Big step for green energy and energy safety
Successful implementation energy saves technologies and startups of "TIIAME" National research university

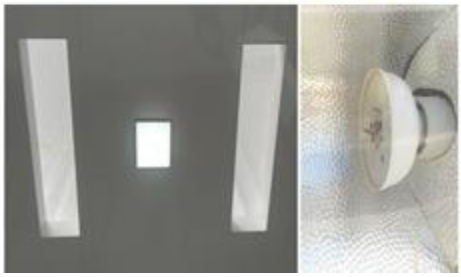
Reducing energy consumption at TIIAME National Research University can be achieved through the following strategies and initiatives:

1. Energy awareness and education campaigns.
2. Installation of energy-efficient lighting and occupancy sensors.
3. Optimizing heating, ventilation, and air conditioning (HVAC) systems.
4. Improving building insulation and weatherization.
5. Procuring energy-efficient equipment and appliances.
6. Expanding renewable energy generation through solar panels, wind turbines, and hydroelectric systems.
7. Installing energy monitoring systems for real-time tracking and analysis.
8. Collaborating with energy providers and sustainability organizations for incentives and grants.
9. Promoting energy-saving behaviors and engagement through competitions and challenges.
10. Continuous monitoring, evaluation, and improvement of energy conservation efforts.

Implementing these measures will help TIIAME National Research University achieve its goal of reducing energy consumption and promoting sustainability on campus.

Solar absorption Air Conditioning system (“TIIAME” National Research Univeristy)

Individual campus heating system to reduce natural gas (Heating system based on electric heats and use solar energy)



Example of Energy Efficient Appliances Usage: Use of LED lighting and lamps with light detection (“TIIAME” National Research Univeristy)

An automatic tap hand wash system is an effective solution to economize both water usage and electricity for water pumps (“TIIAME” National Research Univeristy)

At TIIAME NRU (Tashkent Institute of Irrigation and Agricultural Mechanization Engineers), various energy-efficient devices and systems are employed to minimize energy consumption and promote sustainability. These include the utilization of LED lamps with motion detection system, energy-efficient lighting for campus illumination, conditioning with solar panels, and the implementation of an individual campus heating system to reduce natural gas usage.

1. LED lamps with motion detection system:
TIIAME NRU utilizes LED lamps integrated with a motion detection system for efficient lighting. LED lamps are known for their energy efficiency, consuming significantly less electricity than traditional lighting options. The motion detection system ensures that the lights are activated only when motion is detected, minimizing unnecessary energy usage. This intelligent lighting solution not only saves energy but also enhances safety and security on the campus.

2. Energy-efficient lighting for campus illumination:
Energy-efficient lamps, such as LED or compact fluorescent lamps (CFLs), are extensively used for campus illumination at TIIAME NRU. These lamps consume less power while providing high-quality lighting. By replacing conventional lighting fixtures with energy-efficient alternatives, TIIAME NRU reduces overall energy consumption and contributes to a more sustainable environment.

3. Conditioning with solar panels:
To facilitate energy-efficient air conditioning, TIIAME NRU employs solar panels. Solar panels harness the power of sunlight and convert it into electricity, which can be utilized to operate the air conditioning systems. By utilizing renewable solar energy, TIIAME NRU reduces its reliance on conventional energy sources and decreases its carbon footprint. This approach promotes environmental sustainability and helps in reducing long-term energy costs.

4. Individual campus heating system to reduce natural gas usage:
TIIAME NRU has implemented an individual campus heating system as part of its efforts to reduce the usage of natural gas. This system optimizes energy usage and reduces dependence on natural gas, contributing to sustainable energy consumption on campus. The individual heating system relies on alternative energy sources such as electricity or renewable sources like solar energy . By replacing traditional gas-based heating systems, these alternative energy sources provide reliable and energy-efficient heating for campus buildings.

The individual campus heating system allows for temperature control in each room separately, ensuring more efficient energy usage. Through advanced automation and control technologies, the system detects occupancy and adjusts comfort settings. Energy is only utilized in areas where it is needed, reducing energy consumption and minimizing natural gas usage.

By incorporating LED lamps with motion detection, energy-efficient campus lighting, conditioning with solar panels, and an individual heating system, TIIAME NRU demonstrates its commitment to energy efficiency and sustainable practices. These initiatives not only contribute to a greener and more sustainable campus environment but also serve as a model for other institutions to adopt similar energy-efficient technologies, reducing their reliance on non-renewable energy sources.
Example:

Appliance	Total Number	Total number energy Efficient appliances	Percentage
LED Lamp	50,000	46,000	98%

Fan	87	85	98%
Heating system	1	1	100%
		Average Percentage	98.6%

Defuse-IT intellectual water purification device with solar panel

Defuse-IT is an intellectual water purification device developed by TIIAME (Tashkent Institute of Irrigation and Agricultural Mechanization Engineers), a National Research University in Uzbekistan. This device incorporates a solar panel to enhance its functionality and sustainability.

The Defuse-IT device utilizes innovative technologies to purify water, ensuring it meets the required quality standards for various applications. By integrating a solar panel, the device harnesses solar energy as a clean and renewable power source to drive its purification processes.

Key features and components of the Defuse-IT intellectual water purification device may include:

1. Water Purification System: The device employs advanced purification techniques to remove contaminants, impurities, and pathogens from water, making it safe for consumption or specific applications.

2. Solar Panel: The incorporated solar panel captures sunlight and converts it into electricity. This renewable energy source powers the purification processes, reducing or eliminating the need for grid electricity or other non-renewable energy sources.

3. Energy Storage: The device may include an energy storage system, such as a battery or supercapacitor, to store excess solar energy generated during periods of high sunlight. This stored energy can be utilized when sunlight is limited or during nighttime operation.

4. Intelligent Control System: The Defuse-IT device may feature an intelligent control system that optimizes the purification process based on the water quality, flow rate, and other parameters. This ensures efficient and effective water treatment.

5. Monitoring and Maintenance: The device might incorporate sensors and monitoring systems to track water quality, system performance, and maintenance requirements. This helps in ensuring reliable and continuous operation.

By combining water purification technology with solar power, the Defuse-IT device offers a sustainable solution for clean water provision. It reduces reliance on conventional energy sources and contributes to the mitigation of carbon emissions and environmental impact associated with water treatment processes.

For detailed information about the Defuse-IT intellectual water purification device, its specifications, and performance metrics, it is recommended to refer to official documentation or contact the relevant department at TIIAME.

Mini vertical wind generator

Vertical-axis wind turbines, as the name suggests, have the main rotor shaft positioned vertically. Unlike traditional horizontal-axis wind turbines (HAWTs) that have a horizontal rotor shaft, VAWTs have blades that rotate around a central vertical axis. This design allows them to capture wind from any direction and eliminates the need for a yaw mechanism to align with the wind.

Some potential advantages of vertical-axis wind turbines include:

Omnidirectional Wind Capture: VAWTs can utilize wind from various directions, making them suitable for areas with turbulent or changing wind patterns.

Lower Noise Levels: The vertical orientation of the rotor can reduce noise compared to horizontal-axis wind turbines, making VAWTs more suitable for residential or urban environments.

Ease of Maintenance: VAWTs typically have a simpler design with components located closer to the ground, making maintenance and repairs more accessible.

Scalability: Vertical-axis wind turbines can be designed in different sizes, including smaller-scale models suitable for decentralized or off-grid applications.