AASTMT 2025 Energy Plan:
Powering Green Sustainability, Cleaning the Future

The 2025 Energy Plan is designed to strengthen the Arab Academy for Science, Technology and Maritime Transport's (AASTMT) commitment to SDG 7 – Affordable and Clean Energy. Building on previous energy conservation and carbon-reduction achievements, the plan adopts an integrated approach to improving energy efficiency, expanding renewable energy utilization, reducing carbon emissions, fostering related innovation and research and promoting sustainable energy practices across all AASTMT branches and outside its walls.

1. Strategic Vision and Objectives

Vision:

To establish AASTMT as a leading sustainable educational institution through efficient energy management, increased renewable energy utilization, innovative research, and continuous carbon emissions reduction.

Main objectives for 2025:

1. Optimize electricity consumption through continuous monitoring and energy conservation measures.
2. Increase the contribution of renewable and low-carbon energy sources to the university's energy demand.
3. Improve the energy performance of buildings, laboratories, and campus facilities.
4. Reduce the university's carbon footprint through integrated mitigation measures.
5. Strengthen research, innovation, and practical applications in clean-energy technologies.
6. Expand international and industrial cooperation in sustainable energy.
7. Promote energy awareness and responsible consumption among students, staff, and the wider community.

Strategy:

AASTMT's 2025 Energy Plan focuses on seven strategic pillars that will be discussed in detail in section 2. They include,

- Smart Monitoring
- Energy Conservation and Efficiency
- Renewable Energy Employment
- Carbon Reduction
- Innovative Programs and Lab Facilities
- Research and Funded Projects
- Agreements and Initiatives



2. The Seven Strategic Pillars of AASTMT Energy Plan 2025

The seven pillars adopted by AASTMT in 2025 towards Green Sustainability are detailed as follows,



Pillar 1. Smart Monitoring

Objective: Establish effective energy monitoring and assessment mechanisms to support informed decisions and optimize energy consumption across AASTMT campuses.

Planned actions:

- Monitor electricity consumption across all AASTMT branches and campuses.
- Analyze annual and monthly electricity consumption trends and identify high-consumption facilities.
- Conduct energy audits and evaluate the performance of major electrical loads.
- Develop energy consumption indicators and benchmarking mechanisms.
- Monitor the performance of solar PV installations and evaluate their contribution to campus energy demand.
- Review energy-saving and renovation plans based on actual consumption data.

AASTMT Measures

- Smart building management systems and online real-time regular monitoring to energy consumption for efficient energy management (load priorities determination and energy use optimization in major campus buildings, thus reducing electricity waste and improving operational efficiency).
- Data from local energy meters in each building are used to track building energy use during different times (day/night, weekdays/weekends, and seasonal variations) to identify periods of high and low demand. Differences between peak energy consumption and off-peak consumption are compared to identify potential overuse or unnecessary use. Hence, buildings of high energy wastage will be selected for internal audits to identify reasons for energy inefficiencies and take suitable measures to rationalize energy consumption in such places.
- Continuous checking for unnecessary use of energy in high energy wastage buildings where lighting, air conditioners or computers are left on even if the place is unoccupied.



Pillar 2. Energy Conservation & Efficiency

Objective: Reduce energy wastage and improve the operational efficiency of buildings, lighting systems, air-conditioning units, motors, and electrical equipment.

Planned actions:

- Continue replacing conventional lighting systems with energy-efficient LED technology.
- Implement rationalization measures for air-conditioning systems and optimize operating schedules.
- Renovate and upgrade inefficient electrical equipment and motors.
- Promote energy-saving awareness among students, employees, and facility operators.
- Evaluate the effectiveness of energy conservation interventions through annual comparisons.

AASTMT measures towards energy conservation and efficiency can be categorized as regular annual measures and measures targeted for 2025 upgrading and renovation plan as follows

❖ *AASTMT Regular Measures*

- **LED persistence:** maintain the already achieved 95% LED coverage and replace failures like-for-like with high-efficiency lamps and drivers, besides increasing the % to **97% LED coverage in 2025**.
- **BMS optimization:** standardize scheduling, set-points, alarms and occupancy modes across major buildings, with documented quarterly tuning cycles.
- **HVAC O&M:** coil cleaning, filter regimes, refrigerant leak checks and commissioning of controls to reduce run hours and improve COP/EER.
- **Sub-metering and data use:** expand electrical sub-meters in high-load areas (HVAC, lighting, laboratories) and use interval data to find and fix anomalies.
- Operational guidelines: after-hours shutdown checklists, plug-load controls and default power-saving settings for IT equipment.
- **Projects pipeline:** Prioritize measures with clear payback, such as variable-frequency drives on fans and pumps, Economizer fixes and demand-controlled ventilation.
- **Spreading instructions and directions** towards energy saving and conservation as per the letter addressed to all AASTMT campuses from AASTMT president.
  Letter addressed to all AASTMT institutes from AASTMT president regarding energy saving
- **Increasing awareness regarding energy rationalization and conservation plans** among AAST staff, students, administrators and technicians through energy-related campaigns, initiatives and seminars as shown in the Events Section found in the following link:
  Energy-related Events

❖ *AASTMT 2025 Upgrading and Renovation Plan*

Besides, the pre-discussed regular energy saving procedures, AASTMT sets buildings' renovation and upgrading plan all over its campus annually. In each campus, data from local meters at each building is collected to analyze energy use of this building during different times and identify its subjection to energy wastage or energy inefficiencies. Buildings with highest wastage are to be selected for internal audits and measures are to be taken towards these buildings. Example of the 2025 renovation and upgrading measures taken for Alexandria branch campuses is given by:

2024/2025 AASTMT Renovation and Upgrading Plan

This branch renovations are discussed in detail below since it features multiple campuses, oldest infrastructure and largest number of staff and students i.e. highest energy consumption and energy wastage;

First: Abou Qir Branch

- Upgraded the lighting at the entrance of the new gymnasium by installing 20 LED spotlights, 5 W each.
- Upgraded all electrical outlets, data outlets, and lighting systems on the entire 4th floor of Accommodation Building C.
- Upgraded all electrical outlets and accessories on the entire second floor of Accommodation Building H.
- Replaced the lighting in four classrooms on the fourth floor of the Architectural Eng. Building with 50 LED fixtures.
- Replaced the lighting throughout all corridors of Engineering Buildings C and D with 100 LED fixtures.
- Replaced the lighting in eight classrooms in the seaward section of Building D with 40 LED fixtures.
- Installed two current-correction panels for two UPS units in the Financial Affairs Building.
- Installed two control panels for the water pumps serving Accommodation Buildings A and B.
- Upgraded the lighting in classrooms on the third and fourth floors of Eng. Building D by installing 100 LED fixtures.
- Upgraded the lighting in classrooms on the 3rd and 4th floors of Eng. Building C by installing 100 LED fixtures.
- Replaced the entire lighting system in the main restaurant of Accommodation Building W with 50 LED fixtures.
- Upgraded the lighting in four classrooms in the Preparatory Studies Building by installing 60 LED fixtures.

- Upgraded the lighting, electrical outlets and accessories on the 2nd and 3rd floors of Accommodation Building C.
- Upgraded the lighting, electrical outlets, and accessories on the first floor of Accommodation Building D.
- Installed seven control panels for the seven irrigation-system pumping units.
- Installed one current-correction panel for the equipment in the Civil Eng. Machinery Lab., Eng. Building D.
- Installed one current-correction panel for the paper-cutting machine in the Printing Building.
- Upgraded the exterior lighting at Smart Cafeteria by installing six 100 W LED façade floodlights.
- Upgraded the lighting in the ground-floor classroom of Engineering Building G by installing 30 LED fixtures.
- Upgraded lighting, electrical outlets, and accessories on the 2nd and 3rd floors of the Industrial Modernization Building.
- Upgraded the lighting, electrical outlets, and accessories in Classroom 02 of the Preparatory Studies Building.
- Installed one current-correction panel for a UPS unit on the ground floor of the Financial Affairs Building.
- Upgraded the exterior lighting on the rooftops of the Engineering College buildings by installing six 200 W LED façade floodlights.
- Upgraded the exterior lighting on the roof of the Campaign Building by installing six 200 W LED façade floodlights.
- Upgraded 18 sub-distribution boards serving the Engineering Colleges, covering both power and lighting circuits.
- Upgraded six sub-distribution boards in Accommodation Building D, covering both power and lighting circuits.
- Completely upgraded the power and lighting distribution board supplying restaurant in Accommodation Building D.
- Completely upgraded two power and lighting distribution boards serving Maritime Safety Building vestibule area.
- Upgraded the power and lighting distribution board serving the hangar in the Technicians Building.
- Upgraded the power and lighting distribution board supplying the Campaign Building.
- Upgraded all second-floor offices in Engineering Building A, including lighting, electrical outlets, and accessories.
- Upgraded four classrooms in the Computer Science College across the second, third, and fourth floors, including lighting, electrical outlets, and accessories.
- Replaced the lighting throughout all corridors of Engineering Building G with 300 LED fixtures.
- Upgraded the lighting in four classrooms in Engineering Building G by installing 60 LED fixtures.
- Upgraded the lighting in six classrooms in the IMO Building by installing 80 LED fixtures.
- Installed two control panels for pumping units serving the sports field and the main restaurant, each rated at 3 hp.
- Upgraded the swimming pool lighting at Maritime Safety Building by installing four 200 W LED façade floodlights.
- Upgraded the second section of the low-voltage switchgear at the main distribution substation.
- Upgraded the lighting in the rooms of Accommodation Buildings A and B by installing 180 LED fixtures.
- Upgraded the lighting in the bathrooms of Accommodation Buildings A and B by installing 60 LED spotlights.
- Installed one service distribution board at the Engineering College sports field to provide electrical connections for events and celebrations.
- Upgraded two control panels for the water desalination plant at the main restaurant.
- Upgraded the alarm panel in the Admissions and Registration Building.
- Installed a current-correction panel for a UPS unit on the ground floor of the Financial Affairs Building.
- Installed an automatic alternating control panel for the water pumps serving Engineering Building G.

Second: Miami Branch

- Upgraded the lighting on the ground floor of the main library and in the classrooms of Building A by installing 50 LED fixtures, each rated at 40 W.
- Replaced the lighting on the rooftops of Buildings A and C with six 200 W LED façade floodlights.
- Upgraded 6 administrative offices on ground floor of Building A, including lighting, electrical outlets, accessories.
- Upgraded 3 classrooms on 3rd floor of Administrative Building, including lighting, electrical outlets, accessories.
- Upgraded the lighting in four classrooms in Building A by installing 40 LED fixtures.
- Upgraded the exterior lighting of the Administrative Building and Building B by installing 40 LED spotlights, each rated at 6 W.
- Upgraded the landscape lighting by installing 20 lighting bollards.
- Installed a service distribution board at the International School sports field to provide electrical connections for events and celebrations.
- Upgraded the entire indoor lighting system in the new gymnasium.
- Installed a dedicated power distribution board for the new gymnasium.

Third: Wabour El-Maya Branch

- Replaced the lighting throughout the ground-floor corridors with 50 LED fixtures.
- Installed one current-correction panel for a UPS unit in the studio.
- Replaced the lighting throughout the ground-floor corridors with 50 LED fixtures.
- Installed one control panel for two water pumps, each rated at 3 hp.
- Upgraded the lighting in six classrooms by installing 50 lighting fixtures.
- Upgraded lighting in ground-floor corridors and 8 classrooms by installing 50 LED spotlights, each rated at 24 W.
- Upgraded the lighting in the classrooms and corridors on the first and second floors by installing 30 LED spotlights, each rated at 24 W.

Note: All photos of these renovations and upgrading are in included in the attached report



Pillar 3. Renewable Energy Employment

Objective: Increase the utilization of renewable energy resources and strengthen their integration into AASTMT's energy infrastructure.

Planned actions:

- Maintain and optimize existing rooftop solar PV installations.
- Monitor the contribution of renewable energy from both the national electricity grid and AASTMT's own solar installations and evaluate annual progress.
- Increase solar electricity generation and plan for additional renewable energy installations.
- Promote solar thermal applications for water heating and other suitable uses.
- Explore opportunities for integrating renewable energy with campus electrical loads.

❖ *AASTMT Regular Measures*

The AASTMT established the 1st roof mounted **PV plant** of **50kW** grid connected for self-consumption over building G of collage of Engineering and Technology**, Abu kir campus**. The AASTMT has then installed the 2nd **PV plant** of **150kW** divided into 2 sub-plat 100kW on side of building and 50kW on roof of faculty of engineering, on-grid operated as fed-in-tariff, in College of Engineering and Technology, **Aswan campus.** A 10kW **PV plant** for solar irrigation pumping and water treatment has been installed in **Abu kir campus**.

Continuous maintenance, routine cleaning and improvements in the existing solar installations help to maintain and even improve their output power, thus enhancing its energy share in all AASTMT consumption. This includes regular annual measures as follows,

- **Operate on-site PV:** maintain the existing grid-connected stations, including those at the Abu Qir and Aswan campuses, restore output wherever it falls.
- **Metered reporting:** publish two figures every year — on-site solar generation as a share of total electricity use (PV kWh ÷ total kWh), and the total renewable share including the renewable share of the national grid — with availability, downtime and performance notes.
- **O&M excellence:** standardize panel cleaning, inverter checks and fault response to maximize output and keep savings.
- **Hybrid readiness:** evaluate battery storage and other clean options to improve self-consumption and peak management, through small pilots with clear KPIs.
- **Connection and safety compliance:** keep grid interconnection, protection and permits current for all sites, with single-line diagrams and inspection logs.
- **Procurement and design standards:** use lifecycle costing, minimum performance ratios, warranty requirements and end-of-life recycling provisions in all new renewable procurement.

❖ ***AASTMT 2025 Plan***

- The Renewable Energy Unit is planning to further expand AASTMT's renewable energy infrastructure through the installation of **a 2kW Vertical Axis Wind Turbine (VAW)**, funded by an internal AASTMT research grant. The wind turbine is integrated with the existing PV Plant, establishing a hybrid wind–solar energy system that supports sustainable electricity generation, innovative academic research, and hands-on student training. This initiative reinforces AASTMT's commitment to renewable energy innovation, environmental sustainability, and development of integrated clean energy technologies.
  Energy Research Unit

- Study the potential of **expanding renewable infrastructure** among different AASTMT campuses by installing new solar stations and other renewable solutions. See 2024/2025 proposal to establish a solar power plant and **two electric vehicle charging units** at the **College of Engineering and Technology building – AASTMT Alamein** Branch.
  2024/2025 Study and Proposal for establishing PV station and EV charging units in Alamein Branch



Pillar 4. Carbon Reduction

Objective: Reduce greenhouse gas emissions associated with AASTMT's energy consumption and operational activities, supporting Egypt's national climate

Planned actions:

- Continue assessing the carbon footprint of AASTMT branches and campuses.
- Monitor Scope 1, Scope 2, and Scope 3 emissions.
- Prioritize electricity conservation and renewable energy integration as key emissions-mitigation measures.
- Promote sustainable transportation and carpooling initiatives.
- Improve the efficiency of cooling systems and manage refrigerant-related emissions.
- Encourage waste reduction, recycling, and resource-efficient campus operations.
- Evaluate Carbon Footprint using the GHG Protocol Corporate Standard, for the organizational boundary under its operational control as given by AASTMT Climate Action Plan 2025-2030:

❖ ***AASTMT 2025 Carbon Footprint Strategy***

Under the direction of the President of AASTMT, a multidisciplinary committee coordinated by the Research and Innovation Center assessed the carbon footprint of **four AASTMT branches** (Abu Qir, Misr El-Gedida, Smart Village and South Valley) **for the year 2024/2025**, following the **GHG Protocol and ISO 140641.** It covers Scope 1 (stationary and mobile combustion and fugitive emissions), Scope 2 (purchased energy, including outsourced cooling) and a wider set of Scope 3 sources: purchased goods and services, capital goods, water and wastewater, fertilizers, staff and student commuting, waste, business travel and leased assets. This is given by **AASTMT Carbon Footprint Report 2024-2025** given by
https://aast.edu/en/about/pdf/AASTMT-CF-Finding-Analysis-2024-2025.pdf
https://aast.edu/en/about/co2-footprint.php

During period 2025-2030, AASTMT has put a **Climate Action Plan 2025-2030**, intending to extend this wider assessment to all its campuses based on **GHG Protocol and ISO 14064-1.** AASTMT measures towards reducing Scope 1, 2 and 3 emissions will be assessed annually given the baseline measured in 2025, to make sure the 2025-2030 plan is progressing each year.
AASTMT Climate Action Plans

❖ *AASTMT 2025-2030 Climate Action Plan*

- Actions towards Scope 1 emissions (Direct emissions):

Reduce emissions from refrigerants and university-controlled fuel use via:

• **Refrigerant management:** leak prevention and detection, recorded top-ups, and phased replacement of R22 systems with lower-impact alternatives.

• **Fuel use:** improve the efficiency of generators, boilers and university-controlled vehicles, and log fuel use by source.

- Actions towards Scope 2

Implementation priorities towards renewable employment and energy efficiency via:

• **Operate and expand on-site PV:** maintain the existing grid-connected stations, including those at the Abu Qir and Aswan campuses, restore output wherever it falls, and add feasible rooftop and car-park structures.

• **Metered reporting:** publish two figures every year — on-site solar generation as a share of total electricity use (PV kWh ÷ total kWh), and the total renewable share including the renewable share of the national grid — with availability, downtime and performance notes.

• **O&M excellence:** standardize panel cleaning, inverter checks and fault response to maximize output and keep savings.

• **Hybrid readiness:** evaluate battery storage and other clean options to improve self-consumption and peak management, through small pilots with clear KPIs.

• **Connection and safety compliance:** keep grid interconnection, protection and permits current for all sites, with single-line diagrams and inspection logs.

• **Procurement and design standards:** use lifecycle costing, minimum performance ratios, warranty requirements and end-of-life recycling provisions in all new renewable procurement.

• **LED persistence:** maintain about 95% LED coverage and replace failures like-for-like with high-efficiency lamps and drivers.

• **BMS optimization:** standardize scheduling, set-points, alarms and occupancy modes across major buildings, with documented quarterly tuning cycles.

• **HVAC O&M:** coil cleaning, filter regimes, refrigerant leak checks and commissioning of controls to reduce run hours and improve COP/EER.

• **Sub-metering and data use:** expand electrical sub-meters in high-load areas (HVAC, lighting, laboratories) and use interval data to find and fix anomalies.

• **Operational guidelines:** after-hours shutdown checklists, plug-load controls and default power-saving settings for IT equipment.

• **Projects pipeline:** Prioritize measures with clear payback, such as variable-frequency drives on fans and pumps, Economizer fixes and demand-controlled ventilation.

- Actions towards Scope 3 and sustainable resource management

Divert at least 70% of campus waste from landfill by 2030, reduce total waste generation by 15% before 2030 and become a zero-waste campus by 2049, prioritizing reduction, reuse and high-quality recycling and organics; widen the Scope 3 inventory through:

• **Standardized sorting:** campus-wide, color-coded bins with clear signage for paper, plastics and metals, glass, e-waste, organics and residual waste, placed in high-traffic and teaching areas.

• **Organics program:** cafeteria food-scrap collection and back-of-house separation; composting on campus or certified off-site processing with quality controls.

• **Paper-use controls:** duplex and black-and-white printing by default, digital submissions, paper purchase caps and recycled-content paper.

• **Sustainable procurement:** requirements for minimal or recyclable packaging, reusable and durable products, and producer take-back for IT, e-waste and laboratory consumables, with end-of-life provisions in contracts.
• **E-waste stewardship:** secure collection, certified data wiping and documented downstream recycling or repair.
• **Water efficiency:** routine leak audits, low-flow fixtures where feasible and meter checks.
• **Data and logistics:** weigh collections by stream and campus, track contamination rates and keep recycler and composter manifests for audit.
• **Green commuting:** introduce electric or hybrid shuttle buses for staff and students, starting at Misr El-Gedida and Smart Village; provide secure bicycle parking and incentives for cycling and car-sharing; set up a digital ride-matching platform; and work with local authorities to improve public transport to campuses, as recommended by the Carbon Footprint Report 2024/2025.
• **Fleet, cooling and refrigerants:** assess electrification of the Abu Qir vehicle fleet, improve the efficiency of chilled-water cooling at Smart Village and strengthen refrigerant management at South Valley.
• **Sustainable food and wider Scope 3:** shift campus catering towards locally sourced, seasonal and plant-based options; reduce staff air travel where alternatives exist; and extend the wider Scope 3 assessment to all campuses by 2027.



Pillar 5. Innovative Programs & Lab Facilities

Objective: Strengthen practical education, technical training, and students' projects involving innovative clean-energy programs and laboratory facilities.

Planned actions:

- Continuous improvement to related programs and trainings offered by AASTMT different entities to students and industry.
- Enhance renewable energy laboratory facilities and practical demonstration systems.
- Encourage student innovation and graduation projects addressing clean-energy challenges.
- Organize technical visits to energy companies, power plants, and industrial facilities.
- Promote hands-on student training in solar PV and solar thermal technologies.
- Extend clean-energy training and awareness activities to schools and the wider community.

❖ ***AASTMT Regular Measures***

- Continuous improvement to related programs and trainings offered by AASTMT different entities to students and industry as detailed in the link below
  Energy-related Innovative Programs and Trainings by AASTMT

- Investments in Energy-related LABs intalled in AASTMT different campuses to guarantee continuous maintenance and improvements, thus assisting in consultancy, research and trainings. These Labs include;

➢ **Energy Research Unit LAB in 7th Engineerring Building - Alexandria Headquarter**
Energy Research Unit LAB

➢ **Energy LAB in Eletrical Energy Engineering Department - Smart Village Campus**
Eletrical Energy Engineering LAB

➢ **Environmental Monitoring and Climate Change Laboratory - Scientific Research & Innovation Centre**
Environmental Monitoring and Climate Change Laboratory

➢ **Renewable Energy Educational Lab in the Electrical and Control Eng. Dept- room G142 at AASTMT Alexandria - Abukir campus**
Renewable Energy Lab in EE Dept-AAST Abukir

❖ ***AASTMT 2025 Plan***

- Encourage **renewable energy and decarbonization-related educational events and activities** (seminars, workshops, visits and trainings) in **2024/2025.**
  Energy-related Events
  Energy-related Activities
- Prioritize **renewable energy and decarbonization – related 2024/2025 projects** in **AASTMT Industry Service Complex** to serve the industry and community effectively and resourcefully.
  AAST ISC 2024/2025 projects
- Prioritize **clean energy and decarbonization in 2024/2025 graduation projects**.
  Energy-related Graduation Projects



Pillar 6. Research & Funded Projects

Objective: Advance AASTMT's research and innovation capabilities through national and international funded projects addressing clean energy, energy efficiency, and industrial decarbonization.

Planned actions:

- Participate in international research projects addressing renewable energy and energy efficiency.
- Support research on renewable energy integration, energy storage, and low-carbon technologies.
- Investigate artificial intelligence applications in smart energy systems and energy management.
- Encourage interdisciplinary collaboration between engineering, environmental, and energy research teams.

❖ ***AASTMT 2025 Plan***

- Prioritize **renewable energy and decarbonization research projects**
  Renewable Energy Research Projects
- Start preparing for the implementation 2025 **research projects** outcomes to serve the industry and community effectively and resourcefully**, especially Interreg NEXT MED projects (RESt4GREEN and GREENOLIVE).**
  RESt4GREEN and GREENOLIVE
- Strengthening AASTMT's **Renewable Energy and Sustainable Development (RESD) journal** by providing a practical research platform for generating innovative findings, scientific publications, and knowledge exchange in renewable energy, thermal energy storage, energy efficiency, and sustainable industrial applications.
  RESD Issues
- Encourage Staff to Prioritize fields of **decarbonization and clean energy in research** 2024/2025
  Scientific Research & Innovation-Alexandria | AASTMT
- Sustain and strengthen the application of AI in energy and climate-focused studies by engaging postgraduate students to conduct AI studies in the fields of renewable energy and decarbonization. This is achieved through the opportunities of fully funded MSc and PhD degree and mobility offered by University of Stavanger as per **NORPART - AI-ESI Project** (2022-2026)
  NORPART - AI-ESI Project .



Pillar 6. Agreements and Initiatives

Objective: Expand AASTMT's strategic partnerships and institutional initiatives to accelerate the clean-energy transition via cooperation with industry, academia, governmental institutions, and international organizations.

Planned actions:

- Develop joint training and consultancy with governmental institutions, and international organizations.
- Strengthen cooperation agreements with industry, energy companies and research institutions.
- Organize institutional awareness campaigns on electricity conservation and responsible energy consumption.
- Support community engagement activities promoting renewable energy and environmental responsibility beyond AASTMT walls

❖ ***AASTMT 2025 Plan***

- Put **Government Partnership** towards renewable energy and climate change measures a priority, especially with Ministries of Environment, Local Development, Industry and Finance.

- Activate partnerships and MOUs signed or renewed with industry, in fields of consultancy, trainings and technical cooperation within **AAST Industry Advisory Council annual sessions** and services offered by **AASTMT Productivity and Quality Institute (PQI)** and **Industry Service Complex (ISC)**
  Industry Advisory Counsil Session 2025
  AASTMT Power and Quality Institute
  AASTMT Industrial Service Complex

- Encourage **renewable energy and decarbonization-related campaigns** to promote renewable energy and climate action importance beyond AASTM walls.
  Watch the awareness video of AASTMT initiative campaign “Our Energy, Our Responsibility”
  Our Energy, Our Responsibility Video

- Promote **behavioral change** among staff and students to reduce energy consumption, foster awareness on clean energy and decarbonization importance and encourage community to engage with sustainable practices via **initiatives** and **workshops**.
  Energy-related Events
  Energy-related Activities

3. Implementation and Monitoring Framework

To ensure effective implementation, AASTMT's Energy Plan should be monitored through a continuous cycle of assessment, implementation, measurement, and improvement.

- Assessment and baseline establishment
- Review electricity consumption, energy intensity, renewable energy production, and carbon emissions across all campuses.
- Implementation of energy-saving measures

- Execute lighting upgrades, air-conditioning improvements, energy rationalization, and renewable energy integration.
- Research and institutional development
- Implement research projects, laboratory activities, strategic partnerships, and clean-energy training programs.
- Performance monitoring
- Collect and analyze energy data and assess progress against the established KPIs.
- Reporting and continuous improvement
- Prepare annual energy performance reports, identify remaining gaps, and update future energy plans.

4. Expected Strategic Outcomes

The implementation of the seven pillars is intended to deliver the following institutional outcomes:

- Improved energy efficiency and reduced electricity consumption across AASTMT campuses.
- Increased utilization of solar energy and other low-carbon energy resources.
- Reduced operational carbon emissions and improved carbon-footprint management.
- Modernized energy infrastructure and more effective smart energy monitoring.
- Stronger research and innovation capabilities in renewable energy and sustainable technologies.
- Expanded international cooperation and industry engagement.
- Increased awareness and participation in energy conservation among students, staff, and the community.

5. Conclusion

AASTMT's Energy Plan 2025 represents an integrated institutional framework for advancing sustainable energy management and supporting the university's contribution to SDG 7. Through its seven strategic pillars, the Academy combines smart monitoring, energy conservation, renewable energy utilization, carbon reduction, innovative laboratory facilities, research and funded projects, and strategic partnerships into a unified approach. Ultimately, the plan reinforces AASTMT's pledge to Power Green Sustainability, Cleaning the Future, while supporting its long-term ambition of achieving a 50% reduction in carbon emissions and a 40% renewable energy share by 2040.

Prepared by;

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