



REAP Code : 1011

# ARYA College of Engineering (ACE)

Previously Known as Arya Institute of Engineering & Technology (AIET)

(Affiliated to RTU  
Approved by AICTE, New Delhi)

- Main Campus, SP-40, RIICO Industrial Area, Delhi Road  
Kukas, Jaipur - 302028 | Tel Ph. 0141-2820700

- [www.aryacollegejpr.com](http://www.aryacollegejpr.com)
- Toll Free : 1800 102 1044

## TITLE OF PRACTICE

# “Green Campus in Accordance with Sustainable Development Goals of UN”

## OBJECTIVES OF PRACTICE

The objective of the Green Campus Initiatives for Arya College of Engineering is to cultivate a culture of sustainability and innovation within the academic community. By integrating green practices into campus infrastructure, curriculum, and research projects, the initiative aims to reduce environmental impact, promote energy efficiency, and instill eco-consciousness among students, faculty, and staff. Through initiatives like; **Renewable Energy Integration, Waste Reduction, Water Conservation, Innovation and Research** the institute seeks to serve as a model for sustainable engineering practices and inspire future engineers to incorporate environmental considerations into their designs and projects. Ultimately, the goal is to foster a campus environment that prioritizes environmental responsibility and prepares students to address global sustainability challenges.

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## THE CONTEXT

The context of the Green Campus Initiative lies within the broader global concerns surrounding environmental degradation, resource depletion, climate change, and the urgent need for sustainable development. There is a growing realization that institutions of higher education play a crucial role in shaping a more sustainable future. The Green Campus Initiative emerges as a response to these challenges, aiming to transform educational institutions into models of environmental responsibility, innovation, and stewardship.

Since the need to **safeguard the environment, minimize water waste, and maximize the use of energy resources on campus** has arisen, the institute has implemented a number of **green initiative practices** with the voluntary participation of students and employees.

Several key factors contribute to the context of the Green Campus Initiative:

- **Environmental Degradation:** Campus, as microcosms of society, contribute to environmental issues and can serve as platforms for change.
- **Educational Role:** Institution hold a unique position to instill values and knowledge related to sustainability in students, faculty, and staff. Campus can empower future generations to drive positive change.
- **Social Responsibility:** As leaders in their communities, campus have a duty to set an example by adopting ethical & responsible practices.
- **Innovation and Research:** Campus provide fertile ground for research and innovation in areas such as renewable energy, green technologies etc. These advancements can contribute to solving pressing global challenges. As we have Electric Vehicle manufacturing unit and LED manufacturing lab within the campus.

In this context, the Green Campus Initiatives represent a proactive approach for our institution to align with the global drive toward sustainability.

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## THE PRACTICE

The Green Campus Initiatives in the context of India's Higher Education system is a concerted effort by Arya College of Engineering to address environmental challenges, promote sustainability, and instill eco-consciousness among students, faculty, staff, and the wider community. Arya College of Engineering is steadfast in its commitment to a Green Campus Program, intricately aligned with our vision and mission. As we embark on this eco-conscious journey, **our aim is to seamlessly integrate sustainable development goals 6 and 7 of United Nations** into every facet of campus life.

**Sustainable Development Goal 6:** Ensure availability and sustainable management of water and sanitation for all.

**Sustainable Development Goal 7:** Ensure access to affordable, reliable, sustainable and modern energy for all.

Through proactive measures in **energy efficiency & conservation, waste reduction, and environmental education**, we aspire to cultivate a culture of responsibility and innovation. The lush greenery and eco-friendly infrastructure not only enhance the aesthetic appeal but also contribute to a healthier learning environment. Graduates emerge as environmentally responsible engineers, equipped to address global challenges. **The program's success resonates beyond the campus, inspiring communities and showcasing the power of sustainable practices in shaping a brighter future.**

The Green Campus Initiative takes on distinct characteristics that set it apart:

**Diverse Ecosystems and Biodiversity:** Campus is focusing on preserving and restoring native flora and fauna, contributing to the protection of rich biodiversity by organizing and integrating sustainability principles into curricula and extracurricular activities like; Tree Plantation, Clean India Campaign, Poster Presentation.

**Social Awareness:** ACE organizing extension activities related to environment like; Energy Saving Awareness Programs, Tree Plantation outside campus area, Cleanliness Campaign (Swachh Bharat Abhiyan) etc.

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**Cultural and Spiritual Significance:** Environmental awareness is deeply rooted in Indian culture and spirituality. The Green Campus Initiative is drawing inspiration from traditional practices like; Conservation of water bodies, tree worship etc.

**Education for Sustainable Development:** India's education system places strong emphasis on academic excellence. The Green Campus Program incorporates sustainability education into curricula, producing graduates with a heightened sense of environmental responsibility to ensure access to affordable, reliable, sustainable and modern energy for all

**Innovative Solutions:** The initiative encourages innovation in sustainable technologies and practices. Institution's tech-savvy environment can lead to creative solutions in areas such as Renewable Energy, Use of energy efficient equipment's & waste management, E-vehicle manufacturing unit.

**Youth Leadership:** India has a large population of young people who are increasingly passionate about environmental issues. Green campus program amplifies youth-led sustainability movements and empower future leaders.

**Resource Constraints:** The Green Campus Program uniquely addresses the issues by promoting efficient water management, rainwater harvesting, and the adoption of renewable energy sources like solar power.

## **Constraints/ Limitations faced:**

- Effective rainwater harvesting systems often require ample space for the installation of collection surfaces, such as rooftops or catchment areas.
- Regions with erratic or low rainfall may not yield sufficient water for harvesting.
- Integrating solar power into existing electrical grids can present technical challenges, including voltage fluctuations, grid stability issues, and synchronization with conventional power sources.
- Encouraging and sustaining behavioral change among students, faculty, staff, and visitors to reduce reliance on single-use plastics requires comprehensive education and awareness campaigns.
- Manufacturing EVs involves inherent risks, including technological, financial, market, and regulatory risks.

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## EVIDENCE OF SUCCESS

The success of a Green Campus Initiatives for Arya College of Engineering can be measured through various evidence-based indicators that reflect the positive impact of sustainable practices on the campus environment, student engagement, cost savings, and community involvement.

Here are some key pieces of evidence that demonstrate the success of such an initiative:

**Reduction in Energy Consumption:** Comparative data showing a significant decrease in energy consumption per square foot of campus space over a specified period, achieved through the implementation of energy-efficient technologies, lighting systems (LED lights).

**Increased Use of Renewable Energy:** A considerable proportion of the power requirement of the institution is quenched by the power generated through solar power cell. The institution is harnessing power with its sustainable non- polluting Solar cell being set up in ACE Building (125.50 kW + 185.25 kW) and Boys Hostel-NBH (150.75 kW). The Solar cell is capable of producing around 461.5 kWh of power through its resources.

**Emissions Reduction:** Quantitative evidence of reduced greenhouse gas emissions from the campus, indicating successful efforts to mitigate the institution's carbon footprint as shown in Environment/ Green Audit Report.

**Water Conservation:** Data on reduced water consumption per capita or per unit of campus space, achieved through water-efficient fixtures, landscaping practices, and rainwater harvesting systems.

**Waste Reduction and Recycling Rates:** Documentation of improved waste management practices, showcasing higher recycling rates, reduced waste sent to landfills, and increased use of composting.

**Student Engagement:** Evidence of student involvement in sustainability initiatives, such as participation in campus clean-up events, green clubs, workshops, and awareness campaigns.

**Curriculum Integration:** Documentation of sustainability-related courses, projects, and research within engineering programs, indicating successful integration of sustainability principles into the curriculum.

**Innovative Solutions:** Showcasing student-led projects or research initiatives focused on creating innovative and sustainable solutions, such as developing energy-efficient technologies, waste reduction methods (Bio-Gas Plant), Electric Vehicle Manufacturing Unit.

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**Community Outreach:** Records of community engagement programs, such as organizing local sustainability workshops, partnering with neighboring communities on environmental projects, providing resources for sustainability education in nearby schools, tree plantation and cleanliness drives.

**Awards and Recognitions:** Receipt of awards, accolades, or certifications from local, regional, or national bodies for ACE's commitment to sustainability and its successful green initiatives.

**Alumni and Industry Partnerships:** Alumni involvement in supporting sustainability initiatives and industry partnerships that endorse ACE's efforts to create environmentally conscious graduates.

**Behavioral Changes:** Observational or survey-based evidence of changed behaviors among students, faculty, and staff regarding energy conservation, waste reduction, and sustainable transportation choices.

Collecting and presenting these pieces of evidence provides a comprehensive picture of the ACE's success in implementing a Green Campus Program. These indicators not only validate the impact of sustainable practices but also inspire further action and innovation toward creating a more environmentally responsible campus community.

- The energy audit method was put in place by a third-party government approved energy audit team.
- Green campus initiative instructional labels are put in a conspicuous location throughout the campus.
- Inside the campus, renewable energy sources such as solar plants.
- Within the campus, a rain water harvesting system was built. Rainwater is collected and used for gardening and other purposes.
- Conducts tree-planting drives on a regular basis.
- Sewage is treated through the use of a sewage treatment (STP) facility.
- Establishment of a waste management system to handle hazardous and electronic trash, among other things.
- To reduce carbon footprints, staff and students are urged to use public transportation, battery-powered vehicles, and promote bicycle usage.

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## **PROBLEMS ENCOUNTERED & RESOURCES** **REQUIRED**

Implementing Green Campus Initiatives in Arya College of Engineering can be a beneficial initiative but may also come with its own set of challenges. Here are some common problems that might be encountered along with the resources required to address them:

### **Problems Encountered:**

- Space limitations for the installation of collection surfaces, such as rooftops or catchment areas for Rain water harvesting system.
- Technical challenges such as voltage fluctuations, grid stability issues, and synchronization with conventional power sources in on-grid solar power station.
- Encouraging and sustaining behavioral change among students, faculty, staff, and visitors to reduce reliance on single-use plastics requires comprehensive education and awareness campaigns.
- EV manufacturing unit involves inherent risks, including technological issues.

### **Resources Required:**

- Engaging speakers or experts on sustainability topics can also be helpful.
- Seek grants, sponsorships, or partnerships with companies interested in sustainability.
- Staff dedicated to overseeing and coordinating the Green Campus program, including a sustainability coordinator or manager.
- Expertise from faculty members, researchers, and professionals in relevant fields (e.g., environmental science, engineering, architecture).
- Energy management software for analyzing data and identifying opportunities for improvement.

By securing these resources and effectively deploying them, ACE can establish and maintain successful Green Campus Initiatives that promotes environmental stewardship, enhances the campus community, and prepares students for careers in sustainable engineering and technology.



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