



**PARVATHANENI BRAHMAYYA
SIDDHARTHA COLLEGE OF ARTS & SCIENCE**

Autonomous

Siddhartha Nagar, Vijayawada-520010

Re-accredited at 'A+' by the NAAC

Policy Name:	Green Campus, Energy and Environment Policy
Originating/Responsible Department:	Green Initiative Clubs
Approval Authority:	Governing Body
Date of Original Policy:	March, 2018
Last Update:	

The Green Campus, Energy and Environment Policy

Preamble

The relationship between P.B. Siddhartha College of Arts and Science and nature is a long and enduring one, something that students and staff of the college are aware of. The buildings of this educational institution stand on the side of the rock range, a topographical feature that is chosen to be preserved and protected. P.B. Siddhartha College of Arts and Science is very often acclaimed as the college with avenue trees jutting from the ground giving it a completely natural and organic facade.

Since 1975, the college has always had sustainable initiatives at the core of all activities. 11.88% of the 8.1 acre lush campus in the Diplomatic Enclave has been built up. The rest of the campus can be categorized as playgrounds, lawns and gardens. A sizable portion is left in its natural form and acts as a natural habitat for biodiversity and a large variety of species of grasses, herbs, shrubs and trees.

Scope of the Policy

The Green Campus, Energy and Environment Policy will develop exciting new co-curricular and extracurricular practices that encourage students to take the lead in creating positive change. These initiatives call for a thorough review of all infrastructural, administrative functions from the standpoints of energy efficiency, sustainability and the environment.

The focus areas of this policy are:

- Clean Campus Initiatives
- Landscaping Initiatives
- Clean Air Initiatives - Smoking Free Campus
- Infrastructure
- Solar Power Plant
- Installation of Energy Efficiency Equipment
- Water Conservation through Rainwater Harvesting System

- Waste Management processes
 - ✓ Solid Waste Management
 - ✓ Liquid Waste Management
 - ✓ E-Waste Management
- Awareness Initiatives
- Environment-centric Student Societies and Department Activities
- Green Audit
- Energy Audit
- Plastic-Free Campus

Mission

Creating environmental consciousness among the stakeholders to be a part of nature, instead of a dictator.

Objectives of the Policy

- To protect and conserve ecological systems and resources within the campus.
- To ensure judicious use of environmental resources to meet the needs and aspirations of the present and future generations.
- To integrate environmental concerns into policies, plans and programmes for social development and outreach activities.
- To work with all stakeholders and the local community to raise awareness and seek the adoption of environmental good practice and the reduction of any adverse effects on the environment.
- To continuously improve our contribution to climate protection and adaptation to climate change and to the conservation of global resources.
- To continuously improve the efficient use of all resources, including energy and water, and to reduce consumption and the amount of waste produced, recovering and recycling waste where possible.
- To make the campus plastic free.
- To conduct environmental and energy audits from time to time.
- To minimize the use of paper in administration through having policy for E governance.

The green, Environment and Energy usage Policy of Parvathaneni Brahmaya Siddhartha college of Arts & Science, Vijayawada is to manage energy in such a systematic way so as to minimize its impact on the environment. The policy implies to explore the renewable energy resources to reduce the burden of the government and to find out substitute natural resources as solutions to the energy crisis.

This environment and energy policy is binding for all the components of the institution and applies to all its stakeholders and to the various activities undertaken by the institution. It will help us to embed efficiency and environmental awareness into our everyday activities, thus helping us to realize our responsibilities and commitment to conservation of natural resources and to limit its usage. **The initiative clubs**, official platforms devoted to the cause of environmental awareness, to undertake green initiatives, and to conduct green literacy programmes to save energy and to protect the environment.

Goals:

- To assess our energy usage and measure its impact on the environment.
- To count CO₂ emissions generated by our means of transportation vehicles.
- To reduce local air pollution emissions using environment-friendly vehicles, including bicycles, public transportation and use of pedestrian-friendly roads.
- To install photovoltaic solar panels for the generation of alternate energy.
- To install LED bulbs in the complete campus to save energy.
- To develop systematic waste management mechanism.
- To develop rain water harvesting unit.
- To undertake tree plantation drive.
- To take additional measures to continuously improve our energy consumption.
- To develop and maintain an environmental management system which is ISO standards and an Energy Management System based on ISO standards.
- To ensure the availability of necessary resources to achieve our objectives.
- To encourage use of advanced technology to minimize energy consumption, atmospheric emissions and noise, particularly from our vehicle fleets.

- To engage in dialogue with the government agencies, municipal corporation and the affiliating university and actively work with the local organizations in the areas of environment, energy efficiency and sustainable development.
- To monitor and respond to emerging environmental and energy issues.
- To strengthen our employees' and students' environmental knowledge and skills in order to improve our own environmental performance.
- To provide information and training opportunities on energy saving measures.
- To offer opportunities for employees and students to engage in initiatives those contribute to environmental protection.
- To train our employees and students through our Green initiatives Club to make them '**Go Green Specialists**' and partners to plant trees each year.

This policy will be communicated to the students and employees via internal communication channels, and will be made available to all the stakeholders on the institutional website. The Environment and Energy Policy, objectives and targets will be reviewed on a regular basis by the Green initiatives Club Convener and its members under the guidance of the Principal and Director of the college.

Policy

Clean Campus Initiatives

P.B. Siddhartha College of Arts and Science had pledged to actively coordinate cleanliness activities in the college and beyond the campus in accordance with the hygiene requirements. It commits to continue with this Programme. The broad vision is as follows:

1. Generating mass awareness on cleanliness and hygiene amongst students and staff members by holding regular cleanliness drives. The idea is to motivate them to contribute in a proactive manner.
2. Activities under 'Swachh Bharat Abhiyan' will be a key component of all the community work being done by NSS, NCC and Green Society volunteers of the college.
3. Staff Members will be encouraged to participate in the cleanliness drive

in the college campus.

4. Events such as poster and slogan competitions, essay writing, spoken word poetry, speeches, skits on 'Swachh Bharat' will be organized.
5. Rallies on themes connected with environmental consciousness in and around the college campus will be conducted to create mass awareness.
7. Remove all kinds of waste material like broken furniture, unusable equipment etc.
8. Administer of the pledge by students and staff members to maintain cleanliness of the college campus and its surrounding areas on an annual basis.
9. Conduct workshops on the 3Rs: Reduce, reusing and recycling of waste.
10. Commit to manage waste and maintain clean campus especially during college events.

Landscaping Initiatives

The campus landscape, like its buildings, can be seen as the physical embodiment of a college's values. It is a vital part of the life of a campus, providing space for study, play, outdoor events, relaxation and aesthetic appreciation. Green campus landscapes also manage runoff, help recharge groundwater, and clean and cool the air on campus. The landscape serves as a visual representation of the campus community's commitment to sustainability. As campus landscapes are so visible and accessible, landscaping initiatives are a great way to build awareness around the environment.

There are more than 100 trees and more than 200 shrubs on campus along with 1.5 acre of grass cover. The landscape of trees and plants provide the 3500+ students and staff with clean and cool air and is a soothing environment.

The diverse green cover of P.B. Siddhartha College of Arts and Science is also home to a number of animals and rare birds across at least 24 species, creating a campus rich in biodiversity. The college commits to enriching this healthy habitat and maintaining the symbiotic relation of the institution with nature by

- Organizing annual tree plantation drives
- Encouraging student societies to hold tree planting events

Clean Air Initiatives

We encourage our students and staff to use public transportation. We encourage carpooling to college, an activity that will control air pollution and strengthen social interaction. The entry of automobiles inside the campus is restricted to discourage the use of private vehicles.

Our campus is also located in Siddhartha Nagar, an area identified as the clean area of Vijayawada on the hillside. For this reason, we feel responsible to maintain cleanliness and protect the vegetation on the hilltop. The abundant natural landscape not only cleans the air on campus but also becomes an extension of the green lungs of the city.

Smoking Free Campus

In compliance with the framework provided by the National Tobacco Control Programme (NTCP) 2007-2008, the college prohibits smoking and the use of other tobacco products. Smoking and use of tobacco in and around the campus is strictly prohibited. The anti-smoking committee of the college ensures enforcement of the anti-smoking policy.

Infrastructural Initiatives

Renewable Sources of Energy

P.B. Siddhartha College of Arts and Science is dedicated to minimize and sustainably manage its use of electricity. The college believes in reducing the consumption of electricity produced by non-renewable resources by switching to cleanenergy sources like solar energy for purposes like lighting the campus.

Observance of Green Saturday to Restrict the Use of Petrol/Diesel Vehicles

As per the suggestion of the Department of Environment Science of the college and also to ensure environmental consciousness, it is unanimously decided every Saturday will be observed as GREEN SATURDAY in the college campus and that the students and the staff of the college will be advised to make use of bicycles, battery-operated or community transport service.

Street Lights Controller

To minimize the use of electricity consumption and make the maximum utilization of the available resources, the college has intended to install Solar Photovoltaic Device with 20Wp PV module, 12Ah SMF battery, PWM Charge Controller, PV current sensing system for Dusk to Dawn fully automatic ON/OFF switching of street lights. 11 Sensor-based LED Solar Power Street Lights are installed from the entrance to the college Use of LED bulbs/ Power-Efficient Equipment

100% electric lights and all the computers of the college are LED enabled. The other equipment is also purchased taking into account their power-efficiency.

Environmental Air Quality Monitoring

Smart cities are expected to be urban spaces that provide a decent quality of life to their citizens by offering a clean and sustainable environment. For a Smart city, it is necessary to monitor the environmental conditions for identifying the sources of pollution and mitigate them. A network of low-cost air quality monitoring sensor nodes can be deployed to monitor the air-quality and meteorological parameters.

The air quality monitoring was conducted with the help of fine dust sampler. Near about the 3 station were selected for this activity. The sampling was done for a period of 24 hours each and was carried out in the intervals of 8 hours to evaluate the RSPM parameters. Likewise, the monitoring was done in the intervals of 4 hours for the NO_x and SO_x. The parameters selected to determine the air quality in these areas are RSPM, NO_x and SO_x. The Gravimetric method was used for the determination of RSPM. A Spectrophotometric Method is used to determine and analyze the oxides of carbon, nitrogen and sulphur in the air.

The “**Continuous Ambient Air Quality Monitoring Station (CAAQMS)**” is a facility to measure the air and meteorological parameters (criteria pollutants) continuously all year round. The measured data is remotely monitored and exported in various formats to the local central authorities. The data is published via the Internet for easy public access to raise awareness on current air pollution levels. This way, the public can prevent outdoor activities and reduce health impacts during heavy polluted days.

Display Boards

Various boards including Quotes that promote environmental awareness and ethics including air-pollution control, plastic-free campus, conservation of

energy, recycling of resources, tree plantation, Nature conservation, etc. are displayed for all the stakeholders of the college.

Energy Saving and Energy Efficient Equipment

We commit to install environment-friendly electrical appliances that save energy and reduce wasteful inefficiencies. The college believes in using cleaner energy such as LED lighting.

Water Conservation through Rainwater Harvesting System

As an institution located in the area that has seen maximum fall of ground water levels, the college has committed itself to this effort to replenish the groundwater table by practicing rainwater harvesting. This practice helps in the replenishment and recharge of the groundwater. The unique practice is connecting the whole ground to well, which is 100 year old.

Waste Management Processes

P.B. Siddhartha College of Arts and Science strives to have a minimal impact on the environment and is dedicated to reduce and manage the waste generated by the college campus. The following specific procedures will be undertaken to ensure JMC's contribution in protecting the environment.

Solid Waste Management

With its aim to provide holistic education that also has a positive impact on the environment, the college will adopt practices that will mitigate the generation, and manage solid waste through the following methods:

- Systematically engage with the 3'R' s of environment friendliness (Reduce, Reuse and Recycle).
- Collect paper waste produced on campus and collaborate with scrap dealers for recycling.
- Reduce solid waste by developing a technology-centric teaching and administrative model.
- Reduce use of paper by supporting digitization of attendance and internal assessment records.
- Reduce requirement of printed books by updating the e-books and e-journals collection of the college library.
- Encourage the students and teachers to use emails for assignment submissions.

- Take initiatives to spread awareness amongst students about
 - ✓ Food wastage and ways of minimizing it
 - ✓ Minimizing the use of packaged food
 - ✓ The habit of reusing and recycling non-biodegradable products
 - ✓ Organizing workshops for students on solid waste management.

Liquid Waste Management

- Maintain leak proof water fixtures.
- Minimize the use of water by constructing more Indian style toilets instead of western style toilets.
- Continued employment of a caretaker to take immediate steps to stop any water leakage through taps, pipes, tanks, toilet flush etc.
- Prevention of release and mixing of oil from the college canteen liquid waste in the municipal drainage system by use of Grease trap mechanism. This way the Biochemical Oxygen Demand is reduced in the effluent waste water produced by the college canteen.
- Reuse of wastewater generated by the Reverse Osmosis (RO) system in washrooms.

E-Waste Management

P.B. Siddhartha College of Arts and Science ensures that its usage of technology and generation of e-waste does not impact the environment. For this purpose, the college plans to strive towards:

- MoU with organizations for e-waste recycling.
- More provisions for the disposal of the institutional e-waste.
- Collaboration with e-waste recycling companies to get electronic waste recycled.
- Awareness amongst students about reduction of e-waste and environment friendly disposal practices for e-waste.
- Encouraging department and society level activities pertaining to e-waste management.

Awareness Initiatives

Outreach and education are of utmost importance so that all members of the campus community may value the objectives of the policy and aid in its

implementation. This is why P.B. Siddhartha College of Arts and Science supports and encourages awareness campaigns, seminars, workshops, conferences and other interactive sessions to facilitate effective implementation of the Green Campus, Energy and Environment policies.

Observance of Days to Protect and Nurture Environment

The organization of various events like Rallies, Awareness Campaigns, Cleanliness Drives, Seminars, Conferences, Workshops, presentations, Tree Plantation Drives, Wildlife Photography Competitions, Rangoli Competitions, Essay Competitions, Bird Watching Programs, Excursions, Study Tours, Guest Lectures, Talks, etc. on the occasion of various days like- 'International Day for the Preservation of the Ozone Layer' (16 September), 'World Environment Day' (05 June), 'International Tiger Day' (29 July), 'Wildlife Week' (02 to 08 October), 'World Biodiversity Day' (22 May), 'World Wetland Day' (02 February), 'World Water Day' (22 March), 'World Sparrow Day' (20 March), 'Great Backyard Bird Count (GBBC)' (14 February), Mahatma Gandhi Jayanti (02 October), 'Army Day' (15 January) 'Bird Week' in first week of November, etc. ensures to create awareness among young students and public about various environment related problems and conservation of Nature and natural resources in the surrounding area and educating on how to live an Eco- friendly life.

Environment-centric Student Clubs and Department Activities

P.B. Siddhartha College of Arts and Science encourages all the departments and specific student societies like Green Club, Eco Club, Cycle Club, Biodiversity Club, NSS, NCC and others to organize events, competitions and training sessions that will bring about positive environmental changes at the grass root level. The college supports departments and student societies in molding the students into active agents of environment protection and conservation.

Go Green Activity

Institutional changes towards sustainability and eco-friendly practices have percolated down to the students which have led more and more students to join Go Green mission. Making the society a compulsory one will provide it a bigger platform to broadcast the institution's environmental values to raise awareness. Because compulsory societies expect the fulfillment of a specified number of hours of work and commitment, this will aid the green initiatives and practices that are a part of this policy to grow exponentially.

Green Audit

The college aims to regularly conduct a Green Audit of our college campus to assess our strengths and weaknesses to further our goals of long-term sustainability. A green audit is a useful tool to determine how and where most energy or water or resources are being used. The college can then consider how to implement changes and make savings. It can determine the type and volume of waste. Recycling projects or waste minimization plans can be adopted. It will create health consciousness and promote environmental values and ethics. It provides a better understanding of the impact of eco-friendly practices on campus. Green auditing will promote financial savings through reduction of resource use. It is imperative that the college evaluate its own contributions toward a sustainable future.

Conduct Energy Audit

An Energy Audit is to be conducted as and when required to further reduce its carbon footprint. The importance of reducing energy consumption cannot be overstated. The energy audit, with its specialized tools will identify wastage of energy. Such an inspection often reveals several different flaws which cause a loss of significant amounts of energy which the college will not be able to detect. These flaws often have easy and affordable solutions and provide significant savings.

Plastic-Free Campus

P.B. Siddhartha College of Arts and Science has been observing most of its duties in terms of solid waste management since its inception. In view of the Government of India's resolution to ban all single use plastics due to the hazardous impact of plastic use and pollution, the college administration strictly bans the use of single use plastics in its premise to make it a 'Plastic Free Campus'.

Creative Wall Magazine

Issues pertaining to Environment and Sustainability are addressed through lessons and poems prescribed for the subjects like Compulsory English, Supplementary English, Telugu and Hindi. However, there is a Dedicated Section for the Environment Consciousness in the "Ingenuity- A Students' Space"- a creative wall magazine of the college where the students are promoted to write and display their write-ups regarding environmental sensibility. In order to create awareness regarding environmental pollution of

Green Campus, Environment and Energy Policy

which disposal of solid waste material is one of the major issues.

Green Initiative Clubs
Coordinators

Principal