
**Sustainable Logistics Plan Management Committee**

# Sustainable Logistics Plan of the Federal University of Ceara (PLS - UFC)

Fortaleza – CE

November 2013

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CPO / UFC Infra

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Marisete Dantas de Aquino - CT

Prof. Ronaldo Stefanutti - CT

Thayanne Alves Ferreira - GESLOG Student
Prof. Tomaz Nunes Cavalcante Neto - CT

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## Presentation

The environment is one of the great concerns of the century, considering the future scarcity of natural resources. The main discussions revolve around the use of recyclable materials, which are economically viable and reduce the impact on the environment. Aiming to adopt a more environmentally responsible lifestyle, with a more rational use of natural and economic resources, the Federal University of Ceará has developed its Sustainable Logistics Plan, to be implemented on all its campuses.

This Plan becomes a tool that will define the practices sustainable practices to be implemented, which aim to institutionalize socioenvironmental responsibility. Practices such as reducing the consumption of natural resources, adopting highly durable materials that can be reused or recycled, as well as efficient spending through rationalization, were the principles that guided this document.

The acquisition of goods and materials is the greatest example of changing attitudes and practices in public management. There needs to be awareness of the maximum possible efficiency of materials, as well as the acquisition of these with sustainable and economically viable characteristics, in addition to reducing unnecessary expenses in the purchase of goods and materials. Actions such as the rational use of water and energy are also present in a greater contribution to sustainability.

UFC's Sustainable Logistics Plan (PLS) was prepared with full The effort of the Management Committee, which had the utmost dedication of guests from various sectors belonging to UFC, is therefore a process of socioenvironmental responsibility with practices in environmental re-education.

The UFC PLS was prepared with the help of working groups in the areas of works, selective collection, purchases, energy efficiency, environment and mobility, which collected data and proposed initiatives to be adopted by the entire Academic Community, as provided for in Normative Instruction No. 10 of November 2012, of the Secretariat of Logistics and Information Technology (SLTI) of the Ministry of Planning, Budget and Management (MPOG). Its main objective is

establish goals and actions in order to implement UFC's environmental management in an articulated and sustainable manner.

The preparation of the Plan is of fundamental importance for the institutionalization of an environmental culture at the University, and it is expected that this will be disseminated by the academic community beyond the campuses.

**Introduction**

UFC, in accordance with Normative Instruction No. 10, of November 12, 2012, presents the PLS-UFC to the academic community, developed with the purpose of implementing a culture of sustainability in the Institution.

Environmental sustainability consists of the perfect harmony between economic development and preservation of the ecosystem. In view of this and through sustainable logistics, PLS-UFC seeks to broadly and clearly develop sustainability actions and rationalize expenses and processes in the daily activities of the university community. In general, environmental sustainability can also be considered a means of mitigating, in the short and long term, the damage already caused in the past.

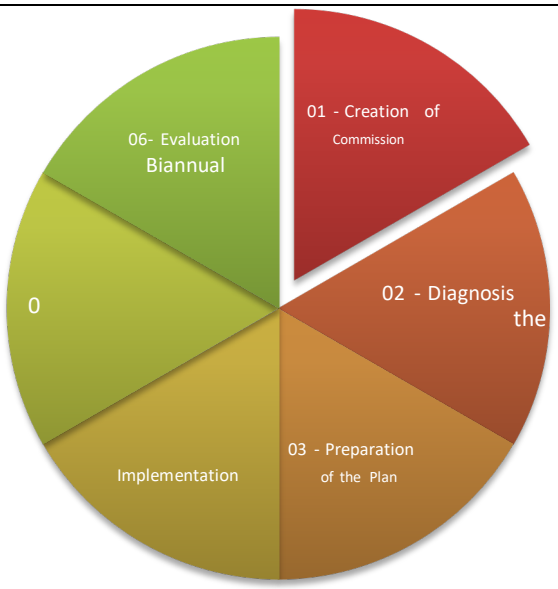
It is concluded that, with this, UFC will adopt sustainable practices different points of view of everyday academic life, constantly creating an environmentally responsible environment that is committed to the surrounding society. In addition to promoting the expansion of democratic freedoms, concerned with the acquisition of new low-carbon technologies and the continuous improvement of the quality of life for all.

# 1 Preparation of the UFC Sustainable Logistics Plan – PLS

## 1.1 Methodology

The Plan was prepared by UFC employees, appointed by the Rector for through MEC Ordinance No. 2,777, of 09/27/2002, and guests, observing article 1 set forth in IN No. 10/2012.

The PLS-UFC was developed according to the needs of the UFC, having in view of some criteria described in IN nº 10/12, as well as practices used in the Institution. As a reference, the PLS of the Ministry of the Environment and the PLS of the Federal University of Recôncavo Baiano were also used. The Management Committee followed and will follow the following steps:




♻ Step 01 – Creation of the Management Committee and division of employees into working groups to help with the preparation, since the subjects that the PLS addresses require specific knowledge from different areas;

♻ Stage 02 – A general diagnosis of the Institution was carried out with the aim of seeking socio-environmental and socio-educational measures within the UFC, in addition to identifying opportunities for improvement;

♻ Stage 03 – The skills of each group and the inventory data of goods and materials were used to measure resources after their due use.

identifications in accordance with Annex 1 of IN No. 10. At this stage, the actions that are already being carried out and how they will be improved were also identified. The Management Committee, in accordance with the guidelines given by the groups, established practices for the Plan, appointed those responsible, deadlines for completing the goals and resources necessary for these practices;

- Stage 04 – Execution will begin after the Plan has been approved by the UFC University Council;
- Step 05 – Execution of the Plan;
- Step 06 – Since the PLS is continuous, every 6 months, counting from its publication, the implementation of the PLS will be assessed and monitored and, if necessary, the goals will be reviewed.

## 1.2 Data collection

Inventory data of consumables and furniture, current contracts, sustainable practices organized by the Environment Week, PROGERE reports, Sustainable Works Manual will be presented in the form of an appendix. This plan was based on this data and information collected directly from all sectors involved in this construction.

### 1.2.1 Sustainable actions and practices already developed at UFC

Among several actions already carried out by UFC, we highlight the Environment Week Environment, held every year since 2003. It has the participation of its students and staff. The SMA has workshops on growing vegetable gardens in small spaces, using household waste, distributing seedlings of native trees for urban landscaping, and debates aimed at internal and external audiences. With this, UFC has been demonstrating its concern for adopting sustainable practices and passing this on to students and the social community.

UFC has already started implementing purchases that require certifications environmentally friendly materials such as cups and A4 paper with a green seal (FSC). It has also adopted sustainable practices in the contracting of works and projects, based on a Sustainable Works Manual.

In the area of energy efficiency, it implemented rationalization programs energy on 2 campuses, with support from ANEEL, with excellent results, from an extension and research project, PROCEN, coordinated by Prof. Tomaz Nunes Cavalcante Neto.

The group of university libraries implemented a broad program of awareness, conservation and restoration of books, and has invested significantly in digital books in recent years. In addition, it has encouraged students to participate in the “Adopt a Book” Campaign, in

which, for each cover donated to UFC books, the student receives in exchange a squeeze bottle or an ecobag, both sustainable.

Regarding selective collection, the Waste Management Program of UFC (PROGERE) is the highlight. It was created in September 2005 and brings together a set of procedures and actions for the implementation of an integrated system for reducing, reusing and recycling the various types of waste generated at UFC units. In 2009, PROGERE began collaborating, in a partnership with DIURB (UFC's Cleaning and Urban Services Division), with the management of recyclable waste, in compliance with Federal Decree No. 5,940/2006, which "establishes the separation of recyclable waste discarded by direct and indirect federal public administration bodies and entities, at the generating source, and its destination to associations and cooperatives of recyclable material collectors, and provides other measures".

In this sense, PROGERE is divided between waste management recyclables produced in academic and administrative units, which mainly generate paper, in addition to other waste such as plastics, glass, technological waste and others, and focuses on the need to manage laboratory waste originating from teaching, research and extension activities.

Regarding laboratory waste, PROGERE has drawn up a plan actions for adequate treatment, considering an inventory prepared of UFC's environmental liabilities.

PROGERE also works with projects and programs belonging to other sectors of UFC, such as:

- Center for Teaching and Research in Urban Agriculture (NEPAU) at the Center for Agricultural Sciences, whose main objective is to maintain and preserve available plant resources and enable sustainable agriculture,

  mainly in urban centers, where there is a shortage of organic matter, in addition to producing basic knowledge about the use of organic waste and offering courses on the different ways of producing high-quality organic compost;
- Environmental Management, Studies and Research Program – PROGEPA, whose objective is to implement, at the Faculty of Economics, Administration, Actuarial Science and Accounting - FEAAC, an integrated environmental program, which contemplates the inseparability between teaching, research and extension, articulating academic activities with sustainability practices existing in public and private institutions, non-governmental organizations - NGOs, cooperatives and associations;
- Weaving Networks – environmental education in public schools, focusing on the discussion of water resource pollution, local biodiversity and waste management.

UFC has also introduced in its bathrooms, phrases to encourage

conscious consumption of toilet paper, water and cleaning, such as:

"Keep this environment clean."

"Use in moderation, so you won't run out. The role of the University is to supply, ours is to save".

"Hygiene and cleanliness is health."

"Don't throw paper on the floor, use the trash can. The role of the University is clean, ours is to keep it clean."

"Are you done? Flush the toilet. Leave this place the way you like it." find it: CLEAN."

In addition to all these actions, UFC also relies on the initiative of its students through a group shared on social media, called "Carona UFC". In it, students are divided between volunteer students who offer rides from different parts of Fortaleza and students who do not have a car. In the same group, a spreadsheet is made available that aims to computerize this initiative and today, they seek to systematize Carona UFC by distributing stickers to volunteers as a way to identify and secure them.

Given this, it is clear that planning policies that reduce the impacts environmental, establishing objectives and goals that meet environmental policy is already a practice initiated at the Federal University of Ceará.

## 2 The UFC PLS

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The objectives of PLS-UFC are to create principles and projects of in accordance with the policies established by current standards and resolutions, in addition to formalizing and expanding to all campuses, procedures already adopted by UFC. The specific objectives are:

- ♻ Reduction in electricity, water and sewage consumption;
- ♻ Reduction in the consumption of A4 paper, disposable cups and printer ink cartridges;
- ♻ Management of solid waste, with a focus on reduction, reuse and recycling;
- ♻ Training program for employees and outsourced workers;
- ♻ Manuals that specify the requirements for purchasing sustainable consumables;
- ♻ Updated manuals with various requirements for sustainable works and projects; Raising ♻ awareness among the academic community regarding sustainability.

# 3 Projects from UFC's Sustainable Logistics Plan

UFC's Sustainable Logistics Plan was prepared in accordance with Normative Instruction No. 10/2012 and UFC's own Institutional Development Plan (PDI). The PLS includes activities already developed by UFC and their continuity, as well as providing instructions for other relevant practices to contribute to environmental preservation.

## 3.1 Consumables

### 3.1.1 Consumable Material - Sustainable Bidding Project

♻ OBJECTIVE: To give preference to the acquisition of recycled or recyclable goods in accordance with Normative Instruction No. 10/2012, in order to reduce costs and preserve the environment, in addition to creating a culture of responsible consumption, valuing products that hold environmental certificates.

♻ INITIATIVES:

1. A list of product specifications that have the lowest environmental impact was prepared based on research on the official websites of the Federal Government and best practice guides (Annex 1 - Standardized List of Consumable Materials validated by the PLS), which will be adopted in UFC notices;
2. Reusable paper cups will be purchased instead of plastic cups;
3. Purchase A4 paper only with the FSC seal. Make a shared purchase of A4 paper with other IFES in the Northeast so that the purchase is made at a lower unit cost, and, if possible, with the UFC logo to avoid improper printing;
4. Carry out awareness campaigns to choose more sustainable products and publicize the products listed in the list to the entire community (Initiative 1).

♻ GOALS:

- Eliminate the purchase of plastic cups entirely by 2017;
- Replace disposable cups with paper cups specified in accordance with Annex 1 of the UFC PLS.
- Do not purchase consumables with specifications different from those presented in the Standardized List of Consumables validated by the PLS.

IMPLEMENTATION SCHEDULE, EXPECTED RESULTS AND RESPONSIBILITY MATRIX

| Initiatives | Expected results | Unit Responsible | Server Responsible | Start Date | End Date |
|---|---|---|---|---|---|
| 1 | Standardize the purchase of consumables with better performance environmental. | CPL / PRADM | Horace | | List is already elaborated |
| 2 | Purchase paper cups reusable. | CPL / PRADM | Horace | 2014 | Activity continuous |
| 3 | Purchase A4 paper with FSC seal. | CPL / PRADM | Horace | It's already in operation | |
| 4 | Purchase only the materials of the**List**, and, carry out periodic reviews. | CPL / PRADM | Horace | 2014 | Activity continuous |

♻RISK IDENTIFICATION:

- Non-adherence of the academic community;
- THE**List**not be expanded/revised gradually.

♻REQUIRED RESOURCES:

- Financial resources for spending on the awareness campaign on the use of**List**and the need for its periodic review.

### 3.1.2 Consumables - Consumption Reduction

♻OBJECTIVE: Reduce the consumption of paper, plastic cups and printer cartridges.

♻INITIATIVES:

1. Provide plastic mugs or squeeze bottles to the entire UFC community. From this, a broad campaign will be carried out to reduce the use of plastic cups. The aim is to eliminate the use of disposable cups by technical staff, teachers and outsourced workers. A competition will be held among Design students to design the mug or squeeze bottle;
2. The reduced acquisition of disposable cups will be made of paper cups, which allow for reuse;

3. Reduce the production of UFC agendas. From 2014 onwards, they will only be produced for students, and a survey will be conducted on the use of agendas among students so that from 2015 onwards, a further reduction in production can be made;
4. Use only electronic messages (e-mail) to communicate circular letters and internal invitations to UFC employees;
5. Undergraduate Course Completion Papers and Monographs to be sent to the UFC Library will only be in digital format. The copies to be submitted to the Examining Board must be printed on both sides;
6. Dissertations and Theses to be sent to UFC University Libraries will be in digital format only;
7. Reduce paper consumption for printing and copying by 40%, adopting the default modefront and backin the copiers;
8. Extend shared printer/copier rental contracts to all units. It has been observed that this has been a practice adopted in several public and private companies with excellent results, according to the testimony collected (Appendix 5). The contract notice for this service will need to be revised to include units that consume a lot of power and units with low power consumption;
9. Purchase printers only for units that have particular needs;
10. Encourage teachers to send files and documents to students through SIGAA, thus reducing the volume of copies.
11. Carry out awareness campaigns to reduce the use of cups, A4 paper and cartridges.

♻GOALS:

- Reduce A4 paper consumption by 30% by the end of 2017;
- Reduce the consumption of disposable cups by 70% by the end of 2017;
- Replace disposable cups with paper cups, specified in accordance with Annex 1 of the UFC PLS.
- Increase the hiring of copiers, reducing the purchase of cartridges and printers by 50% by the end of 2016.

IMPLEMENTATION SCHEDULE, EXPECTED RESULTS AND RESPONSIBILITY MATRIX

| **Initiatives** | **Expected results** | **Unit Responsible** | **Server Responsible** | **Start Date** | **End Date** |
|---|---|---|---|---|---|
| 1 | Reduction in the use of disposable cups in all UFC units. | Division of Management Environmental | | Jan/14 | Dec/17 |

| | | | | | |
|---|---|---|---|---|---|
| 2 | Total replacement of disposable cups by paper cups. | CPL / PRADM | Horace | Jan/14 | Dec/17 |
| 3 | Reduction in the production of UFC's annual agendas. | Division of Management Environmental | | Jan/14 | Dec/17 |
| 4 | Greater agility in communication. Minor waste. | All the Units | | Jan/14 | Activity Continuous |
| 5 and 6 | Waste reduction paper, cartridge and printers. Largest ease of access to works. | Library University student | Jonathan | Mar/14 | Activity Continuous |
| 11 | Reduce consumption of paper and cartridges printer. | All the Units | | Jan/14 | Activity Continuous |
| 12 and 13 | Increase efficiency in paper consumption, cartridge and printers. | Pro-Rector's Office of Administration | Fernando Lion | Jan/14 | Activity Continuous |
| 14 and 15 | Increase efficiency in paper consumption, cartridge and printers. | Division of Management Environmental | | Jan/14 | Activity Continuous |

♻RISK IDENTIFICATION:

- Non-adherence of the academic community.

♻REQUIRED RESOURCES:

- Servers for the Environmental Management Division;
- Two Scholarships for Design course students who win the mug design competition orsqueeze;
- Financial resources to increase the number of machines and copiers;
- Financial resources for purchasing mugs orsqueezes; - Financial resources for campaign expenses.

**3.2 Sustainable Construction Project and Building Maintenance**

♻ GENERAL OBJECTIVE: Ensure that new UFC works are in accordance with the best environmental sustainability practices and that they provide an excellent quality environment for users.

♻ SPECIFIC OBJECTIVES: Revise the UFC Sustainable Public Works Manual to ensure more complete design guidelines (architecture, structure and facilities) and execution standards in terms of sustainability. Finalize the UFC Master Plan.

♻ INITIATIVES/ACTIONS:

1. Include in the UFC's public notice for contracting works and renovations the presentation, by the company that won the contest, of the PGRCC, the construction waste management plan, and monitor its proper execution in all works;
2. Complete the UFC Master Plan, to ensure rational occupation of the campuses with sustainable criteria, ensuring good quality for new buildings with the least impact on the environment and existing buildings;
3. Review the UFC Sustainable Public Works Manual (Appendix 6), considering:

- Insert a standardization in the specification of materials in order to guarantee ease and economy of maintenance. This standardization will be based on previous experiences so that durable and sustainable products are adopted;
- Provide space for bicycle racks in new buildings;
- Indicate design guidelines that make the most of natural lighting;
- Specify taps with timers and toilets with attached bowls (duoflux or ecoflux type);
- Specify white color for the tiles in order to reduce the thermal load of the buildings;

4. Preserve native and adapted species in the campus afforestation and promote compensation and replanting of vegetation that may be removed in new construction projects. An item on this topic will be included in the UFC Master Plan;

♻ GOAL:

- Ensure that all new works, from the publication of the PLS, are carried out following the criteria and guidelines specified in the UFC Sustainable Works Manual, ensuring savings in environmental and financial resources, through the introduction of concepts such as environmental respect, durability and reduction of building maintenance costs.

IMPLEMENTATION SCHEDULE, EXPECTED RESULTS AND RESPONSIBILITY MATRIX

| Initiatives | Expected results | Unit Responsible | Server Responsible | Start Date | End Date |
|---|---|---|---|---|---|
| 1 | Appropriate treatment for construction waste. | Commission permanent of Bidding of UFC Infra | | Nov/13 | Jan/14 |
| 2 | Regulation of new works / Occupation adequate of thecampuses. | Commission Special of the Master plan | | Nov/13 | Jul/14 |
| 3 | More durable works and with the greatest respect environmental. | Coordination of Projects and Works / UFC Infra | Aurelian/ Moacyr | Jan/14 | Apr/14 |
| 4 | Preservation of species vegetables from the campuses. | Commission Special of the Master plan | | Nov/13 | Jul/14 |

♻RISK IDENTIFICATION:

- Lack of dissemination of the UFC Sustainable Works Manual to contracted design companies;
- Community resistance to the standardization of coatings;
- Non-completion of the Master Plan;
- Failure to comply with the requirements of the manuals.

♻REQUIRED RESOURCES:

- Training of the inspection team to assess and monitor the PGRCC;
- Preparation of new items in the SINAPI Table of which UFC is a partner;
- Acquisition of bibliographic material on new materials and coatings, and on the use of construction waste; - Financial resources.

## 3.3 Sustainable Services Design

### 3.3.1 Selective Collection

♻OBJECTIVE: To expand the Solidarity Selective Collection in UFC environments, through investments in infrastructure and promotion of PROGERE campaigns. The collection

complies with Federal Decree 5.940/06 and CONAMA Resolution No. 275 of April 25, 2001.

♻ SPECIFIC OBJECTIVES: To encourage all academic and administrative units to join the selective collection program. Start the Collection of batteries. Acquire new equipment and renovate warehouse for waste storage. Acquire exclusive vehicle for collection on campuses. Manage laboratory waste.

♻ INITIATIVES:

1. Promote the correct and sustainable disposal of collected waste. Expand collection to include glass, batteries and cells;
2. Organic solid waste from sweeping and pruning will be sent to NEPAU - Center for Teaching and Research in Urban Agriculture, so that it can be transformed into organic compost used in the production of seedlings; gardening, cultivation of vegetables, medicinal plants, ornamental plants, etc.;
3. Provide NEPAU with the technical capacity to carry out biotechnological processing of pruning and sweeping;
4. Prepare the UFC Solid Waste Management Plan;
5. Identify in the UFC Master Plan an area designated for the construction of the solid waste laboratory (project already approved by FINEP, coordinated by Prof. Ronaldo Stefanutti);
6. Adapt the waste storage warehouse to increase collection;
7. Create groups responsible for planning, implementation, monitoring and intermediation with the cooperatives that will receive waste from all campuses;
8. Implement specific collectors on campuses and verify the need for new points on campuses that already carry out this action;
9. Include in cleaning service provision contracts the contractor's joint responsibility for adhering to the UFC Selective Collection policy;
10. Expand selective collection through the acquisition of a new truck to collect and transport waste;
11. Implement action to eliminate the chemical waste liability already identified throughout the UFC;
12. Plan and implement the appropriate treatment of chemical waste from laboratories;
13. Carry out a campaign to ensure that computer equipment that is not being used is returned to the estate, so that it is classified as unusable and the remainder is donated, through an agreement with public schools;

♻GOALS:

- Expand Solidary Selective Collection practices in allcampusesfrom UFC until 2017;
- Make UFC one of the reference institutions in selective collection.

IMPLEMENTATION SCHEDULE, EXPECTED RESULTS AND RESPONSIBILITY MATRIX:

| **Initiatives** | **Expected results** | **Unit Responsible** | **Server Responsible** | **Start Date** | **End Date** |
|---|---|---|---|---|---|
| 1 | Promote the destination sustainable use of collected waste. Increase the items collected. | PROGERE | Geovany | Oct/13 | Activity Continuous |
| 2 and 3 | Reuse waste organic. | DIURB / NEPAU | John Portacio / Prof. Emerald | 2014 | Activity Continuous |
| 4 | Develop the Solid Waste plan. Carry out activity of Extension and Research. | | Prof. Ronaldo Stefanutti | Jan/14 | Jan/15 |
| 5 | Indicate area for the Waste Laboratory Solids. | Commission of the master plan from UFC | | | July/14 |
| 6 to 11 | Increase the number of units participating in selective collection. Increase the number of items collected. Improve the infrastructure of storage of waste. Make management of the most waste efficient. | PROGERE | Geovany | Jan/14 | Act Continuous |
| 12 | Complete the inventory of laboratory waste. Develop the reagent bank. Develop new technologies for treatment of these waste. | PROGERE | Geovany | Jan/14 | Jan/17 |
| | Organize the equipment of computer science that are not | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 13 | being used. Forward the unusable for auction and provide the rest an agreement to donation. | Division of Management Environmental | | Jan/14 | Jan/17 |

♻ RISK IDENTIFICATION:

- Lack of awareness of the correct use of selective collection by the community;
- Lack of resources necessary for the correct storage and transportation of materials;
- Lack of supervision;
- Non-adherence of contracted cleaning companies.

♻ REQUIRED RESOURCES:

- Financial resources for the purchase of a truck;
- Resources for adapting the waste storage warehouse;
- Resources for NEPAU infrastructure to become a Biotechnology processing unit;
- Financial resources for other necessary expenses, including awareness campaigns;
- Acquisition of collectors required for all campuses.

### 3.3.2 Electrical Energy

♻ OBJECTIVE: To reduce electricity costs and increase efficiency.

♻ INITIATIVES:

1. Acquisition of equipment with the PROCEL seal and "classification A" or the best classification available;
2. The acquisition of air conditioning equipment will be made based on the specifications prepared by engineer Fabrício, from the Projects and Works Coordination Department of UFC Infra, which can be found in Annex 3. These specifications will be included in all notices from the Permanent Bidding Committee of the Pro-Rectory of Administration;
3. Create a standard for the installation of power generators, as well as provide for their shared use. Specify generators based on technical studies by CPO/UFC Infra and that do not require the construction of a shelter;
4. Create a pilot project for individualized energy consumption measurement for the Technology Center/Pici campus. The aim is to expand this project to

all academic units and create a control indicator (kWh/student). This project will be presented to ELETROBRÁS for funding;

5. Develop an energy efficiency program for the missing units (Center for Humanities, School of Law, FEAAC, Sobral and Quixadá) by submitting a project to the National Electric Energy Agency. This program consists of diagnosis, equipment replacement and awareness campaigns;
6. Develop projects that use renewable energy
7. Specify in the notices for contracting Specialized Pruning services (Appendix 4) the use of equipment and appropriate frequency to avoid damaging the electrical grid;
8. Carry out campaigns to raise awareness about the use of electricity, reducing consumption at unnecessary times.

♻ GOALS:

- Make purchases of equipment with the PROCEL seal rating "A";
- Rationalize energy consumption and increase its efficiency in UFC environments.

IMPLEMENTATION SCHEDULE, EXPECTED RESULTS AND RESPONSIBILITY MATRIX:

| **Initiatives** | **Expected results** | **Unit Responsible** | **Server Responsible** | **Start Date** | **End Date** |
|---|---|---|---|---|---|
| 1, 2 | Acquisition of equipment with seal PROCEL and "A rating" or best rating available. | CPO / UFC Infra and CPL / PRADM | Fabricio and Horace | Jan/14 | Activity continuous |
| 3 | Create standard for generator installation of energy. | CPO / UFC Infra | Fabricio | | |
| 4 | Consumption diagnosis of energy sectorized by academic unit. | PROCEN | Prof. Tomaz Cavalcante Grandchild | Jan/14 | Dec/15 |
| 6 | Develop projects that use energy renewables. | To be defined. | | | |
| 7 | Perform maintenance of network through pruning specialized. | DIURB / DAA / UFC Infra | John Portacio | Nov/13 | Feb/14 |

| | | | | | |
|---|---|---|---|---|---|
| 8 | Campaign of awareness of use of energy. | Coordination of Communication Institutional | Prof. Nonato File | Jan/14 | Jul/14 |

♻ RISK IDENTIFICATION:

- Servers' failure to be aware of energy reduction;
- Failure to acquire the equipment necessary to monitor buildings.

♻ REQUIRED RESOURCES: -

Servers;

- Four scholarship holders for PROCEN (Energy Conservation Program);
- Energy measurement program;
- Specific equipment;
- Financial resources for the advertising campaign (lectures, marketing actions and printing of banners, posters and stickers).

**3.3.3 Water and Sewage**

♻ OBJECTIVE: To reduce water consumption and increase its efficiency in UFC environments.

♻ INITIATIVES:

1. Carry out a survey of UFC's hydraulic installations looking for leaks;
2. Establish for new works: individual measurement and more efficient hydraulic accessories from the point of view of durability and consumption reduction (coupler boxes and taps with timers). These guidelines must be included in the UFC Sustainable Works manual;
3. When replacing toilets and taps due to imperfections, do so using more efficient systems that consume less water, such as flush tanks and taps with timers;
4. Study the feasibility of storing rainwater for new works;
5. Carry out campaigns to avoid wasting water.

♻ GOALS:

- Reduce water consumption through more rational use and better hydraulic accessories.

IMPLEMENTATION SCHEDULE, EXPECTED RESULTS AND RESPONSIBILITY MATRIX

| Initiatives | Expected results | Unit Responsible | Server Responsible | Start Date | End Date |
|---|---|---|---|---|---|
| 1 | Reduction in consumption. | CPO / UFC Infra | Eng. Antonio Moacyr | Jan/14 | Dec/14 |
| 2 | Rational use of water. | CPO / UFC Infra | Eng. Antonio Moacyr | Jan/14 | Dec/14 |
| 3 | Replacement of equipment damaged by similar more efficient. | City Halls | | | Act Continuous |
| 4 | Project that consumes less water. | CPO / UFC Infra | Arch. Aureliano | Jan/14 | Jul/14 |
| 5 | Carry out campaigns to the non-waste of water. | Division of Management Environmental | | Jan/16 | Jul/16 |

♻ RISK IDENTIFICATION:

- Failure to replace damaged equipment with similar, more efficient equipment;
- Failure to include more efficient specifications for new construction projects.

♻ REQUIRED RESOURCES:

- Works with a slightly higher implementation cost so that there is less water consumption and greater durability, resulting in longterm savings.

### 3.3.4 Cleaning

♻ OBJECTIVE: To implement optimization techniques in the cleaning service at UFC so that they carry out sustainable actions and contribute to the provisions of 3.3.1 of this PLS.

♻ INITIATIVES:

1. Include a requirement for sustainable practices and training certificates in notices for contracting cleaning services, containing: - Training to reduce waste of cleaning materials;

- Seek out contracted companies to increasingly replace products that harm the environment with similar products that cause less impact, such as biodegradable and non-toxic products;
- Hold the contracted company responsible for the correct disposal of the waste generated;

2. Install collectors within the University in order to encourage Solidary Selective Collection in compliance with Decree No. 5,440 of October 25, 2006;

♻GOAL:

- Introduce sustainable practices into UFC cleaning services in the next public tender notice.

IMPLEMENTATION SCHEDULE, EXPECTED RESULTS AND RESPONSIBILITY MATRIX

| Initiatives | Expected results | Unit Responsible | Server Responsible | Start Date | End Date |
|---|---|---|---|---|---|
| 1 | Create standards of sustainable practices for companies hired for the cleaning services. | DIURB / DAA | Gumercindo | | |
| 2 | Deploy collectors in all UFC. | PROGERE | Geovany | | |

♻RISK IDENTIFICATION:

- The lack of training of those responsible for cleaning; - Failure to include environmental requirements in the Notice.

♻REQUIRED RESOURCES:

- Collectors.

### 3.3.5 Telephony

♻OBJECTIVE: Reduce telephone costs.

♻INITIATIVES:

1. Carry out an assessment of the current fixed and mobile telephone contract and present a report indicating whether there is a possibility of revising the contract to make it more efficient;

2. As provided for in the PDI, a report will be made on what the necessary requirements for implementing VOIP technology for communication would be and what the requirements are;

♻ GOAL:

- Facilitate communication between servers through alternative services;
- Effective reduction of telephony costs by 2017.

IMPLEMENTATION SCHEDULE, EXPECTED RESULTS AND RESPONSIBILITY MATRIX:

| Initiatives | Expected results | Unit Responsible | Server Responsible | Start Date | End Date |
|---|---|---|---|---|---|
| 1 | Evaluate contracts current mobile phone and fixed. | DAA / UFC Infra | Gumercindo | Jan/14 | Dec/14 |
| 2 | Analyze the possibility of implementation of VOIP technology. | STI | Jose Antonio Macedo | Jan/15 | Dec/15 |

♻ RISK IDENTIFICATION:

- Lack of IT infrastructure for the implementation of VOIP technology; - Poor broadband connection quality;
- Failure to acquire equipment necessary for using internet communication.

♻ RESOURCES TO BE USED:

- Infrastructure for VOIP technology.

**3.3.6 Landscaping and Revitalization**

♻ OBJECTIVE: To harmonize the interaction of the academic community with the environment, enabling a better coexistence with nature. To guarantee the safety of trees present in allcampusesof the UFC, as well as restoring the affected geographic areas.

♻ INITIATIVES:

1. Include in the Notice for the contracting of PRUNING strict requirements that guarantee specialized service, which maintains the architecture and physical integrity of the trees, in addition to being carried out with regulated frequency aiming at the perfect maintenance of the electrical grid. The specifications prepared by Prof. Marcos Esmeraldo (NEPAU) and DIURB / UFC Infra to be included in the next Notice will be made available on the PLS-UFC website;

2. Require that the pruning supervisor of the contracted company be an agricultural technician or someone else who has the necessary specialization for this type of work;
3. Appoint those responsible for supervising pruning;
4. Edit a catalogue with the Pici Forest Inventory, prepared by Prof. Marcos Esmeraldo, to be launched during UFC's Environment Week in June 2014;
5. Prepare the georeferencing of the species catalogued in item 2 and post visual communication of the species according to the project to be made available on the PLS-UFC website;
6. Institutionalize the squares and forests on all campuses, through the adoption of names proposed by the community and approved by the University Council;
7. Include in the UFC Master Plan regulations for plant restoration in cases where new constructions require tree felling.

♻ GOAL:

- Edit UFC tree catalog;
- Prepare georeferencing of cataloged trees; - Preserve the vegetation on UFC campuses.

IMPLEMENTATION SCHEDULE, EXPECTED RESULTS AND RESPONSIBILITY MATRIX:

| **Initiatives** | **Expected results** | **Unit Responsible** | **Server Responsible** | **Start Date** | **End Date** |
|---|---|---|---|---|---|
| 1,2 and 3 | Carrying out a Specialized PRUNING and more efficient. | DIURB | John Portacio | Next Announcement to hiring of PRUNING. | |
| 4 and 5 | Record vegetation of the UFC. Preserve vegetation UFC. | NEPAU | Prof. Marcos Emerald | Jan/14 | Jun/14 |
| 7 | Preserve vegetation UFC. | Plan Commission Director | | | |

♻ RISK IDENTIFICATION:

- Lack of financial resources necessary to purchase materials;
- Failure to comply with the requirements for contracting pruning services.

♻ REQUIRED RESOURCES:

- Financial resources in the amount of R$14 thousand reais for publishing the tree catalog;
- Financial resources for georeferencing species.

### 3.3.7 Data Processing

♻ OBJECTIVE: To acquire environmentally certified T&I equipment (green T&I), including for extension projects, in accordance with Annex 02, which degrade nature less and which contribute in some way to people's quality of life.

♻ INITIATIVES:

1. Eliminate the purchase of stabilizers, as they are unnecessary for current T&I equipment and electricity supply levels;
2. Adopt green T&I certifications for computer tenders as per Annex 02, prepared by STI technician Válber Jones;
3. Outsource printing and copying. Replace individual printers with shared printing.

♻ GOALS:

- Make T&I consumption environmentally responsible.

IMPLEMENTATION SCHEDULE, EXPECTED RESULTS AND RESPONSIBILITY MATRIX

| Initiatives | Expected results | Unit Responsible | Server Responsible | Start Date | End Date |
|---|---|---|---|---|---|
| 1 | Eliminate acquisition of stabilizers. | CATI | Prof. José Antonio Macedo | 2014 | 2014 |
| 2 | Acquisition of T&I equipment sustainable. | CPL | Horace | Already started | Continuous Act |
| 3 | Reduce acquisition of individual printers. | PRPL /STI / PRADM | Fernando Lion | | |

♻ RISK IDENTIFICATION:

- Failure to use green T&I requirements in tender notices.
- Failure of the community to assimilate the culture of printer sharing.

♻ REQUIRED RESOURCES:

- Campaign for shared printer usage.

### 3.3.8 Third parties

♻ OBJECTIVE: To reduce outsourced labor costs and promote the quality of services offered.

♻ INITIATIVES:

1. Include training requirements for new notices for hiring outsourced workers, so that work is carried out with greater productivity and quality;
2. Conduct a satisfaction survey with the entire academic community, regarding the quality of services provided by outsourced companies;

♻ GOAL:

- Reduction of costs with outsourcing;
- Improve the service provided by outsourced labor.

IMPLEMENTATION SCHEDULE, EXPECTED RESULTS AND RESPONSIBILITY MATRIX

| Initiatives | Expected results | Unit Responsible | Server Responsible | Start Date | End Date |
|---|---|---|---|---|---|
| 1 | Create standard for realization of new bids. | DAA / UFC Infra | Gumercindo | Jan/16 | Dec/16 |
| 2 | Carry out, periodically, satisfaction survey with the whole community academic. | DAA / UFC Infra | Gumercindo | Jul/14 | Dec/14 |

♻ RISK IDENTIFICATION:

- Non-adherence to the standards of companies with current contracts; - Failure to monitor training requirements.

♻ REQUIRED RESOURCES:

- Servers;
- Computerized satisfaction survey program.

#### 3.3.9 Treatment of Recycled Materials

♻ OBJECTIVE: To continue collecting waste from the Solidary Selective Collection, packaging, transporting and treating it, in order to contribute to a sustainable culture throughout the academic community.

♻ INITIATIVES:

1. Increase the collection turnover of UFC units;
2. Expand the storage space for collected waste;
3. Donate recyclable materials to waste picker cooperatives;
4. Provide training to employees responsible for collection;
5. Create posters and explanatory leaflets about how the collection works, times and frequencies, storage and disposal;
6. Create a monitoring group for the collection, storage and donations of materials;
7. Carry out an incentive, communication and awareness campaign for the entire academic community.

♻ GOAL:

- Expand the Solidarity Selective Collection Project;
- Contribute to research carried out at UFC on the Treatment of Recycled Materials.

IMPLEMENTATION SCHEDULE, EXPECTED RESULTS AND RESPONSIBILITY MATRIX

| **Initiatives** | **Expected results** | **Unit Responsible** | **Server Responsible** | **Start Date** | **End Date** |
|---|---|---|---|---|---|
| 1 | Increase the collection turnover of units. | DIURB / PROGERE | John Protasio | Jan/15 | Continuous Act |
| 2 | Expand the storage space of collected waste. | CPO UFC Infra / PROGERE | Arch. Aurelian | Jul/14 | Jul/15 |
| 3 to 7 | Make a donation of recyclable materials. | PROGERE | Geovany | Jan/14 | Continuous Act |

♻ RISK IDENTIFICATION:

- Lack of available servers;
- Non-identification of compounds;
- Lack of necessary space for storage of waste collection; - Lack of exclusive driver for the service.

♻ REQUIRED RESOURCES:

- Financial resources to expand waste collection;
- Allocation of five outsourced servers to meet service demands and two to ensure proper separation of materials in the warehouse;

- Financial resources for the purchase of materials and equipment, such as waste bins, shredders, scales, adhesives, plastic bags and other planned materials;

## 3.4 Quality of Life at Work Project

There is a Coordination for organization and quality of life at UFC work, from the Office of the Vice-Rector for Human Resources Management, which already develops all the planning and execution of actions aimed at quality of life at work.

## 3.5 Sustainable Commuting Project

♻ OBJECTIVE: To reduce the need for travel by vehicle within the campuses and the University fleet.

♻ INITIATIVES:

1. Present a pilot project for shared bicycle use within the PICI campus (Appendix 08). The aim is to install 7 bicycle racks through a partnership with a sponsoring company, 1 at the entrance to the PICI campus and 6 distributed throughout the academic units, so that students can make internal trips using the bicycle loan system, as is done in cities such as Paris, Rio de Janeiro and São Paulo. In addition to the bike racks, cycle lanes will be designed to connect the bike racks;
2. Include spaces for bicycle parking for new works in the UFC Sustainable Works manual;
3. Include in the UFC Master Plan the use of bicycles as a means of transport within campuses and plan a network of cycle paths;
4. Monitor the frequency of intercampus buses to reduce the circulation of lines that are found to be underused;

♻ GOAL:

- Reduce fuel purchase costs;
- Reduce the emission of polluting substances produced by motor vehicles.

IMPLEMENTATION SCHEDULE, EXPECTED RESULTS AND RESPONSIBILITY MATRIX:

| Initiatives | Expected results | Unit Responsible | Server Responsible | Start Date | End Date |
|---|---|---|---|---|---|
| 1 | Present pilot project of use shared by bicycle inside the PICI campus. | CPE / PRPL | Prof. Augusto Albuquerque | Nov/13 | Mar/14 |
| 2 | Search for a company sponsor for installation of 7 bike racks and cycle tracks connecting the bike racks. | CPE / PRPL | Prof. Augusto Albuquerque | Apr/14 | Nov/14 |
| 3 | Insert in the Sustainable Works manual of UFC spaces for bike racks for the new works. | CPO / UFC Infra | Arch. Aurelian | Jan/14 | Continuous Act |
| 4 | Follow up bus frequency intercampi. | DAA / Transport | Lelis | Jan/14 | Continuous Act |

♻ RISK IDENTIFICATION:

- Failure to purchase sustainable fuels;
- Non-adjustment of intercampus bus schedules;
- Failure to obtain a sponsoring company;
- Failure of the Master Plan to adapt to cycle lanes and bicycle parking.

♻ RESOURCES TO BE USED:

- Financial resources from the Sponsorship Acquired for:
- Purchase of bicycles;
- Installation of cycle lanes;
- Student loan and registration system;

## 4 Monitoring and Evaluation of PLS

### 4.1 Environmental Management System

After approval of the PLS, with any revisions, which may be presented by the community, the Pro-Rectory of Planning will submit to the University Council the creation of the Environmental Management Division, linked to the Planning and Strategic Management Coordination, of the Pro-Rectory of Planning. This Division will have the purpose of monitoring the implementation of the PLS, carrying out reviews and preparing the next Plans.

For the operation of the Environmental Management Division, 3 will be required servers and a bonus function FG1, for the head. In 2016, an evaluation of this proposed structure will be made and the Environmental Management Division will be transformed into an Environmental Management Coordination, linked to the ProRectory of Planning.

## 5 Bibliographic References


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BRAZIL.**Sustainable Logistics Plan – Ministry of the Environment**. Brasilia: Ministry of the Environment, 2013.

BRAZIL.**Sustainable Logistics Plan – Federal University of Recôncavo Baiano.**Bahia, 2013.

BRAZIL.**Institutional Development Plan 2013/2017 – Federal University of Ceará.**Fortaleza, 2013.

BRAZIL.**Eletrobras.**Available at: <http://www.eletrobras.com/elb/procel>Accessed on: 10/24/2013.

## Appendix 1 – Water and Electricity Consumption Table

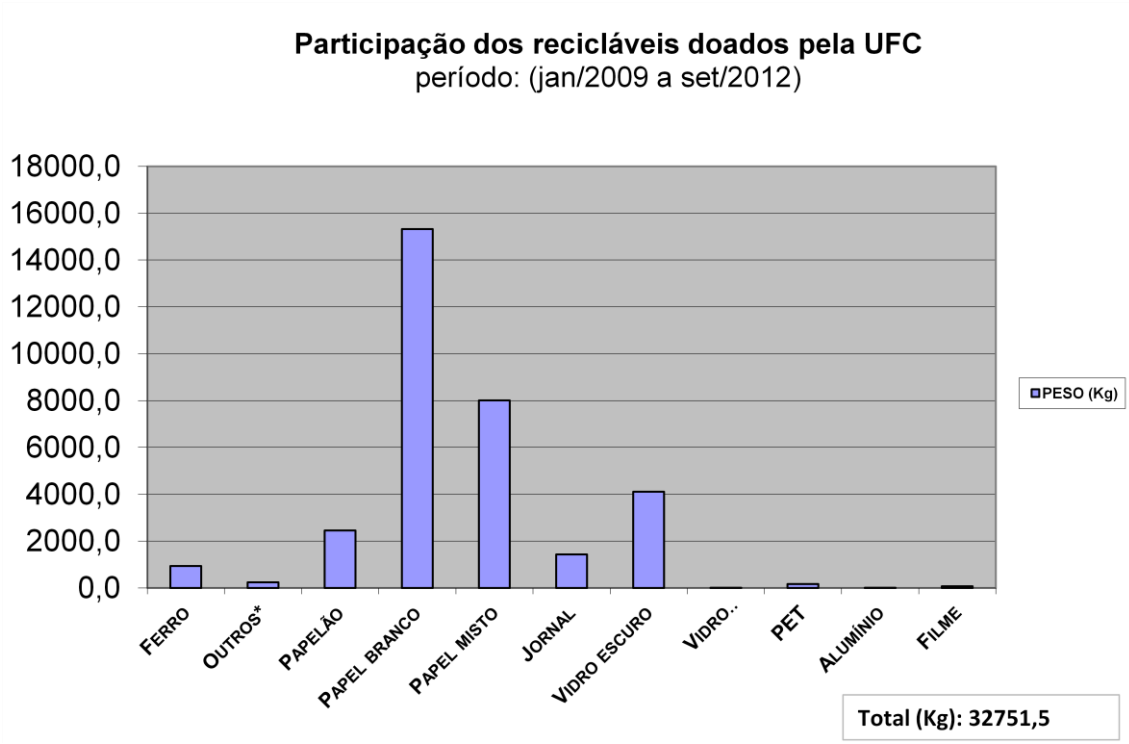
| Table - Water and Electricity Consumption | | | | | | |
|---|---|---|---|---|---|---|
| Resource Consumed | Amount | | | Value | | |
| | Exercises | | | | | |
| | 2012 | 2011 | 2010 | 2012 | 2011 | 2010 |
| Water (m3) | 6,815,413 | 8,539,044 | 9,272,114 | R$ 1,574,704.64 | R$ 1,504,383.04 | R$ 1,520,960.76 |
| Energy Electrical (kWh) | 50,345,718 | 44,853,155 | 47,522,027 | R$ 9,213,172.87 | R$ 8,893,501.76 | R$ 9,264,679.49 |
| Total | 57,163,143 | 53,394,210 | 56,796,151 | R$ 10,787,877.51 | R$ 10,397,884.80 | R$ 10,785,640.25 |

**Appendix 2 – Units participating in selective collection at UFC (PROGERE)**

| | |
|---|---|
| **Pici Campus** | |
| 1 | Office of the Vice-Rector for Undergraduate Studies |
| 2 | Science Center |
| 3 | Technology Center |
| 4 | Center of Agricultural Sciences |
| 5 | Department of Analytical Chemistry and Physical Chemistry |
| 6 | Department of Organic and Inorganic Chemistry |
| 7 | Department of Hydraulic and Environmental Engineering |
| 8 | Department of Agricultural Engineering |
| 9 | Department of Agricultural Economics |
| 10 | Department of Fisheries Engineering |
| 11 | Department of Electrical Engineering |
| 12 | Department of Transportation Engineering |
| 13 | Department of Metallurgical Engineering |
| 14 | Department of Mechanical Engineering |
| 15 | Department of Geography |
| 16 | Department of Statistics |
| 17 | Prodema |
| 18 | NDC (Child Development Center) |
| 19 | DAA/DIURB |
| 20 | COP |
| **Porangabuçu Campus** | |
| 21 | Faculty of Pharmacy, Dentistry and Nursing (Coordination) |
| 22 | Faculty of Medicine (Coordination) |
| 23 | Faculty of Dentistry |
| 24 | Nursing Department |
| **Benfica Campus** | |
| 25 | Rector's Office |
| 26 | Office of the Vice-Rector for Extension |
| 27 | Office of the Vice-Rector for Student Affairs |
| 28 | Yellow House; |
| 29 | ICA |
| 30 | Communications Consulting |
| 31 | FEAAC. |
| 32 | FACED – Faculty of Education |
| 33 | SINTUFC |
| 34 | HRH (HRD) |
| 35 | SRH (DDP) |
| 36 | SRH (DAP) |

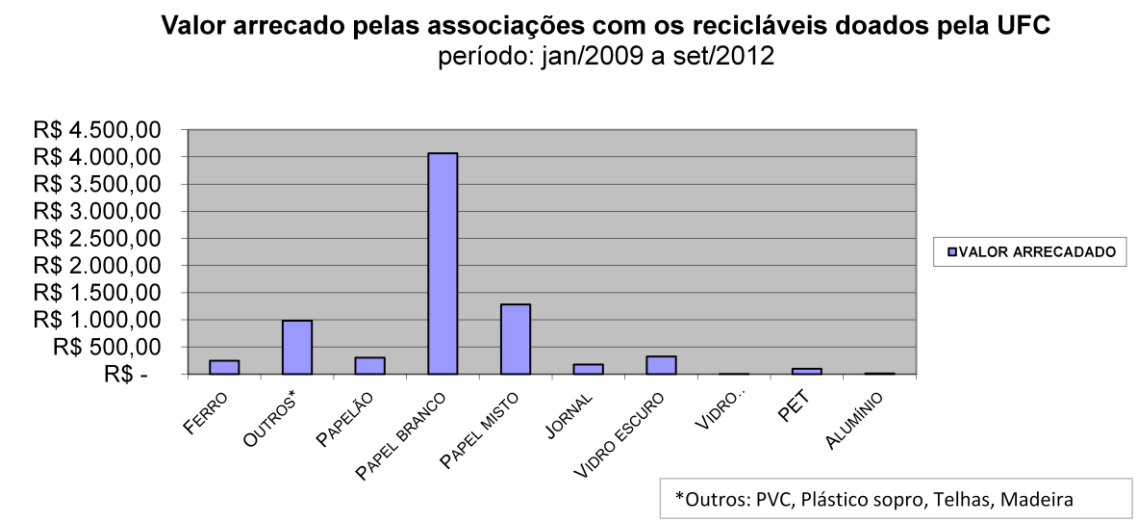
| | |
|---|---|
| 37 | Law school |
| 38 | SINTUFC |
| 39 | Benfica City Hall |

**Graph 1 – Quantity of recyclable waste donated (Jan/2009 to Sep/2012)**




* Undifferentiated waste

**Graph 2 – Amounts collected by associations through the donation of recyclable waste by UFC (Jan/2009 to Sep/2012)**




* Others: PVC, Blown plastic, Tiles, Wood

**Annex 1 – List of Sustainable Consumable Materials**

| CODE OF THE ITEM | MATERIAL - Standard Descriptive | DESCRIPTION | APPLICATION | FEATURES ADDITIONAL |
|---|---|---|---|---|
| 347498 | A4 paper | A4 paper, material recycled paper, weight 75. | - | - |
| 395860 | A4 paper | A4 paper, material vegetable cellulose, weight 75, color white. | Printer Laser. | FSC certification or Management Council Forestry. |
| 407921 | 5849 - Cup Disposable | Disposable cup, starch material corn (Acid Polyactic), capacity 180. | Cold liquids and hot. | Non-toxic and Biodegradable. |
| 407922 | 5849 - Cup Disposable | Disposable cup, starch material corn (Acid Polyactic), capacity 130. | Cold liquids and hot. | Non-toxic and Biodegradable. |
| 409680 | 5849 - Cup Disposable | Disposable cup, starch material corn (acid polyactic), capacity 250. | Cold liquids and hot. | Non-toxic and Biodegradable. |
| 409926 | 5849 - Cup Disposable | Disposable cup, bagasse material cane, capacity 50. | Cold liquids and hot. | Non-toxic and Biodegradable. |
| 413887 | 5849 - Cup Disposable | Disposable cup, bagasse material cane, capacity 200. | Cold liquids and hot. | Non-toxic and Biodegradable. |
| | | Disposable cup, | | |

| | | | | |
|---|---|---|---|---|
| 421447 | 5849 - Cup Disposable | starch material corn (acid polyactic), capacity 200. | - | Non-toxic and Biodegradable. |
| 421448 | 5849 - Cup Disposable | Disposable cup, starch material corn (acid polyactic), capacity 120. | - | Non-toxic and Biodegradable. |
| 249677 | 12792 - Paper Towel | Paper towel, high paper material whiteness (100% fibers) recycled), type single sheet, length 200, width 30, color white. | - | Super-resistant, quick acquittal liquids. |
| 391513 | 12792 - Paper Towel | Paper towel, 100% fiber material virgin cellulose, length 22, width 20, color white. | - | Biodegradable. |
| 346131 | 20 - Folder File | File folder, card material recycled, type simple, width 310, height 230, color brown, weight 400. | - | 2 10mm thick. |
| 389269 | 20 - Folder File | File folder, cardboard material recycled, type suspended pendulum, width 240, height 360, natural color, weight 350. | - | 3 display/rod plastic/label. |
| | | File folder, | | |

| | | | | |
|---|---|---|---|---|
| 390014 | 20 - Folder File | polyethylene material recycled, type l, width 240, height 340, colorless color. | - | |
| 413705 | 20 - Folder File | File folder, cardboard material recycled, type az classifier, width 350, height 280, spine 80. | - | 3 with 02 holes, letter format. |
| 424882 | 20 - Folder File | File folder, card material Recycled Kraft, type flaps and elastic, width 230, height 330, spine 20, natural color, weight 420. | - | - |
| 381875 | 6239 - Diploma | Diploma, material recycled paper, type color printing, weight 90, length 297, width 210. | - | According to the model of organ. |
| 385090 | 13327 - Broom | Broom, material pet bristles (recycled), material wood strain, strain length 20. | - | Cable screwable/bristles feathered: 58/26 threads, strain width 4. |
| 389278 | 22 - Pillow Stamp | Stamp pad. Box material: recycled plastic, cushion material: absorbent sponge fabric covered, blue color, type inked, length 120, width 90. | - | - |
| | | Certificate, type participation, paper material | | |

| | | | | |
|---|---|---|---|---|
| 389427 | 4793 - Certificate | recycled, weight 240, length 297, width 210, print color 4/1 colors. | - | According to the model of organ. |
| 389475 | 200 - Book Minutes | Minutes book, material recycled paper, quantity of sheets 100, weight 90, length 300, width 216. | - | Hardcover; numbered and lined pages. |
| 389774 | 176 - Mechanical pencil | Mechanical pencil, material recycled plastic, diameter load 0.5. | - | With clip, tip and trigger metal/rubber. |
| 389775 | 176 - Mechanical pencil | Mechanical pencil, material recycled plastic, diameter load 0.7. | - | With clip, tip and trigger metal/rubber. |
| 403981 | 8662 - Light bulb Fluorescent Compact | Light bulb fluorescent compact, base type Edson-27. | - | Class "A" seal PROCEL, factor minimum power: 0.96, average life: minimum: 6,000, power nominal: 20, voltage nominal: 127, light intensity (maximum depreciation: 15%) minimum per watts: 55. |
| 403982 | 8662 - Light bulb Fluorescent Compact | Light bulb fluorescent compact, base type Edson-27. | - | Class "A" seal PROCEL, factor minimum power 0.96, average life: minimum 6,000, power nominal: 20, voltage nominal: 220, light intensity (depreciation maximum:15%) minimum per watt: 55. |

| | | | | |
|---|---|---|---|---|
| 226694 | 6136 - Detergent | Detergent. Composition: tesoactives anionic, supporting actor, preservatives, active component linear alkylbenzene sodium sulfonate. Application: removal of fats from crockery, cutlery and pots, aroma natural. | - | Contains surfactant biodegradable. |
| 229739 | 11200 - Solution Cleaning Multipurpose | Cleaning solution multipurpose. Basic composition: active tension anionic biodegradable/non-biodegradable ionic/. Aspect physical: powder. Type of use: cleaning instruments and glassworks by ultrasound. Application: cleaning metals and glassworks. | - | - |
| 324827 | 11865 - Soap in Powder | Washing powder. Application: cleaning general. Aspect physical: powder. | - | Biodegradable. |
| 377530 | 11902 - Bag | Bag. Material: polyethylene (recycled), color black. Application: production planting of seedlings. | - | Accordion 06 holes side, height 21, width 26, thickness 0.018. |
| | | | | With continuous welding, |

| | | | | |
|---|---|---|---|---|
| 411825 | 11903 - Bag Plastic Waste | Plastic garbage bag, capacity 100, color blue, width 75, height 105. | - | application collects selective, standards class "I" techniques, type "E", resin material thermoplastic recycled. |
| 405278 | 99 - Pen Ballpoint | Pen ballpoint, plastic material recycled material ball tip tungsten, type medium writing, color blue ink. | - | Non-toxic, body cylindrical. |

**Annex 2 – Green IT Practices**

Computers purchased by the institution whenever possible are acquired in compliance with various certifications and recommendations that focus on environmental sustainability, these requirements allow UFC to acquire equipment that degrades nature less and can also contribute in some way to people's quality of life, maintaining the focus on technological solutions that harm nature as little as possible (Green IT).

Below are some of them and their benefits and parameters.

supported by the same:

- EPA Energy Star 5.0: Issued by the EPA (United States Environmental Protection Agency), it is a seal that certifies that the equipment has good energy efficiency, products with this certification offer the same, or better, performance than other equipment not approved for this certification with lower energy consumption and consequently reducing electricity costs;

- RoHS: RoHS (Restriction of Certain Hazardous Substances, Restriction of Certain Hazardous Substances) is a European directive that restricts the use of substances that are hazardous to health and that may harm the environment in the manufacturing process of electronic products. These substances are: cadmium (Cd), mercury (Hg), hexavalent chromium (Cr(VI)), polybrominated biphenyls (PBBs), polybrominated diphenyl ethers (PBDEs) and lead (Pb). The directive was created with people's health and the environment in mind, as there are currently major problems worldwide related to the disposal of electronic waste, as in the vast majority of cases these devices are thrown together with regular waste and end up being thrown into open-air landfills, which can

contaminate groundwater or even directly contaminate people through direct contact. Substances such as lead can have serious consequences for human health;

- ♻ The equipment must have at least 10 percent of its composition made from reusable or recyclable materials: This requirement in the computer acquisition process contributes to better use in the recycling process of the equipment at the end of its useful life, thus contributing to a more sustainable environment;
- ♻ ISO 14001: This is an international standard that defines what must be done in an institution to establish an effective environmental management system; Companies that have this certification prove that they are concerned about the environmental impact caused by their activities;
- ♻ WEEE: It is a European directive, like RoHS, related to the management of electronic equipment waste, which emphasizes the importance of recycling these materials;
- ♻ EPEAT: This is a certification that allows consumers to evaluate the effects of a given IT product on the environment. Equipment that has this certification can obtain the following evaluation concepts: Gold, silver and bronze; This evaluation is done by assessing the environmental standards of the product's life cycle, based on a series of environmental performance criteria;

**Annex 3 – Air Conditioning Purchase Specifications**

## 1 Energy Efficiency in Public Buildings

The adoption of energy efficiency measures in public buildings is important, as it contributes to reducing emissions that impact the planet's climate. PROCEL's Public Buildings subprogram was structured in July 1997 and although some actions were already underway, it was from that date that the program began to establish unified strategies to achieve the objective of promoting energy efficiency actions for public buildings.

During the electricity crisis in mid-2001, the Federal Government established the Electric Energy Crisis Management Chamber – GCE. In this context, it collaborated by estimating consumption reduction targets.

PROCEL-EPP has the following objectives:

- Reduce the costs of public buildings by reducing consumption and demand for electricity;
- Improve working conditions, comfort and safety of public servants;
- Train administrators and employees of public buildings in energy efficiency;
- Promote laboratory training in energy efficiency.

The strategies employed include: Implementation of pilot projects for demonstration; Replacement of obsolete technologies with efficient ones;

- Promotion of a training plan for public building administrators in energy efficiency;
- Normative instruments.

During the energy supply crisis in 2001, several decrees were created with the aim of proposing emergency measures to reduce consumption within the federal public administration.

The following legal instruments are currently in force: Decree 99,656/1990;

- Normative Instruction No. 01/1997;
- Law 9,991/2000;
- Federal Decree 3330, of January 6, 2000; Decree 4131/2002;
- Ordinance 113 of the MME/2002;

- Resolution 492/2002-ANEEL; Law
- 10.438/2002;
- Law 12.212/2010;
- Normative Instruction 01/2010 – Ministry of Planning, Budget and Management.

Decree No. 99,656, of October 26, 1990, provides for the creation, in bodies and entities of the direct and indirect Federal Administration, of the Internal Commission and Energy Conservation (CICE), in the cases mentioned, and provides other measures.

Federal Decree 3330, of January 6, 2000, determined a reduction in the consumption of electrical energy for lighting, refrigeration and environmental architecture purposes in direct public administration bodies, foundations, companies and mixed economy companies, directly or indirectly controlled by the Union, with PROCEL being responsible for monitoring and technical supervision, and ANEEL for regulating the procedures necessary for operation.

Ordinance 113-MME, of March 15, 2002, resolves that local authorities, public companies and mixed economy companies linked to the MME, throughout the national territory, must observe a consumption target of 82.5%.

Federal Decree 4131, of February 14, 2002, determines that Federal public administration bodies, autonomous agencies and national foundations must comply with electricity consumption targets. It determines that federal public administration bodies and entities must diagnose the degree of energy efficiency of their administration with a view to identifying solutions and developing consumption reduction projects. It also determines that when purchasing equipment or contracting works and services, specifications that meet the requirements inherent to energy efficiency must be adopted.

## 2 Energy Saving Recommendations

### 2.1 Air Conditioners

Air conditioners are relatively high-power equipment and of intense use. Energy savings begin with the purchase of the air conditioner, through adequate sizing of the device's capacity, care in the installation, its rational use and routine efficient maintenance.

For better use of equipment with reduced consumption of energy, air conditioners with a minimum efficiency rating of “Classification A” (with the PROCEL Seal) from the Brazilian Labeling System, developed by Inmetro, must be purchased. For equipment that does not have Classification A on the market, the best Classification available must be considered.

**2.2 Phrases for Adherence to Sustainability Practices**

To ensure the suitability of others involved, it is recommended to use phrases that encourage sustainable practices, such as:

- ♻ "Using energy responsibly, without waste, is an exercise in citizenship";
- ♻ "The fight against energy waste is based on changing habits and energy efficiency".

**Annex 4 – Justification for Printer Contracts (Fernando Leão - Technical Advisor to the Vice-Rectory of Administration)**

## 1 ADVANTAGES OF RENTING PRINTERS, MULTIFUNCTIONAL DEVICES AND COPIERS

♻ Preventive and corrective maintenance due to the lease contract; ♻ Quality in printing of academic and administrative work; Reduction ♻ in expenses in the process of purchasing supplies; Elimination of ♻ stocks and consumable logistics; ♻ Possibility of "double-sided" printing;

♻ Management of networked equipment;

♻ Usage traceability with ticketing by cost center; Efficiency in the ♻ immediate replacement of defective equipment; Possibility of better ♻ dimensioning of demand by user; Possibility of technological update ♻ without the need for investment by UFC;

**Federal University of Ceara**

**Dean's Office**

THE**RECTOR OF THE FEDERAL UNIVERSITY OF CEARÁ,**in the exercise of its legal and statutory powers, approves the present **SUSTAINABLE LOGISTICS PLAN**.

**Publish, Register and Comply.**

Fortaleza, November 2013

**Jesualdo Pereira Farias**

**Rector**