جامعة الإمام عبدالرحمن بن فيصل
IMAM ABDULRAHMAN BIN FAISAL UNIVERSITY

# SDG 7.4.4

# Policy Development for Clean Energy Technology

## 2024-2025

# Table of Contents

**Imam Abdulrahman Bin Faisal University (IAU) promotes energy efficiency and participated/hosted various energy efficiency related events within and outside the campus.**

**Find below some of our energy efficiency related events.**

# 1. IAU Strategic Plan 2018-2025 in Alignment with KSA Vision 2030

The given webpage link shows the Strategic plan of IAU 2018-2025. This plan explained its alignment between KSA Vision 2030 and IAU strategic goal V-Sustain IAU campus environment.

Under IAU Strategic Goal V, refer page no. 100, 101, 144, and 147, which describes about the Renewable Energy and Energy Efficiency:

- Initiative 5.1.1.5,
- KPI 5.1.1.5,
- Initiative 2.4.1,
- Initiative 3.2.1,
- Initiative 3.2.4,
- Initiative 3.2.5


https://www.iau.edu.sa/sites/default/files/iau_straplan_en_20jun2019.pdf

## 2. Integrated Environmental Solutions and Consultancy Office at IAU (GAMEP authorized)

# INTEGRATED ENVIRONMENTAL SOLUTIONS AND CONSULTANCY OFFICE (GAMEP Authorized)

The department of environmental engineering is considered as a pioneer since it is the first department to offer the bachelor's degree environmental engineering in the kingdom of Saudi Arabia.

The Integrated Environmental Solutions and Consultancy Center established by Imam Abdulrahman Bin Faisal University in 2020 and Authorized by the Presidency of General Authority of Meteorology and Environment Protection (GAMEP).

The distinguished experience, expertise, and capabilities are utilized to develop engineering solutions that meet the customers' needs and local standards. The services include providing optimum air quality management and solutions on the indoor/outdoor air pollution and industrial emissions from oil and gas, energy, mining, and minerals sectors.

The Consulting and Engineering Office is dedicated to working with clients to implement compliance solutions using innovative approaches and advanced technologies. The measurement and analysis are conducted following stringent environmental laboratory protocol and best quality practice.

## The multi-disciplinary consultants engineering office includes:

01 Environment services including environmental studies, design, and supervision

02 Professional training for environmental specialists and technicians

03 Short and long Certificate programs in environmental specialists and engineering filed

04 Third-party inspection and opinion work to ensure compliance with the project specifications, codes, and standards.

05 Physical, chemical, and biological procedures and mechanisms accountable for the proclamation, conveyance, alteration and preservation of pollutants.

06 Pollutant control procedures (predominantly the exclusion of trace & toxins or pollutants).

07 Basic ideologies of physical, chemical, and biological conduct know how for water, wastewater and solid wastes scums or residues from different sources.

08 Pollutant control measures for Air, other contaminants removal from air & its monitoring (gases, Particulate matters & Meteorological parameters etc.).

## 1. Division of Solid and Hazardous Waste Management

This consultation office offers consultation services, conducting studies, third-party testing, inspection, and training in the field of environmental engineering and waste management, including industrial, medical among all other types of solid waste. In Addition, we offer short courses related to the area of solid waste management. The office is part of the Integrated Environmental Solutions and Consultancy Center established in 2020 by Imam Abdulrahman Bin Faisal University. All laboratory analysis are conducted following an approved environmental laboratory protocol.

## Our services include:

- Inspecting, analysis, and assessment of all types of hazardous waste.
- Landfill and incineration design
- Best applicable technology
- Oil waste management and reuse
- Industrial waste collection and disposal
- Medical waste management, disposal, and incineration
- Radioactive waste management
- Contaminated solid purification

## 2. Division of Wastewater Treatment and Reuse:

water/wastewater team in IAU consultation office specializes in providing solutions for the industry's water/wastewater treatment challenges. We can guide you for the operations of wastewater system, provide troubleshooting, and can help or manage your analytical testing. We offer consulting services for both water and wastewater treatment plants. We offer consultation services, conducting studies, measurements, and training in the field of wastewater engineering, treatment, optimization, reuse, and design.

### Our consultation services and laboratory analysis are authorized by the Presidency of Meteorology and Environment (GAMEP).

- Conducting analysis and modelling on the existing design of wastewater engineering systems and finding cost-saving opportunities that provide a return on investment.
- Designing, implementing, and upgrading wastewater treatment systems
- Advice on best practicable and cost-effective solutions for wastewater treatment.
- Wastewater analysis and characterization
- Marine pollution and deep discharge design
- Blue flag services and consultation
- Water footprint calculations and simulations
- Wastewater plant modelling and simulation studies

## 3. Division of Air Quality and Emission Control

Offering consultation services, conducting studies, third-party testing, inspection, and training in the field of environmental engineering, indoor and outdoor air quality assessment, emission inventory calculation, dispersion modelling, health risk assessment, dose calculation.

- Mobile station air quality monitoring for EIA studies
- Stack Gas Monitoring
- Designing Innovative Air Pollution Control Technologies
- Optimizing Current Air Pollution Control Technologies
- Short courses and training
- Calibration and maintenance
- Bioaerosol Sampling and Analysis
- Noise Pollution Monitoring, Mapping, Modeling, and Control
- Monitoring of Meteorological Parameters
- Air Toxics Health Risk Assessments
- Dispersion Modelling
- Source Apportionment Modeling
- Air Quality Program Management
- Air Pollution and Air Quality Mapping
- GIS maps for measured pollutants
- Source and stack emission monitoring
- Ambient air quality studies
- Mobile lab services
- Environmental management plan (EMP)
- Environmental impact assessment studies (EIA)
- Life cycle assessment studies (LCA)
- Pollutants dispersion modelling (AREMOD)
- Risk assessment and dose calculation
- Auditing and inspection
- Energy efficiency
- Carbon footprint
- Global warming and greenhouse gases
- Ambient/Indoor Sampling, Monitoring, Analysis of Air Pollutants

**Mobile Air Quality Monitoring Station**


https://www.iau.edu.sa/sites/default/files/resources/general_introduction-compressed.pdf

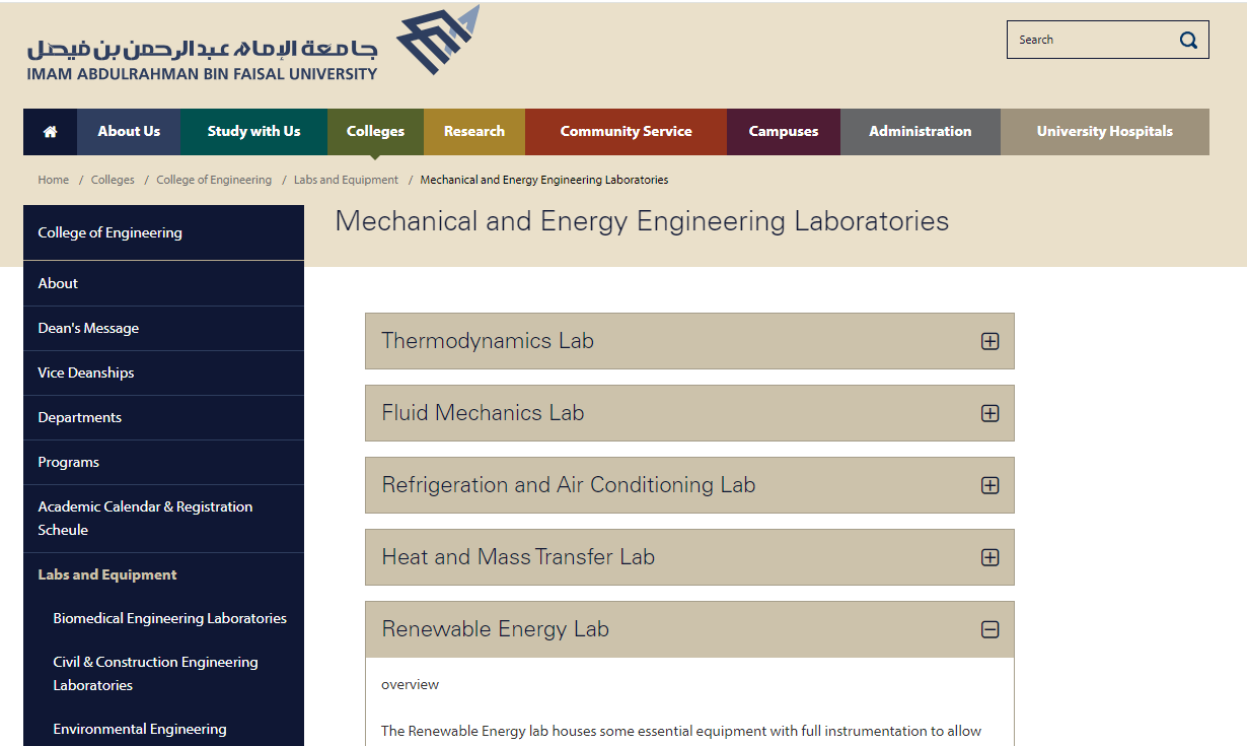
# 3. IAU Consulting Center for Buildings Energy

The given webpage link (refer to About section and Scope of work section) describes about the "consulting center for buildings energy", a body accredited by IAU Institute of Consulting Studies to deliver training and consulting services in field of engineering related rationalization of energy consumption. Its scope of work includes training, education and workshops in the areas of sustainability, green buildings and energy conservation. It also includes energy efficiency studies and audits of existing buildings; consultations about the efficiency of air conditioning systems; and consultations about the solar energy.


https://www.iau.edu.sa/en/administration/centers/institute-of-consulting-studies/services/experience-houses/consulting-center-for-buildings-energy

## 4. Mechanical and Energy Engineering Laboratories at IAU

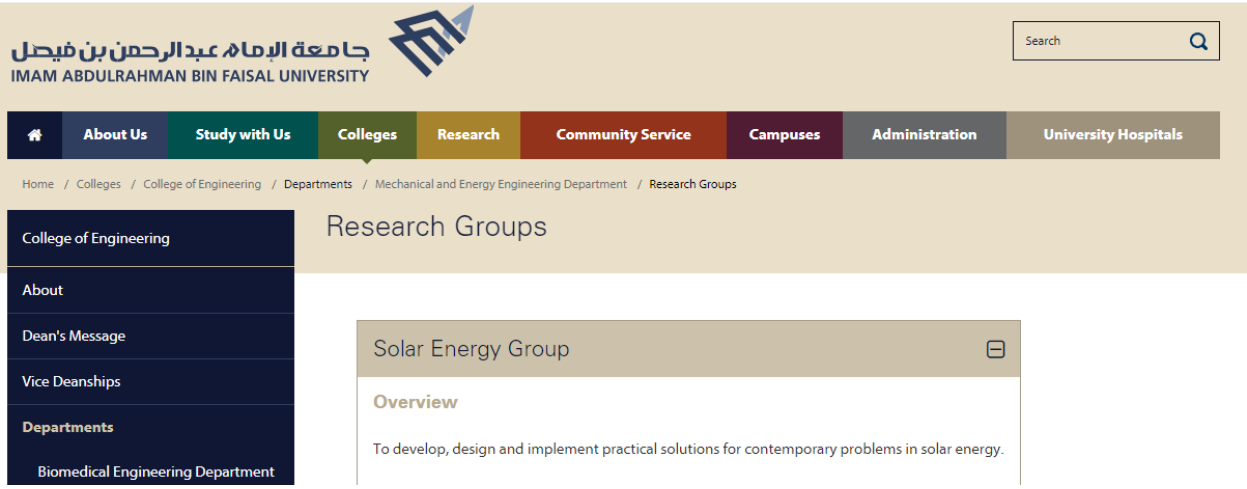
The given webpage link (refer to Mechanical and Energy Engineering Laboratories) shows the presence of the Mechanical and Energy Engineering Laboratories in the College of Engineering of IAU. Among various labs, the renewable energy lab is the one that has essential equipment with full instrumentation to allow students to investigate the effective use of solar energy as a renewable, environmentally friendly energy source.




https://www.iau.edu.sa/en/colleges/college-of-engineering/labs-and-equipment/mechanical-and-energy-engineering-laboratories

## 5. Research Groups at IAU for Renewable Energy

The given webpage link (refers to research groups section) shows the presence of the research groups in the College of Engineering of IAU. The research groups include solar energy group, wind energy group, and air conditioning and energy storage group. These research groups aim to develop, design, and implement practical solutions for contemporary problems in solar energy, wind energy, and air conditioning and energy storage. The objectives of these groups encompass conducting market-relevant commercial research, supervising students, cooperating with research, and publishing high-quality papers.




https://www.iau.edu.sa/en/colleges/college-of-engineering/departments/mechanical-and-energy-engineering-department/research-groups

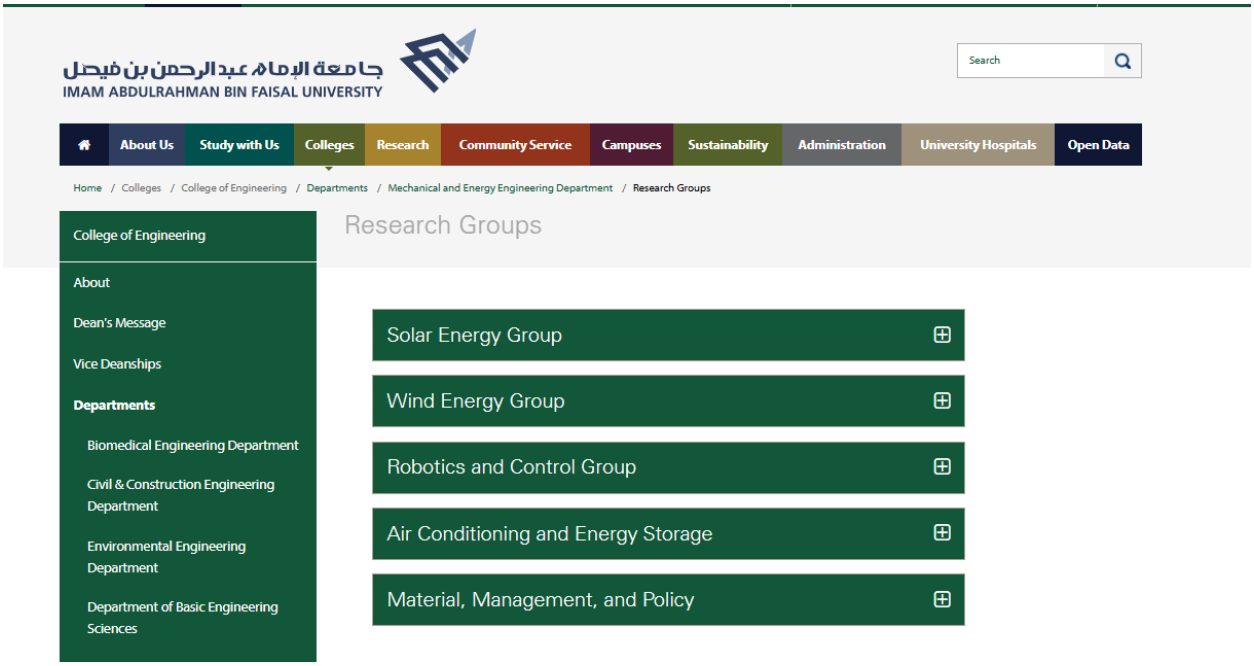
## 6. IAU Hosts International Webinar on Higher Education and Sustainability

Dammam – Imam Abdulrahman Bin Faisal University (IAU), represented by the Deanship of Academic Development, hosted an international webinar titled "University Education for Sustainability: Building Skills for Lifelong Impact" on Tuesday, November 26, 2024. The event was attended by Dr. Abdullah Al-Muhaidib, Vice President for Academic Affairs, who emphasized the university's commitment to sustainability through education and its role in empowering faculty members.

The webinar aimed to advance the integration of sustainability in higher education and enable faculty members to adopt practices that align with the Sustainable Development Goals. The event drew 245 participants, including faculty members and national and international experts.

https://www.iau.edu.sa/en/news/iau-hosts-international-webinar-on-higher-education-and-sustainability

# 7. Research groups on Energy at IAU




https://www.iau.edu.sa/en/colleges/college-of-engineering/departments/mechanical-and-energy-engineering-department/research-groups

# 8. IAU Initiatives to achieve higher Energy Efficiency

The given PDF link explains the initiatives taken by IAU to achieve higher energy efficiency.

Photo solar systems installation initiative to reduce monthly electricity bill payments:



Electric and affordable shuttle buses for the student and faculty

https://www.iau.edu.sa/sites/default/files/resources/reduce_overall_energy_consumption_2022.pdf

# 9. Energy Efficient Building Practice at IAU

The given PDF link describes energy efficient usage in IAU in the following Parts:

- PART A: Sustainable system for Outdoor Signage
- PART B: Optimized Eco-friendly Buildings


Energy Efficient Appliances Usage in all the Buildings of IAU: Use of LED & fluoracent lighting and lamps with central clock system, centralized speaker & LCD Announcement screen

| | |
|---|---|
|  |  |
| (Precast Concrete insulated panels and Curtain wall) Administration Building- IAU | **IAU implement and abide by Saudi Building Code in its all Construction and Electricity plan** |

**PART B**

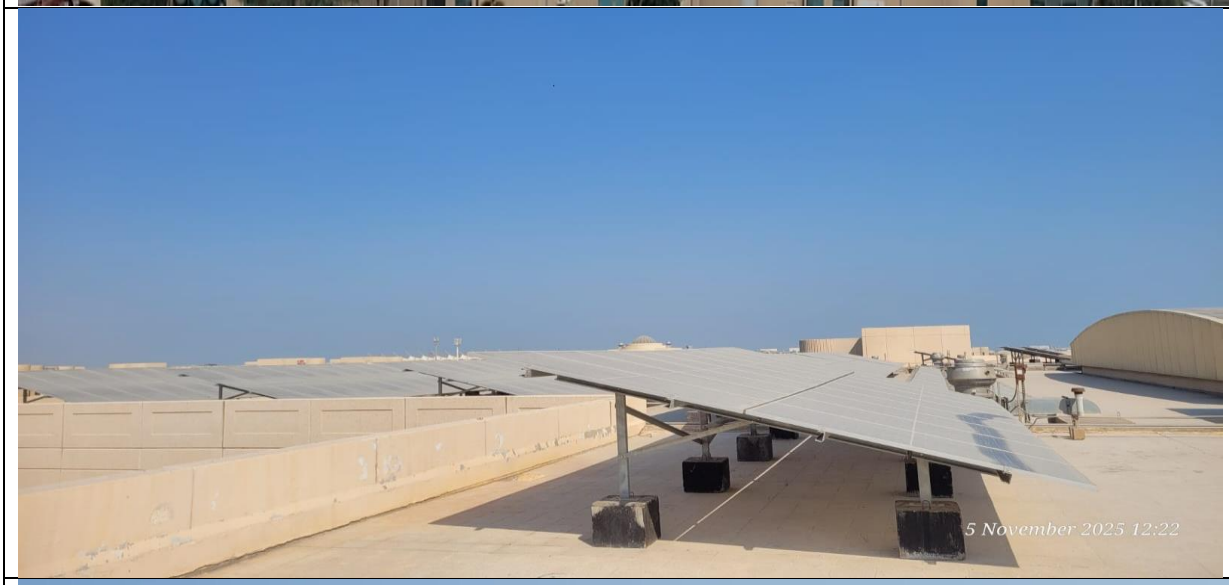

**OUTDOOR SIGNAGE IN C1-EAST CAMPUS**


Example of Energy Efficient Appliances Usage: Solar energy for map direction and board and light outside

EXAMPLES OF SIGNAGE & SOLAR LIGHTS IN IAU CAMPUS

https://www.iau.edu.sa/sites/default/files/resources/energy_efficient_building.pdf

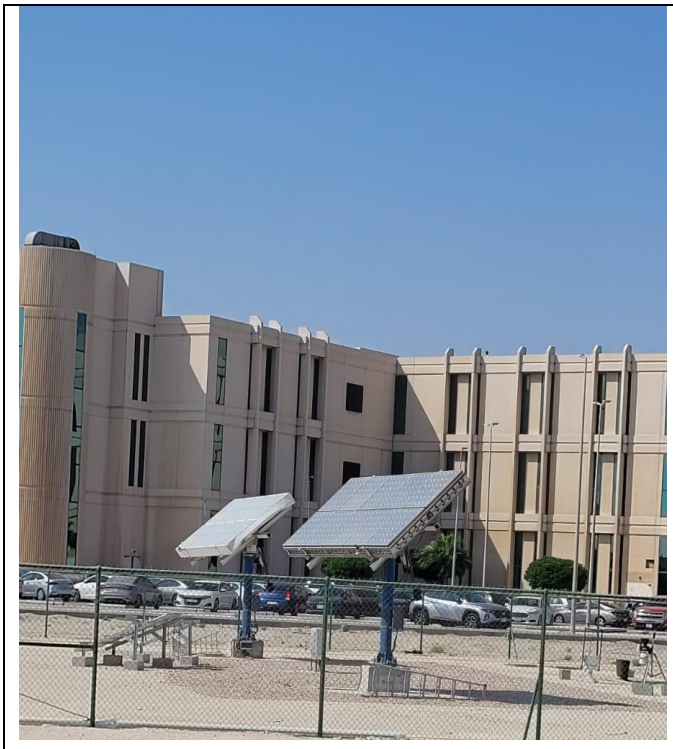
# 10. Renewable Energy Sources in IAU Campus




**In all IAU Campuses the roofs of the buildings are installed with Solar panels**


**Solar Plants at IAU Open Spaces for Renewable Energy**

**Solar Panel as substitute to conventional electricity installed in the campus as part to reducing Greenhouse gas emission**



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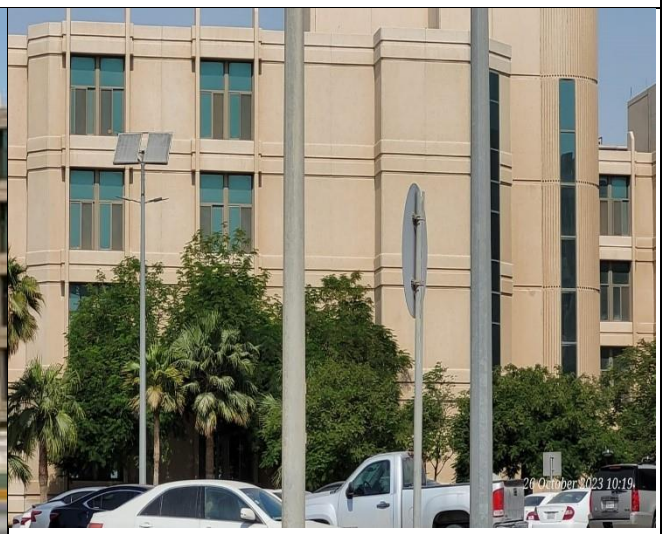
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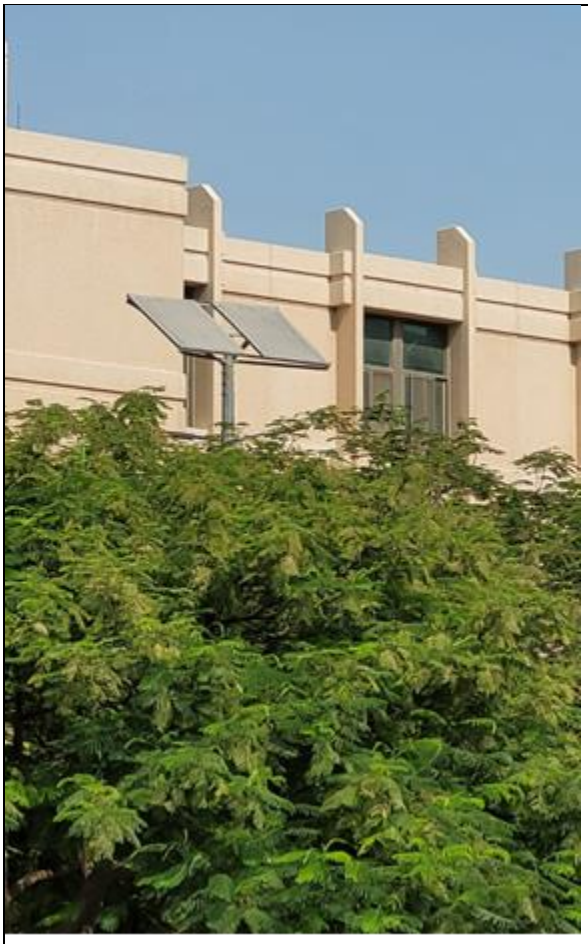


**Solar Panels spread at IAU Campuses**

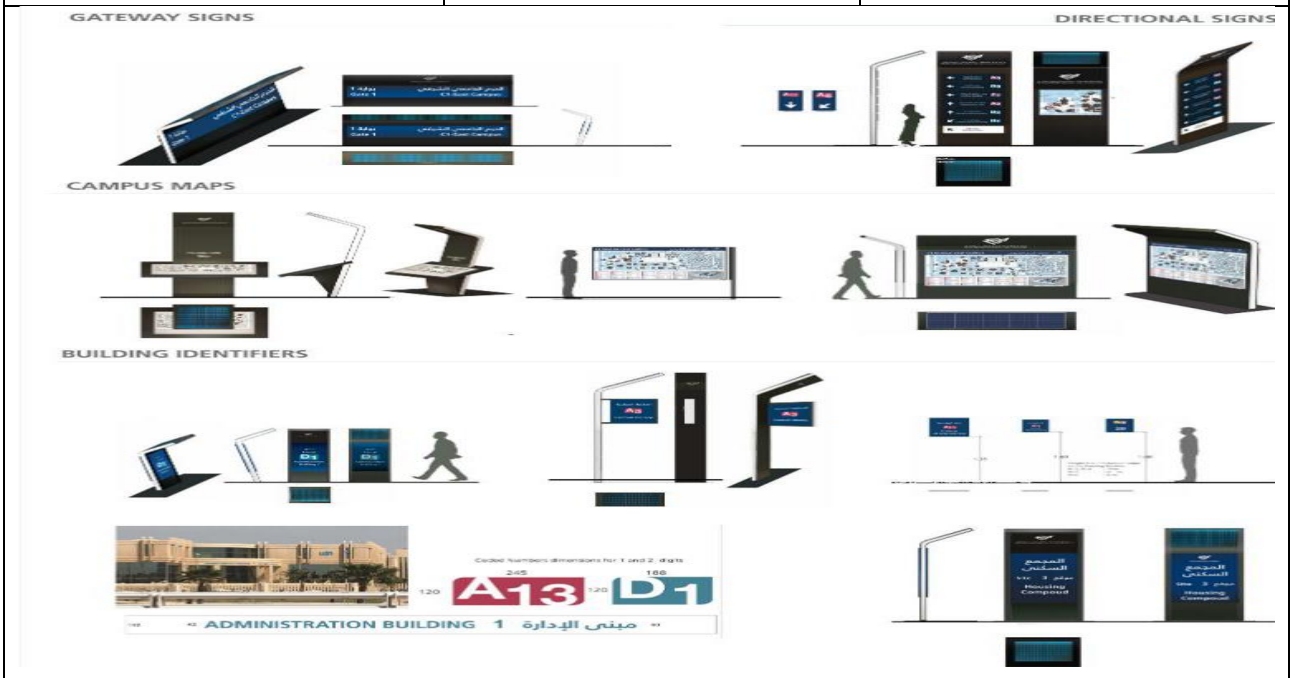
**Solar Panels installed all over the campus to provide energy for the purposes of lighting, heating, cooling, running university laboratories, etc.**

## Renewable Energy Usage in Campus


**Example of Energy Efficient Appliances Usage: Solar energy for map direction and board and light outside**

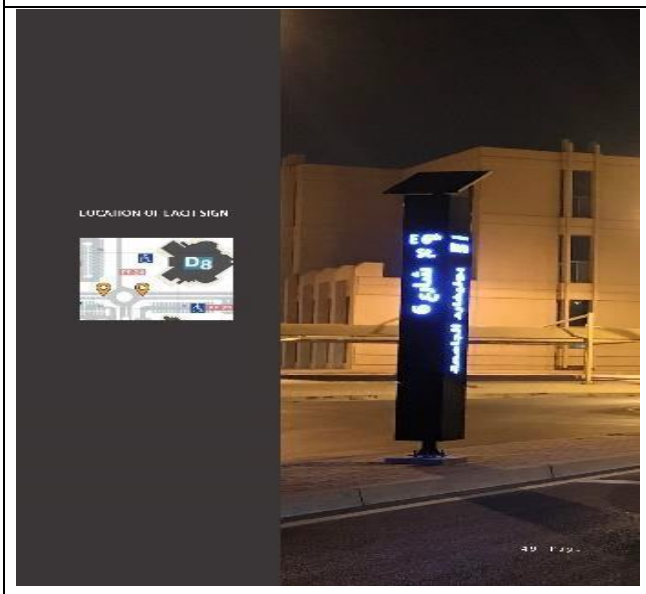
**EXAMPLES OF SIGNAGE & SOLAR LIGHTS IN IAU CAMPUS**




**OUTDOOR SIGNAGE IN C1-EAST CAMPUS**







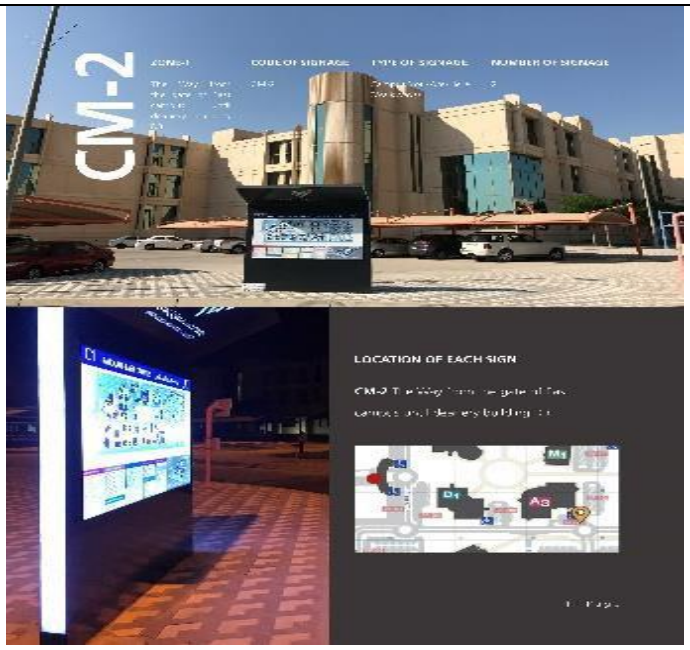
**NIGHTVIEW OF SOLAR OUTDOOR SIGNAGE IN IAU CAMPUS**



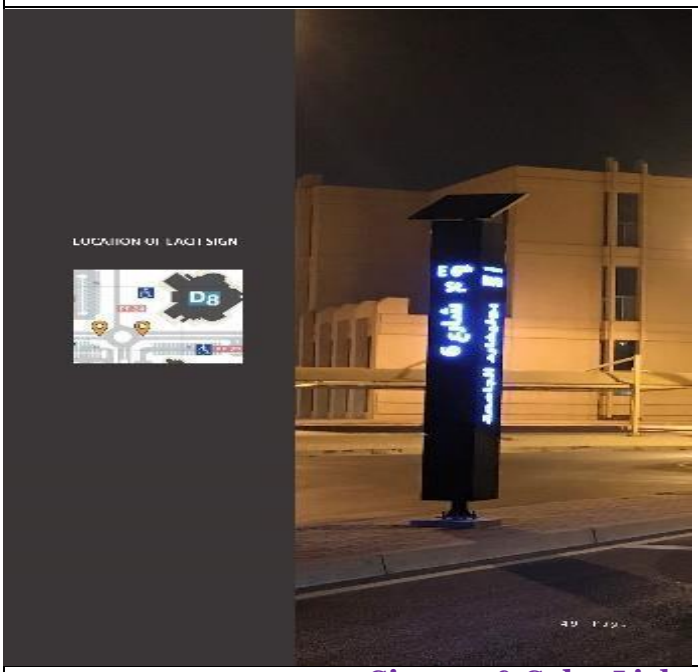
**NIGHTVIEW OF SOLAR OUTDOOR SIGNAGE IN IAU CAMPUS**



**DAY-VIEW OF SOLAR OUTDOOR SIGNAGE IN IAU CAMPUS**









**Signage & Solar Lights in IAU Campus**



**NIGHTVIEW OF SOLAR OUTDOOR SIGNAGE IN IAU CAMPUS**



**DAY-VIEW OF SOLAR OUTDOOR SIGNAGE IN IAU CAMPUS**

**Description:**

Currently, solar energy is used only for campus lights and signage in main campus.

The mega project is in pipeline to install solar panels in the university to have an alternate source of energy, which will help to be less dependent on electricity and reduced the electricity consumption.

Wind power plants are installed in IAU Campus as part of alternate sources of energy. Based on the initial observations and usage relevance to IAU campus many Wind power plants are going to be installed on the open spaces of IAU.

## 11. College of Engineering of IAU participated in the Solar Energy and Storage Exhibition

Dean of College of Engineering of IAU, Prof. Dr. Fahd Al-Omari, and Head of the Mechanical and Energy Engineering Department, Dr. Mosaid Al-Zahrani, participated in the Solar Energy and Storage Exhibition, and presented two scientific papers that enhance the college's research and industrial role in sustainable energy in support of the Kingdom's Vision 2030.


https://x.com/CE_IAU_SA/status/1983180226118201404

## 12. Awareness lecture on "The Impact of Smart City Applications in Combating Desertification" by IAU

In conjunction with the launch of the #Green_Homeland_Sustainable_Tomorrow #Our_Environment_is_a_Treasure event, I was delighted today to represent @IAU_Arch at the kind invitation of @IAU_DCP and in collaboration with @ncvcksa , where IAU delivered an awareness lecture titled: The Impact of Smart City Applications in Combating Desertification.


https://x.com/Aboodkoa/status/1920386053124296992

# 13. IAU Engineering College Students participated in developing the High Concentrated Photovoltaic (HCPV) system

Supported by #ImamAbdulrahmanBinFaisalUniversity, #Engineering College participated in developing the High Concentrated Photovoltaic (HCPV) system in collaboration with King Abdullah City for Atomic and Renewable Energy and the American company "Arzon Solar," achieving highly efficient results under harsh desert conditions and high temperatures.


https://x.com/CE_IAU_SA/status/1916507044275798342

## 14. IAU Engineering College Students participated in the events of the third Renewable Energy Symposium and Exhibition

The #College_of_Engineering of IAU concluded the events of the third Renewable Energy Symposium and Exhibition, after days filled with scientific contributions and fruitful workshops, thanking all participants and supporters for their contributions to the success of this event.


https://x.com/CE_IAU_SA/status/1912930146014703621

# 15. Participation of College of Engineering of IAU in Energy Debate

#College_of_Engineering of IAU proudly participates with its teams in the Energy Debate at King Fahd University of Petroleum and Minerals, where the college team secured second place 🎖 among the universities of the Eastern Region.


https://x.com/CE_IAU_SA/status/1884486325786604026

# 16. Participation of College of Engineering of IAU in Energithon Event at King Fahd University of Petroleum and Minerals

As #College_of_Engineering of IAU proudly shares, its team participated in the "Energithon" event at King Fahd University of Petroleum and Minerals as the only team from outside the university, achieving second place 🎖️.


https://x.com/CE_IAU_SA/status/1884528765310517480

# 17. IAU Female Engineering Students achieved two positions at the Second Conference on a Sustainable Green Future

Female students from the College of Engineering (Environmental Engineering Department) at #Imam_Abdulrahman_Bin_Faisal_University achieved two positions among the top three at the Second Conference on a Sustainable Green Future in the Kingdom 2025, organized by the Center for Environment and Marine Studies at King Fahd University of Petroleum and Minerals.

https://x.com/IAU_KSA/status/1886644022736724043

# 18. IAU Participation in "Green Homeland, Sustainable Tomorrow" forum

Under the patronage of His Excellency the President of #Imam_Abdulrahman_Bin_Faisal_University, Prof. Fahd bin Ahmad Al-Harbi, #College_of_Engineering was honored by the Vice President of the University for Development and Community Partnership, Prof. Asim bin Abdulrahman Al-Ansari, in recognition of its environmental initiatives and participation in the accompanying corner of the "Green Homeland, Sustainable Tomorrow" forum.


https://x.com/CE_IAU_SA/status/1919419153871405218

# 19. Approval for the Establishment of Saudi Building Code Academy by IAU

The happiness of the Dean of #College_of_Engineering, Dr. Murad Al-Thubaity, appreciates the Cabinet's approval for the establishment of the Saudi Building Code Academy, which will mark a qualitative leap in the development of engineering education, and enhance the academic and technical efficiency of students and engineers in the civil engineering sector.


https://x.com/CE_IAU_SA/status/1899946964969476345

## 20. Dialogue session on "Future Energy and 500 Days of Work" at IAU

An aspect of the dialogue session "Future Energy and 500 Days of Work" Hosted by Professor Dr. Fahad Al-Omari and in partnership with the Cultural Club, the session addressed important and enriching topics in the field of energy and its sources.


https://x.com/coec_iau/status/1788278005501976664

## 21. IAU College of Engineering Students won Second Place for Project producing Biofuel from Coffee Beans

We are proud of the Achievement of the students of #College_of_Engineering from the Department of Mechanical Engineering and Energy, Abdullah Al-Harbi, Jarrah Al-Qassim, Saud Al-Sarhani, Ibrahim Al-Yousifi, and Ghazi Al-Otaibi, who secured second place in the CITEthon Hackathon with their project to produce biofuel from coffee beans.


https://x.com/CE_IAU_SA/status/1912918031505686531