



CETYS Universidad apoya los Objetivos de Desarrollo Sostenible



Sustainability Report

2024

Consolidating Forward-Looking Actions

Baja California, Mexico, October 2024

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For the preparation of this report, we had the collaboration and support of a large number of people from different areas of the CETYS System and its academic community. To all of them our greatest gratitude.

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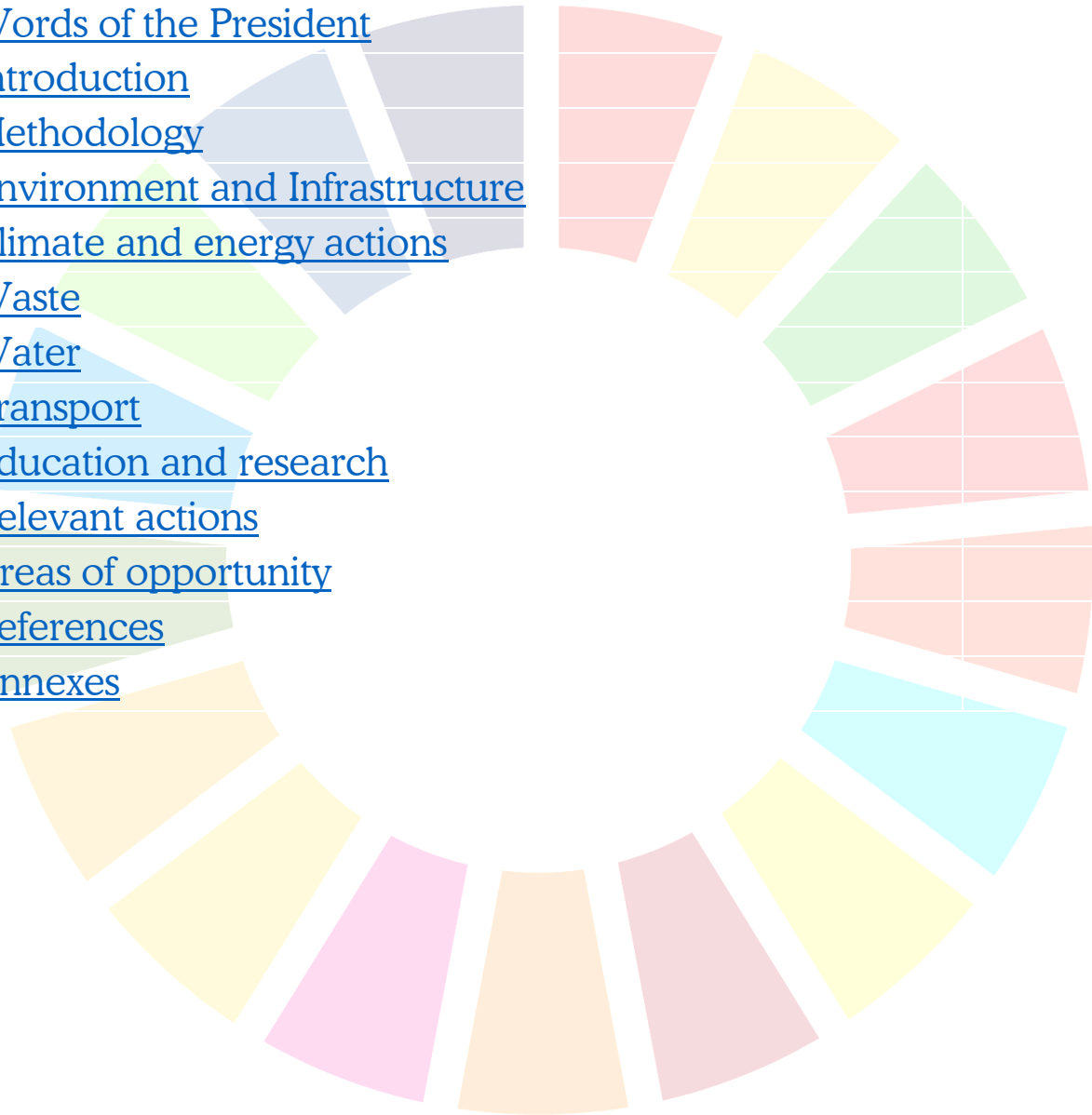
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Words of the President



Over the years, CETYS University has demonstrated its commitment to its mission and vision of training people who promote regional development, supported by long-range strategic plans.

In the CETYS 2036 Development Plan, the institution reaffirms its commitment to sustainability and seeks to intensify its actions and consolidate its results, in all areas of university work, with special emphasis on the fulfillment of the Sustainable Development Goals of the United Nations 2030 Agenda.

The long-term plans and continuous improvement actions have allowed the institution to consolidate various initiatives and programs that position CETYS as a leading institution and strongly committed to sustainability, among which the following should be highlighted: Water resource management (treatment of 8 l/s of wastewater); the use of renewable energies (generation of 1.4 MWh); integrated waste management (70% diverted from the landfill); the creation of sustainable infrastructure (architectural

adaptations to reduce energy consumption); the compensation of greenhouse gas emissions (300 x 500 program); and the conservation of biodiversity ("Beneficial Aromas" and "Experiential Gardens" programs).

In 2023, the Institute for Sustainability Studies (ISS) was created, with the aim of: organizing, coordinating, and promoting the actions that the institution has been developing over the years around sustainability. In this period, the ISS has managed to raise awareness among more than 2,400 students and professors in relation to the United Nations Sustainable Development Goals, and has deployed actions that have allowed the institution to obtain relevant results in international certifications and rankings.

Education as a factor of change and personal growth and an engine of social change, drives us and commits us to work – day by day – for a better future, which we must strive to make more sustainable. "You change, you change the world".

Dr. Fernando León García
President of the CETYS System

Introduction

The Center for Technical and Higher Education (CETYS University) is a private institution of educational excellence, born in 1961 in Baja California, Mexico, under the auspices of a group of visionary businessmen committed to education grouped in the Educational Institute of the Northwest, A.C.

From the definition of its mission: "It is the purpose of CETYS to contribute to the formation of people with moral and intellectual capacity necessary to participate in an important way in the economic, social and cultural improvement of the country", the institution has systematically promoted: a) scientific training, b) character formation and c) general cultural training. Currently, its multi-experiential educational model, based on a humanistic vision, a flexible educational experience and experiential learning, is based on 10 Distinctive Competencies that promote competitive training at a national and international level:

1. The reason for being:
 - to. Identity and integrity
 - b. Leadership and social responsibility
 - c. Lifelong learning
2. The University Era:
 - to. Innovation and entrepreneurship
 - b. Internationalization and interculturality
 - c. Sustainability
3. The learning of the university student:
 - to. Critical thinking
 - b. Information management and use of technology
 - c. Collaborative work
 - d. Communication

Under this model, the institution ensures that all its graduates – regardless of the educational level they have completed – have been sensitized, and/or trained around knowledge and experiences related, among other issues, to sustainability.

In the context of the Development Plan of the Center for Technical and Higher Education, CETYS 2036, the President Fernando León García, entrusted in January 2022 a group of academics and external advisors, to

initiate exploratory work for the creation of the Institute for Sustainability Studies of CETYS University (ISS-CETYS).



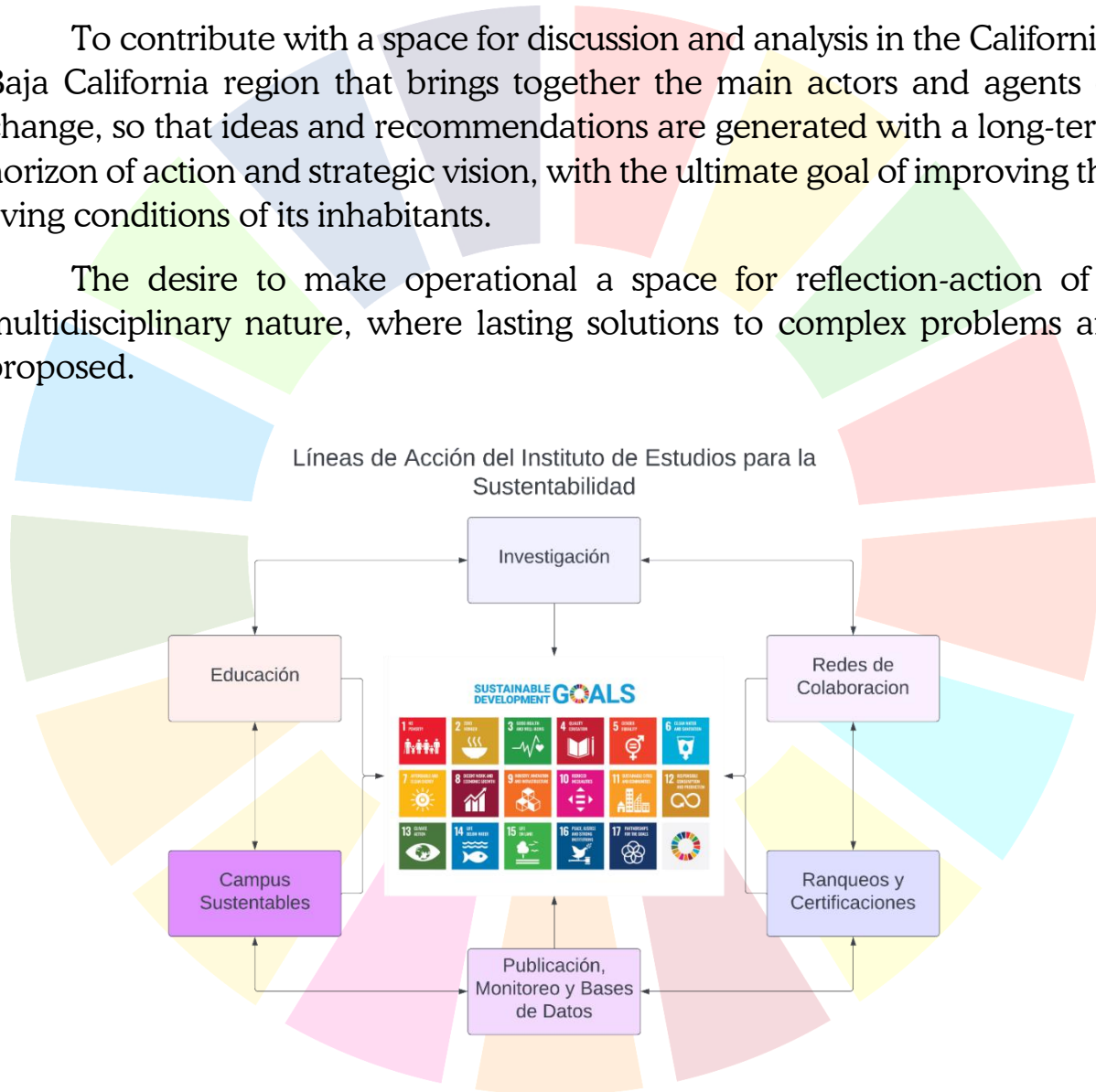
The CETYS Institute for Sustainability Studies (ISS), begins operations in 2023, with the initial objective of organizing, coordinating, and promoting the actions that the institution has been developing over the years around sustainability, so that it has greater regional and international visibility on the subject. and that it contributes in a clear and decisive way with actions conducive to moving more quickly towards sustainable development, from the local to the global level.

Since its conception and creation, ISS-CETYS has sought to be perfectly aligned with and promote the achievement of the 17 United Nations Sustainable Development Goals (SDGs), in the fields of education, research, linkage, improvement of spaces and infrastructure, construction of global citizenship, as well as the dissemination of sciences, arts and culture.

The main motivation for the creation of the Institute for Sustainability Studies of CETYS revolves around the following main ideas:

- The need to organize, structure and make visible all the efforts developed by the CETYS community on the subject.

- The importance of unifying, articulating and directing future institutional efforts under a universal framework of reference such as the United Nations Sustainable Development Goals.
- The urgent need to contribute with ideas and actions – from the local to the global level – to the transition towards sustainable development.
- To contribute with a space for discussion and analysis in the California-Baja California region that brings together the main actors and agents of change, so that ideas and recommendations are generated with a long-term horizon of action and strategic vision, with the ultimate goal of improving the living conditions of its inhabitants.
- The desire to make operational a space for reflection-action of a multidisciplinary nature, where lasting solutions to complex problems are proposed.



Among the main actions carried out by the ISS during 2024, the following can be highlighted:

1. Realization of the forum: "Hope and Action. Together for the SDGs".
2. Participation in the "10th International Workshop on UI GreenMetric University Rankings. Innovation, Impacts and Future Direction of Sustainable Universities" in Bogotá, Colombia.
3. Deployment of the program to raise awareness about the Sustainable Development Goals for all areas of the institution (2,400 participants).
4. Deployment of the flagship projects: "300 x 500", "Beneficial Aromas" and "Experiential Gardens".
5. Incorporation into the Higher Education Institutions for Sustainability (HESI) initiative.
6. Participation in the 4th. National Workshop on Sustainable Universities in Mexico, UI GreenMetric World University Rankings, at the Benemérita Universidad Autónoma de Puebla.
7. Obtaining the highest distinction ("Green Flag") as a Sustainable Campus from the international certifying body FEE.
8. Collaboration in the realization of the second "InterCETYS Ambiental".
9. Preparation of the CETYS Climate Commitment proposal.
10. Publication of the article "Use and Management of Water in a Scarcity Region. The CETYS University Experience in Northwestern Mexico." Journal of Sustainability Perspectives 3 (1), 2023, 91-98

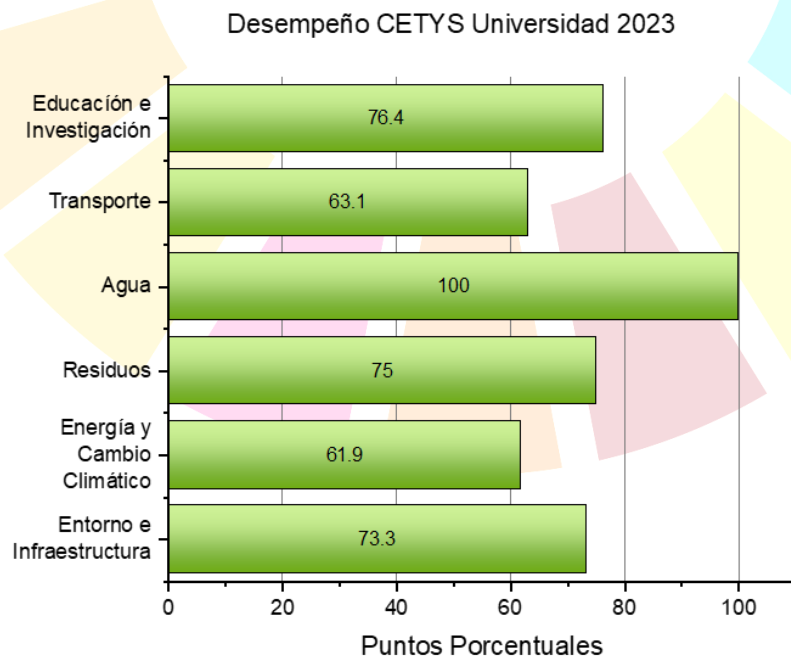


This document "Sustainability Report 2024. Consolidating Actions with a Vision of the Future", gives an account of the state that the institution has regarding sustainable development and the actions that have been planned in the context of the CETYS 2036 program.

The objective of this document is to define future actions and report on institutional progress on six key aspects of sustainable development:

- a) Environment and infrastructure
- (b) Energy and climate change action
- c) Waste management
- d) Water resources
- (e) Transport and internal mobility
- (f) Education and research

These lines of evaluation respond to the conceptual structure of the international organization "UI GreenMetric", which has developed a system of evaluation of sustainability in university spaces widely accepted worldwide. In 2023, CETYS University ranked 303rd out of 1183 participating universities worldwide, and in 11th place among Mexican institutions (private and public). The percentage scores by category evaluated, achieved by CETYS University in 2023 are presented in the following figure:



Methodology

The methodology followed in this report is based on the areas of evaluation proposed by "Universitas Indonesia GreenMetric" (<https://greenmetric.ui.ac.id/>), and incorporates additional material related to the knowledge and academic application of the United Nations Sustainable Development Goals (SDGs).

The world ranking of universities proposed by UI GreenMetric in 2010 is based on 6 criteria or dimensions of analysis (the percentage weight of each criterion in the final evaluation is indicated in parentheses), which are quantified from the evaluation of 82 variables and the construction of 51 indicators (UI GM, 2022 a,b, c):

- Physical infrastructure of university facilities (15%)
- Actions related to energy efficiency and climate action (21%)
- Waste management (18%)
- Water management (10%)
- Use of transport (18%)
- Education and research (18%)

In this study, this methodology was followed, considering the information and conditions existing on each campus and throughout the CETYS System.

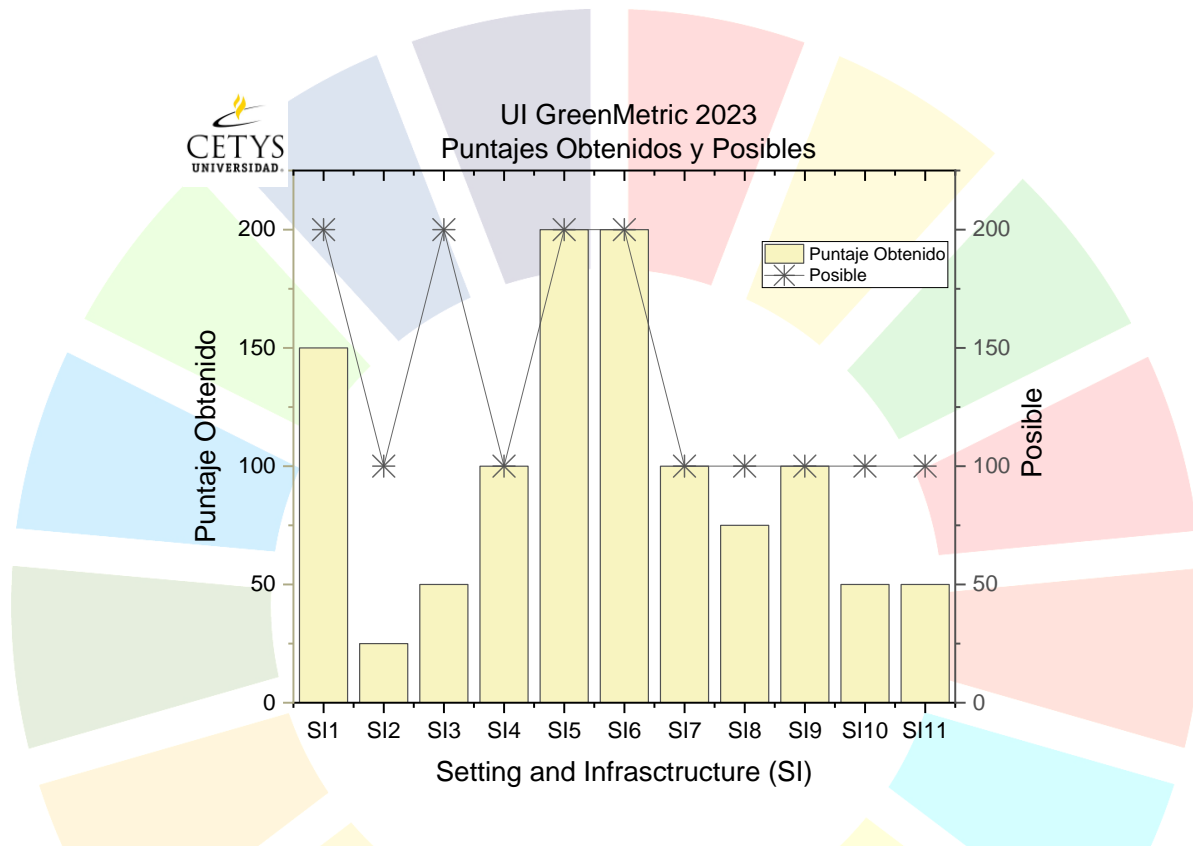
Additionally, a questionnaire was applied to find out the knowledge that full-time teachers have about the SDGs and their application in the different subjects taught in the institution.

Finally, a section is integrated where the most relevant actions at the institutional level and the existing areas of opportunity at the campus level are highlighted.

At the end of the document, the historical behavior (2022, 2023) of the international scores and positions obtained by CETYS using the GreenMetric evaluation method is shown.

Environment and Infrastructure (IS)

The first dimension of analysis of UI GreenMetric corresponds to "Environment and Infrastructure", it comprises 11 indicators and 13 variables, some of them regarding context. The maximum possible score for this dimension is 1500 points and corresponds to 15% of the overall evaluation. Below is the graph with the scores achieved by the institution in 2023 and the description of the indicators.



SI1	The ratio of open space area to the total area	SI7	Percentage of operation and maintenance activities of building in one year period
SI2	Total area on campus covered in forest vegetation	SI8	Campus facilities for disabled, special needs and or maternity care
SI3	Total area on campus covered in planted vegetation	SI9	Security and safety facilities
SI4	Total area on campus for water absorption besides the forest and planted vegetation	SI10	Health infrastructure facilities for students, academic and administrative staff's wellbeing
SI5	The total open space area divided by total campus population	SI11	Conservation: plant (flora), animal and wildlife (fauna), genetic resources for food and agriculture secured in either medium or long-term conservation facilities
SI6	Percentage of university budget for sustainability efforts		

❖ Highlights

➤ CETYS University System

- In 5 of the 11 indicators proposed in the "Environment and Infrastructure (SI)" dimension, CETYS University achieved the maximum possible scores.
- The SI6 indicator related to the institution's investment in areas associated with sustainability stands out, which was 12% of its global budget (average of the last 3 years).

➤ Campus Mexicali

- There is an Emergency and Contingency Response Plan implemented on campus, through which compliance with NOM-002-STPS-2000 can be guaranteed, which has the purpose of safeguarding the well-being of 2806 people who make up the campus, including students, professors and administrative staff.
- CETYS App is created and implemented to facilitate and speed up access to the facilities, as well as to allow immediate communication with the CETYS community.
- With an operational team in the maintenance department made up of 77 people, the annual Maintenance Program and Management is executed, which is designed to preserve the optimal state of 36,311.00 m² of work and study area, 53,246 m² green areas, and roads within the campus.
- In accordance with the mobility master plan, more than 87% of the campus has facilities that facilitate movement within it, in a safe and accessible way. Parking lots, ramps, walkways, elevators are some examples; All this developed thinking of people who require the use of a wheelchair or have a mobility problem. The plan also aims to ensure that new developments meet the quality and functionality standards defined therein.

➤ Campus Tijuana

- The campus attends to the safety of students, faculty, administrative and visiting staff through digital and physical security infrastructure, evacuation routes, as well as support brigades in case of natural disasters or emergencies that merit the safeguarding of people in a time of less than 10 minutes, through the Emergency and Contingency Attention Plan of CETYS University.
- There are parking spaces for people with disabilities, handrails, ramps that comply with the regulations, elevators in some of its buildings and parking, as well as the conditioning of bathrooms for people with disabilities, favoring inclusion and facilitating the mobility of people with motor or visual impairment.
- Conservation of local flora and fauna. Reforestation activities are carried out where students are involved to promote respect and protection of the biodiversity of the area. Likewise, the wildlife that chooses the campus as a space to live in is protected and fed.

➤ Campus Ensenada

- The ratio between open space and available space is the highest of all campuses, which provides the opportunity to have a sustainable development of physical spaces.
- The ratio between open space and the student population is the highest at the system level and is in the order of 296 m²/person.

❖ Areas of Opportunity

➤ CETYS University System

- In the SI2 and SI3 indicators, proposed in the "Environment and Infrastructure (SI)" dimension, CETYS University is expected to obtain the lowest scores. These two indicators are related to the existence of green areas with planted vegetation and forest spaces. In both cases, the location of CETYS, its climatic characteristics and the scarcity of water have limited its development in these areas. In 2023, the ISS is deploying an important reforestation project called "300x500".

➤ Campus Mexicali

- Make the necessary efforts to ensure that 100% of the campus is compatible with the mobility plan.
- Formalize the policy and procedures for the conservation of endemic flora and fauna on campus.

➤ Campus Tijuana

- The campus has little space for water absorption, since most of the land is built or with artificial grass.
- The facilities require improving or building ramps that allow the free movement of people with mobility problems or visual impairment.
- It is necessary to formalize a conservation plan for wild flora and fauna.

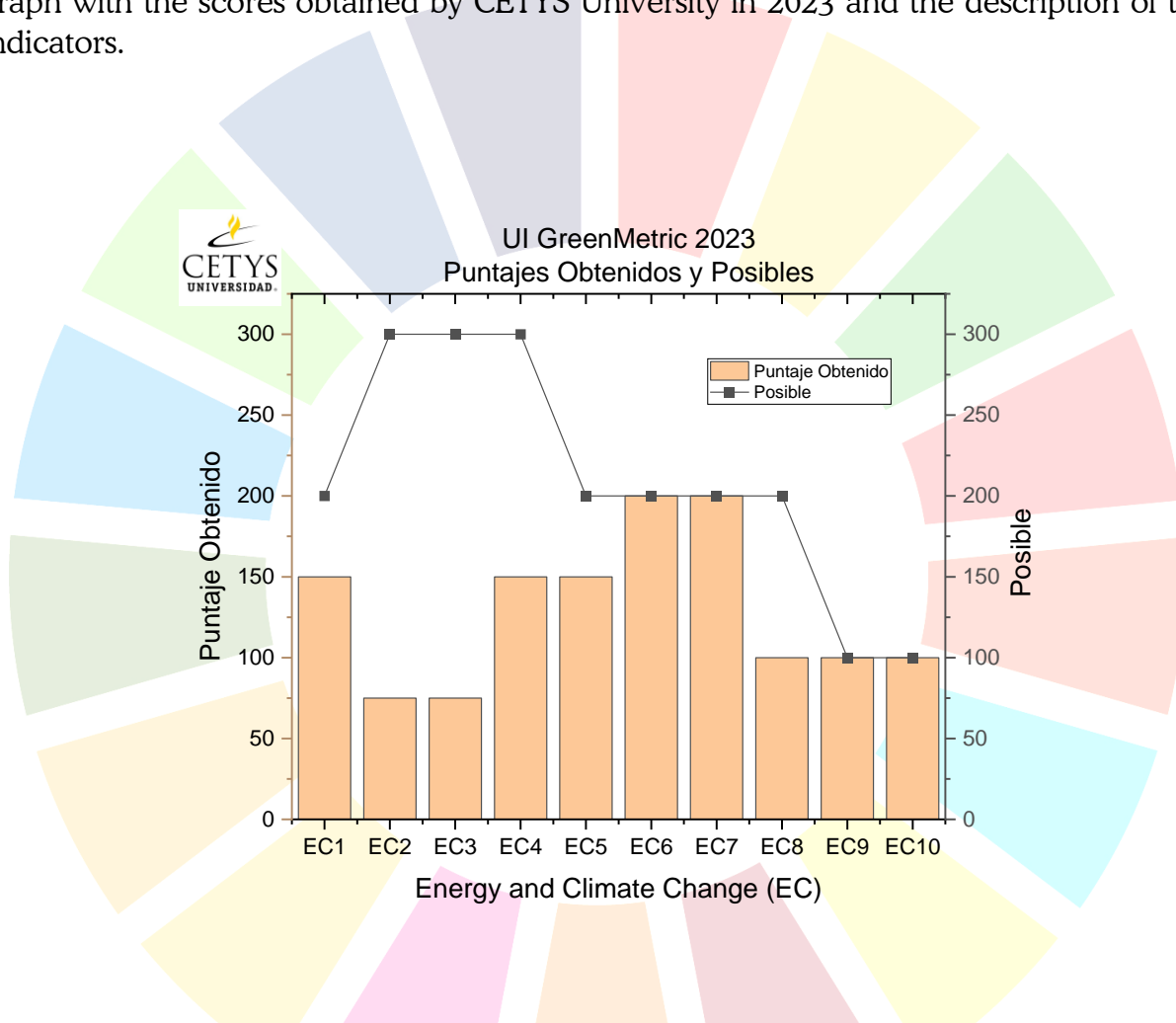
➤ Campus Ensenada

- It is necessary to promote a greater development of wooded areas within the campus.



Climate and energy actions (EC)

The second dimension of analysis of UI GreenMetric corresponds to "Climate Actions and Energy", comprising 10 indicators and 14 variables. The maximum possible score for this dimension is 2100 points and corresponds to 21% of the overall evaluation. Below is the graph with the scores obtained by CETYS University in 2023 and the description of the indicators.



EC1	Energy-efficient appliances usage	EC6	Elements of green building implementation as reflected in all construction and renovation policies
EC2	Smart building implementation	EC7	Greenhouse gas emission reduction program
EC3	Number of renewable energy sources on campus	EC8	Total carbon footprint divided by total campus' population
EC4	Total electricity usage divided by total campus' population (kWh per person)	EC9	Number of the innovative program(s) in energy and climate change
EC5	The ratio of renewable energy production divided by total energy usage per year	EC10	Impactful university program(s) on climate change

❖ Highlights

➤ CETYS University System

- In 4 of the 10 indicators proposed in the "Climate and Energy Actions" dimension, CETYS University achieved the highest possible scores.
- The performance in the EC6 indicator stands out, where the adoption of "green" measures in the construction or renovation of buildings is observed.
- The installed capacity of photovoltaic solar energy production is the largest of all universities in Latin America.

➤ Campus Mexicali

- It has the largest photovoltaic energy production facilities of all universities in Latin America, with an installed capacity of 1,112 MW.
- In the new CECE, Professional and CEID buildings, elements of "green buildings" were incorporated, such as: use of natural light, air flow, building skin for thermal control, etc.
- The campus has high-efficiency refrigeration technology, based on "Chillers" chillers, which are the most energy-saving equipment in this market and which provide service in 60% of the campus facilities.

➤ Campus Tijuana

- There is a photovoltaic system located in the campus parking lot that generates an average of 112,000 kWh of solar energy annually.
- The "Smoke-Free Campus" program and the transportation program for students living in areas isolated from the university's facilities, promote the reduction of greenhouse gas emissions.
- There are permanent institutional programs that have a positive impact on climate change, such as Zero Waste, promoting both academics, administrators and students of the different educational levels served by CETYS University, a philosophy of life that promotes, transversally, respect and actions to improve the environment, in the different generations that are trained in the institution.

➤ Campus Ensenada

- The design and construction of the Center for Viticulture and Enology Studies (CEVIT) have taken into consideration elements that contribute to sustainability.
- The renewable energy laboratory has had a strong impact on the dissemination of this type of career in the community.

❖ Areas of Opportunity

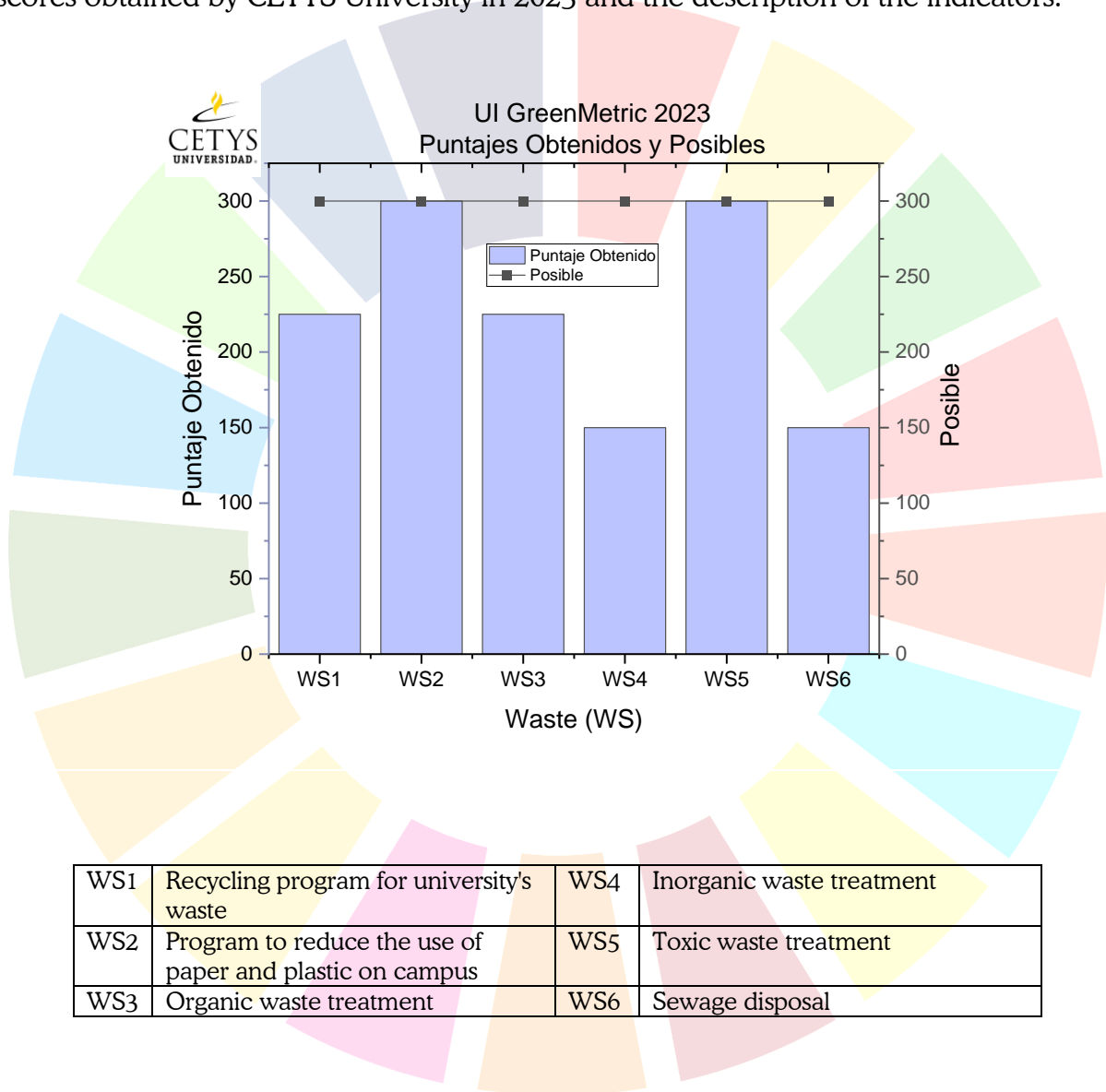
➤ CETYS University System

- Diversify renewable energy generation sources by implementing academic projects that use, for example, wind energy.
- Implement automatic control and monitoring systems for the most important buildings on each campus.
- Reduce the carbon footprint produced by the use of motor vehicles.
- **Campus Mexicali**
 - Explore some other renewable energy sources besides solar.
 - Review the technological elements that new buildings need as a professional so that they fall into the category of Smart Buildings. At the moment, there are two on this list: CEID and CECE.
 - Achieve 100% of temperature comfort appliances to be of high efficiency
- **Campus Tijuana**
 - Upgrade the missing technological equipment, with Energy Star certification criteria, as well as the traditional lamps and bulbs to LED light.
 - Privilege natural light in buildings and the installation of windows that allow free air circulation, in order to reduce the use of fans or air conditioners.
- **Campus Ensenada**
 - It is necessary to promote the use of renewable energy sources on campus.
 - Energy audits are necessary to make energy use more efficient in campus facilities.



Waste (WS)

The third dimension of analysis of UI GreenMetric corresponds to "Waste", it comprises 6 indicators and 6 variables. The maximum possible score for this dimension is 1800 points and corresponds to 18% of the overall evaluation. Below is the graph with the scores obtained by CETYS University in 2023 and the description of the indicators.



WS1	Recycling program for university's waste	WS4	Inorganic waste treatment
WS2	Program to reduce the use of paper and plastic on campus	WS5	Toxic waste treatment
WS3	Organic waste treatment	WS6	Sewage disposal

❖ Highlights

➤ CETYS University System

- In 2 of the 6 indicators proposed in the "Waste" dimension, CETYS University achieved the maximum possible scores.
- The "Zero Waste" program stands out, which has been worthy of international recognition.

➤ Campus Mexicali

- There are well-established processes that adhere to the regulations for the management of toxic waste.

➤ Campus Tijuana

- The campus works with the Zero Waste program, which has 3 main goals for the entire campus community: reduce waste, raise awareness and conserve resources. In the first point, it is established to reduce by 90% the waste resulting in the university that goes to the landfill, in the second point it promotes the education and awareness of the entire CETYS Tijuana community about the actions that affect the environment and in the third the goal is to maximize the use and conservation of resources.
- There is a Zero Waste decalogue that promotes the avoidance of waste and single-use materials, not introducing materials with a negative impact on the environment on campus, reducing the consumption of non-reusable, non-repairable or non-recyclable products, reusing materials that allow it, selecting digital documents over printed ones, separate waste according to the containers distributed on campus, report to the academic authorities the improper use of the Zero Waste stations and the complaint to the academic authorities related to the lack of the sustainability program.
- One of the purposes of the Heritage and Purchasing Policies and Procedures Manual is to guarantee the best use of resources, under the criteria of objectivity, responsibility and contribution to the Zero Waste policy for the conservation and sustainable management of natural resources.
- The implementation of institutional programs for waste reduction and the recycling of paper and plastics, as well as programs generated by the students themselves, such as "Use thermoses", in order to reduce the use of disposables and plastic bottles among members of the CETYS community.
- Organic waste treatment. The compost program has a historical total of 195,424.40 kg. of pruning, a historical total of 13,923.50 kg. of organic waste, and an annual production of between 13 and 15 tons, which are used as nutrients for the plants and green areas of the campus.
- The Zero Waste program in the community provides a space for local families to participate in caring for the environment by taking waste ranging from PET, PETE, HDPE and PP plastics, as well as aluminum and metal, paper, cardboard and some electronic devices to the CETYS recycling center.

➤ Campus Ensenada

- Regulations associated with toxic waste management and wastewater management are complied with.

❖ Areas of Opportunity

➤ CETYS University System

- It is necessary to work for the implementation of waste management programs, especially organic ones, on all campuses.

➤ Campus Mexicali

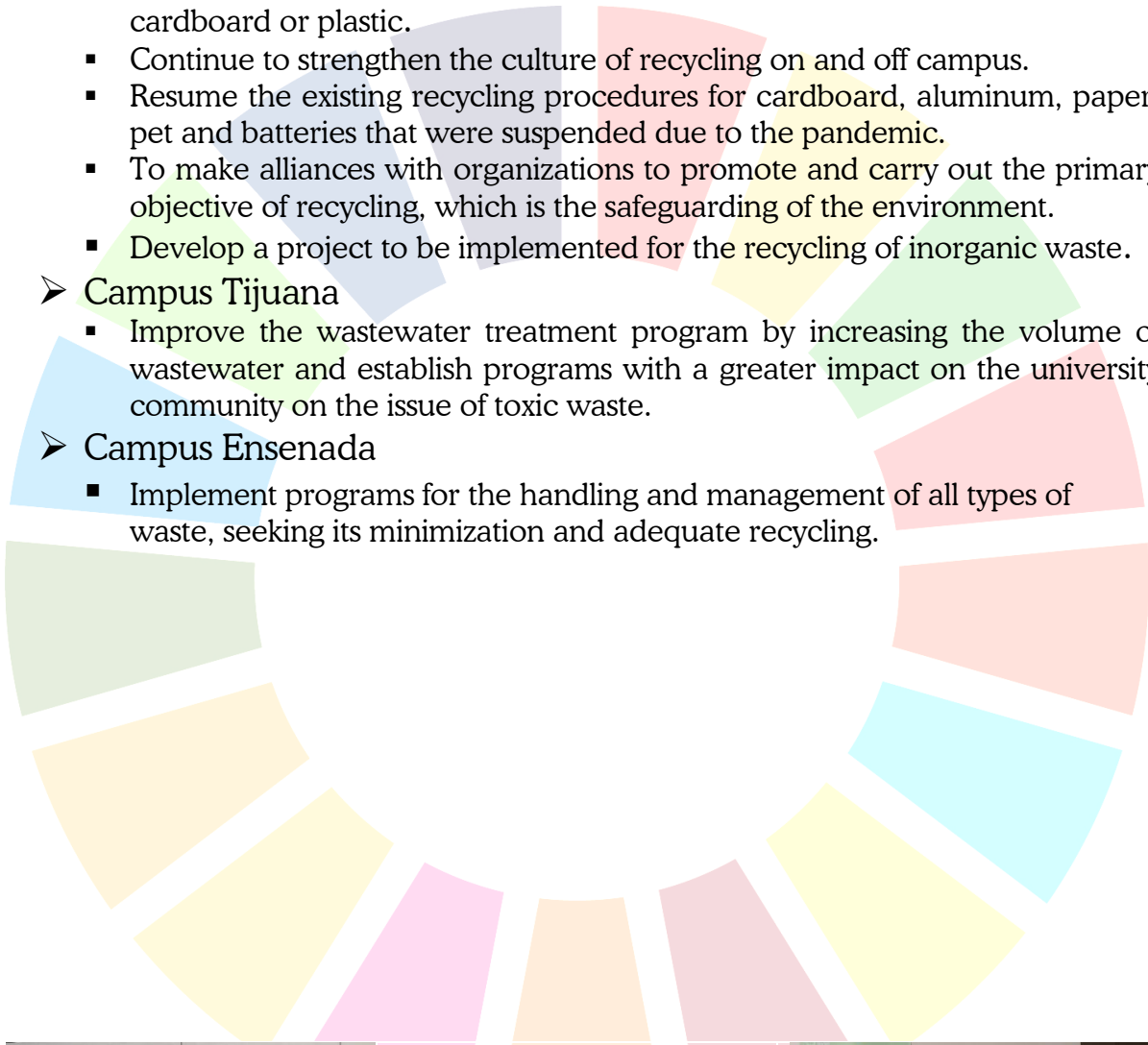
- There are a limited number of processes for recycling material such as paper, cardboard or plastic.
- Continue to strengthen the culture of recycling on and off campus.
- Resume the existing recycling procedures for cardboard, aluminum, paper, pet and batteries that were suspended due to the pandemic.
- To make alliances with organizations to promote and carry out the primary objective of recycling, which is the safeguarding of the environment.
- Develop a project to be implemented for the recycling of inorganic waste.

➤ Campus Tijuana

- Improve the wastewater treatment program by increasing the volume of wastewater and establish programs with a greater impact on the university community on the issue of toxic waste.

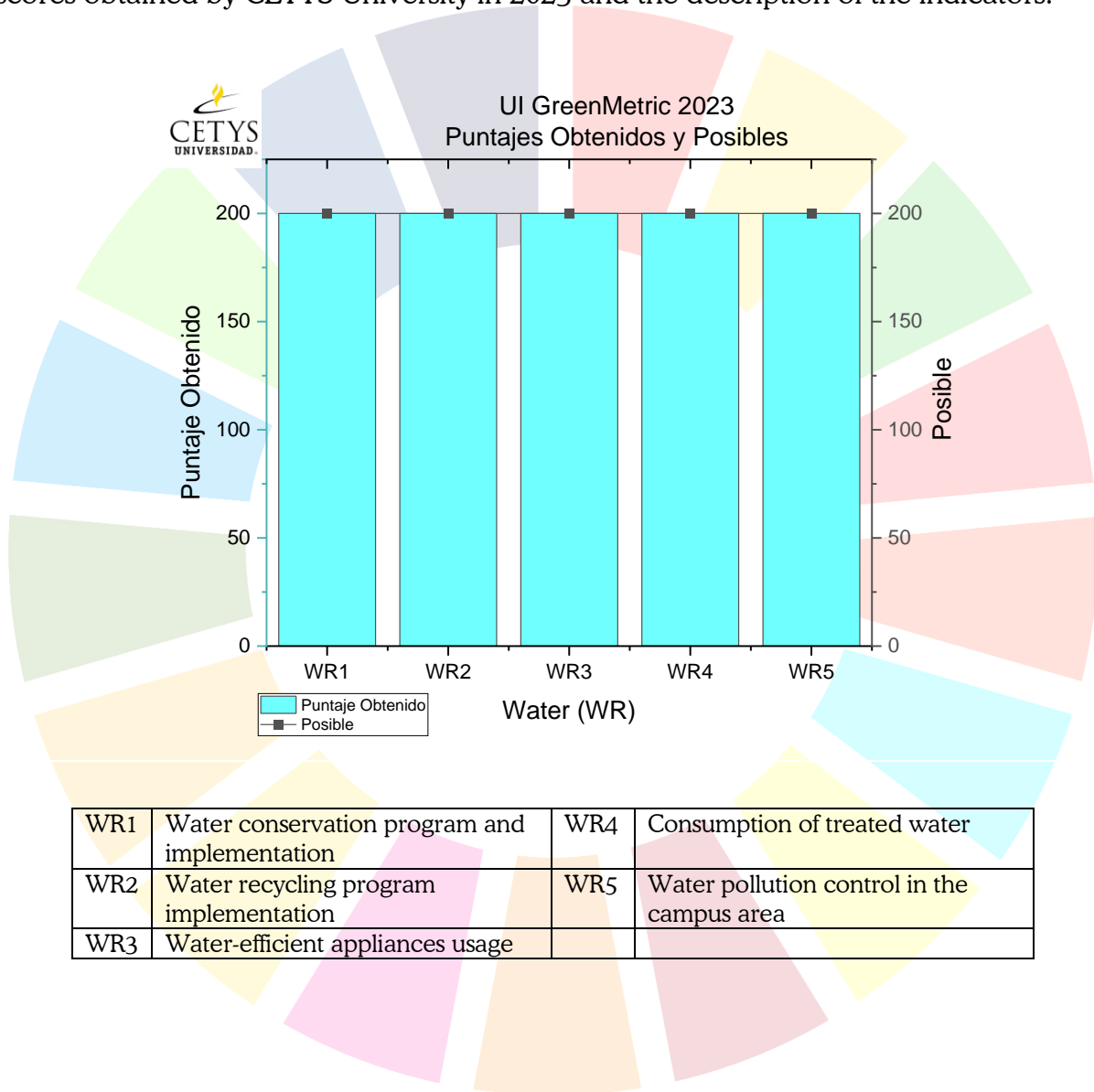
➤ Campus Ensenada

- Implement programs for the handling and management of all types of waste, seeking its minimization and adequate recycling.



Water (WR)

The fourth dimension of analysis of UI GreenMetric corresponds to "Water", it comprises 5 indicators and 5 variables. The maximum possible score for this dimension is 1000 points and corresponds to 18% of the overall evaluation. Below is the graph with the scores obtained by CETYS University in 2023 and the description of the indicators.



WR1	Water conservation program and implementation	WR4	Consumption of treated water
WR2	Water recycling program implementation	WR5	Water pollution control in the campus area
WR3	Water-efficient appliances usage		

❖ Highlights

➤ CETYS University System

- In 5 of the 5 indicators proposed in the "Water" dimension, CETYS University achieved the maximum proposed scores, positioning the institution as the highest at the national level in water resource management.
- The use of water from the water treatment plants of Camps Mexicali and Tijuana stands out.

➤ Campus Mexicali

- There is a water recycling plant that produces 7 liters per second, which is used 100% in the irrigation of green areas.
- 100% of the water sources for human consumption that are found on campus are periodically subjected to chemical analyses – through external laboratories – that guarantee their quality.
- To guarantee the supply and quality of water for human consumption, there is a water treatment plant with reverse osmosis technology with a production of 2,200 gallons per day

➤ Campus Tijuana

- The wastewater treatment plant. Once the water is recycled, it is stored in 3 tanks with a capacity of $25,000 \text{ m}^3$, giving a total of $75,000 \text{ m}^3$, which provides the vital liquid to the green areas of the campus and that is used in the bathroom facilities to provide clean and reusable water, benefiting the environment.
- The toilet area has low-water consumption furniture and regulating taps that adjust to the time necessary for cleaning and hand washing, which prevents wasting the liquid, as well as toilets that comply with CONAGUA Standard 009 respecting the 6 liters sufficient for each flush.

➤ Campus Ensenada

- Efforts have been made to implement energy-saving equipment (sinks and toilets) for the efficient use of water.

❖ Areas of Opportunity

➤ CETYS University System

- It is necessary to implement rainwater harvesting and storage systems and waste water management (treatment).

➤ Campus Mexicali

- Continue until you have 100% water-saving bathroom and sanitary elements.
- Explore the possibility of recycling the water used on campus.

➤ Campus Tijuana

- Improvement in the water collection and conservation system, by more than 50%.

➤ Campus Ensenada

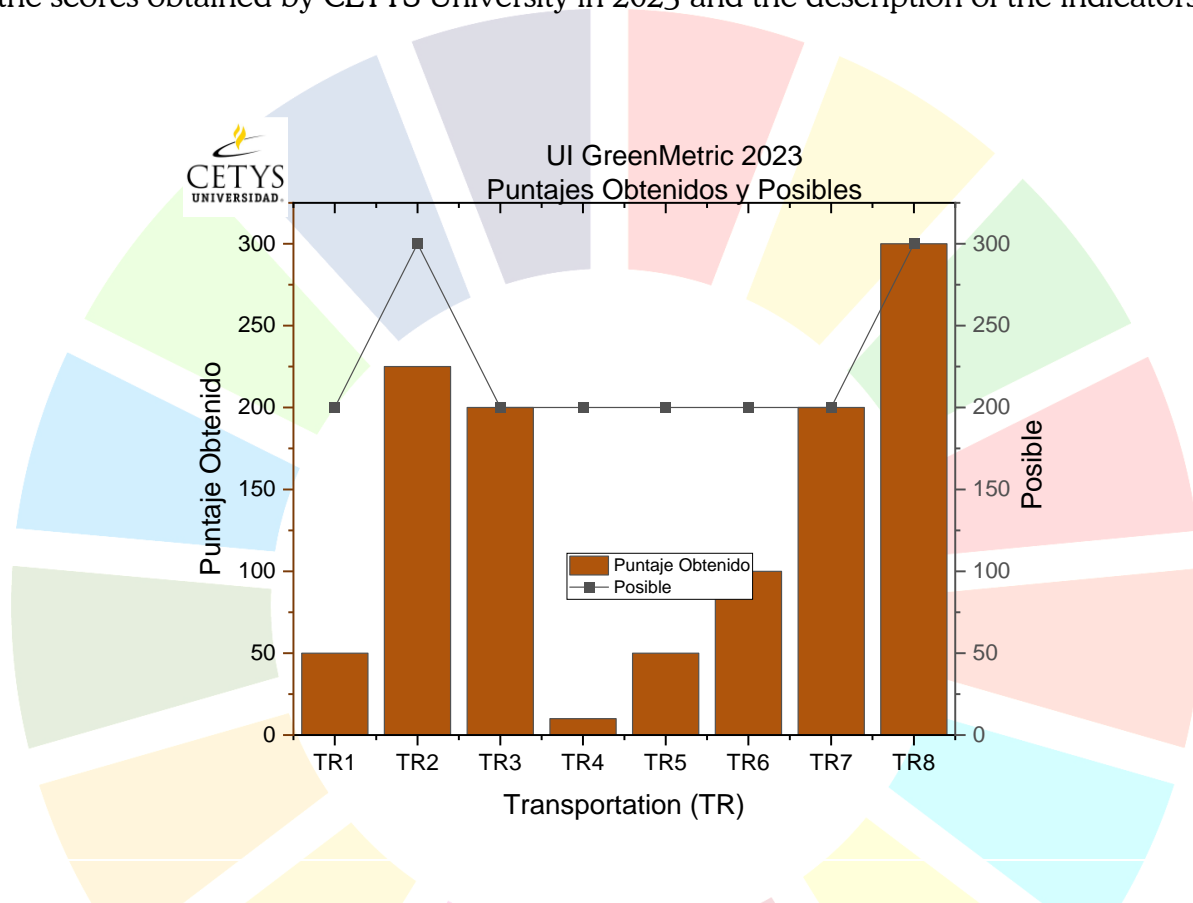
- Seek to implement mechanisms for the treatment and use of wastewater.

- Establish projects for the collection of rainwater or environmental humidity.



Transportation (TR)

The fifth dimension of analysis of UI GreenMetric corresponds to "Transportation", it comprises 8 indicators and 17 variables. The maximum possible score for this dimension is 1800 points and corresponds to 18% of the overall evaluation. Below is the graph with the scores obtained by CETYS University in 2023 and the description of the indicators.



TR1	The total number of vehicles (cars and motorcycles) divided by the total campus' population	TR5	The ratio of the ground parking area to the total campus' area
TR2	Shuttle services	TR6	Program to limit or decrease the parking area on campus for the last 3 years
TR3	Zero-Emission Vehicles (ZEV) policy on campus	TR7	Number of initiatives to decrease private vehicles on campus
TR4	The total number of Zero-Emission Vehicles (ZEV) divided by the total Campus Population	TR8	The pedestrian path on campus

❖ Highlights

➤ CETYS University System

- In 3 of the 8 indicators proposed in the "Transportation" dimension, CETYS University achieved the highest possible score.
- The walking spaces on campuses (design, signage, dimensions, lighting, security, etc.) and the efforts related to mobility of people with different abilities around campus stands out.

➤ Campus Mexicali

- There is the Zorro Bus student transport system which serves especially remote areas of the city, allowing individual mobility to be reduced and therefore the carbon footprint.
- There are a total of 40 bicycles provided free of charge by CETYS, which allow movement within the campus without gas emissions.
- The car pool program is promoted which encourages sharing personal transportation with colleagues

➤ Campus Tijuana

- There is security in the parking area, signage, lighting, elevator for people with disabilities, visible indications, handrails on slopes.
- Student transfer program: Real del Mar-CETYS/CETYS-Real del Mar and Tecate-CETYS/CETYS-Tecate

➤ Campus Ensenada

- Preferential parking spaces have been established for cars that have more than 3 occupants ("Carpool").
- Spaces for motorcycles have been identified in the parking lots.

❖ Areas of Opportunity

➤ CETYS University System

- It is necessary to start thinking about programs that encourage the use of "zero emissions" or electric vehicles by students, assigning preferential spaces in parking lots and charging stations that use renewable sources such as solar photovoltaic installed on campuses.

➤ Campus Mexicali

- Encourage the use of bicycles on and off campus.
- Continue to reinforce the culture to reduce the use of private cars.

➤ Campus Tijuana

- Ramps with inclination according to municipal and functional regulations for people with disabilities.
- Greater number of parking spaces for people with disabilities in plate 1.
- Promote the use of bicycles for maintenance and security personnel, as they are zero-emission vehicles.
- Development and implementation of programs to reduce the use of parking lots. Example: Carpool, strategic transport route, within the municipality.

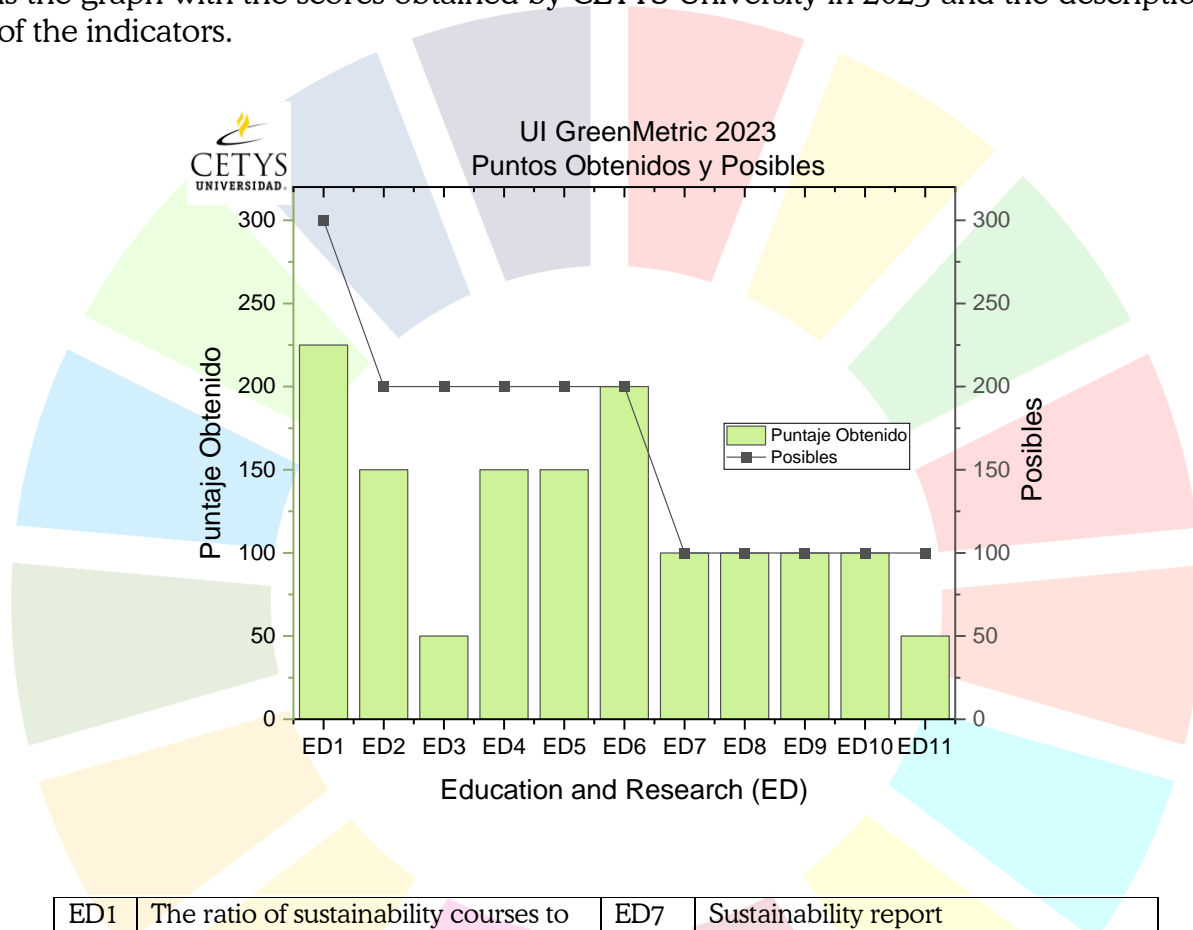
➤ Campus Ensenada

- Promote programs for the transportation of several people in a single vehicle, taking advantage of the characteristics of the student body and the city.
- Promote the use of bicycles and motorcycles among students.



Education and Research (ED)

The sixth dimension of analysis of UI GreenMetric corresponds to "Education and Research", comprising 11 indicators and 16 variables. The maximum possible score for this dimension is 1800 points and corresponds to 18% of the overall evaluation. Below is the graph with the scores obtained by CETYS University in 2023 and the description of the indicators.



ED1	The ratio of sustainability courses to total courses/subjects	ED7	Sustainability report
ED2	The ratio of sustainability research funding to total research funding	ED8	Number of cultural activities on campus
ED3	Number of scholarly publications on sustainability	ED9	Number of university program(s) to improve teaching and learning
ED4	Number of events related to sustainability	ED10	Number of sustainability community services projects organized by and/or involving students
ED5	Number of student organizations related to sustainability	ED11	Number of sustainability-related startups
ED6	University-run sustainability website		

❖ Highlights

➤ CETYS University System

- In 5 of the 11 indicators proposed in the "Education and Research" dimension, CETYS University achieved the maximum score proposed.
- The number of cultural activities developed on each campus, the teacher training and training programs and the community activities organized by CETYS students and academics stand out.

➤ Campus Mexicali

- There are a significant number of student organizations with various purposes, of which 4 (RECICALI, REDES, MUN and UNIREDA) are directly related to sustainability.
- The Comprehensive Teacher Training (FIP) program developed 65 courses and activities related to the improvement of teaching and learning.
- Within the curricula of the different careers and postgraduate programs, 107 courses were taught and directed to subjects related to sustainable development

➤ Campus Tijuana

- The institution offers the career of Engineering in Renewable Energies. In addition, it offers 109 courses directly or indirectly related to sustainability.
- The issue of sustainability is considered important in the development of students' graduation competencies, by holding at least 7 events related to the theme within cultural activities.
- The academic and administrative area provides constant training to teachers, diversifying technological tools and learning modalities.
- The student community actively participates in events related to sustainability, including off-campus activities such as beach cleanups, reforestation and care of green areas, ecological bazaars, support for the recycling center, events to promote respect and awareness of environmental care such as Earth Week, promoted by the student group "Terravita".
- The Business Incubation Area publishes the results of the competitions in which campus students participate, related to the United Nations 2030 agenda, promoting that the initiatives presented generate formal projects, which have the accompaniment of the area through mentoring. Of 10 active incubation projects, 3 correspond to sustainable models and 4 projects participated in Heineken's "Green Challenge".

➤ Campus Ensenada

- A significant number of sustainability-related research projects and publications come from campus academics.
- The number of sustainability-related courses offered on campus is similar to those on the other campuses.
- A significant number of cultural activities have been offered.
- A group of students won the Millennium Fellowship award on SDGs

❖ Areas of Opportunity

➤ **CETYS University System**

- There is a need to increase the number of academic publications related to sustainability.
- It is necessary to encourage and follow up on the creation of "start-ups" generated by students, related to some areas of sustainable development.

➤ **Campus Mexicali**

- Support the creation of companies that are aimed at and related to products and services that contribute to care for or that are friendly to the environment.
- Generate events and programs to support the community. It can be direct support or awareness aimed at improving the environment of the same.
- Promote and support sustainability-related research and publishing.

➤ **Campus Tijuana**

- Promotion of new companies related to sustainability and sustainability.

➤ **Campus Ensenada**

- Increase the number of sustainability-related events.
- Promote the creation of student organizations (professional and graduate) related to aspects of sustainability.
- Increase the number of community projects and actions related to sustainability by students and academics at the professional and graduate levels.
- Encourage the creation of companies ("Start-ups") related to sustainability.

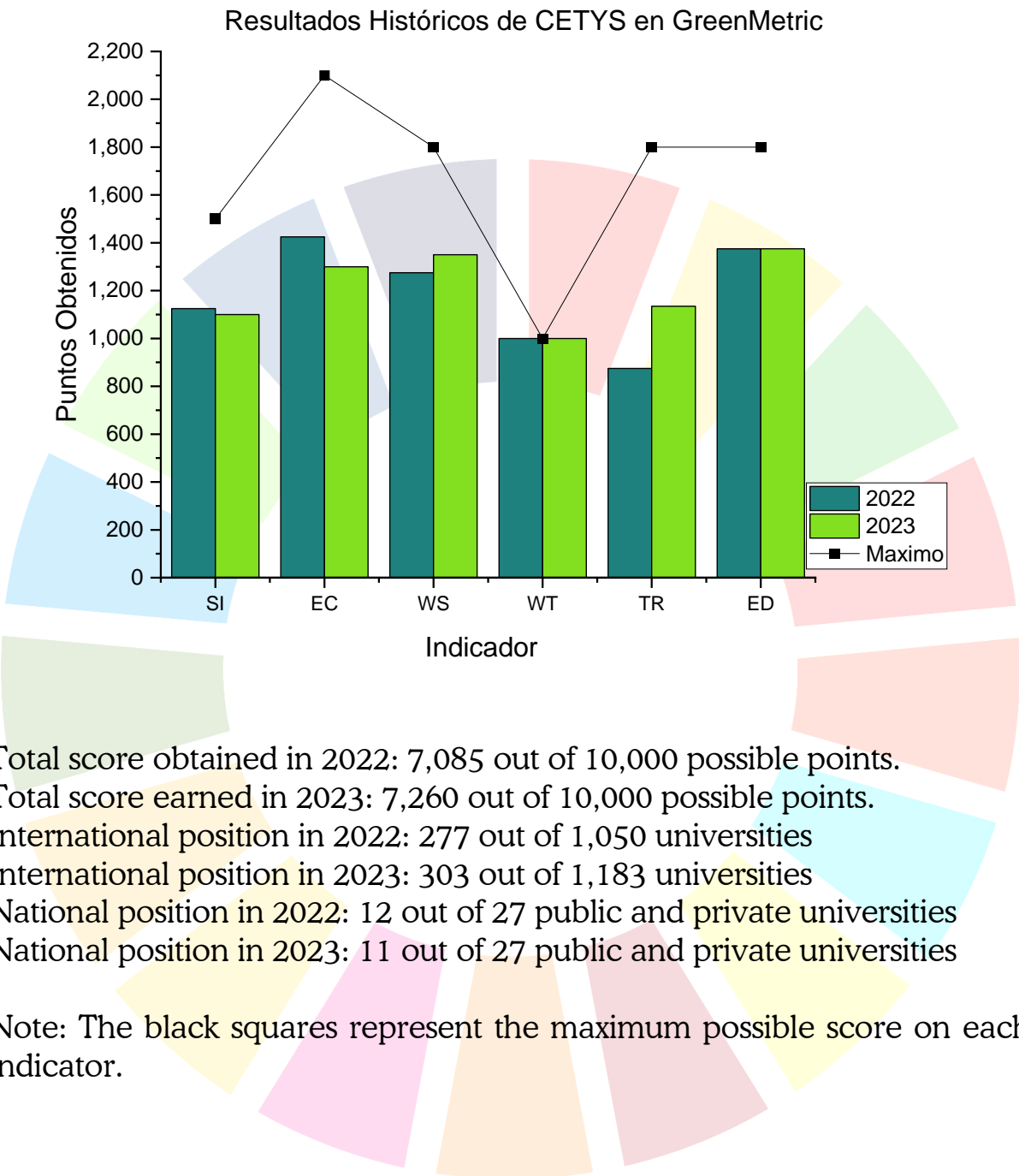


Relevant actions

1. The efforts aimed at CETYS moving towards a more sustainable development are present in the highest management spheres of the institution and in its educational model.
2. During 2023, the actions aimed at structuring the institution's efforts around sustainability and the United Nations Sustainable Development Goals are formalized, based on the creation of the CETYS Institute for Sustainability Studies.
3. In 2023, CETYS University, and thanks to the good results obtained, once again participates in the international "ranking" related to the evaluation of sustainability in academic institutions, promoted by the UI GreenMetric organization.
4. Ensenada International Campus obtains the highest "Green Flag" distinction and certification as an "Eco-Campus" promoted by the Foundation for Environmental Education (FEE).
5. Among the most relevant programs in terms of sustainability that CETYS has been operating, the following should be highlighted: CETYS Solar Power, which positions the institution as the leading university in Latin America for its photovoltaic solar energy generation capacity, and the Zero Waste program for waste management and handling, which has earned international recognition from the International Network of Sustainable Campuses.
6. The design, construction and operation of smart and green buildings on the 3 campuses (e.g. CECE, CEID, CEVIT, Auditorium Gymnasium), is a very important element in the transition to sustainable development.
7. Around 2500 students and teachers of the institution have participated in the process of raising awareness about the SDGs.

Areas of opportunity

1. Standardize criteria between campuses, for the design, planning and development of future physical spaces under the concept of sustainable spaces.
2. Develop institutional policies, programs, and actions related to the energy efficiency of their physical spaces and with proposals to minimize the impacts of climate change from academia, administration, and the student community.
3. Waste management must follow the successful model implemented in Campus Tijuana at the System level.
4. Water resources are a scarce resource in the region where CETYS University is located and are a key element for the future development of the California-Baja California binational region. The institution should try to have a more decisive influence on all aspects related to water, from specific training and awareness programs, contribution to public policies, development of research projects and formation of binational and international collaboration networks, among other elements. The use and management of the resource within CETYS should be an example to be followed in the Baja Californian university community.
5. In the collective imagination of CETYS University, the routine use of zero-emission vehicles is not yet glimpsed. A plan of action in this regard needs to be encouraged.
6. Research and training in areas related to sustainability and the United Nations Sustainable Development Goals should be substantially increased, as should the creation of "green" productive companies or those focused on aspects of sustainability by students, with the support of the institution's academics.
7. CETYS's participation in international rankings allows it to make comparisons with international peers and establish better focused policies. The figure below shows the institution's performance during the years it has participated in GreenMetric.



Total score obtained in 2022: 7,085 out of 10,000 possible points.
 Total score earned in 2023: 7,260 out of 10,000 possible points.
 International position in 2022: 277 out of 1,050 universities
 International position in 2023: 303 out of 1,183 universities
 National position in 2022: 12 out of 27 public and private universities
 National position in 2023: 11 out of 27 public and private universities

Note: The black squares represent the maximum possible score on each indicator.

References

UI GM (2022a). Guideline. UI GreenMetric World University Rankings 2022. "Collective Actions for Transforming Sustainable Universities in the Post-Pandemic Time". Universitas Indonesia. <https://greenmetric.ui.ac.id/publications/guidelines>

UI GM (2022 b). Questionnaire. UI GreenMetric World University Rankings 2022. Universitas Indonesia. <https://greenmetric.ui.ac.id/publications/questionnaire>

UI GM (2022 c). Evidence Template. UI GreenMetric World University Rankings 2022. Universitas Indonesia. <https://greenmetric.ui.ac.id/publications/evidence-template>

UN (2015a). The 20130 Agenda for Sustainable Development. United Nations (UN). <https://www.un.org/sustainabledevelopment/es/development-agenda/>

UN (2015 b). Sustainable Development Goals. United Nations (UN). <https://www.un.org/sustainabledevelopment/es/>

Annex 1: List of buildings considered smart buildings and their characteristics

No.	Name	Place	Automation		Safety				Energy		Water		Indoor Environment				Lighting				Building Area (m2)
			B1	B2	S1	S2	S3	S4	E1	E2	A1	A2	I1	I2	I3	I4	L1	L2	L3	L4	
1	CECE	MXL				X	X					X	X	X			X				4,400
2	CEID	MXL			X	X	X					X	X	X			X	X			6,500
3	GRAD	TIJ		X	X	X	X						X			X			X		2289
4	AG	TIJ		X	X	X	X		X							X	X				4,250
5	CEVIT	ENS				X										X	X	X	X		3,501
Total																				20,940	

Notes:

- 1) CECE= Excellence Center in Competitiveness and Entrepreneurship
- 2) CEID= Excellence Center in Innovation and Design
- 3) GRAD= Graduate Studies Building
- 4) AG = Auditorium Gymnasium
- 5) CEVIT= Center for Viticulture and Enology Studies
- 5) MXL= Mexicali, Baja California, Mexico; TIJ= Tijuana, Baja California, Mexico, ENS=Ensenada, Baja California, Mexico

Annex 2: List of energy-saving appliances

MEXICALI			
Appliance	Total Number	Total number energy efficiency appliances	Percentage
Lamps and LED Lamps			
A/C and Ecologic A/C (minimum SIR 13)	284	131	46.13
Computers and Energy-Star Certified Computers	836	323	38.64
Servers and Energy-Star Certified Servers	10	10	100.00

TIJUANA			
Appliance	Total Number	Total number energy efficiency appliances	Percentage
Lamps and LED Lamps	448	246	54.91
A/C and Ecologic A/C (minimum SIR 13)	120	30	25.00
Computers and Energy-Star Certified Computers	1013	464	45.80
Servers and Energy-Star Certified Servers	5	5	100.00

ENSENADA			
Appliance	Total Number	Total number energy efficiency appliances	Percentage
Lamps and LED Lamps	185	81	43.78
A/C and Ecologic A/C (minimum SIR 13)	13	11	84.62
Computers and Energy-Star Certified Computers			#DIV/0!
Servers and Energy-Star Certified Servers	3	3	100

SISTEMA			
Appliance	Total Number	Total number energy efficiency appliances	Percentage
Lamps and LED Lamps	633	327	51.658768
A/C and Ecologic A/C (minimum SIR 13)	417	172	41.247002
Computers and Energy-Star Certified Computers	1849	787	42.563548
Servers and Energy-Star Certified Servers	18	18	100.000000

Annex 3: List of water-saving applications

MEXICALI			
Appliance	Total Number	Total number water efficiency appliances	Percentage
Hand Washing Taps	147	118	80.27
Toilet Flush (tasa de baño)	215	215	100.00
Mens Urinals	89	56	62.92

TIJUANA			
Appliance	Total Number	Total number water efficiency appliances	Percentage
Hand Washing Taps	90	90	100.00
Toilet Flush (tasa de baño)	108	108	100.00
Mens Urinals	45	45	100.00

ENSENADA			
Appliance	Total Number	Total number water efficiency appliances	Percentage
Hand Washing Taps	26	24	92.31
Toilet Flush (tasa de baño)	24	24	100.00
Mens Urinals	19	14	73.68

SISTEMA			
Appliance	Total Number	Total number water efficiency appliances	Percentage
Hand Washing Taps	263	232	88.21
Toilet Flush (tasa de baño)	347	347	100.00
Mens Urinals	153	115	75.16
TOTAL AVERAGE PERCENTAGE			87.79

Annex 4: Carbon footprint calculation

a) Electricity Usage per year (kWh)				
	Mexicali	Tijuana	Ensenada	System
Jun-23	286,496.00	109,909.00	38,668.00	435,073.00
Jul-23	341,341.00	124,863.00	33,236.00	499,440.00
Aug-23	535,570.00	67,742.00	35,084.00	638,396.00
Sep-23	417,319.00	193,488.00	52,178.00	662,985.00
Oct-23	304,849.00	200,931.00	50,974.00	556,754.00
Nov-23	152,310.00	198,953.00	51,296.00	402,559.00
Dec-23	76,080.00	68,629.00	47,572.00	192,281.00
Jan-24	70,480.00	88,786.00	29,582.00	188,848.00
Feb-24	73,473.00	97,936.00	33,740.00	205,149.00
Mar-24	55,794.00	113,128.00	34,972.00	203,894.00
Apr-24	103,218.00	133,186.00	33,684.00	270,088.00
May-24	184,345.00	149,484.00	39,172.00	373,001.00

TOTAL Year 2023/2024	2,601,275.00	1,547,035.00	480,158.00	4,628,468.00
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c) Transportation per year (cars)				
	Mexicali	Tijuana	Ensenada	System
Numero de Carros por día	2840	868	544	4252
Cajones de Estacionamiento	1420	434	272	2126
Distancia Recorrida (km)	0.244	0.138	0.175	0.1856
TOTAL	984,003.20	51,892.08	25,894.40	

d) Transportatio per year (motorcycles)				
	Mexicali	Tijuana	Ensenada	System
Número de motos por día	30	110	12	152
Cajones de motos	15	55	6	76
Distancia Recorrida (km)	0.244	0.138	0.175	0.186
TOTAL	109.80	833.39	12.60	

TOTAL Carbon Footprint (Ton/year)				
	Mexicali	Tijuana	Ensenada	SYSTEM
a) Electricity	2185.07	1299.51	403.33	3887.91
b) Transporte (Shuttle)	0.72	0.03	0.07	2.59
c) Transporte (carros)	66.52	11.48	9.14	75.75
d) Transporte (motos)	0.35	0.73	0.10	1.35
TOTAL (Ton/year)	2,252.67	1,311.75	412.64	3,967.61

