Times Higher Education Sustainability Impact Ratings

University: Al-Mustaqbal University

Country: Iraq

SDG 7.2: University measures towards affordable and clean energy

7.2.2: Does your university as a body have plans to upgrade existing buildings to higher energy efficiency?

Response: Yes

1- Plan of upgrading existing buildings to higher energy efficiency Policy

Al-Mustaqbal University has plans to apply the higher energy efficiency (green buildings) through introducing the concept of energy conservation and management to promote energy saving. Energy efficient appliance had been utilized in our campus and replacing the conventional types.

Goal: For a sustainable university that depend on clean and affordable energy by 2030 to achieve the UN SDG-7 and contribute to energy consumption to be reduced and implementation of renewable energy and efficient energy appliance.

Target: Al-Mustaqbal University usage to be 100% energy efficient appliance by 2025.

Results: **in 2021-2022,** Al-Mustaqbal University used **73%** of energy efficient appliance.

Results**: in 2022-2023**, Al-Mustaqbal University used **84.6%** of energy efficient appliance.

Results: **in 2023-2024**, Al-Mustaqbal University used **95.94%** of energy efficient appliance.

Results: **in 2024-2025**, Al-Mustaqbal University used 98 **%** of energy efficient appliance.

Al-Mustaqbal University energy consumption program includes two major parts which they are:

(1) Awareness raising towards energy consumption, climate change, global warming.

(2) Technical industrial applications: the technical applications are prepared to be applied researches and submitted to different companies in private and public sectors such as ministry of electricity, oil, etc.

Our university plan is to replace the entire conventional appliance and replace them by the higher energy efficient appliance by 2030. These appliances utilized less electricity and

contribute in energy conversion and management. Tables below describe the appliance usage in 2022, 2023, and 2024, and 2025 as shown in Tables (1-3) respectively. It is noted that the percentage of **the efficient appliance in 2025 is the maximum (98%) because of the successful policy of the university achieved until 2025**.

Table (1) Appliance usage in 2022

Appliance	Total Number	Total number energy Efficient appliances	Percentage
LED Lamp	3800	3550	93%
Fan	150	95	63%
Air condition	320	195	60%
Computer	600	480	80%
Fan ceiling	650	465	69%
Etc.	…	**…**	**…**
		Average Percentage	**73%**

Table (2) Appliance usage in 2023

Appliance	Total Number	Total number energy Efficient appliances	Percentage
LED Lamp	5800	5550	95.7%
Fan	250	195	78%
Air condition	480	395	82.3%
Computer	600	480	80%
Fan ceiling	650	565	87%
Etc.	…	**…**	**…**
		Average Percentage	**84.6%**

Table (3) Appliance usage in 2024

Appliance	**Total Number**	**Total number energy Efficient appliances**	**Percentage**
Lighting			
Indoor light bulbs:	11245	11142	98.9%

replacing Halogen light bulb with LED			
Heating and cooling			
Fan	610	595	97.5%
Air conditioners	872	820	94%
Fan ceiling	1107	1100	99.3%
Office equipment			
Computers	910	819	90%
		Average Percentage	95.94%

Table (3) Appliance usage in 2025

Appliance	Total Number	Total number energy Efficient appliances	Percentage
Lighting			
Indoor light bulbs: replacing Halogen light bulb with LED	11245	11142	98.9%
Heating and cooling			
Fan	610	595	97.5%
Air conditioners	940	920	97.8%
Fan ceiling	1107	1100	99.3%
Office equipment			
Computers	1250	1225	98%
		Average Percentage	98%

2- Transition into Smart Building Implementation

Beside all of that, Al-Mustaqbal University is working on transition into smart building implementations for both renovation and new building. Table (4) and Table (5) show the smart building implementation in 2023 and 2024, respectively of the university toward smart building based on several criterion, such as automation, safety, energy, water, indoor environment, and lightening.

Table (4) Smart building implementation in 2025

No.	Name	Place	automation		safety				energy		water		Indoor environment				lighting				Building Area (m^2)
			B1	B2	S1	S2	S3	S4	E1	E2	A1	A2	I1	I2	I3	I4	L1	L2	L3	L4	
1	AL-Mustaqbal University; Engineering Building A	Babylon , Iraq		x	x	x	x		x		x		x	x		x	x	x		x	5500
2	AL-Mustaqbal University; Medical Building B	Babylon , Iraq		x	x	x	x	x			x		x	x		x	x	x	x	x	15000
3	AL-Mustaqbal University; Administration Building c	Babylon , Iraq		x	x	x	x		x		x		x	x		x	x	x	x	x	2500
4	AL-Mustaqbal University; Physical Education and Sports Sciences Building D	Babylon , Iraq		x	x	x	x				x		x	x		x	x	x	x	x	3500

5	AL-Mustaqbal University; Pharmacy Building	Babylon , Iraq			x	x	x				x		x	x			x	x	x	x	2500
6	AL-Mustaqbal University; Dental Building	Babylon , Iraq			x	x	x				x		x	x			x	x	x	x	2500
7	AL-Mustaqbal University; student club	Babylon , Iraq		x	x	x	x		x		x		x	x		x	x	x		x	3000
8	AL-Mustaqbal University; Nursing building	Babylon , Iraq		x	x	x	x		x		x		x	x		x	x	x		x	2500
9	Human Buildings	Babylon , Iraq		x	x	x	x		x		x		x	x		x	x	x	x	x	4000
10	Security Building	Babylon , Iraq		x	x	x	x		x		x		x	x		x	x	x	x	x	1000
11	University Presidency Building	Babylon , Iraq		x	x	x	x		x		x		x	x		x	x	x	x	x	6000
12	Documents Building	Babylon , Iraq		x	x	x	x		x		x		x	x		x	x	x	x	x	1200
	Total																				49200

Smart building implementation

*Total Building Area: 80000 m^2

However, in 2025, some building are extended for more space

Table (5) Smart building implementation in 2025

No.	Name	Place	Automation		safety				energy		water		Indoor environment				lighting				Building Area (m^2)
			B1	B2	S1	S2	S3	S4	E1	E2	A1	A2	I1	I2	I3	I4	L1	L2	L3	L4	
1	AL-Mustaqbal University; Engineering Building A	Babylon , Iraq		x	x	x	x		x		x		x	x		x	x	x		x	5500
2	AL-Mustaqbal University; Medical Building B	Babylon , Iraq		x	x	x	x	x			x		x	x		x	x	x	x	x	15000
3	AL-Mustaqbal University; Administration Building c	Babylon , Iraq		x	x	x	x		x		x		x	x		x	x	x	x	x	2500
4	AL-Mustaqbal University; Physical Education and Sports Sciences Building D	Babylon , Iraq		x	x	x	x				x		x	x		x	x	x	x	x	3500
5	AL-Mustaqbal University; Pharmacy Building	Babylon , Iraq			x	x	x				x		x	x			x	x	x	x	2500
6	AL-Mustaqbal University; Dental Building	Babylon , Iraq			x	x	x				x		x	x			x	x	x	x	2500
7	AL-Mustaqbal University; student club	Babylon , Iraq		x	x	x	x		x		x		x	x		x	x	x		x	3500

8	AL-Mustaqbal University; Nursing building	Babylon , Iraq		x	x	x	x		x		x		x	x		x	x	x		x	2500
9	Human Buildings	Babylon , Iraq		x	x	x	x		x		x		x	x		x	x	x	x	x	4000
10	Security Building	Babylon , Iraq		x	x	x	x		x		x		x	x		x	x	x	x	x	1000
11	University Presidency Building	Babylon , Iraq		x	x	x	x		x		x		x	x		x	x	x	x	x	6000
12	Documents Building	Babylon , Iraq		x	x	x	x		x		x		x	x		x	x	x	x	x	1300
13	Al Mustaqbal Energy Research Center - G	Babylon , Iraq		x	x	x	x		x	x	x		x	x		x	x	x	x	x	900
14	AL MUSTAQBAL AI CNTER -	Babylon , Iraq		x	x	x	x		x	x	x		x	x		x	x	x	x	x	1500
15	Service affairs Building – J	Babylon , Iraq		x	x	x	x	x			x		x	x		x	x	x	x	x	1170
16	AL HUSSAN Mosque	Babylon , Iraq		x	x	x	x	x			x		x	x		x	x	x	x	x	350
17	College of Art and Humanities	Babylon , Iraq		x	x	x	x	x			x		x	x		x	x	x	x	x	18000
18	SDG -LAB	Babylon, Iraq		x	x	x	x	x			x		x	x		x	x	x	x	x	1500
19	MUS Postgraduate Building	Babylon, Iraq		x	x	x	x	x			x		x	x		x	x	x	x	x	650
20	New Administration Building (Main internace)	Babylon, Iraq		x	x	x	x		x		x		x	x		x	x	x		x	1000
	Total area of the smart buildings																				74570

***Total Building Area: 102170 m^2**

That means almost 73% of the building in campus are smart building and Al-Mustaqbal is going to increase this ratio by achieving the plane prepared for that.

3- The trend evolution of electricity demand from (2019 to 2025)

On the main campus of Al-Mustaqbal University, electricity is used for lighting, cooling, heating, and powering laboratory equipment. Figure 1 The updated graph shows total electricity demand continuing its steady upward path rising modestly from ~360,000 kWh in 2024 to around 365,000 kWh in 2025—while generator usage reverses its historical upward trend (which peaked over 200,000 kWh in 2023) and begins a gradual decline. The widening gap between overall consumption and

generator output in 2025 represents the successful integration of solar energy, which absorbs the operational growth while systematically replacing fuel-heavy generator power.

The data collected, as shown in Figure 2, reveal a steady year-on-year growth in electricity consumption, with 2025 recording the highest overall usage levels across all months. Consumption strongly peaks during the summer heat in May and June due to heavy cooling demands, followed by a secondary spike in September before dropping off in the autumn. The lowest overall electricity demand occurs consistently during August and late autumn months. Integrating solar power in 2025 directly offsets these massive summer peak loads, lowering reliance on grid and generator power while significantly reducing operational utility costsDuring the years from 2022 to 2025, an increase in consumption was observed, especially during the summer, when peak demand was at its highest due to student exams and full occupancy of the buildings.

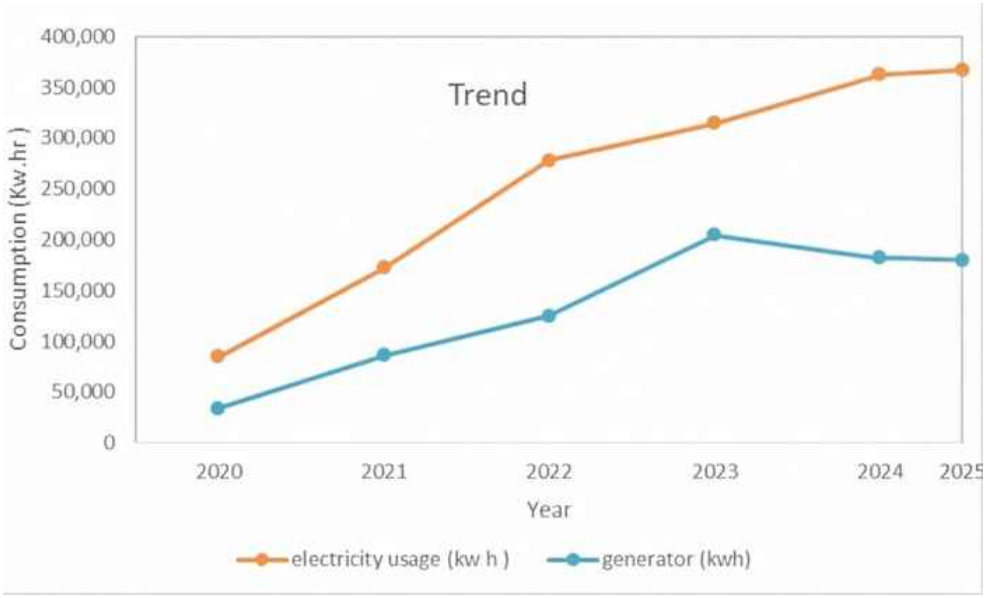


Figure 1: The trend evolution of electricity demand from (Sep 2020 to Sep 2025)

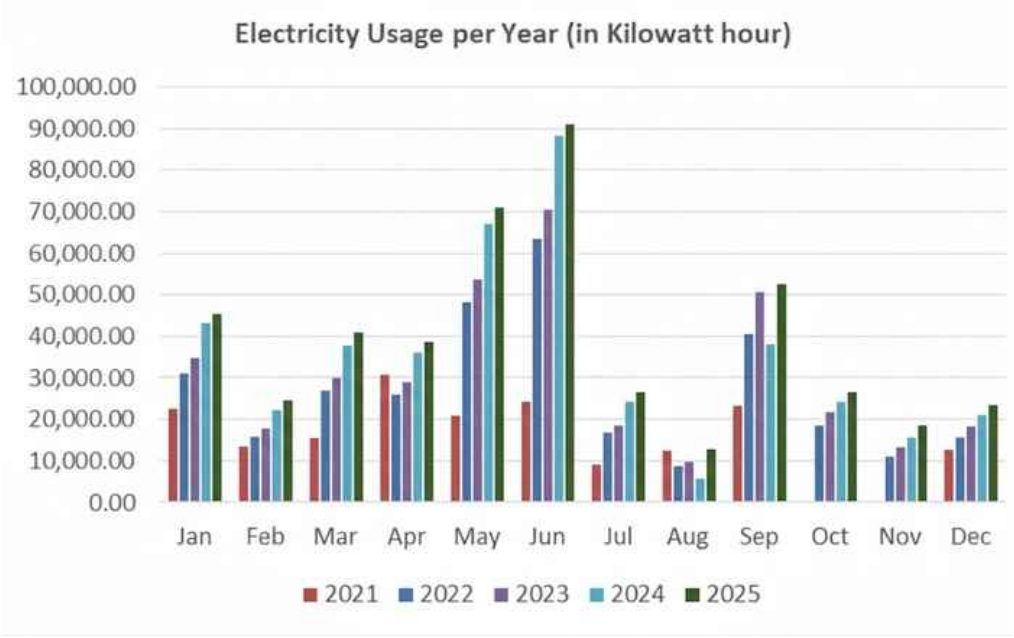


Figure 2: Comparison differences in electricity consumption between 2021 to 2024

4- Achieved parts of the Al-Mustaqbal University Plan

Using energy-efficient appliances can contributes critically in cost savings, energy security, conservation, reduction of the emission. Al- Mustaqbal University aimed to find the suitable solutions committed to enhance the energy efficiency in the campus through various appliances and technologies. Some of them are described in the following:

1. **New Low-Energy Buildings**:

   Implementing efficient (low-energy building) designs, including electrification and renewable energy sources such as wind turbine and solar energy, can reduce emissions and energy saving up to 80% of the annually.

2. **ENERGY STAR® Program Expansion**:

   Al-Mustaqbal University have updated the efficiency standards and expansion ENERGY STAR® program cut the total residential emissions by **18%**, by promoting the certified appliances around and across campus.

3. **Inverter Air Conditioning** (IA/C):

   Inverter A/C units have been installed by certified technician in lecture halls and the required rooms and space, and this significantly reduced the energy consumption while upholding comfort situation during cold and hot weather.

4. **Projects for Solar Refrigeration and Air Conditioning**:

   The campus of Al-Mustaqbal University utilizes solar energy to power applications like split air conditioners and solar absorption refrigerators in order to reduce the energy consumption.

5. **Enhanced Energy Efficiency for the Building in Campus:**

   Al-Mustaqbal University has replaced the energy sources of the high CO_2-emitting fuels with low-emission alternatives by adopting renewable technologies, such as solar panels and wind turbine generators.

6. **Ceiling Fans**:

   Whenever the weather is good and suitable through some periods in the Iraqi climate, Al-Mustaqbal University are using ceiling fans extensively instead of using A/C systems, thereby reducing usage energy-intensive cooling systems and results in substantial energy savings.

7. **LED Lighting**:

   Al-Mustaqbal University campus has extensively transitioned to use LED bulbs, which can enhance the energy efficiency 60% to 70% if compared to traditional lighting systems. This in turns significantly reduced the electricity consumption.

8. **Energy Usage Diagnostics**:

   Al-Mustaqbal University built special units for regular measurement, monitoring, and analysis the energy usage of the buildings and CO_2 emissions. This helped the specialist to improve energy management systems and classify the areas for further efficiency improvements.

9. **Thermal Insulation**:

   The principle of thermal insulation in new and old buildings has been adopted as Al-Mustaqbal University policy to enhance energy efficiency, personnel protection, reducing the additional costs for sound management, and enhancing overall thermal performance. All of these stuffs achieve higher energy efficiency and saving.

10. **Daylighting Strategies**:

    Most of the existing buildings and the new buildings in the campus are designed with effective daylighting distribution that reduces the need for conventional lighting systems and effectively reduces the high electric demand.

11. **Smart Energy Management**:

    Utilizing cost-effective methods and smart energy management systems efficiently reduced energy usage in both existing and upgraded technologies of management of the old and new buildings inside the campus.

12. **Smart Appliances**:

    Al-Mustaqbal University integrated several smart appliances that managed and programmed for operation during off-peak energy hours for the building of the campus to minimize energy costs and increase the overall efficiency. For example, smart LED and a smart refrigerator that

equipped with smart and programmable technology that allows monitoring processes remotely using a smartphone or other devices. It comes with a lot of benefits, such as energy monitoring, scheduling of operations, temperature managing, alerts and notifications to shut the cooling systems in case one door is left open, for an example.

13. **Community Engagement Initiatives**:

Al-Mustaqbal University has been introducing workshops and information to teach students and staff about the welfares of energy-efficient appliances and keeping encourages spreading the culture of sustainable campus.

14. **Motivations for Energy Efficiency**:

AL-Mustaqbal offers motivations for departments that achieve countable reductions in consumption of energy in order to widespread their adoption of energy-efficient practices. Additional cash and moral awards are offered by the university annually.

15. **Regular Maintenance Programs**:

Al-Mustaqbal University establishing a repetitive maintenance schedule for all appliances in the campus for ensuring they work properly at its maximum level of the efficiency. This will prolong their lifespan and maintain the energy savings.

16. Heat Recovery Systems:

Install heat recovery systems in buildings to capture waste heat from appliances and processes, reusing it for heating water or space, thereby reducing energy demand.

17. Energy Efficient Kitchen Equipment:

Our university upgraded kitchen appliances in campus facilities to save energy. For example, induction cooktops and convection ovens are installed in the kitchen for less energy and faster cooking processes.

18. Smart Power Strips:

The smart power strips are widely used in the campus appliance to cut off power to devices when working in standby mode. These strips prevented wasting energy when appliances are not actually in use.

19. Incorporating Renewable Energy Sources:

Al-Mustaqbal University paid too much attention for transition phase from conventional sources into the most recent-economically efficient. For example, Solar panels and wind turbines are used to power specific appliances. This led to further reducing reliance on grid and traditional resources of energy and enhanced sustainability.

20. Use of Water-Efficient Appliances:

Al-Mustaqbal University also invested in water-saving appliances, such as smart and low-flow dishwashers and smart washing machines. Adopting this policy not only conserved water but also reduced the energy required for heating and cooling water.

21. Engaging Students in Research Projects:

This step is one of the most important steps adopted by our university. It trying to involve students their final year projects and research to put more effort on developing innovative solutions toward efficient energy usage in and out the campus. This step fostered a hands-on learning environment and encouraged student's creativity.

22. Real-Time Feedback Displays:

As usual and as indicators about energy consumptions, our university installed real-time energy displays in special and common areas or wherever that applicable to show energy consumption for the appliances inside the campus. This really encouraged users to be more mindful of their energy use.

23. Partnerships with Local Utilities:

Collaborate with local utility companies to provide workshops, resources, and incentives for energy-efficient appliance usage and upgrades.

24. Sustainability Competitions:

In order to foster the sense of the campus community, our university organized several events involve competitions among departments of the university in order to recognize which one of them can achieve the greatest level of energy savings through use of energy-efficient appliances.

25. Programs for Lifecycle Assessment:

Our university has been implemented significant lifecycle assessment programs for the appliances inside the campus for evaluating their environmental effect from the production process to disposal one. Based on this assessment, the university is able to take the right decisions toward the most sustainable productions.

26. Training Staff:

The university provides routine training for the management staff on the latest technology of the efficient energy management. By this training, the university assured that their staff can sustain and optimize appliance performance and that for sure led to increase energy efficiency.

<u>Energy Efficient Appliances Usage:</u> Using efficient appliance devices in the Al-Mustaqbal University – Iraq



Using efficient air conditioning split unit working on the solar panel



Solar street lighting project



Solar thermal collector: novel design



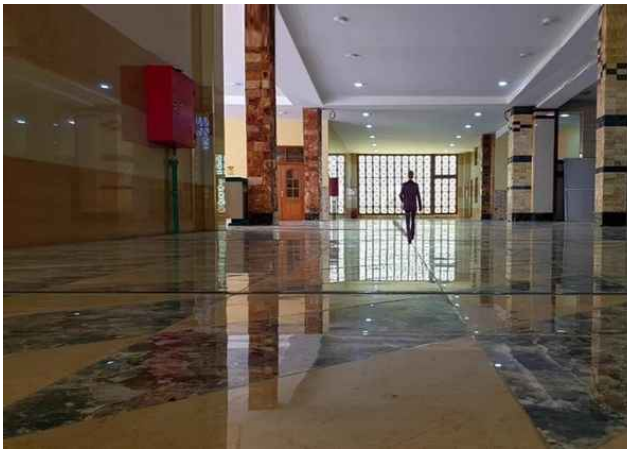
Novel design of vertical axis-wind turbine



Design and implementation of a water Solar pumping System



Implementation of PV panels for lighting Al-Mustaqbal Center for Energy Research



Use of LED lighting and lamps with light detection



Installing skylights to allowing sunshing and natural light flood into the building

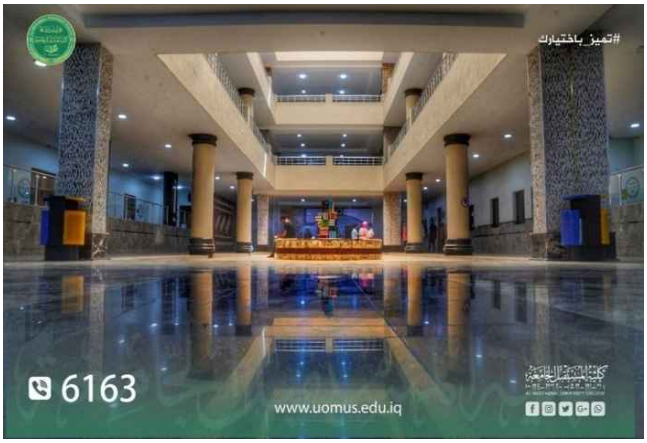


Solar-Powered Umbrella Charges Electronic Devices



Implementation walk-through disinfection gates powered using solar panel









Using efficient flat led lighting





Energy Audit in Al - Mustaqbal University building



Smart thermostats (installing smart thermostats in the lab to optimzing the heating and cooling)





In addition to all mentioned strategies implemented by Al-Mustaqbal University, the university has been working on several projects and developing them for better energy efficiency that reduce the dependency on the generators that depend on fossil fuel (carbon dioxide emerges as a result of combustion). These projects, workshop, and seminars will indirectly affect the climate change. Some of them are described below:

PROJECT#1: Some students achieved and updated creative project under the supervision of professors from Al-Mustaqbal University to design a vehicle air conditioning system that operates on exhaust gases emitted from a diesel engine. Through this design, the energy generated due to the expansion of the exhaust gas was invested to drive the compressor of the refrigeration cycle system. The results showed that the performance factor of the proposed cooling system increases by 30% when compared to the traditional cooling system. The results also showed that fuel consumption was reduced as a result of reduced loads on the engine, and thus the possibility of reducing gas emissions to the environment. Based on these results, the projects can be suggested as solution to the problem of energy waste for the air conditioning system in a vehicle operating on the vapor compression cycle. This work was published in an international magazine at the link:

https://doi.org/10.1007/s40032-021-00787-4

PROJECT#2: Within Al-Mustaqbal University aims to support the practical programs for students and providing educational equipment and developing in a way that suits the labor market and modern technology. A group of department staff and students designed and implemented a smart educational air conditioning system that works with IOT strategy. Through the system, you can learn how the inverter cooling system works and how to control the electric current and voltage. The students simulated the system through a smart screen that allow to recognize the change in pressures, temperatures, frequency, power consumed, and performance coefficient of the system. The Wi-Fi connected air conditioner is equipped with the latest technology, allowing the student or user to easily maintain the ideal room environment and provide full control by cellphone. It also provided the ability

to save data and send it via the Internet to the user for the purpose of monitoring performance and identifying malfunctions or leaks, if any.

https://uomus.edu.iq/NewDep.aspx?depid=2&newid=16283

PROJECT#3: Due to the Air Conditioning and Refrigeration Engineering Department's interest in renewable energies, a laboratory device was manufactured and recently developed to electrically break down water (electrolysis) under the supervision of a group of professors as a graduation project for a group of fourth-year students. The raw materials were prepared and the device was manufactured during the first semester, and good initial results were obtained with the successful production of hydrogen gas. Hydrogen gas is also used in many fields, such as welding, as a protective gas, as fuel for missiles, and in power plants as an electrical generator due to its ability to conduct heat. This method has a relatively low cost, and done by connecting two electrodes to two pieces of stainless steel and placing them in a container of water with sodium hydroxide added to it "to increase the conductivity of the water," thus breaking the chemical bonds between oxygen and hydrogen and breaking the molecules using electricity.

https://uomus.edu.iq/NewDep.aspx?depid=2&newid=16601

Project#4: This project has achieved by faculty of the Al-Mustaqbal University and other institutions in order take serious problems in solar energy systems and suggest solutions accordingly. This work included a historical overview of the utilization of solar energy in various cooling and refrigeration processes, covering aspects of design and application. providing an extensive review of various solar-powered cooling techniques, including photovoltaic, photovoltaic-thermal (PVT), absorption, desorption, and mechanical systems, and their potential to enhance energy efficiency. It also covers the contributions of optimization and machine learning in improving the efficiency of solar cooling technologies. The current study conducts a broad survey of diverse cooling systems utilizing solar energy for either full or partial operation. This project adopted by Al-Mustaqbal University to be a guide to plan the projects needs to work on in the future.

https://uomus.edu.iq/NewDep.aspx?depid=2&newid=28809

Project#5: **Design and implementation of a smart building management system using the Internet of Things Technology**. Integration of smart building technologies into new or existing buildings improves thermal comfort, security, lighting, sanitation, and air quality. Also, smart technologies enhance energy management, thus reducing the total energy cost and environmental impact. In this Project, a modern control system with a

management level named Building management system (BMS) is designed to save energy, cost, and time and enables comfort conditions to be easily monitored and controlled from a single point.

Additional projects and research paper along with the their links online are described below:

Project title	Project link
Solar dish collector: case study in Iraq	https://www.uomus.edu.iq/Projects/Projects/WameedMUCProject_2022_9242312.pdf
Performance study of water pump working by solar energy	https://www.uomus.edu.iq/Projects/Projects/WameedMUCProject_2022_91843490.pdf
An Experimental Study into Thermal Performance of Heating System Combined with Solar Heater	https://www.uomus.edu.iq/Projects/Projects/WameedMUCProject_2022_9229316.pdf
Design and implementation of air speed measuring device (ANEMOMETER)	https://www.uomus.edu.iq/Projects/Projects/WameedMUCProject_2022_9182636.pdf
Experimental study of a cooling system based on energy recovered from automobile exhaust gases	https://www.uomus.edu.iq/Projects/Projects/WameedMUCProject_2022_7120485.pdf
Experimental Study of Double Pipe Heat	https://www.uomus.edu.iq/

Exchanger	Projects/Projects/ WameedMUCProject_2022_7269321.pdf
Design and implementation of wireless controller For air conditioning unit using Raspberry Pi	https:// www.uomus.edu.iq/ Projects/Projects/ WameedMUCProject_2022_72657103.pdf
Experimental Study the Mechanical Properties of Nano Composite Materials by Using Fiber Glass and Nano Boron carbide/ Epoxy	https:// www.uomus.edu.iq/ Projects/Projects/ WameedMUCProject_2022_91743723.pdf
Convective Heat Transfer in a Circular Tube with Short-Length Twisted Tape Insert	https:// www.uomus.edu.iq/ Projects/Projects/ WameedMUCProject_2022_91825440.pdf
Numerical investigation Of Adding A Personal Ventilation System As combined with a Hybrid Ventilation System During Isolated Office Rooms	https:// www.uomus.edu.iq/ Projects/Projects/ WameedMUCProject_2022_92028547.pdf
Design and Fabrication of Parabolic Trough Solar Collector for Thermal Energy Applications	https://uomus.edu.iq/ Projects/Projects/ WameedMUCProject_2021_7315301.pdf

Moreover, Al-Mustaqbal University organized the Third Engineering Forum for

Graduation Projects entitled “Graduation Projects: Creativity and Innovation Towards a Sustainable University.' under the patronage of the president Professor Dr. Hassan Shakir Majdi, and the supervision of the Dean of the College of Engineering and Engineering Technologies, Assistant Professor Dr. Azhar Mohsen Abd. With the collaboration with the University of Babylon / College of Engineering, the Third Engineering Forum for Graduation Projects was held. The forum addressed several topics, including:

A- Mechanical and thermal applications

B- Applications of renewable and clean energy

C- Reducing the use of fossil fuels

D- Environmental conservation and mitigating the greenhouse effect

E- Carbon footprint and reducing gas emissions.






RECOMMENDATION
Countries should support projects and research that study production.
The start of production and use of clean renewable energy on a large scale in countries.
Directing the media to highlight the benefits of the renewable fuel alternative
Encouraging
as well as
contributing
of green ideas on
the ground


6163 تواصل معنا
www.uomus.edu.iq
جامعة المستقبل
AL MUSTAQBAL UNIVERSITY

Additional gathering and workshop can be found below:

Activities on Smart Building

1- **https://uomus.edu.iq/CollegeEn/Details/104797**
2- **https://uomus.edu.iq/UnitsAndDivisionsEn/NewsDetails/104775**
3- **https://uomus.edu.iq/CollegeEn/Details/86896**
4- **https://uomus.edu.iq/CollegeEn/Details/86181**
5- **https://uomus.edu.iq/Department/Details/84018**
6- **https://uomus.edu.iq/College/Details/84216**

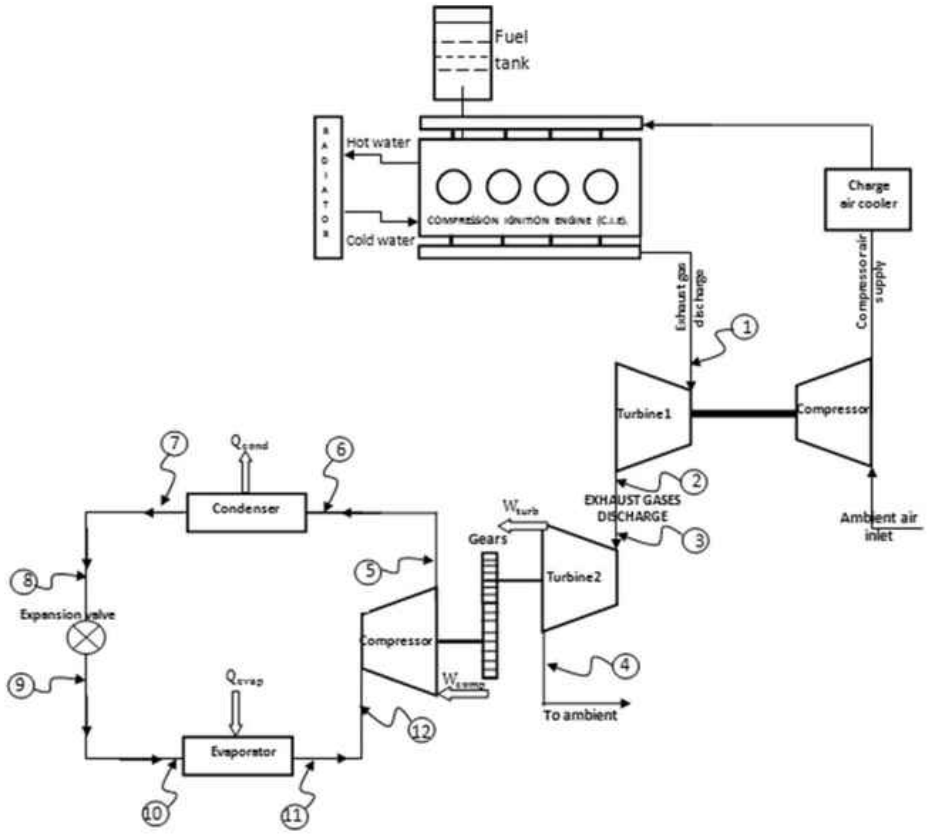
General activities about using alternative renewable energy inside the campus.

1- **https://uomus.edu.iq/UnitsAndDivisionsEn/News/67?newsCategory=News&page=19**
2- **https://uomus.edu.iq/UnitsAndDivisionsEn/NewsDetails/97611**
3- **https://uomus.edu.iq/UnitsAndDivisionsEn/NewsDetails/97201**
4- **https://uomus.edu.iq/UnitsAndDivisionsEn/NewsDetails/98677**
5- **https://uomus.edu.iq/UnitsAndDivisionsEn/NewsDetails/97195**
6- **https://uomus.edu.iq/UnitsAndDivisionsEn/NewsDetails/96544**
7- **https://uomus.edu.iq/UnitsAndDivisionsEn/NewsDetails/105707**
8- **https://uomus.edu.iq/UnitsAndDivisionsEn/NewsDetails/96532**
9- **https://uomus.edu.iq/UnitsAndDivisionsEn/NewsDetails/105705**
10- **https://uomus.edu.iq/UnitsAndDivisionsEn/NewsDetails/105653**
11- **https://uomus.edu.iq/UnitsAndDivisionsEn/NewsDetails/105646**
12- **https://uomus.edu.iq/UnitsAndDivisions/NewsDetails/105645**

4- Patent that service the industry

Al-Mustaqbal University aimed at improving energy efficiency and clean energy. The industrial sector seeks the assistance of energy experts from the professors working at our campus; promote cooperation between the university and industry sectors. Ministry of higher education and scientific research supplied the universities with a platform to upload their ideas of the applied research to allow for the industrial companies in private and public sector to know about these ideas. One of these service that involve a patent on "Design of Cooling System for an Automotive using Exhaust Gasses of Turbocharged Diesel Engine" prepared by Prof. Dr. Qusay Rasheed Al-Amir1 and Asst. Prof. Dr. Mohamed F. Al-Dawody and Assit Prof. De. Azher M. Abed, HOD of air conditioning and refrigeration techniques engineering department, Al-Mustaqbal University College





https://uomus.edu.iq/NewDep.aspx?depid=2&newid=5031

Workshops, seminars, forums:

2. Al-Mustaqbal University Signs Memorandum of Cooperation with the Ministry of Environment to Strengthen Partnership in Environmental Research and Sustainable Development

   Under the patronage and in the presence of His Excellency Dr. Helo Al-Askari, Minister of Environment, during his visit to Al-Mustaqbal University, a joint scientific memorandum of cooperation was signed between the two parties. This initiative comes in line with the directives of the President of Al-Mustaqbal University, Prof. Dr. Hassan Shaker Majdi, to achieve the Sustainable Development Goals (SDGs), and reflects the

university’s accomplishments in sustainability-related research, practices, and its commitment to fostering partnerships to realize these goals.

The memorandum outlines multiple areas of mutual interest, most notably:

• Supporting environmental research and studies

• Providing scientific consultations and environmental impact reports

• Organizing joint conferences and workshops

• Implementing training programs for capacity building

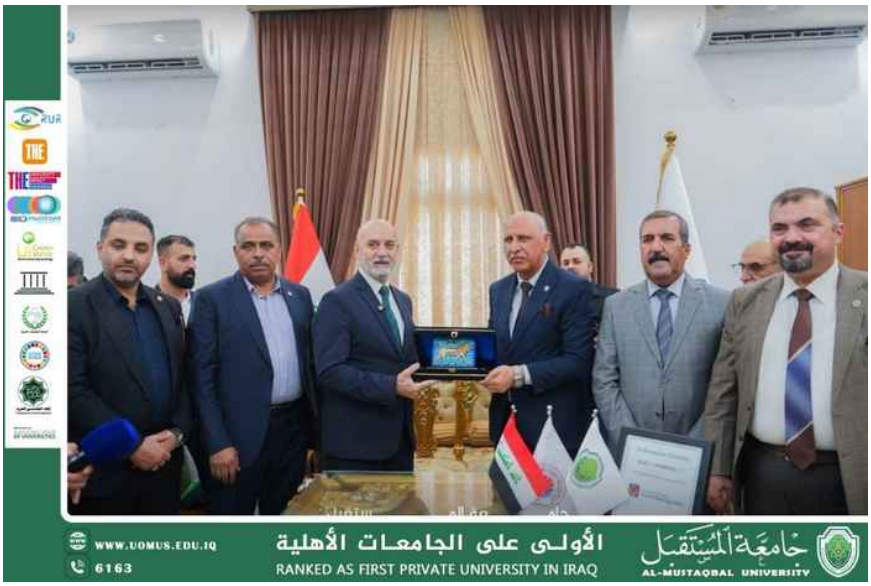
• Promoting awareness about environmentally sound practices to ensure sustainability

• Conducting environmental surveys

• Promoting related activities and initiatives through the official websites and media channels of both parties

Please visit for more details;

https://uomus.edu.iq/En/EnNewCol.aspx?newid=91749



A- Al-Mustaqbal University (UOMUS), in partnership with the Government of Babylon, has officially commenced preparations for the Ambassadors for Sustainability Camp, scheduled to be held in early October at the Babylon Tourist Resort.

The launch event was attended by the Governor of Babylon, Mr. Adnan Faihan Al-Dulaimi, together with the President of UOMUS, Prof. Dr. Hasan Majdi, vice presidents, deans, department heads, faculty members, staff, and students from the Ambassadors of Al-Mustaqbal University Sustainability Program.

The day began with a presentation delivered by Prof. Dr. Mudhaffar Al-Zuhairy, Director of Scientific and Academic Supervision, who outlined the camp’s strategic objectives, its role in advancing sustainability, and the preparations underway to ensure success. A key

highlight was the announcement of the AI Hackathon for Sustainability, designed to provide students with a platform to showcase their ideas and apply modern technologies in support of the United Nations Sustainable Development Goals.

For more details, please visit;

https://uomus.edu.iq/En/EnNewCol.aspx?newid=93702



B- President of Al-Mustaqbal University Visits Mansoura University in Egypt and Signs Preliminary Cooperation Protocol to Strengthen Academic and Research Partnership

This collaboration comes as part of Al-Mustaqbal University's vision of academic leadership and international engagement, reinforcing its position as a pioneering Iraqi institution dedicated to preparing a new generation of researchers and students capable of keeping pace with scientific advancements and actively contributing to community service and sustainable development.

For more details, please visit;

https://uomus.edu.iq/En/EnNewCol.aspx?newid=92852



A- AL-Mustaqbal University has engaged with the local community by hosting events focused on renewable energy solutions. This includes inviting guest speakers and collaborating with environmental groups to promote sustainable practices. These events discussed a session held titled 'Active Effective Education and Its Role in

Sustainable Development' and transition to renewable energy as well.



https://uomus.edu.iq/MUCNewsPaper/displayNews.aspx?p=%2752%27

The Energy Research Centre at Al-Mustaqbal University announces the establishment of a free course titled “Course on Concepts and Foundations of Renewable Energy. In this free course, the centre introduced the main principle and resources of the renewable energy and their critical rules in reducing emissions and providing sustainable future of the energy.
For more information, please visit:



https://uomus.edu.iq/NewCol.aspx?newid=26307

Specific Initiatives

Al-Mustaqbal University celebrating the World Energy Day in cooperation with the Scientific Society for Energy Studies & Research, has organized a Scientific Forum under the slogan "Investment of Clean Energy is Our Route towards Sustainable Development." This Forum, indeed, represents an opportunity to raise awareness about energy and its importance, in addition to investigating the challenges that might face this sector to ensure the provision of safe and sustainable energy for all. Besides, there is a necessity to work on developing national policies that could reflect the global energy perspective. We are obliged to note that several personalities have participated in the Forum representing the Ministries of Oil, Electricity and Environment, in addition to Researchers and Academics as well as owners of companies specialized in the field of energy. Attendees have mainly focused on discussing the applications of renewable energy and the type of threats that might face such utilizations. Moreover, raising awareness about the importance of energy and its consumption is highly required as agreed upon by everybody. Thus, we could positively move ahead towards the implementation of Sustainable & Clean Energy.

The Forum has included several issues, classified into three sessions. The first session has incorporated five lectures. They are as follows:

1. Patents & Their Applications in the Sector of United Energy, delivered by the Expert Mr. Ali Al-Bakri, Head of Engineering Accreditation Authority.

2. Uses of Solar Energy in Iraq: Challenges & Problems, delivered by Dr. Majid Al-Jabiri, Head of British Energy Centre, London.

3. Econ
Hashim

4. Chall
Kfaishi,

5. Interr
Renewa

In addit
posters
Graduat
Univers

The Sec

1. Ener
Oil I
2. Prosp
Haroun



3. An Introduction to the National Initiative for Energy Subsidy & Emissions Reduction, delivered by Eng. Mr. Muhannad Shakir Mahmoud, Central Quality Dept., Ministry of Electricity.

4. Electric Power Supplied by Generators: Reality & Solutions, delivered by Eng. Samah Shiyaa Ouda,

The Forum Activities have been concluded with a Dialogue Session in which two lectures have been delivered. These two lectures are

1. Use of Biogas to Produce Clean Energy from Landfills, delivered by Dr. Maytham Abdallah Sultan, Department of Environment & Water, Ministry of Science & Technology.

2. Green Hydrogen & Fuel Cells, delivered by Dr. Halima Jabir Mohammad

For his part, Prof. Dr. Hasan Shakir Majdi, Dean of Al-Mustaqbal University, has given a speech, addressing the global challenges that might confront the Energy Sector due to war crises, rise of fuel prices, pollution increase that results from using fossil fuels, and thus pushing the whole world towards clean and renewable energy. Indeed, the Forum, being organized by Al-Mustaqbal University, is deemed a contribution that mainly aims to achieve Sustainable Development Goals, and this could be accomplished by supporting the Energy Sector, reducing emissions and to become a Scientific Platform that can play an essential role in providing recommendations and proposals for the purpose of developing plausible solutions to these problems and challenges.



The College of Engineering and Engineering Technologies holds the third Clean Energy Forum within the university s initiatives to promote the Sustainable Development

Goals, especially Goal 7 (Clean and Affordable Energy).

https://uomus.edu.iq/UnitsAndDivisionsEn/NewsDetails/104625

More evidence can be found in the images below .









Using the motion activated lighting in less frequntly used to ensure lights are only on when pepole are present









Windows and Skylights



Solar Photovoltaic (PV) panels for LED lighting and lamps.



Use of LED lighting and lamps with light detection





Using efficient air conditioning split unit working on the solar panel