



SDG 7: AFFORDABLE & CLEAN ENERGY

Ziauddin University pledge to achieve sustainable goals in all their activities therefore, University plays their role to increased energy efficiency and the increased use of renewable energy is crucial to creating more sustainable.

- Smart Building Implementation:**

Ziauddin University is striving hard to be recognized as the icon of the innovative, leading-edge educational institute that endeavors to international sustainability efforts for the Environment, Economy, and Equity. One of the very important key elements of sustainability is smart building implementation. Ziauddin University is implementing the concept of smart building with smart and energy-efficient appliances, smart security system, indoor environment and automation system that include the CCTV, Fire Extinguishers, Smoke Detector, Hand scanners & VHF Sets for smart security systems.

Solar panels, R.O plant, HVAC, smart Heat Exchanger, centralized cooling system, Splits/ AC Inverters, LED lights, Energy Savers and air dryers and many other equipment for minimizing the electrical energy and carbon footprint with complete automation and security in the campus.

Power Generation and Heat Exchanger System	Centralized Cooling System	Solar Panels (Energy Efficient)
		
Energy-efficient and smart appliances	Automation	R.O Plant (Water efficient)
		
Smart Safety & Security System		
		
		



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- **Energy Efficient Appliances Usage in overall building:**

Ziauddin University implemented energy efficient appliances in the entire University, to be recognized as the icon of the innovative, leading-edge educational institute that endeavors to International sustainability efforts for the Environment, Economy, and Equity.

The energy efficient appliances usage included Solar panels, R.O plant, HVAC, smart Heat Exchanger, centralized cooling system, Splits/ AC Inverters, LED lights, Energy Savers and many other equipment for minimizing the electrical energy consumption in the campus.



LED Lighting



Ceiling Fans and HVAC



Centralized Cooling System



Elevators



• Renewable Energy Sources in Campus

Ziauddin University practices their operations through the following renewal energy sources. These are as follows:

- The **combined cooling, heating and power (CCHP)** unit in Ziauddin Clifton uses diesel & Gas as fuel. The rated power of the is **300+265 Tons**.
- Entire Ziauddin University Building including B+G+5th Floor area of each floor 25000 Sq.ft. covered for Chiller Cooling.
- Hot Water provides heating for Kitchen and Bathrooms throughout the University.
- At Ziauddin University Link Road Site (Educational City), we had a total of 5 inverters of 127KW installed in the system. These inverters are connected to 404 solar panels installed on the parking lot. In 2021, we have more solar installed at the cafeteria and for street lights. Now, 127KW capacity has been extended to **225 KW** at the Link Road site.
- Another **250KW** Solar Installed at Ziauddin University KDLB, Kemari Site. **51 KW** installed at Ziauddin University Boat basin site. **51 KW** installed at Ziauddin University North Site. **110 KW** solar installed at Ziauddin Sukkur Campus. **3 solar of 10 KW** are installed at multiple sites at Ziauddin University Clifton.
- 1.2 MW, 1250 KVA, 725 KVA and 750 KVA DG Sets and 2 backups of 500 KVA DG sets are installed at Ziauddin University Clifton Site. Moreover, 60 KVA Diesel Generator installed at North Site.
- Moreover, the Wind Turbine project is under process at Ziauddin Link Road Site, Educational City Karachi.



Co-Generation Hot Water Supply



2x300 Tons Absorption Chiller



250 KW Solar Installation at Ziauddin University KDLB, Kemari Site



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Solar Parking at Link Road Site



Solar Street Lights at Link Road Site

Solar Cafeteria at Link Road Site



225 KW Solar Installation at Ziauddin University Link Road Site, Educational City.



Solar Street lights at Sukkur Campus



110 KW Solar Installation at Ziauddin University Sukkur Campus



1.2 MW Gas Genset at ZU Clifton Site



1250 KVA DG Set at ZU Clifton Site



500 KVA two DG Sets at ZU Clifton Site for Backup



750 KVA DG Set at ZU Clifton Site



725 KVA DG Set at ZU Clifton Site

- **Innovative program(s) in energy change**

Program:

Renewable Energy Generation using Vertical Axis Wind Turbine

Ziauddin University Faculty of Engineering Science Technology & Management, Department of Electrical Engineering participated in the Pakistan Sustainability Week and presented their project on "Renewable Energy Generation using Vertical Axis Wind Turbine". The project won the second prize in the Alternative Energy domain.





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- Greenhouse gas emission reduction program

Scope 1 Examples: University Fleet to reduce burning fuel from vehicles



1. Pedestrian Friendly Campus designed with Multiple entrances of building to reduce private vehicle inside the campus which directly reduces fuel burn from the vehicles.



2. Campus to Campus Shuttle Service to reduce carbon emission from private cars.



Scope 2 Example: Renewable Energy Sources (Solar System) is an indirect source to reduce gas emission by low energy purchased



Scope 3 Example:

1. Rideshare (Carpool) designed to encourage commuters to adopt healthy and sustainable transportation



Scope 3 Example: 2. Example of Waste Disposal at Ziauddin University

Examples of Greenhouse gas emission reduction program at Ziauddin University