

Air University

Sustainability and Climate action Policy

General

1. Pakistan has faced numerous catastrophic floods, droughts, and earthquakes in recent few years resulting in huge loss of life, displaced thousands of people, destroyed livelihoods, and damaged infrastructure. Climate change indicators are now very obvious and expected to be magnified in intensity and frequency in the coming years. Air University has raised this prospect at appropriate level that these natural hazards will increase in frequency and severity in the coming decades and Pakistan is one of the most vulnerable country to the effects of climate change.

Purpose

2. The purpose is to give directions to the policymakers, project developers, and town development professionals whose work may be extended due climate change in Pakistan. The Asian Development Bank intends to play a key role in supporting the climate resilience to its member countries, and needs attention to attract the world towards Pakistan upcoming challenges.

Short Term Measures

3. Natural calamities are very difficult to respond, eventually they will have their disastrous effects on life and will fade away, however to reduce the losses few short term measures have been suggested by the Air University to protect education sector from climate change.

- a. All present and future building designs have been modified from conventional to earthquake proof with better rain water drainage systems.
- b. Rain water absorption and drainage system are being elongated to absorb more water and drain it to the main water streams to avoid flooding inside the university.
- c. Rain water storage tanks are also being planned to store a reasonable amount of water for horticulture which will be used during dry spells of weather to keep areas green to reduce the heat effects of climate change.
- d. Modern and weather proof shelters are planned for parking of vehicles to reduce the damage due to extreme temperatures and effects of hail storms, heavy rains and earthquakes.
- e. Multistoried buildings are planned distance apart to avoid damage to building due to falling of other buildings in the near vicinity.
- f. Elaborate firefighting resources are made available with proper coordination and integration practices.

Long Term Measures

4. Long term measures are linked with the National Policy of the Pakistani Government, however, salient features are as under:-
- a. All roads and infrastructures will be evaluated for climatic changes in the next 2 decades and will be designed accordingly.
 - b. Construction along river, water channels will not be allowed.
 - c. Multistoried building will have well developed drainage system with dedicated exit routes for escape in least possible time.
 - d. Upgradation of Pakistan Metrological Department with state of the art weather radars Richter scales and real time weather updates through satellites connectivity.
 - e. Development of NDMA with improved communication and information centers in case of actual calamity.
 - f. Emergency Relief Cell of Cabinet Division Government of Pakistan will have hotlines system of communication connected globally to apprise the world about the extent of damage to lure inn timely support in terms of tentage, food and monitory assistance.
 - g. NDMA will initiate official reports of damage worldwide to keep the world informed.

Our Strategy

- a) **Commitment to Sustainability:** Promoting sustainable practises and minimising its environmental impact are priorities for Air University. This entails applying sustainability concepts to all facets of the institution's operations, academic programmes, and decision-making procedures.
- b) **Greenhouse Gas Emissions Reduction:** The institution wants to cut the amount of greenhouse gases it produces through its activities and operations. This entails putting in place energy-efficient technology, relying on renewable energy sources, and promoting energy-saving practises across the university.
- c) **Waste Management and Recycling:** The emphasis on ethical waste management methods at Air University supports recycling initiatives. The university shall support waste reduction programmes among students, professors, and staff and provide suitable recycling facilities.
- d) **Water Conservation:** Through the adoption of water-saving fixtures, wise irrigation techniques, and educational programmes to promote water conservation among campus residents, the university aims to reduce water usage.
- e) **Sustainable Transportation:** For its students, employees, and visitors, Air University encourages environmentally friendly mobility options. Offering bike racks, promoting public transportation, and encouraging the use of electric or hybrid vehicles are a few examples of how to do this.
- f) **Sustainable Procurement:** The institution pledges to give preference to sustainable and environmentally friendly goods and services in its

procurement procedures. This involves taking into account how purchased goods and services will affect the environment.

- g) **Education and Awareness:** The community at Air University is to be informed about sustainability and climate action. This entails incorporating sustainability-related lessons into the curriculum as well as planning environmental-related workshops, seminars, and campaigns.
- h) **Partnerships and Collaboration:** The university will actively look for collaborations with outside NGOs, research centres, and organisations focused on sustainability and climate action. The difficulties of the global environment will be addressed through cooperative efforts.
- i) **Monitoring and Reporting:** Systems for tracking and evaluating Air University's progress towards sustainability objectives will be put in place. The campus community and pertinent stakeholders will regularly receive reports on sustainability activities and results..

Conclusion

5. Climate change needs very elaborate and methodical attention at the National level and better awareness to the students to deal with this menace in the times to come. The university's sustainability/climate action policy will be reviewed and updated on a regular basis depending on new technologies, industry best practices, and increasing environmental concerns.

(Ahmed Hassan)

Air Commodore Retired
Director QEC

1. Keynote Session: Climate Anxiety

Dr. Fizza Farrukh from Air University delivered an engaging and insightful session on climate anxiety. She explored how environmental changes affect mental health, shared coping strategies, and facilitated open discussions. Participants described the session as inspiring and interactive, with meaningful conversations on environmental challenges that encouraged critical thinking. Dr. Farrukh emphasized the importance of youth engagement in creating a sustainable future.

As part of this focus, attendees completed a climate anxiety assessment test to evaluate their personal levels of environmental concern. Organizers also shared actionable sustainable practices that individuals can adopt in daily life to reduce their ecological footprint and build resilience.



Student Project Demonstrations

A highlight of the forum was the exhibition of eco-friendly projects developed by students from the Mechatronics and Mechanical Engineering departments. All projects were constructed entirely from waste materials under the supervision of the reporting faculty member, demonstrating practical innovation in sustainable design. The top two best projects were awarded with certificates of acknowledgement as well.



Supervised overall by Dr. Fizza Farrukh (Department of English) Dr. Hammad Nazeer (Department of Mechatronics Engineering) and Dr. Mehr Nigar (Department of Mechanical Engineering), the showcased projects included:

- **Bridge Crane:** The model structure works by moving the bridge along a runway, allowing a trolley to travel across it and a hoist to lift materials.
- **Moving Robot:** A functional robotic prototype emphasizing mobility and automation using recycled components.
- **Mini Escalator:** A scaled model showcasing efficient vertical transport concepts built from waste materials.

2. Interactive Activities and Engagement

The event featured several hands-on, engaging activities designed to make climate awareness fun and memorable:

- **Word Search:** A puzzle activity focused on environment- and sustainability-related terms to reinforce key vocabulary and concepts.
- **Loop Game:** Participants jumped in and out of a physical loop based on host prompts about environmental issues (e.g., “Is plastic pollution in your control?”). If they believed the issue was within their personal or collective control, they jumped in; otherwise, they stayed out. This dynamic game sparked discussion, built awareness of personal agency, and was described as both educational and highly enjoyable.
- **Climate Anxiety Test:** A self-assessment tool (linked to Dr. Farrukh’s session) that helped participants gauge and reflect on their environmental concerns.

These activities encouraged active participation, critical thinking, and a sense of empowerment, aligning perfectly with the forum’s interactive ethos. The event concluded by distribution of seedlings to all of the participants.



Supervision and Collaboration

The entire event was supervised by:

- **Dr. Hammad Nazeer**, Department of Mechatronics Engineering.
- **Dr. Mehr Nigar**, Department of Mechanical Engineering.
- **Dr. Fizza Farrukh**, Department of English.

Their guidance ensured high-quality project development and seamless event execution. The AU Sustainable Futures Club provided excellent student-led organization, fostering strong collaboration between faculty and the student body.

The Climate Action Forum exemplified how student clubs, faculty expertise, and interactive programming can drive meaningful progress toward the SDGs. It left participants better informed, more aware of their role in climate solutions, and inspired to adopt sustainable habits.

3. Final Year Projects

Final Year Projects or capstone project are offered in 6th semester as mandatory projects to complete the Bachelors of Mechatronics Engineering. All of these projects are aligned with SDGs following the UN sustainability core values and principles.

Please find attached (excel sheet) the list of projects mapped with SDGs for session

1. 2020-2024
2. 2021-2025
3. 2022-2026

Smart room sterilization system using U



VC

rays

AUKC

Description:

UVC is used to maintain air quality standards despite the dynamics of cooling load and the dynamics of biological pollutants in the room. There are also innovations in room sterilization using UVC rays for biological pollutants attached to the surfaces such as benches, floors, and walls. Irradiating of rooms is carried out automatically every time the room is about to be used or after an activity and can be automated via condition sensors attached to PC-operated web cams.

The irradiation process is carried out at certain time intervals when the room unoccupied. During the process the door is closed and information is displayed to users outside. UVC wavelengths can be remotely regulated so they can be used for multi-organic sterilization of pollutants (biological pollutants).

Partnership Initiative with Abroo Foundation – Waste-to-Education Program

Air University Islamabad has initiated a collaborative program with the Abroo Foundation that links campus sustainability with social impact. Under this initiative, the university provides its recyclable waste materials (such as paper, plastic, and other disposables) to the foundation.

The Abroo Foundation manages the recycling and resale of this waste, and in return, channels the generated funds to scholarship programs for underprivileged students. This enables deserving students to gain access to higher education at Air University, bridging the gap between sustainability efforts and educational opportunities.

Key Features of the Initiative:

- **Waste Utilization for a Cause:** University waste is systematically collected and provided to the Abroo Foundation for recycling and resource generation.
- **Scholarships for Students:** The proceeds from recycling directly fund scholarships for students from economically disadvantaged backgrounds.
- **Sustainability with Social Impact:** This initiative demonstrates how environmental stewardship can be effectively tied to social responsibility.
- **Access to Higher Education:** The program ensures that students who otherwise lack financial resources are able to pursue higher education at Air University.

Expected Outcomes:

- **Reduction of campus waste through effective recycling practices.**

- **Increased opportunities for underprivileged students to enroll in higher education.**
- **Strengthened university–community partnerships promoting sustainable development and social equity.**

Initiative with SDPI (Sustainable Development Policy Institute), Pakistan

Air University has initiated a collaboration with the **Sustainable Development Policy Institute (SDPI) of Pakistan** to jointly **develop and implement policies** aimed at enhancing the professional growth, welfare, and overall well-being of faculty and staff. This initiative focuses on evidence-based policy formulation, capacity building, and sustainable practices that ensure a better working environment and long-term institutional improvement.

Our Green Vision

We are implementing green construction standards, adopting energy-efficient technologies, maximizing water use, encouraging trash minimization and recycling, and so forth.

Curriculum Integration

Students gain a thorough awareness of environmental problems and solutions through courses on sustainable development, environmental management, and conservation principles.

[2] Energy and Climate Change (EC)

Air University has undertaken various projects to address the problems caused by global warming and has significantly contributed the nation's climate. Development of Smart & Assistive Technologies for Energy Conservation in Buildings. Solar Powered Intelligent LED Street Light with Sun Tracker. Design and Development of an IOT based Smart Meter Lab Model



Thinking Green for Sustainable Development

- ❖ Air University takes pride in being the organizer of Pakistan's largest technical Olympiad, Air Tech. The event is an amalgamation of numerous technical events highlighting a theme which always is a major problem being faced globally. AirTech'19 addressed the issue of **Climate Change**, with the underlying theme "**Thinking Green for Sustainable Development**"

Our Green Building Structure and Renewable Energy Resources

- ❖ All buildings are well ventilated and built to support energy saving with coolant walls (thick walls).
- ❖ The Solar system is being installed to decrease reliance on electricity.
- ❖ Sky light roof covers the open area instead of concrete ceiling to ventilate and light the blocks.



AU Indoor Plants

This theme was created to support the causes and enhance awareness of individuals for clean and green Pakistan. All offices were provided an indoor plant and buildings corridors were also decorated with indoor plants to create better working environment and increase awareness of Air University employees



AU healthy and Welcoming Atmosphere

To provide a healthy and welcoming atmosphere for their staff, students, and teachers.



Green Space

Air University Has Built gardens, and green places on the campus. These spaces for leisure, biodiversity preservation, and carbon sequestration in addition to improving the university's aesthetic appeal.





Paperless Environment

The paperless environment adopted by Air University supports staff and student growth in digital literacy and proficiency. By using digital tools and platforms, individuals become more adept at navigating and utilising technology, which improves their employability in a world that is becoming more and more digital. We have included instruction in digital literacy in their curricula, giving students the skills they need to succeed in the digital age.

Student Learning and Academic Excellence

The Clean Campus

Shaoor the Society took an initiative and conducted an On-Campus Safai Walk, an annual event for the Clean and Green Campaign and now an initiative of the Green Youth Movement under prime

Ministers youth Movement. The idea behind the initiative was to enhance the concept of cleanliness and to encourage students, staff and management to play their part and apply the need and use of proper sanitation and hygiene practices among university Faculty along with students of AU took part in this activity showing their positive behavior towards the conservation of campus, creating an environment for everyone to learn about cleanliness and creating awareness about its importance for future.





Planned Innovative Program – Smart Room Sterilization System Using UVC Rays Air University Islamabad

Air University Islamabad is planning to launch an advanced smart room sterilization system powered by UVC rays as part of its upcoming 4th floor development project, which will be entirely dedicated to smart classrooms and technology-enabled learning spaces. This initiative is expected to begin in the next academic year and reflects the university's forward-looking vision for health, safety, and sustainability.

Planned Features:

- **UVC-Based Air Quality Control:** The system will use UVC irradiation to maintain optimal indoor air quality, controlling biological pollutants regardless of occupancy levels or cooling variations.
- **Surface Sterilization:** Classrooms and labs will be equipped with UVC rays for the sterilization of walls, floors, benches, and electronic devices, ensuring a clean and hygienic environment after each academic session.
- **Automated Operation:**
 - Sterilization will occur automatically before or after room usage.
 - Smart occupancy sensors and condition detectors will ensure the system only functions when spaces are vacant.
 - Warning indicators outside each classroom will notify users during sterilization cycles.
- **IoT-Enabled Monitoring:**
 - Integration with IoT dashboards and cameras will allow real-time remote control and monitoring by facilities staff.
 - Adjustable UVC wavelengths will provide customized sterilization against various biological pollutants.

Expected Impact:

- Establishes Air University as a leader in smart and safe campus innovations in Pakistan.
- Enhances student and staff health protection through reliable sterilization measures.
- Aligns with AU's green and smart building initiatives, ensuring sustainable and technology-driven solutions.

✓ **Timeline:** Implementation is scheduled with the completion of the new 4th floor smart building project at the main campus in the next year.

Additional evidence link (i.e., for videos, more images, or other files that are not included in this file):

[2.13] Number of Innovative Program(s) in Energy and Climate Change (EC.9)

Air University South Sub Campus

Innovative Program: Smart Energy-Saving and Environmental Management System

At Air University South Sub Campus, innovative programs have been introduced to enhance energy efficiency and environmental sustainability. One of the key initiatives is the Smart Energy-Saving and Environmental Management System that integrates ICT-based controls, renewable energy, and campus-wide monitoring.

- **Smart Classroom Automation:** Classrooms are equipped with motion-sensor-based LED lighting and automated air-conditioning controls. This ensures that lights and cooling systems are automatically turned off when rooms are unoccupied, reducing unnecessary electricity consumption.
- **Solar-Powered Street Lighting:** The campus has piloted solar-powered LED streetlights that provide illumination during the night while minimizing dependency on grid electricity.
- **Green IT Practices:** Energy-efficient servers and ICT infrastructure have been installed to reduce the digital carbon footprint, with automatic shutdown policies for idle devices.
- **Smart Water and Energy Monitoring:** A digital dashboard is being implemented to track real-time water and electricity consumption, enabling better decision-making and accountability in sustainability practices.
- **Future Integration of Renewable Sources:** With the 500 kW solar project under implementation, smart meter will allow automatic integration of renewable energy into the grid to optimize usage and reduce carbon emissions.

Impact:

- Reduction of energy wastage through automation.
- Increased reliance on renewable energy (solar street lighting and upcoming solar power project).
- Improved monitoring and accountability for sustainability-related performance indicators.
- Direct contribution toward SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation and Infrastructure), and SDG 13 (Climate Action).

Additional evidence link (i.e., for videos, more images, or other files that are not included in this file):

Template for Evidence(s)

UI GreenMetric Questionnaire

University : Air University, Islamabad (Kamra Campus)

Country : Pakistan

Web Address : <https://www.au.edu.pk/>

2 Energy and Climate Change (EC)

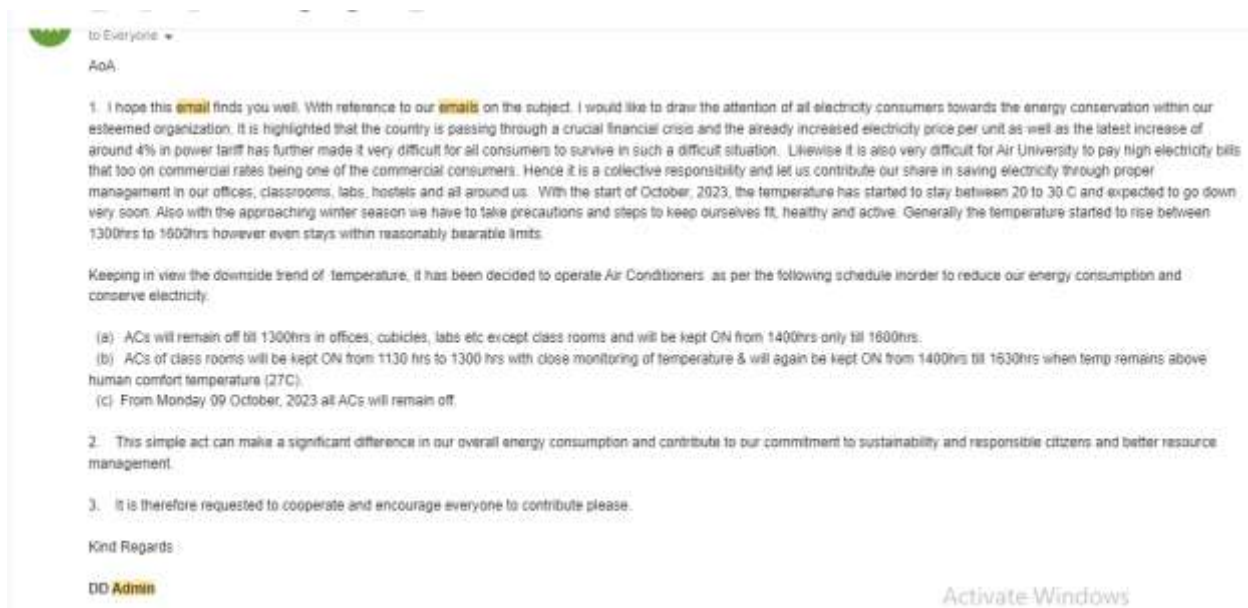
2.13 Number of innovative program(s) in energy and climate change

Description:

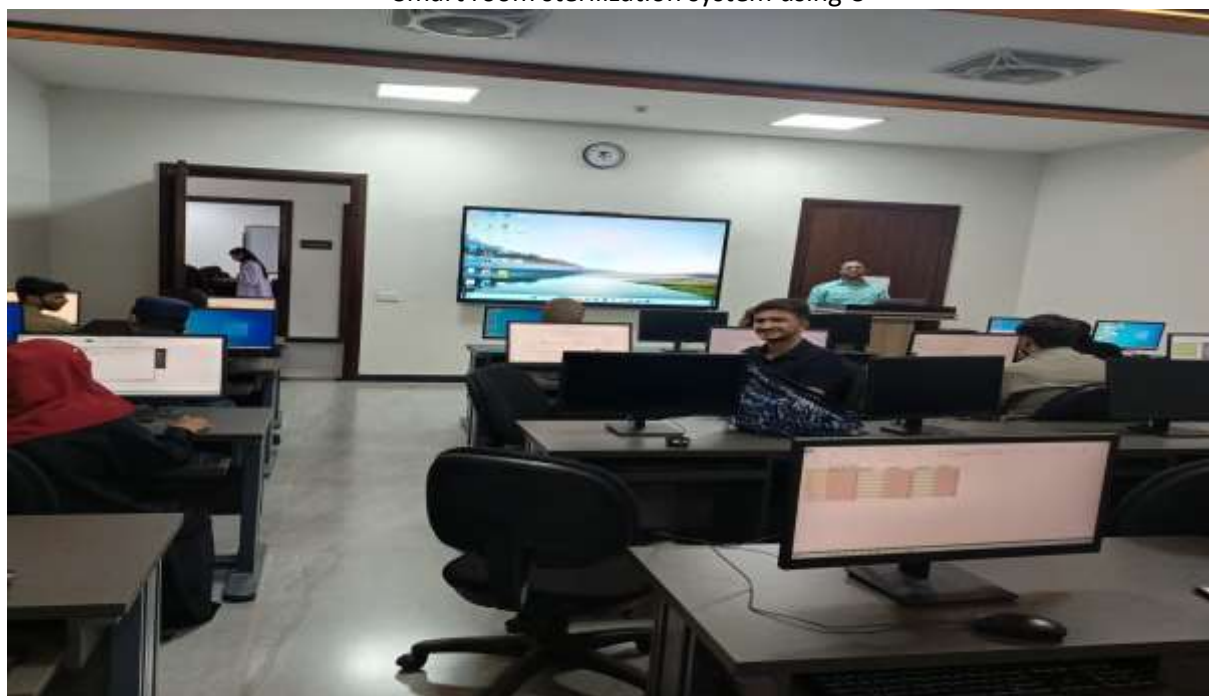
AU Kamra Campus conducts online classes once a week to conserve energy and reduce carbon emissions. All faculty and students work from home, while 100% of staff operates from the campus.

Notification of online classes, Annexure C attached.

AU Kamra Campus saves electricity through proper management in offices, classrooms, labs, and hostel.



Smart room sterilization system using U



VC

rays

AUKC

Description:

(Please describe innovative program(s) on your campus. The following is an example of the description. You can describe more related items if needed.)

UVC is used to maintain air quality standards despite the dynamics of cooling load and the dynamics of biological pollutants in the room. There are also innovations in room sterilization using UVC rays for biological pollutants attached to the surfaces such as benches, floors, and walls. Irradiating of rooms is carried out automatically every time the room is about to be used or after an activity and can be automated via condition sensors attached to PC-operated web cams.

The irradiation process is carried out at certain time intervals when the room unoccupied. During the process the door is closed and information is displayed to users outside. UVC wavelengths can be remotely regulated so they can be used for multi-organic sterilization of pollutants (biological pollutants).



Description: Innovative Programs – Air University Karachi Sub Campus

Air University Karachi Sub Campus has introduced several innovative programs that integrate smart technology and sustainability principles to enhance campus operations, environmental quality, and energy management. These innovations are part of the university's ongoing efforts to develop a smart, safe, and green learning environment aligned with the Sustainable Development Goals (SDGs).

Key innovative initiatives include:

1. **Smart Energy Monitoring System:**
The Karachi Sub Campus has implemented an automated Energy Management and Monitoring System (EMMS) to track real-time electricity consumption across academic blocks and administrative units. The system identifies peak usage hours, detects energy wastage, and supports informed decision-making for efficient energy utilization.
2. **UVC Air Sterilization Units:**
To maintain high indoor air quality, UVC-based sterilization units have been installed in classrooms, laboratories, and offices. These systems eliminate airborne microorganisms and pollutants, ensuring a safe and healthy indoor environment. The irradiation process is automated using occupancy sensors and is activated during unoccupied hours to ensure safety and efficiency.
3. **Automated Water Conservation System:**
An IoT-based water management system has been introduced to monitor and control water usage in washrooms and green areas. This system automatically regulates water flow and detects leaks, significantly reducing wastage and promoting sustainable resource use.
4. **Digital Classroom Infrastructure:**
Classrooms are equipped with smart interactive panels, motion-sensing lights, and automated ventilation controls, ensuring optimal learning conditions while reducing energy consumption.
5. **Renewable Energy Integration through Solar Panels:**
The campus utilizes a solar-powered grid system that supports partial energy needs of academic buildings, reducing dependence on conventional energy sources and lowering the overall carbon footprint.

These innovations reflect Air University Karachi Sub Campus's strong commitment to creating a technologically advanced, energy-efficient, and eco-friendly academic environment, contributing directly to SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation and Infrastructure), and SDG 13 (Climate Action).

Additional evidence link (i.e., for videos, more images, or other files that are not included in this file):



Solar Plates installed at Acadmic Block, Boys Hostel and Bus Shed roof top producing 45000 of units per month

Description:

Air University Multan Campus has implemented several innovative programs focusing on energy efficiency and climate change mitigation, demonstrating a strong commitment to sustainability. The campus buildings are thoughtfully designed to maximize the use of natural daylight and ensure effective ventilation across all floors, reducing the dependence on artificial lighting and mechanical cooling systems. This design approach not only enhances occupant comfort but also significantly lowers energy consumption.

A major highlight is the installation of a solar panel system with a capacity to generate approximately 45,000 units of electricity per month. This renewable energy source fully meets the campus's peak summer electricity demand of around 36,000 units per month, enabling the campus to operate entirely on clean solar energy. This transition has drastically reduced reliance on conventional energy sources, cutting greenhouse gas emissions and supporting environmental sustainability goals.

In parallel with energy initiatives, the campus has prioritized greenery and afforestation by planting approximately 9,000 trees over the last two years. With 30% of the 27-acre campus dedicated to plantations and green spaces, the initiative enhances biodiversity, improves air quality, and contributes to carbon sequestration.

Additionally, the campus ensures that 100% of electrical appliances used are energy-efficient. This comprehensive approach combining building design, renewable energy adoption, afforestation, and energy conservation reflects Air University Multan Campus's proactive role in addressing climate change through innovative programs.

Additional evidence link (i.e., for videos, more images, or other files that are not included in this file):



















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Additional evidence link (i.e., for videos, more images, or other files that are not included in this file):

















Template for Evidence(s) UI GreenMetric Questionnaire

University : Air University
 Affiliate college : Fazaia Bilquis College of Education for Women, PAF Nur Khan.
 Country : Pakistan
 Web Address : www.au.edu.pk

[2] Energy and Climate Change (EC)

[2.13] Number of innovative program(s) in energy and climate change

1. **Most Innovative Initiative: Integrated ICT and Energy Management System**

- **Action:** Investment in a data center, computer labs, and a comprehensive CCTV system.
- **Reason for Innovation:** This infrastructure creates the foundation for a smart, data-driven microgrid. It enables real time energy data analysis, dynamic control of building systems based on occupancy, and optimal integration of future renewable energy sources.
- **Category:** System Integration & Data Intelligence.

2. **Highly Innovative Initiative: Mandatory Energy Conservation Policy**

- **Action:** Implementation of a strictly enforced policy requiring all staff and students to switch off appliances.
- **Reason for Innovation:** It innovates by creating a culture of collective accountability and responsibility, ensuring human behavior supports technological upgrades for long-term sustainability.

- **Category:** Behavioral & Cultural Change.
- 3. Innovative Initiative (Future Potential): Planned Solar Power Installation**
- **Action:** Working on installing a solar power system for campus buildings.
 - **Reason for Innovation:** Its innovative potential depends on scale and integration. It becomes highly innovative if designed as an independent microgrid or integrated with the data center for smart management.
 - **Category:** Renewable Energy Integration.
- 4. Standard Best Practices (Foundational, Less Innovative):**
- Upgrading to energy-efficient equipment (LEDs, appliances).
 - Utilizing sunlight-optimized building design.
 - Sourcing electricity from grid-based hydropower.
 - **Assessment:** These are essential, commendable actions but are considered standard, foundational practices rather than groundbreaking innovations.

Summary Table: Ranking Innovation

Initiative	Category	Level of Innovation	Reason
Integrated ICT Infrastructure	System Integration	Most Innovative	Enables a smart, data-driven, and adaptive energy ecosystem.
Mandatory Conservation Policy	Behavioral Science	Highly Innovative	Embeds sustainability into institutional culture, ensuring long-term efficacy.
Solar Power Installation	Renewable Energy	Innovative	Demonstrates a commitment to on-site generation and energy independence.
Energy-Efficient Upgrades	Efficiency	Standard Best Practice	Essential and effective, but now considered a baseline action.
Sunlight-Optimized Design	Passive Design	Standard Best Practice	A long-standing principle of green building architecture.

Conclusion: The most innovative aspect of the college's strategy is not any single technology, but the **combination of a smart infrastructure backbone (ICT) with a policy that mandates behavioral change**. This holistic approach, which integrates technology, data, and human factors, is a sophisticated and truly innovative model for institutional energy and climate action.

Template for Evidence(s)

UI GreenMetric Questionnaire

University : Air University Islamabad
 Affiliated College: Fazaia college of Education for women Peshawar.
 Country : Pakistan
 Web Address : www.fcwp.edu.pk

[2] Energy and Climate Change (EC)

[2.13] Number of innovative program(s) in energy and climate change (EC.9)

Description:

- 1) The College has installed a solar system to generate electricity from sunlight. The LED lights and inverter AC are used to save energy.





2) Disposable waste is thrown into three colours dustbins for the purpose of Reuse, Reduce and Recycle.



- 3) To promote green UI, the college has shifted to online mode of communication to save paper at college premises.
- 4) No use of plastic bags in college to keep the environment clean is in practice.

Description:

Air University has undertaken multiple innovative initiatives and programs focused on energy conservation, renewable energy adoption, and climate change awareness. These efforts align with the institution's sustainability goals and contribute to Pakistan's broader environmental objectives.

Key Programs and Initiatives:

1. **Renewable Energy Research and Innovation Program:**
 - Faculty and student research projects are conducted on solar and hybrid energy solutions.
 - The program encourages prototype development for low-cost, efficient solar systems and energy storage technologies.
 - Collaborations are being explored with energy-focused organizations and government agencies to pilot renewable energy applications on campus.
2. **Campus Energy Efficiency Initiative:**
 - Installation of solar panels across administrative and academic blocks to reduce dependence on non-renewable energy sources.
 - Deployment of energy-efficient lighting and smart meters for real-time monitoring and reduction of electricity usage.
3. **Climate Change Awareness and Action Program:**
 - Regular seminars, workshops, and conferences are organized to promote climate literacy among students and staff.
 - Student societies lead awareness campaigns and participate in tree plantation drives and waste segregation projects to foster green campus culture.
4. **Hybrid and Electric Vehicle Promotion Initiative:**
 - Encourages the use of hybrid and electric vehicles within campus premises.

- Infrastructure planning includes designated parking areas for zero-emission vehicles and charging stations to be installed in upcoming projects.

5. Sustainability Research and Policy Integration:

- Encourages cross-disciplinary research in climate modeling, carbon footprint reduction, and sustainable energy management.
- Findings from these studies are integrated into university policies and sustainability reports for long-term planning.

Outcome:

Through these innovative programs, Air University is advancing sustainability education, promoting renewable energy practices, and actively contributing to national climate change mitigation goals.

Additional evidence link (i.e., for videos, more images, or other files that are not included in this file):

Description:

During the pandemic duration Fazaia Medical College has implemented the following SOP's on Campus.

1. Mask were mandatory for all Individuals before entry to the college.
2. During active Covid 19 pandemic classes were shifted to online mode.
3. A minimum physical distance of 6 feet is advised for social distancing.
4. 50% Attendance of the Staff and faculty were implemented as per Govt. SOP's.
5. Mask Boxes and hand Sanitizers were placed at Entry, Exit Points of each building.
6. Disinfection was done regularly at college.
7. Daily body temperature were checked of each individuals before enter to the college
8. Vaccination was made mandatory for each individuals of the university.
9. All staff, faculty and students were advised to bring vaccination certificates along with them before entering to the college.

SOPS: CLASSROOM PRECAUTIONS FOR COVID19

Social Distancing – Lecture Halls/tutorial rooms/labs/SDG rooms

- A staff or faculty member was designated as a focal person for Covid 19 concerns.
- Exposure of students with each other was reduced by changing the timings of the practical and tutorial timings.
- Staff and students remain at least 6 feet apart, provide physical guides, such as tape on floors or sidewalks to ensure the distance
- Break time of all classes is different to minimize student's interaction
- Scatter the students where possible (recommended one student per 113 square feet)
- The weekly timetable is adjusted by the class in charge of the laboratory to prevent crowding. Laboratory tasks and activities are Identified that can be performed with reduced or no face-to-face interactions

Ventilation

- Ensure proper ventilation of the lecture hall ,tutorial rooms, lab and museum to reduce droplet infection by using exhausts
- Keep windows open
- Air conditioning is to be avoided in general, if unavoidable, mixture of outside air must be provided for each occupant (30 people requires a minimum of 15 x 30 or 450 cfm of outside air)

Use of Mask

- Use of face masks was mandatory
- Covid19 precautions are displayed everywhere on walls and markings on the floor
- Instructions regarding disposal of used masks are displayed to avoid the risk of contamination
- For students with disabilities, such as hearing loss or auditory problems, use of face shields are encouraged

Cleaning and Disinfecting

- Daily cleaning and disinfecting of surfaces and objects that are touched often, (such as desks, countertops, doorknobs) is ensured
- Regular disinfection of lecture hall, tutorial rooms, lab, museum and staff/faculty rooms with disinfectant is ensured
- Areas exposed to Covid positive patients is cleaned and disinfected first before use
- Students are regularly told about 'Hand Hygiene', use of sanitizers, 'Respiratory Etiquettes' and social distancing
- Double bagged waste bin with cover are provided for proper disposal of the used masks and any disposable material

Lecture hall / Corridors Control

- Where possible, use of arrow markings, posters, sign boards to indicate single-direction movement is ensured
- One way movement of students is ensured

Actions - If student appears to be sick

- Isolated and transported to hospital or homes those who are suspected positive
- Students who have a fever of 38.00C or above or other signs of illness are relived from the classes and quarantined immediately
- Exposed contacts are advised to get isolated and get tested for covid as soon as possible

STANDARD OPERATING PROCEDURES FOR LABORATORY

1. General Laboratory Safety Procedures

DO's

- ❖ Know the potential hazards of the materials used in the laboratory. Review the Material Safety Data Sheet (MSDS) and container label prior To use a chemical.
- ❖ Know the location of safety equipment such as telephones, emergency call numbers, eyewashes, fire extinguishers, fire alarms, and first aid kits.
- ❖ Ensure that necessary supplies and equipment are available for responding to laboratory accidents.
- ❖ Practice good housekeeping to minimize unsafe work conditions such as obstructed exits and safety equipment.
- ❖ Wear the appropriate personal protective apparel.
- ❖ This includes eye protection, a lab coat, gloves, and appropriate foot protection (no sandals or open-toed shoes). Avoid rolled-up sleeves.
- ❖ Wash skin promptly if contacted by any chemical, regardless of corrosively or toxicity.
- ❖ Label and store chemicals properly.
- ❖ Restrain and confine long hair and loose clothing that could catch fire or get caught in moving parts of machinery.

DON'Ts

- Eat, drink, chew gum in rooms or laboratories where chemical are used or stored.
- Store food in laboratory refrigerators, ice chests, cold rooms, or ovens.
- Drink water from laboratory water sources.
- Use laboratory glassware to prepare or consume food.
- Smell chemicals, taste chemicals, or pipette by mouth.
- Work alone in the laboratory without prior approval from Lab Supervisor.

2. Glassware and Sharps – Procedures for Safe Handling and Disposal

Definitions

Sharps - The term "sharps" refers to “any item having corners, edges, or projections capable of cutting or piercing the skin.”

Examples of “sharps” include:

Needles, Broken glass, Syringes, Razor blades, Lancets, Scalpel blades, Knives, Any other sharp lab waste

Handling

- Glassware and sharps should be handled and stored carefully to avoid damage.
- Reusable syringes that are not biologically contaminated must be capped and put away after use.

- Cap syringes using the one-handed method of picking up the cap with the needle then carefully securing the cap onto the syringe. A disposable syringe should be used for biological materials and should be placed in a sharps container without recapping.
- Chipped, broken, or star-cracked glassware should be discarded or repaired. Damaged glassware should never be used unless it has been repaired.
- Use appropriate hand protection when picking up broken glass or other sharp objects. Small pieces should be swept up using a brush and dustpan.

Disposal

- Sharps waste disposal require packaging in puncture resistant cardboard or plastic containers in order to minimize the risk of injuries.
- Uncontaminated metal or glass sharps should be collected in puncture-proof containers, labelled, sealed, and disposed.

3. Electrical Safety Procedures

Serious injury or death by electrocution is possible when appropriate attention is not given to the engineering and maintenance of electrical equipment and personal work practices around such equipment. In addition, equipment malfunctions can lead to electrical fires. By taking reasonable precautions, electrical hazards in the laboratory can be dramatically minimized.

- Laboratory personnel should know the location of electrical shut-off switches and/or circuit breakers in or near the laboratory so that power can be quickly terminated in the event of a fire or accident.
- Electrical panels and switches must never be obstructed.

- All electrical equipment should be periodically inspected to ensure that cords and plugs are in good condition. Insulation on wires can easily be eroded by corrosive chemicals and organic solvents.
- All electrical outlets should have a grounding connection requiring a three-pronged plug.
- Face plates must not be removed from electrical outlets.
- Electrical wires must not be used as supports.
- Extension cords should be avoided. If used, they should have three-pronged with grounded connectors, positioned or secured as not to create a tripping hazard, and ONLY for temporary use.
- All shocks must be reported to the lab supervisor. All faulty electrical equipment must be immediately removed from service until repaired.
- Electrical outlets, wiring, and equipment within a laboratory or building must only be repaired by authorized professional electricians.
- Unauthorized modifications of electrical appliances is prohibited.
- Proper grounding and bonding of flammable liquid containers should be practiced to avoid the build-up of excess static electricity.
- Experimental electrical equipment in laboratories must be shielded, insulated, or have appropriate fail-safe devices when energized or in use. Personnel must be proficient in use of the equipment and safety precautions. Personnel should be trained in first aid and CPR in case of electrical shock.

4. Chemical Spill Response Procedures

- All chemical spills must be reported to laboratory supervisor.

Do not attempt to clean up spills involving chemicals that are flammable, toxic, corrosive or reactive as indicated on the label or Material Safety Data Sheet (MSDS); or that cause eye or respiratory tract irritation; or chemicals that emit strong, or noxious odours or fumes.

Exceptions for in-house spill response include minor chemical spills, which meet all of the following criteria

- ❖ The material does not emit strong odours, vapours, fumes or dust that are noxious or irritating to the eyes or respiratory system.
- ❖ The material is not known to be a carcinogen or strong mutagen, or dangerous for the environment.
- ❖ The spill is contained on an impervious surface, and cannot migrate into the environment through drains, soil, ground water or surface water.

Procedures for Spills that Meet the Exception Criteria

- Remove all ignition sources and establish exhaust ventilation. Vent vapours to outside of building only (open windows and turn on fume hood).
- Choose appropriate personal protective equipment (e.g., goggles, face masks, impervious gloves, lab coat, apron or coveralls, and boots).
- Confine and contain the spill. Cover with appropriate absorbent material. Sweep solid material into a dust pan and place in a sealed plastic container.
- Decontaminate the area with soap and water after clean-up and place residue in a plastic bag or another sealed plastic container. Label the container.

Follow the chemical spill response (ESCAPE) procedure as follows:

1. Exit the area — immediately after a hazardous chemical is spilled you must exit the area. If the spill occurred in a laboratory and access to the fume hood is not blocked by the spill and/or hazardous vapours are not present in the area then raise the sash on the fume hood and increase the airflow.

2. Shut the doors and secure the area — Shut the doors to the area where the spill is located and secure the area if possible. Most laboratories are under negative pressure which will pull air from the hallway into the lab, keeping potentially hazardous vapors from spreading into other areas.

Procedures for Chemical Contamination to the Eyes or Body:

In the event of chemical contamination to the eyes or body:

1. Remove any contaminated clothing immediately and flush all areas of bodily contact with copious amounts of water. This should take place while someone else makes the appropriate phone calls from a safe location.
2. Ensure that medical assistance is obtained for those injured or exposed (safety shower, medical attention, etc.). Continue to rinse body contact areas with copious amounts of water for at least 15 minutes unless directed otherwise by appropriate emergency medical personnel.
3. Visit the designated medical services provider for your campus. If possible, take applicable Material Safety Data Sheets (MSDS) with you.

5. Procedures for Animal Handling:

These SOPs are designed to avoid injury to animals as well as the handlers.

- Animals should be housed according to the natural history of that specific species.
- Reduce stress of the animal and handler before procedure.

- Transport animal gently.
- Use personnel protective equipment where required.
- Wash hands before and after the experiment.
 - Dispose of dead animal properly after expe



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