contributing to the continuous improvement of the safety program.

Personal Protective Equipment (PPE) is fundamental to ensuring health in the workplace

THE IMPORTANCE OF COMMUNITY

RELATIONSHIP WITH THE LOCAL COMMUNITY

Our relationship with the communities that surround Estre facilities is critical for generating local value and ensuring smooth operations. We know that managing and disposing waste safely and responsibly is not just about taking care of the environment, but also the health of the public in general.

Even though sanitary landfills are critical for the disposal of solid waste in cities, their implementation and operation may face resistance from the public, many times due to lack of knowledge about how they work. The operation of a sanitary landfill may also disturb the surrounding communities due to smell produced for a time period—however short it might be—between the disposal and the coverage of the waste

with soil, as well as the traffic of trucks loaded with waste.

With the aim of building a relationship of trust and generating value for the communities where it operates, Estre performs a series of actions and initiatives that contribute to obtaining and maintaining their so-called “social license to operate.”

Estre remains in constant contact with local communities through Social Communication and Community Participation Programs, which promote projects in sports, culture, work and income generation, development of recycling cooperatives and environmental education.

Whether it is at the beginning of a new project or during its expan-



G4-DMA, G4-EC7,
G4-EC8, G4-SO2

Social license is the constant and continuous acceptance and approval of a project or enterprise by the local community, key stakeholders and society in general. Our relationship with the community is critical for our business.

sion or completion, the Social Communication Programs inform the public of the need for that landfill, the reasons behind the selection of that location, the issues resulting from the implementation and

operation of the enterprise, and all the steps that will be taken to minimize them. The Estre Institute also supports some of the local initiatives in the communities, by offering environmental education.

“Sustainable Community”
Program in Rosário
do Catete (SE)



G4-EC7, G4-EC8,
G4-SO2

From left to right, pictures show initiatives from the projects Varre Grota, Comunidade Sustentável and Cooperlândia, respectively



SUSTAINABLE COMMUNITY PROJECT

A community engagement project designed to endow the community with the tools they need to find solutions for better quality of life. Estre uses an engagement method that is conducted in three stages: identifying issues, seeking solutions within their own realm of possibilities and forming a network to maximize the effect of these efforts.

Activities Promoted in Rosário do Catete (Sergipe) in 2016:

- Social Innovation Workshop: promoting interaction between community leaders and associations for joint planning of priority actions.
- Children's Day - mobilized 200 volunteers to promote recreational, cultural and environmental education activities on Children's Day for 500 children.
- Support for the formation of a Recycling Cooperative for implementing a selective collection project in the city.
- Support for the Transforming Lives Challenge Project, which qualified 200 women to create handcrafted products that were sold at state-wide and nation-wide events and fairs.
- Support for seven sports projects for children and teenagers.

VARRE GROTA PROJECT – Maceió (AL)

The project is intended to bring the public together to clean up their neighborhoods. Maceió has 76 Grotas or communities with socially vulnerable populations, of which 22 Grotas are served by Estre's garbage collection and street sweeping services. The Varre Grota Project was brought to 3 "Grotas": Grota do Rafael, Grota do Onofre and Grota do Conjunto Ipanema, where 12 community street sweepers serve 5,620 families.

Results:

- Better organized leaders planned better social initiatives.
- Improved health and quality of life.
- The city government was praised by the public, which then co-opted the project as a government program for 2017.

TRAINING AND DEVELOPMENT OF RECYCLING COOPERATIVES

The main purpose of recycling cooperatives, which receive support from Estre through selection unit projects and creation of work procedures, is to generate work opportunities. The company also provides training in environmental education and cooperativism, always from an entrepreneurial and economic sustainability standpoint.

To provide support to the cooperatives, Estre relies on a partnership with Cooperlândia Ambiental do Brasil. Created in 2002, in the city of Paulínia (SP), on the premises of CGR Paulínia, Cooperlândia has become a benchmark in its sector, in Brazil and abroad, and was the 1st recycling cooperative in the world to receive the ISO 14001 certification.

REVIRAVOLTA COOPERATIVE – NOSSA SENHORA DO SOCORRO (SE)

After the closure of Palestina Dump in 2013, 35 waste collectors registered by the city social services showed interest in forming a cooperative. Reviravolta Cooperative was formed through a joint effort between the local City Environmental Office, Estre, Instituto Votorantim and the Environmental Prosecution Office.

In 2016, SEBRAE joined the partnership and, supported by the consulting service provided by Cooperlândia's President, assisted the group in Reviravolta's restructuring process focused on innovation, raising efficiency, improving results and getting ready for new challenges.

Other projects in progress:

- Formação Creation of a Cooperative in Piratininga (SP) - Piratininga Waste Management Center
- Creation of a Cooperative in Rosário do Catete (SE) – Sergipe Waste Management Center





Presentation of scale model of the Trash Cycle, during the educational workshop "Where's the trash that was here?" at Estre Institute headquarters in Paulínia (SP)

MISSION

To promote, in a playful way, reflection and dialogue about contemporary social and environmental challenges with a critical and emancipatory environmental education.



Students visit Southeast Regional Branch of the Estre Institute, in Paulínia (SP)

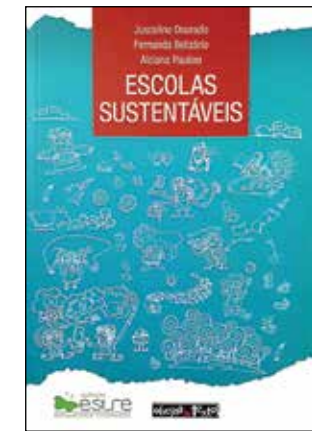
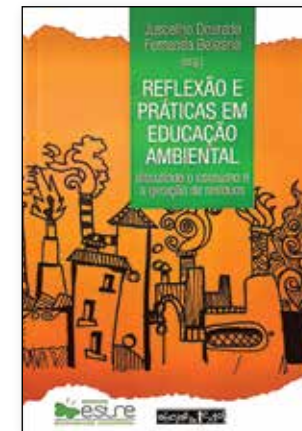
Established in 2006, Estre Institute was created to promote and strengthen the environmental education, contributing to the education in communities where Estre operates.



The Institute promotes a variety of events—involving a much wider and more diversified public—on topics such as consumption, waste, citizenship, sustainable educational spaces and other topics involving environmental education. Activities are conducted on two fronts: Environmental Education Projects and Dialogue and Knowledge, which have already directly reached more than

300,000 individuals in almost 10 years of operation. Estre Institute has non-profit status and is located in three Brazilian regions:

- **Southeast Regional (headquarters):** Paulínia/SP
- **South Regional:** Fazenda Rio Grande/PR
- **Northeast Regional:** Rosário do Catete/SE



BOOKS PUBLISHED

Reflection and practices in environmental education: exploring consumerism and waste management (2012)

It combines huge practical experience, the culmination of years of research and debate about environmental education conducted by the Institute. An important reference for teachers, environmental educators and researchers.

Solid waste in Brazil – opportunities and challenges of Federal Law no.12.305 on solid waste (2014)

Solid waste management is one of Brazil's most serious challenges. With the involvement of numerous specialists, the publication offers an extensive overview of the industry, discussing the main provisions of the new law and its applicability.

Sustainable Schools (2015)

The book offers new perspective on how a critical and emancipatory environmental education can be powerful and transforming for schools. It presents the history of the program and shares the practical experiences of Estre Institute.

ENVIRONMENTAL EDUCATION PROJECTS ORGANIZED BY ESTRE INSTITUTE

Educational workshop “Where is the waste that was here?”:

educational project where teachers and students have the opportunity to talk, experience and reflect about environmental education, consumption and waste.

Stories that belong to

the world: storytelling roadshow organized in schools, city theaters, parks and public spaces. The Institute introduces topics such as citizenship, educational sites, environmental education, waste and consumption to a diverse audience in a fun and interactive manner.

Sustainable Schools: a project designed to mobilize the school community to think and act collectively to make schools a sustainable educational.

2016 RESULTS

- Projects in 8 of 12 of the company’s sanitary landfills.
- Over 50,000 people served, including students, children, educators and those interested in environmental education in general.
- Hundreds of people from 25 cities have already visited the units of the institute.



“Stories that belong to the world” show held in Parque Taquaral, in the city of Campinas (SP)

THE GENERATION OF SHARED VALUE

SROI CASE – Financial indicators for the Social Investment Return on **Rosário do Catete (SE)**

Pilot project using the International Finance Corporation (IFC - World Bank) methodology to measure return on social projects in the municipality of Rosário do Catete (SE)

In 2012, Estre started operations at the Waste Management Center in Rosário do Catete, Sergipe. The arrival of the landfill met some resistance from the town of 10,000 inhabitants, who were not aware of its operation. The department of Institutional Affairs, in charge of the relationship with the local community, together with Estre Institute, conducted a series of activities locally. In 2016, Estre Institute inaugurated its Northeast Regional branch with a permanent local team, and has also taken one of its educational waste cycle models to the city.

The local actions, still in progress, are intended to: bring the company closer to the community; empower the community to over-

come its own challenges; educate residents about the operation of a landfill—including guided tours for the general public and schools—and provide environmental education.

Estre believes that the relationship with the community generates shared value both for the community and the company.

Financial return on social investment

This study, conducted together with an outside consulting firm, used the International Finance Corporation (IFC – World Bank) methodology, which estimates the avoided operating costs and the added value after the social investment.



Residents of Rosário do Catete (SE)

Avoided costs and added value

The “avoided costs” indicators accounted for 31.9% of the SROI result and were measured based on four aspects: interruptions in operations avoided due to disagreements with the community, legal expenses, sponsorship demands and licensing requests. On the other hand, the indicator related to added value accounted for 68.1% of SROI, from which the “social license maintenance to operate” indicator alone accounted for 31.3%. The other aspects

measured were: spontaneous media coverage, revenue from new agreements and a decrease in the average receipt period. The method has resulted in an ROI of 3.16 times within a five-year period. Even if this result cannot be automatically duplicated in other situations, it has contributed the development of indicators on social license to operate, for the Estre Institute or for the departments of sustainability and of institutional affairs. The study also facilitates strategic decision-making for Estre’s social investments.

R\$ 3.16
for each R\$ 1
invested—this is
the return on the
social investment
made in Rosário do
Catete (CE) over a
period of 5 years

OUR COMMITMENT TO **THE ENVIRONMENT**

Estre's commitment to the environment is at the core of its business vision, which is to provide innovative, safe and responsible environmental solutions.

G4-DMA

ENVIRONMENTAL MANAGEMENT

Aerial view of the Paulinia sanitary landfill (SP)



The inappropriate management of waste imposes a high cost on society. Based on projections from Abrelpe, R\$7.5 billion would be needed through 2023 to close all dumpsites in Brazil. Despite the hefty price tag, it would still be less than the R\$13.5 billion needed to maintain and operate the dumpsites (especially the cost of treating pollution-related diseases), in addition to the environmental recovery of the damaged areas.

Another study conducted in 2015 by the NGO International Solid Waste Association (ISWA) estimates that the Brazilian Healthcare System (SUS) spends R\$1.5 billion annually on diseases caused by inappropriate waste disposal. In other words, at the end of the day, ensuring appropriate waste management, besides pro-

tecting the environment and the quality of life of the public, is cheaper than maintaining the dumps and continuing with inappropriate waste management.

Landfills

Today, in Brazil, landfill technology is the most appropriate disposal method for solid waste that cannot be recycled or reused. Completely different from a dumpsite, a landfill prevents the leaking of leachate, protects water tables, ensures that greenhouse gases, such as methane, are not released into the atmosphere, thus protecting the environment and public health.

Estre operates thirteen sanitary landfills in different parts of the country. Also known as Waste Management Centers, they offer different complementary solutions,

The Paulínia sanitary landfill was Estre's first in Brazil

such as final healthcare waste disposal units, power generation units and effluent treatment stations.

They are highly efficient, safe systems for soil waterproofing, drainage and percolated liquid (leachate) collection, which is decontaminated and turned into reuse water, drainage and treatment of gases that contribute to the greenhouse effect, geotechnical monitoring based on periodic reports controlled by environmental agencies and fauna and flora control.

When building a landfill, the company establishes commitments to mitigate the impacts from the project in the form of operational, environmental and social conditions. Estre strives to perform these obligations and also to make sure that its landfills operate in accordance with best practices, so as to avoid any risk to the environment or public related to its operation.

An important consideration is the proximity of an operation to an environmental preservation area.

• **Nine of Estre's operations are located close to environmental preservation areas and have environmental protection and reco-**

very measures in place to ensure the preservation of the existing ecosystem.

The company also maintains tight control over the leachate generated by the decomposition of waste. The landfill ensures that there are no leaks into the soil and that it is efficiently captured. Estre works to treat 100% of the leachate collected and turn it into reuse water, thus mitigating another impact from the operation.

• **In 2016, 1,248,335.98 m³ of leachate was treated.**

The decomposition of buried waste also generates biogas, which contains methane, one of the main greenhouse effect gases. To minimize this impact, Estre captures and burns the biogas at all its landfills so that the methane is transformed into carbon dioxide, significantly reducing its impact on the atmosphere. With the final disposal service offered to its clients in the public and private sector, in 2016, Estre safely and appropriately disposed of:

- **5.6 million tons of Class II Waste**
- **47.4 million tons of Class I Waste (hazardous waste)**

In 2016,
11,000
Nm³/h of biogas
were generated, and
Estre was able to deduct
and recover 450,000
carbon credits
(Certified Emission
Reductions - CER).



Estre's waste
collection truck

PUBLIC COLLECTION AND CLEANING SERVICES

Waste management begins in the cities, where public cleaning, sweeping and waste collection are essential services that contribute to a city's sanitation, quality of life, public health and environmental preservation.

Public cleaning is a basic city maintenance service that depends largely on the support of citizens. It covers everything from washing public monuments, including painting sidewalks and curbs, to cleaning and unclogging storm drains.

Waste collection, in turn, is a key aspect of waste management. Estre offers manual, automated or contain-

erized collection. Selective collection services are available in some cities, which rely on advisory services for the organization of recycling cooperatives. Ecostations, where waste that should not be sent to common landfills (furniture, used electronic appliances, lamps and batteries, etc.) is taken, can also be installed.

In 2016, Estre collected urban solid waste in ten cities (Américo Brasiliense, Aparecida de Goiânia, Aracaju, Curitiba, Maceió, Ribeirão Preto, Salvador, São José dos Campos, São Paulo, Taboão da Serra), including its own operations and affiliates.

Estre has collected approximately 3 million tons of waste (including residential waste, selective collection and health-care waste).

The company has also collected 2.7 million tons of waste, as part of the SOMA consortium, which is responsible for urban cleaning and sweeping in the southeast region of São Paulo.

PONTO VIVO PROJECT MACEIÓ (AL)

The protection of the environment and quality of life begins when garbage is placed outside of homes. The citizens need to be informed about how collection works and how to dispose of waste, to avoid creating uncontrolled waste and rubbish disposal sites. In Maceió, the local team of Viva Ambiental created the Ponto Vivo project in 2010 to reduce the number of these inappropriate waste disposal sites. The team educates the public about waste collection and the consequences of inappropriate waste disposal. They also revitalize areas that have been used as waste disposal sites by planting trees and providing general maintenance. In 2016, there were 128 Pontos Vivo in Maceió.



Attend Ambiental

TREATMENT OF LIQUID WASTE USING STATE-OF-THE-ART TECHNOLOGY AND RESPECT FOR THE ENVIRONMENT

Besides managing solid waste to minimize its adverse impacts on the environment, Estre also treats liquid waste produced by the manufacturing processes of many industries. This liquid (effluent) requires special treatment before being disposed of in the regular sewage system. Solutions from Attend Ambiental, a joint venture between Sabesp and Estre Ambiental, allow clients to treat their effluents safely and reuse water.

In 2016, Attend Ambiental treated 1.8 million tons of effluents.

INNOVATIVE PROCESSES

G4-DMA, G4-EN27

INNOVATION IN WASTE MANAGEMENT



One of the main guidelines of the PNRS is to reduce the generation of waste and, when this is not possible, to seek out the best alternatives for treating a given waste and exhaust all possibilities before the waste is subject to final disposal.

Tyrannosaurus operation, producing refuse-derived fuel (RDF)



Brazil has the potential for extraordinary progress in terms of waste management, mainly with respect to the development of reverse logistics processes that enable a circular economy. Estre is at the forefront of some of these value recovery processes, with energy

generation from landfills and production of fuel using waste. Besides making better use of some resources, which without treatment would reach the end of their life cycle, the treatment processes enable environmental impacts to be mitigated.

Resicontrol liquid
co-processing operation

REFUSE-DERIVED FUEL (RDF)

Estre was the first Brazilian company to acquire a piece of machinery called Tyrannosaurus, which is capable of crushing large quantities of urban waste (residential and commercial) and non-hazardous industrial waste (Class IIA and IIB). Waste is mechanically treated and homogenized, ensuring a blend with the best proportion between dry and wet materials.

RDF can be used in cement furnaces, boilers and biomass plants. Besides having a high calorific value when compared to other alternative fuels, the use of RDF reduces the generation of environmental liabilities and also preserves natural resources, such as petroleum coke.

Today, the Tyrannosaurus is housed in Paulínia, in the state of São Paulo, and has a daily processing capacity of between 300 and 600 tons of solid waste

In 2016:

- **more than 50,000 tons of RDF were produced, corresponding to an installed capacity of 261.6 MW.**

CO-PROCESSING

For the treatment and recovery of unserviceable, non-hazardous, hazardous products or waste (Class II or I), there is a blending service for the purposes of co-processing. Waste such as contaminated soil, oil sludge, resins, glues, latex, paint sludge, cosmetics and drugs can be subject to co-processing, which ensures the transformation of products and safety of the client's brand. The result is similar to that of Tyrannosaurus, a solid or liquid blend with high calorific value and appropriate for use in cement kilns. The burning of this material emits less gaseous pollutants than natural fossil fuels and the energy from the burning creates the clinker used in cement production, contributing to a reduction in CO2 emissions.

In 2016, 45,000 tons of solid and liquid blend were produced.



REVERSE LOGISTICS OF ELECTRONIC WASTE

When the PNRS came into effect, priority groups for reverse logistics measures were established, due to the high level of contamination of such waste in the environment. Electronic products are one type of priority waste, since they are used intensively and become obsolete in a short period of time. However, TVs, cell phones, refrigerators, laptops and many other products contain materials that can be fully reused, even when the equipment no longer works. In the Reverse Logistics of Waste Electric and Electronic Equipment (WEEE), Oxil, a Estre Group company, is responsible for the transformation, disassembly and final disposal; collection, transportation and storage; destruction of confidential documents; supervised destruction; and development of customized projects to serve customers with specific demands.

In 2016, 580 tons of electronic waste were received.

Currently, at least 85% of the materials received are recycled and the remainder is sent for value recovery.

Reverse logistics
of electronic waste



RECYCLING OF CONSTRUCTION WASTE

Construction is one of the most important sectors of the Brazilian economy and also one that produces the most waste. It is estimated that the city of São Paulo alone produces 2,500 truckloads worth of construction waste per day. This material can (and should) be reused as raw material for the construction industry.

Estre has a mechanized recycling system capable of processing various types of construction materials. Sand, gravel, rocks, mortar, concrete and ceramic materials are crushed and can be used again.

ENERGY

Decomposing waste from homes, tree pruning and other organic compounds in the landfills generate a biogas composed of methane and carbon dioxide, which contribute to the greenhouse effect if directly released into the atmosphere.

Estre has the technology to generate clean, renewable energy from biogas. It is captured by drains installed inside the landfill and then sent through pipes to an electric power plant, where it is filtered and cooled. It is then ready to be used as fuel in engine generators, which burn the biogas and produce electric energy.

Recycling of
construction waste



Aerial view of biogas burning facility in Paulínia (SP)

Biogas plants are also more stable, safer sources of energy as they do not depend on weather conditions, as is the case with hydroelectric power plants and wind farms. These plants can work safely at full power, 24 hours a day.

In 2014, the company started the operation of its first biogas plant at the Guatapar landfill, close to Ribeiro Preto, in the state of So Paulo. A second plant was activated two years later in Curitiba. Today, they have an installed capacity of 10 MW, equivalent to the energy needs of approximately 120,000 inhabitants. In the coming years, Estre intends to build plants on all its landfills with a potential installed capacity of 80 MW.

Results for 2016:

- **Production of 55,557 MWh**
- **We avoided the release of 9,867 tons of methane, which is the equivalent of 246,690 tons of CO²**



Management of industrial waste involves the entire chain, from generation to final disposal

WASTE MANAGEMENT FOR PRIVATE COMPANIES

Waste management is aimed at industry and commercial establishments of any size. It covers the entire waste chain, from generation to final destination, while tracking every process. The entire flow of waste management undergoes all diagnosis phases, characterization, environmental licensing, internal handling, temporary storage, collection, shipping, final destination at certified units and value recovery of waste.

The continuous improvement process provides for a periodic review to improve environmental and economic efficiency for our clients, including new projects on circular economy, where waste can become an input for production. In 2016, Estre managed 103,075 tons of waste, of which 50.61% was recycled or processed for value recovery.

INDEX OF GRI-G4 CONTENT

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Strategy & Analysis			
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Organizational Profile			
G4-3	Organization Name	10 and 11	
G4-4	Primary brands, products, and services	10, 11, 18-21	
G4-5	Location of the organization's headquarters	10	
G4-6	Number of countries where the organization operates, and names of countries where either the organization has significant operations or that are specifically relevant to the sustainability topics covered in the report.	Estre operates in Brazil only.	
G4-7	Nature of ownership and legal form of the organization.	10 and 12	
G4-8	Markets served (including geographic breakdown, sectors served, and types of customers and beneficiaries)	10, 11, 16-21	
G4-9	Organization profile	Back cover, 14-17	
G4-10	Employee profile	46 and 47	Principle 6
G4-11	Percentage of total employees covered by collective bargaining agreements	100% of employees are covered by collective bargaining agreements, which are managed by HR and Management and abide by applicable laws.	Principle 3
G4-12	Organization's supply chain	22 and 23	
G4-13	Any significant changes during the reporting period regarding the organization's size, structure, ownership, or its supply chain	No changes in the report period.	
Commitment to External Initiatives			
G4-14	Whether and how the precautionary approach or principle is addressed by the organization	Estre does not adopt the Precautionary Principle.	
G4-15	Externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses	36	
G4-16	Memberships of associations (such as industry associations) and national or international advocacy organizations	36	
Identified Material Aspects and Boundaries			
G4-17	Entities included in the organization's consolidated financial statements or equivalent documents	Back cover	
G4-18	Process for defining the report content and the Aspect Boundaries	6 and 7	
G4-19	Material Aspects identified in the process for defining report content	The materiality matrix was not constructed in this first publication, considering consultation with stakeholders, for this reason, these indicators were not reported	
G4-20	Aspect Boundary within the organization		
G4-21	For each material Aspect, report the Aspect Boundary outside the organization		
G4-22	Effect of any restatements of information provided in previous reports, and the reasons for such restatements	Not applicable as this is the first time that Estre has published its report	
G4-23	Significant changes from previous reporting periods in the Scope and Aspect Boundaries.		
Stakeholder Engagement			
G4-24	List of stakeholder groups engaged by the organization	Estre does not have a list of all the stakeholders engaged by the organization. However, the most engaged audiences currently in a long-term structured relationship are local communities, employees, clients and shareholders. Estre strives for a transparent and constructive relationship with all of them. There are project to support communities development, employees are valued and have development opportunities, there is a constant search for better and more innovative solutions for the clients, and the business is conducted seeking to add value to its shareholders.	
G4-25	Basis for identification and selection of stakeholders with whom to engage		
G4-26	Organization's approach to stakeholder engagement		
G4-27	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns,		
Report Profile			
G4-28	Reporting period	6 and 7	
G4-29	Date of most recent previous report	This is the first time that Estre has published its report	
G4-30	Reporting cycle	6 and 7	
G4-31	Contact point for questions regarding the report	6 and 7	

G4-32	'In accordance' option (core or comprehensive) the organization has chosen	6 and 7	
G4-33	Organization's policy and current practice with regard to seeking external assurance for the report	The report was not subject to external assurance.	
Governance			
G4-34	Governance structure of the organization	12 and 13	
Ethics & Integrity			
G4-56	Organization's values, principles, standards and norms of behavior	10, 11, 38-41	

Specific Standard Contents

Category: Economic

Aspect: Indirect Economic Impacts	Pages / Omissions	Global Treaty
Disclosure on Management Approach	52 and 53	
G4-EC7	Development and impact of infrastructure investments and services offered	52-59
G4-EC8	Significant indirect economic impacts, including the extent of impacts	52-59

Category: Environmental

Aspect: Biodiversity	Pages / Omissions	Global Treaty	
Disclosure on Management Approach	64-67		
G4-EN11	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	67	Principle 8
Aspect: Products and Services			
Disclosure on Management Approach	64-69		
G4-EN23	Total weight of waste by type and disposal method	66-69	Principle 8
Aspect: Products and Services			
Disclosure on Management Approach	60-77		
G4-EN27	Extent of impact mitigation of environmental impacts of products and services	64-77	Principles 7, 8 and 9
Disclosure on Management Approach			
Disclosure on Management Approach	64-67		
G4-EN31	Total environmental protection expenditures and investments by type	In 2016, Estre invested R\$ 87 million on environmental management: 52% on leachate treatment, 15% on environmental monitoring and project and 33% in waste treatment.	Principles 7, 8 and 9

Category: Social – Work practices and decent work

Aspect: Occupational Health and Safety	Pages / Omissions	Global Treaty	
Disclosure on Management Approach	44-47		
G4-LA6	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of workrelated fatalities, by region and by gender	46 This information was not fully disclosed due to lack of consolidated information relating to 2016.	Principle 8
Aspect: Training and Education			
Disclosure on Management Approach	42-45		
G4-LA10	Programs for skills management and lifelong learning	44, 45, 47	Principles 7, 8 and 9
G4-LA11	Percentage of employees receiving regular performance and career development reviews, by gender and by employee category	This information was not fully disclosed due to lack of consolidated information relating to 2016.	Principle 6

Category: Social – Society

Aspect: Local Communities	Pages / Omissions	Global Treaty	
Disclosure on Management Approach	52 and 53		
G4-SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs	60	Principle 1
G4-SO2	Operations with significant actual or potential negative impacts on local communities	52-55	Principle 1
Aspect: Anti-corruption			
Disclosure on Management Approach	38-39		
G4-SO3	Total number and percentage of operations assessed for risks related to corruption and the significant risks identified	38	Principle 10
G4-SO4	Communication and training on anti-corruption policies and procedures	38-41	Principle 10

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